INSTITUTIONAL AND LEGAL FRAMEWORK FOR FOREST POLICIES IN ECA REGION AND SELECTED OECD COUNTRIES - A COMPARATIVE ANALYSIS

Prepared

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### EXECUTIVE SUMMARY

1. Objectives and data
Forests and forest policy issues are important in most of the countries in the ECA region, which consists of the following sub-regions and countries: The North-west region, comprising the Baltic countries (Latvia, Estonia and Lithuania), Poland and Belarus; the Danube and Carpathians comprising Ukraine, Moldova, Romania, Hungary, Slovakia and the Czech republic; the Balkans, covering Slovenia, Bosnia, Croatia, Albania and Macedonia; Russia (which because of its size is in a category of its own); Turkey and the Caucasus - Georgia, Azerbaijan and Armenia; and Central Asia, comprising Uzbekistan, Turkmenistan Kyrgyzstan, Kazakhstan and Tajikistan.

When discussing the future development of forest policies in the ECA region, both OECD and ECA countries have forest policy experiences which could be of considerable importance to learn from. The objectives of this report is:

1. To draw out possible lessons of OECD and ECA country experiences regarding forest regulations, institutions, concession policy, financing, incentives and resource pricing that could be of benefit to ECA forest policy makers, and compare if possible the experiences of selected countries in these areas with those of the OECD countries;

2. To develop a range of policy options which could be of use to ECA decision-makers, taking into account the advantages and disadvantages of each.

Considerable efforts have gone into the first objectives as that was found to be a necessary component for covering the second objectives. In addition, it is thought that the results from addressing the first objectives could provide valuable background information for later, more detailed forest policy analysis of single ECA countries. We have concentrated on laws and institutional arrangements, but have also included economic and informational instruments as most often, there are rather close connections between the various groups of policy instruments.

The report is based on three main sources of information: a. Existing literature and formal documents regarding forest policy analysis and instruments of relevance for ECA countries; b. our own experiences and understanding of forest policy issues in OECD and ECA countries; c. interviews/discussions with relevant individuals in those countries.

2. Lessons learned

Chapter 3 presents an overview of the information gained, structured along three main types of policy instruments: (i) Laws and institutional arrangements, (ii) economic incentives, (iii) informational instruments. Although this typology is convenient, it is emphasized that there are no strict borders between these three main types. For example, will changes of legal/institutional character most often be required if new subsidies or tax schemes are established, forest extension services changed, or research significantly increased. Although the picture given by the case-studies is far from complete, the following general lessons are emphasized:

- A long range of studies is found of various forest policy instruments, but nearly all of the studies are only describing the instruments. Very few studies exist which analyze the effectiveness and cost efficiency, not to say the costs and benefits, of various policy instruments. And even less studies exist which evaluate alternative policy instruments in the same country, or compare the same policy instrument or set of instruments as applied in two or more countries. Statistical testing of hypotheses about the impacts of forest policy instruments hardly exist. One must therefore to a large degree rely on piecemeal or anecdotal information, and be cautious when giving forest policy recommendations.

- A long range of policy instruments is available for being chosen by policy makers - the question is to choose the most appropriate ones - or more realistically in practice: to avoid choosing bad instruments.

- The studies undertaken on effectiveness and efficiency of policy instruments in OECD countries show that policy instruments have been effective, and the following results are among those reported:
  - The various policy means analyzed have had physical effects in forest management - i.e. their effectiveness have been empirically verified.
  - The impacts of a single policy instrument depend upon which other policy instruments are applied. Subsidies alone (or other single economic policy instruments) do not always give results unless they are followed up by other policy means like extension service advice and proper implementation efforts.
• The time element (or expected «life-time») of a subsidy might be important for its effectiveness and efficiency, as it influence forest owners’ expectations.
• Subsidies may in several cases be cost-increasing - e.g. the loggers or machine operators may (through increased logging costs) take a substantial share of harvesting subsidies initially given to the forest owners.
• The present forest authorities, both in OECD and ECA countries, could preferably be more active in getting subsidies for the non-priced non-wood services forestry provides. Today, one is in most countries too traditionally focusing on the wood production with only mentioning forestry’s positive external effects on the environment. As a consequence, forest enterprises often have a weak position compared to nature conservation authorities, and optimal forest management is made difficult. To improve on this aspect, more and better information is needed for policy-makers and other people who in general know little about forestry, in particular its importance for environmental benefits and nature conservation.
• Of the three main types of policy instruments mentioned above, laws and institutional instruments are the strongest if accompanied by appropriate sanctional mechanisms. The main drawback of this group of instruments is their relative low degree of flexibility. Combinations of appropriate law/institutional instruments and economic ones, have in several OECD countries proved to be effective, and given more flexibility. The impacts of the informational policy instruments (extension service, information, education and research) are more longterm, but also important.
• Clearly defined property rights and transparent and fair legal arrangements are a prerequisite for good resource management and for the other policy instruments to have any effects. This is particularly important in ECA countries where awareness of property rights is quite new and sometimes doubtful.
• Whenever corruption starts to dominate, most policy measures become rather irrelevant.
• When public goods, often having no fair market price, are involved, one should be extra careful when designing policies based purely on market incentives, in particular if irreversible impacts may occur. In the new ownership situation in several of the ECA countries, one main challenge is to create, preferably before privatization, an appropriate legal framework for private forest management securing vital public environmental services from forestry.
• Forestry is characterized by many stakeholders and complicated ecological, economic, institutional, and social relationships which often are dynamic and stochastic by nature. It is therefore particularly important to avoid that one (or just a few) stakeholder(s) get too dominant positions - it being in the markets for economic goods as monopolists or monopsonists, or in the institutional/organizational «market».
• Among the most important market and intervention failures in both OECD and ECA countries are:
  **Market failures:**
  • Incomplete information on biological consequences
  • Uninterested and ignorant owners
  • Scale disadvantages due to small holdings
  • Too much concentration of the production of priced products and services
  • Destruction of ecosystems by establishing too much monocultures
  • External effects from other sectors, e.g. air and water pollution

  **Intervention failures:**
  • Unequal treatment of sectors (e.g. too strong stimulation of agriculture, too low energy prices, unequal treatment of the public and private forest sectors)
  • Inappropriate use of forestry in regional policy
  • Too tight management regulations
  • Below-cost sales from public forest owners
  • Heavy regulation of the market for forest land

• Comparing OECD and ECA countries on forest policy issues, it is our impression that they differ particularly on the following points:
  • Ownership and land tenure systems are in general more settled and thus less up for discussion in OECD countries.
  • The legal framework in most of the ECA countries needs changes in particular regarding how to combine environmental and market issues.
  • OECD countries have more experiences on various forms of concession systems and market forms.
  • In several of the OECD countries the legal restrictions on the private forest owners are relatively flexible but the forest authority is relatively strong to guarantee the implementation. In several of the
ECA countries it is opposite: The legal restrictions are very high and the forest authority is rather weak regarding implementation and sanction possibilities.

- Forest owner cooperation and arenas for public participation and conflict resolution are less developed in the ECA region.
- Corruption seems to be a higher problem in some of the ECA countries.
- Economic incentives are more used in OECD countries, although to varying degree.
- Extension service for private forest owners is inadequate in most ECA countries - in particular for new private forest owners having very limited forest management experience.

3. Developing policy options

In Chapter 4 policy options are discussed which could be of use to ECA decision-makers. What is appropriate forest policies will vary from country to country, depending upon the environmental, socio-economic, institutional, historical and political setting. Therefore, instead of giving specific policy recommendations, Chapter 4 is focused, first, on discussing how, in practice, the decision makers could structure the search for appropriate policy instruments in his country. Then, based on the findings in Chapter 3 and our own general policy experiences, we discuss what in our opinion are the most important factors to consider in ECA countries when going for forest policy reforms.

3.1 Structuring the search for appropriate options

The following procedure is proposed:

A. Create and keep a comprehensive policy process view

During the whole work of choosing policy instruments, it is important to keep a comprehensive process view. By that we mean three issues: To be aware of the various stages in the policy process, to be adaptive, and to be proactive. This is elaborated some in the following:

a. Be aware of the various stages in the policy process. It is important that forest policy-makers have the various stages in the policy process in mind when choosing policies. These stages are illustrated in Fig. 4.1, and consists of:
   - problem formulation (how problems or issues are perceived and demand for action made by various stakeholders);
   - agenda acceptance (how demand for policy changes is accepted and entering the political scene or placed on the political agenda);
   - goal specification (identifying what is wanted)
   - policy adoption (the actual choice of policy instruments);
   - policy implementation (implementation by appropriate agencies).

Under each of these stages some sort of evaluations are needed by one or several stakeholders, and the stages are often rather closely interlinked. Also, the implementation stage has to be considered - only policy adoption is not sufficient.

b. Be adaptive: Policy issues are often complicated and considerable uncertainty exists both regarding dose/response effects of policy means, goal specification, policy adoption, policy implementation, and future trends influencing the forest sector. In addition public and private objectives and preferences change over time, and new knowledge is obtained. It is therefore important to follow an adaptive approach, based on the following premises:
   - Forest policy decisions are taken more or less continually - even a decision to do nothing is still a decision.
   - These decisions should be based on the best possible scientific knowledge available at the time, including assessments of relevant future trends influencing forestry and forest industries, and an appreciation of the uncertainties involved.
   - As times go by, we learn more, and the new knowledge improves the basis for our decision-making in the next period. The likelihood of learning over time should be taken explicitly into account when taking policy decision today, and places a particular value on keeping options open. In forestry and forest policy, these options are particularly important when they concern irreversible changes, such
as loss of biodiversity, as at present we have limited knowledge about the impact of alternative management regimes on threatened species. A considerable amount of research is underway on such issues, and will most likely give improved knowledge in the future. As such there is a benefit of retaining flexibility by leaving options open, where possible, so that new forest policies can be reformulated and implemented when new knowledge is available.

C. Be proactive: By this we mean that the policy makers should try to anticipate which policy issues are likely to emerge in the not too distant future, and try to design the forest policy so it can address these issues without too much difficulties and costs. As such, this point is linked to the above mentioned adaptive approach, but put more emphasize on knowledge about main driving forces in society influencing the forest sector.

B. Decide criteria for choice

Here it is important to clarify two issues: The first is the goals of the forestry. They should refer as directly as possible to the national development goals for the society as a whole as decided upon in the overall political process. Vital and difficult here is to operationalize the overall development goals into sub-goals for forestry which are clear enough for forest policy evaluation and implementation. Usually, these goals can be divided in three categories/dimensions of sustainable forest management and development: a. environmental goals, b. economic goals, and c. social goals (including distributional aspects). Very important here is to identify possibilities for irreversible impacts. A very useful tool here could be the use of National Forest Programs (NFPs - cf. below) emphasizing intersectoral linkages, international agreements related to forestry and participatory processes.

The second issue is to decide on which criteria to use for estimating degree of goal achievements. Here, we advocate at least three criteria: effectiveness, cost efficiency and risks related to the estimate of the effectiveness and cost efficiency (note that this is another type of risk factor than the one mentioned above related to the goals). By cost efficiency we mean the costs per unit of goal factor achieved (or the inverse). Risk is more difficult to define, but as a first crude approximation one could use a qualitative scale of high and low risk.

C. Making the choice of policy instruments.

This means, first, to get an overview of what is technically feasible as policy instruments in the respective country. This could be a long list of possibilities as given examples of in Chapter 3. Then such a list in most cases has to be reduced, taking into consideration the actual social, institutional, financial, and political settings. This is not a trivial reduction, and should be done with care. As a guiding principle, it is better, in case of doubts, to include too many instruments than exclude at this stage.

Finally, one has to make the detailed evaluation of the feasible policy instruments, using the criteria and process view discussed above.

3.2 Most important options to consider

In theory, the number of policy options are many, and the second main point in Chapter 4 is a discussion of what we, based on the information gained and own experiences, consider to be the most important policy options for ECA countries. Great variation exist between the countries, and one should be cautious in generalizing too strongly. But a first step could preferably be to structure both the ECA and the OECD countries into groups which are more homogeneous in relation to criteria like types of main forest ecosystems, ownership structure (size and types of ownership), importance of forestry, forestry tradition, social condition (degree of unemployment, income level), legal and institutional setting, development of wood industries. We suggest the following groups of the ECA countries as potential useful for the purpose of this report:

- Armenia, Azerbaijan, Kazakhstan, Uzbekistan, Moldova, Georgia, Kyrgyzstan, Turkmenistan – which need almost everything new related to forest policy and sustainable forest management: legislation, forest conservation, protection, and management, education, research and exchange of information, wood processing industry, non-wood forest products.
- Albania, Belarus, Bulgaria, Bosnia-Herzegovina, Croatia, Romania, Russia, Ukraine – which are still subject to deep economic and political recessions,
• Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia – which are the most advanced in the process of reformulation of forest policies and improvements of institutional and legal instruments as well as practical changes (partly because of the adaption and screening process before accession to EU).

Practical options for these groups could be: a. Identification of the level of needs by elaboration of country profiles regarding priorities in forestry related issues; b. organization of expert exchange between ECA countries and stimulation of their mutual learning from each other and from experiences in relevant OECD countries.

In general for the group of ECA countries, it is our opinion that the following policy issues (with corresponding policy options) are more important than others:

1. Goals for sustainable forest management. The goals for forestry should be as clear as possible, and derived consistently from the overall development goals of the respective country. It is important to utilize the comparative advantages of the countries. For example are labour costs relatively cheap compared to capital costs, and this should stimulate to the use of more labour intensive (and domestically produced) harvesting and processing technology than the newest and most capital intensive equipment imported from high-salary countries.

2. Rights of property regimes/land tenure. The rights of property/land tenure regimes have to be clearly defined and followed. If not, the effects of the other forest policy instruments will easily be negligible.

3. Forest policy responsibilities between government institutions. Overlapping and unclear legal and institutional arrangements between governmental institutions are major stumbling blocks for forest policies.

4. Forest investments. A problem facing most countries is to secure that investments in forestry for long-term industrial wood production and environmental services are kept at a sufficient level. Regarding wood production, a certain part of the surplus generated from wood sales could be earmarked for such investments. Regarding environmental services various legal and financial policy means could be used. For the state forest service it will in most countries be necessary to find new income sources than wood sales, or if only based on the shrinking income from wood sales, the institution will be forced to shrink. Increasing the amount of the deficit spending for the state forest service, which is common in many European states, will politically become more difficult in the future. Economists are developing new procedures to sell non-wood goods and services, but the size of achievable income from these activities is still rather uncertain, and it may have politically difficult distributional impacts. An alternative is a special budget (financed by public resources) for non-wood goods and services, or combination of these two approaches.

5. Fragmentation of forest estates. Due to the ongoing privatization process in many of the ECA countries, fragmentation of properties is an important challenge facing forestry there. The challenge is to create appropriate legal frames of private forest management in the new ownership situation securing important public environmental services from forestry, and efficient forestry practices.

6. Forest owner associations and extension services. In most OECD countries, forest owner associations have been very important for knowledge dissemination to and support of small and medium sized forest holdings. In most of the ECA countries this kind of organizations are rather few and limited in scope, and public financial support for such organizations could be preferable at least in an initial phase.

7. Public participation and conflict resolution. Forestry provides many types of goods and services, and the various stakeholders rank them differently. It is therefore quite natural that conflicts occur regarding what is optimal forest management. To get a reasonable balance between competing views, it is important that appropriate institutional arrangements are created for public participation and conflict resolution in forestry.

8. Role between forest authorities and interest groups. Associations of forest owners and interest groups are now for the forest authorities in most of the ECA countries. In a system with more private ownership and market economy the interest groups are important for formulating and securing the interest of the various
stakeholders. Strong forest authorities will soon recognize this in information for policy making, but they will most likely insist on the right of the state on the final decision. The cooperation with interest groups can, however, go further if the forest authority realizes that the real challenge is the implementation of the programs. The forest authority could bargain with the interest groups and exchange compromises in the programs for promises to support policy implementations. It can also for example invite the interest groups to participate in the formulation of forestry programs or delegate self-regulation of specific tasks to the interest groups, enabling them to offer special services for their members and to gain new members. In the future the strength of the forest authority, and forestry in general, will depend to a high degree on its ability to win new allies within the different interest groups.

9. Corruption. If corruption gets foothold, one arrives very easily in situations where forest policies have no meaning.

10. Knowledge of the likely impact of each of the policy instruments available. The lack of empirical knowledge of impacts is a serious problem. In practice, one has to use best judgement and learn over time from implementations in own and other countries. Note that as we see it, the choice of implementation strategy is a policy instrument.

11. Mix of forest policy instruments. The effect of a policy instrument depends on the size and type of other policy instruments in use. For example, experiences from several countries show that changing the forest law for privatization of forests, has to be supplemented with proper sanctionary and monitoring policy measures to secure environmental public services. It is also important that the different forest policy instruments are not seriously conflicting each other. Among other things this demand that the number of forest policy instruments are high enough.

12. Policies in other sectors. In most ECA countries forestry and forest industries are just small parts of the total economic activity, whereas their importance regarding regional/rural development and environmental aspects are high. Consequently, the policies implemented in other sectors of the economy are in most of these countries very important for the forest sector. In particular the policies related to agriculture (land use), energy, environment, trade, transport, and the general economy heavily influence the functioning and potential of the forest sector. When considering forest policy changes, it is important to include analyses of policies/policy instruments in these other sectors.

13. Overall coordination – National Forest Programs. The combination of single forest policy instruments and their coordination with policies in the other sectors of the economy to fulfill overall development objectives of the society, is a great challenge for forest policy. Few countries, if any, have yet managed that properly. Unclear objectives, special interests, conflicting preferences, financial shortages, and historical/institutional constraints are examples of factors which make an appropriate coordination difficult. The concept of National Forest Programs (NFP) being introduced in several countries now, is a promising coordination tool for covering the main stages of the whole policy formulation and implementation process for sustainable forest development. However, the NFP concept is defined and practiced differently in different countries, and might easily develop into another “paper-tiger” in the international forestry debate if not properly followed up.

4. Future research needs

As mentioned above most of the literature on forest policy instruments is of descriptive nature focusing on describing the various instruments used, and few analyses exist on their impacts. More research is urgently needed - in particular studies on the effectiveness, cost efficiency and distributional impacts of various forest policy means. This should be done in several ways - e.g. by analyzing single policy instruments, by comparing alternative (sets of) policy instruments in the same country or as applied in two or more countries.

This research could preferably concentrate on policy instruments which seem to have given extreme results - either very good or very bad - and the main reasons for these results. Examples of important questions to address are: Must certain necessary conditions be fulfilled to provide successful policy reforms? Are certain
combinations of policy instruments preferable/not preferable? What are the transaction costs of various sets of policy instruments? What are their short- and long-term impacts?

5. Implications related to the forest policy of the World Bank

We see the following points as particularly relevant implications for the World Bank’s forest policy towards ECA countries:

• Stimulate the countries (by providing financial support and high expertise from both ECA and OECD countries) to evaluate their present forest policy instruments and potential policy reforms on the issues outlined above and in Chapter 4. It is important that the OECD experts brought in have relevant experiences for the task and sufficient knowledge about historical, economic, ecological and social conditions in the ECA country.
• Secure, before going in with financial assistance to forest sector projects, that such evaluations are done, and that appropriate policies are likely to be implemented.
• Monitor the implementation of projects and policies, and build in procedures for possible changes to benefit from potential learning over time.
• Provide financial support for research on the impacts of forest policy means as outlined above.

1. INTRODUCTION

1.1 Background

The ECA region consists of the following sub-regions and countries: The North-west region, comprising the Baltic countries (Latvia, Estonia and Lithuania), Poland and Belarus; the Danube and Carpathians comprising
Ukraine, Moldova, Romania, Hungary, Slovakia and the Czech Republic; the Balkans, covering Slovenia, Bosnia, Croatia, Albania and Macedonia; Russia (which because of its size is in a category of its Own); Turkey and the Caucasus - Georgia, Azerbaijan and Armenia; and Central Asia, comprising Uzbekistan, Turkmenistan, Kyrgyzstan, Kazakhstan and Tajikistan.

Most ECA countries have a long tradition of forest management and well established forest institutions; the Russian Forest Service was established in 1797 and the first Forest Ordinance for Slovenia dates back to the 15th century. The principles of biologically sustainable forest management are also well understood and many ECA countries are leaders in the field of forest research; Romania’s forests have been managed to maintain their natural species mix, and much of he early genetic research was carried out in the Former Soviet Union.

Since 1990, after the changes of the Former Soviet Union, however, the forest authorities in the ECA countries have been faced with a number of difficulties. These include:

- A sharp decline in markets for forest products in most countries caused by the economic downturn and confusion following transition.
- An increase in illegal timber extraction caused partly by increasing poverty and the need for fuelwood (the Balkans and the Caucasus) or by opportunities for «black market» trade (Russia, Bulgaria).
- Difficulties with adopting a forest resource pricing regime which reflects the real value of the resource and allows development of markets, in an environment where there are many barriers to the development of these markets.
- The need to create entirely new legislation (for the newly independent countries), which provides on the other hand for sustainable forest management, and on the other for opportunities for the emerging private sector within a clear regulatory framework.
- Reorganization of forest sector institutions, often without adequate provision for funding.
- Increasing conflicts between local and central governments regarding access to and utilization of forest resources, within an overall policy of decentralization of government functions.
- Restitution of a relatively large portion of forest land to owners who may not have a tradition of sustainable management and who may wish to maximize short term revenue.
- Rapid privatization of forest industries through deals which, frequently, under-value assets and do not provide for adequate recapitalization.
- Declining central government budgets for forest regulation and management, more complicated tasks, and frequently, budget allocation systems which do not provide incentives for efficient management.
- The need to address the appropriate balance between the «private» and «public» good function of forests through regulatory, tax and other incentive means.

There are many differences in institutional arrangements between the countries in the region, and in many countries institutions are still evolving. In Russia virtually all forest land is and is likely to continue to be owned by the state, while in Slovenia 80% of forest land has now been privatized. In several countries (Turkey, Croatia) the main forestry organization operates similarly to a commercial «State Forest Enterprise»; in other countries all forest utilization has been divested to privatized enterprises while the Forestry Service is funded from the federal budget.

As Ministries of Finance face increasing budget shortfalls, support for the «public» functions, and public funding, of forests has declined in most countries. Recognition of these public functions, and of the state’s financial responsibility for assuring their sustainability, is a difficult issue. It is an issue which also many
European and North American countries face or have faced. In most European countries there are financial
incentives for reforestation even where forests are privately owned, and in most countries certain forest
management functions (e.g. fire management) continue to be publicly funded. There are restrictions on the use of
privately owned forest land in most all European countries (in particular on conversion to non-forest uses) and in
many there are obligations to follow forest management plans.

1.2 Objectives

Both OECD and ECA countries have forest policy experiences which could be of high importance to learn from
when discussing the future development of forest policies in the ECA region.

Based on the original TOR and later adjustments according to first detailed scope of work, the objectives of this
report is:

1. To draw out possible lessons of OECD and ECA country experiences regarding forest regulations,
institutions, concession policy, financing, incentives and resource pricing that could be of benefit to ECA
forest policy makers, and compare if possible the experiences of selected countries in these areas with those
of the OECD countries;
2. To develop a range of policy options which could be of use to ECA decision-makers, taking into account the
advantages and disadvantages of each.

Considerable efforts have gone into the first objectives as that was found to be a necessary component for
covering the second one. In addition, it is thought that the results from the first objectives could provide
valuable background information for later, more specific, forest policy analysis of single ECA countries.

We have not used much efforts in collecting country specific data on forestry conditions and existing economic
and socio-economic situation as that already was done in World Bank (1999) and Phare (1998).

The report is focused on laws and institutional arrangements, but we have also included economic and
informational instruments as it most often is rather close connections between the various groups of policy
instruments.

1.3 Report outline

Chapter 2 gives a short methodological overview of the work. In Chapter 3 we present our main findings from the
literature survey. Major options are discussed in Chapter 4. In Chapter 5 we give some recommendations
regarding research and implications related to the forest policy of the World Bank.

2. METHODOLOGY AND DATA

Simplified, one may say that this report is based on two basic assumptions: First, that the institutional and legal
framework for forest policies is a policy instrument in itself closely linked to the other policy instruments
available: economic incentives and informational instruments. As such it is not possible to analyze legal and
institutional instruments in isolation from economic and informational ones.

The second assumption is that the legal and institutional framework and the economic and informational policy
instruments in use at present can, in most countries, be improved to give higher welfare by changes in
government intervention. This second assumption is not trivial as one has to ask why (or under which
conditions) would changed government intervention give a higher welfare for the society. A huge literature exist
on this topic also related to the forest sector - cf. for example Cubbage et al. (1993), Klemperer (1992), Solberg
(1998), Wibe and Jones (1992), and it is beyond the scope of this report to go in details here.

The report has been based on three main sources of information.
* Existing literature and official documents regarding forest policy analysis and instruments. We have tried to get an overview of existing literature, and made a selection based on how relevant the documentation is in relation to forest policy challenges in ECA countries.

* Our own experiences and understanding of forest policy issues in OECD and ECA countries.

* Interviews/discussions with relevant individuals in those countries.

3. POLICY LESSONS BASED ON CASE STUDIES FROM SELECTED OECD AND ECA COUNTRIES

The overview in this chapter is structured along three main types of policy instruments: (i) Laws and institutional arrangements, (ii) economic incentives, (iii) informational instruments. However, it should be emphasized that although this typology is convenient, there are no strict borders between these three main types. For example will changes of legal/institutional character most often be required if new subsidies or tax schemes are introduced, forest extension services changed, or research is much increased.

3.1 Laws and institutional arrangements

3.1.1 Laws

Forestry laws are in most countries the fundamental basis for forest policy. We may distinguish between nominal and functional laws (Schmithüsen 1992): The term nominal forest law comprises the body of legislation which addresses specifically forests and forestry. It refers primarily to the forest law itself dealing with forest conservation and development as its central legal object. It also includes regulations and rules complementary to that law as well as its implementing jurisdiction.

Nominal forest law has three important aspects. It is a sector specific legislation focusing on the conservation and development of forests and as such part of the economic development and natural resources legislation. It is an important and integral part of and use and rural development legislation dealing with forests as part of the rural space. And in view of the growing importance of the forest cover as part of the natural environment it is an element of environmental protection law as well as of nature and landscape conservation legislation.

Nominal forest laws has ideally to be comprehensive in its short and long term objectives and process oriented with regard to the involvement of different interest groups in resources management decisions. It has to provide a consistent framework and participatory forest policies in favour of people which rely directly on the forests. It should offer incentives and/or compensations to private and communal forest owners which provide public benefits in managing their forests on a multifunctional basis and in accordance with the principle of sustainability.

The term functional forest law refers to a wide range of laws and regulations which address other subjects and problem areas the provision of which having some relevance or impact on forest conservation and development.

Legislation which in this connection appears of particular importance to sustainable forest development may be grouped in the following manner:

- Legislation that deals with social and economic measures for the development of the rural space: This includes land tenure legislation, land-use planning legislation, regional and national development and investment laws as well as tax legislation.
- Legislation that is principally concerned with renewable natural resources: This comprises sector specific legislation related to agriculture, grazing, fishery, and their various interfaces with forestry and combined production systems. It also refers to agrarian reform and land colonization laws, as well as to erosion control and land rehabilitation regulations.
- Legislation which refer to the general and specific aspects of environmental protection: This includes national environmental protection codes, legislation related to air pollution control, and to soil and water conservation.
Legislation which concerns nature protection: This includes principally laws protecting flora, fauna and undistributed landscapes, and to a considerable extent the hunting, wildlife and natural parks legislation.

The growing complexity of legislation requires a thorough analysis of the compatibility of the various laws and regulations. The following are among those issues needing particular attention:

- What are the implications of the expanding system of environmental and nature protection legislation on the further evolution of forest legislation?
- To what extent are the respective provisions mutually supportive, contradictory or may even neutralize and obstruct each other?
- To what extent is it necessary to insert or reinforce in environmental protection law specific provisions related to forest conservation and management?
- In what respect does forest law benefit from an evolution and improvement on the natural resources and rural development legislation?
- In what respect have forest laws to be modified in order to be compatible and to support such legislation?

The role of law in forest resource management has to be judged in the context of the fundamental values which regulate the basic social relationships and the political system of a country.

In a constitutional and democratic state it is the responsibility of parliament and of government to elaborate public policies and to define legally binding norms to be respected by the community. Laws and regulations are the result of democratic policy formulation processes. They are at the same time the prerequisite for the implementation of public policy objectives. Changes in national policies require an appropriate modification of the relevant body of legislation.


In Europe forest regulations have a long tradition, and it is worth noting that most regulation stemmed from wood shortages occurring throughout medieval to modern times. Most laws governing forestry in Europe are originally designed to ensure continuous tree cover and harvests to provide timber products. The last 10-20 years this has changed drastically, and many countries have during the last decade either changed their forest laws or started the process of changing, to include environmental benefits like recreation, biodiversity protection and water catchments, avalanche protection - cf. Gluck et al. (eds.) (1999), Solberg (1998 a, b), Rykowski (1998), Tikkanen & Pajari (eds.) (1998), Tikkanen & Solberg (1995).

However, rather few studies on forest law analyse the shortcomings of existing regulations. Appelstrand (1998) gives an analysis of the new Swedish Forestry Act of 1993. It provides a new, revised policy for Swedish forestry, giving equal priority to environmental consideration and high and valuable timber production. It is argued that the implementation of environmental aspects of forest policies is to a large extent dependent on the professional administrative culture. In the interaction between multiple-use actors in a policy network this culture is one of the factors which may directly affect the actual outcome and the acceptance of a policy program. Another outcome of the new policy is the changed balance between the policy instruments. Striving towards deregulation and less state intervention, the new policy relies, to a great extent, on the good-will of the forest owners. Owners must now take greater direct responsibility compared with their earlier role, which was merely that of an «executor». The role of the forest owner in Sweden is by the new Act now changed to that of a «caretaker», taking the initiative and
being responsible for the future state of the forest. What remains to be seen is if this indicates a possible development towards a more pluralistic perception of future forest policy decision-making.

Trømborg & Solberg (1995) compares the forest law in Norway and Washington State, USA. Several differences are found, among the most important are: The forest law regulations were much more detailed in Washington; the formal enforcement of the law was stronger in Washington; and in Norway economic incentives were more used compared to Washington.

Phare (1998:55) reports the following issues as most important for improving the forest law situation in the 13 Phare countries (Albania, Bosnia and Herzegovina, Bulgaria, Hungary, Latvia, Lithuania, Macedonia, Poland, Romania, Slovakia, Slovenia, Czech Republic, Estonia):

**Strengthening legal frameworks:**

- Development of clear and realistic legislation taking account of EU requirements and paying attention to traditions
- Utilization of technical assistance to improve legal frameworks
- Information and experience exchange on legal issues

**Strengthening of administrative structure**

- Re-organization of the institutional systems to give more power and political independence to the forestry authorities
- Strengthening of the authority of forestry officials, in order to better enforce existing laws
- Establishment of advisory service systems within the forestry department
- Education of officials and other measures to improve systems, and measures to educate the public concerning forestry regulations

**Law enforcement**

- Improvement of penalty procedures
- Better cooperation between police and legal authorities
- Education of the courts concerning forestry laws, including penalties for violations, in order to speed up prosecution and punishment of violators

**Strengthening of political support**

- Closer co-operation, integration and understanding between different stakeholders
- Development of better relationship between the private and public sector
- Creation of a well functioning lobby system
- Support to activities performed by different forest associations and NGOs
- Improvement of public relations for the forestry sector
- Development of better relationship between forest authorities, the tourism sector, the environmental department and NGOs

**Strengthening of public awareness**

- Improvement of information collection and distribution
- Inventory of information sources
- Public education programmes to increase knowledge of relevant legislation
- System to enable feedback from the public on forest policies and practices

The above mentioned issues are also of high importance in several OECD countries at present, but with varying degree.

According to the World Bank (1997 a) the interim principles of the Russian forest legislation are in line with current international social, economic, and environmental thinking about sustainable forest development, but
they lack specificity in administrative and fiscal processes and leave many interested parties with control over forest resources without properly defining their responsibilities. The new Forest Code declares all forests of the State Forest Fund to be federal property, but uses language that allows the possibility of regional ownership of forests.

Sheingauz et al. (1995) carried out assessments of the Russian forest legislation based on case studies. From these analyses, the following is concluded by Nilsson & Shvidenko (1998):

- The current framework of forest legislation is still largely based on a centrally planned institutional framework.
- The forest legislation does not cover all functions of the Russian forest resources, and not even all Russian forests.
- The forest legislation, in the form of a matrix of legislative executive bodies, is extremely complex and difficult to administer and implement.
- The forest legislation is, to a large extent, normative and descriptive, and lacks efficient mechanisms for implementation.
- Due to lack of mechanisms to implement legislation, there are many loopholes, opening the way of corruption.
- There are clauses allowing participation by the people in the implementation of the laws, but too few mechanism exists for their doing so.
- Severe contradictions influencing the administration of natural and forest resources exist within the overall Russian legislative framework.

Teets and Saladin (1996) claim that the primary criticism of the interim principles of the forest legislation in Russia is that it «contradicts and undermines existing environmental legislation and greatly expands potential conflicts of interest for the Federal Forest Service between conservation and exploitation». Teets and Saladin (op.cit.) stress that the lack of compliance with, and implementation and enforcement of environmental standards can be traced to three related factors: (1) the process by which laws are made, which allows little dialogue with stakeholders and thus builds little political will for implementation; (2) the institutional structures responsible for implementation and enforcement, which have limited resources and ambiguous mandates; and (3) the substantive standards themselves, which are sometimes unrealistic and frequently unclear.

Sedjo (1997) shows that the joint responsibilities of the federal government and regional governments in many cases develop and invite conflicts.

Astemark (1997) claims that legal and bureaucratic issues are generally the main problems preventing foreign investment in the Russian forest sector and that the legal institutions in Russia are much weaker than in the West - despite numerous acts of legislation and decrees - with a larger gray zone between legal and illegal activities. Gunther (1997) holds a similar opinion.

Russia has made a number of international environmental commitments with respect to forestry. The World Bank (1997 a) states that, due to a weak national forest management policy, Russia has difficulties fulfilling these commitments. The inefficiency of environmental control resulting from a lack of resources and inefficient organizations is well-documented (World Bank 1997 a). Kotov and Nikitina (1993) claims that Russian authorities are too weak to ensure compliance with environmental legislation and adequate mechanisms and institutions for effective implementation are simply absent. Violations of environmental regulations are commonplace and seem to be part of the tradition in uses and rules. For example, Krasnoyarsk Kray reports 4,500 violations of wildlife management rules per year (World Bank 1997 a).
Property rights might be viewed as links between the social world and the biophysical world and property right systems constitute the basis for forest resource management.

In principle, one may distinguish between 3 types of land ownership: state owned, private owned and common owned. Most ECA countries have the last 50-80 years had predominantly state owned forest land, and today most of them are planning to convert, or have converted, considerable parts of the forest land to private ownership. As such the question of type of ownership is an important policy question in these countries. Table 3.1 shows the objectives of the 13 Phare-countries regarding distribution of ownership as reported by Phare (1998).

Table 3.1. Expected post-transition forest ownership structure

<table>
<thead>
<tr>
<th></th>
<th>Private</th>
<th>Co-operative</th>
<th>Corporate forest</th>
<th>Municipal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>individual</td>
<td>Church</td>
<td>Company</td>
<td>Community</td>
</tr>
<tr>
<td>ALB</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>21</td>
</tr>
<tr>
<td>BLH</td>
<td>20</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>BUL</td>
<td>18</td>
<td>-</td>
<td>-</td>
<td>10-15</td>
</tr>
<tr>
<td>CZR</td>
<td>19</td>
<td>3</td>
<td>-</td>
<td>12</td>
</tr>
<tr>
<td>EST</td>
<td>50</td>
<td>-</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>FYROM</td>
<td>15</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>HUN</td>
<td>40</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>LAT</td>
<td>50</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>LIT</td>
<td>47</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>POL</td>
<td>18</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>ROM</td>
<td>20</td>
<td>23</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SLK</td>
<td>10</td>
<td>22</td>
<td>5</td>
<td>x</td>
</tr>
<tr>
<td>SLN</td>
<td>70</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

1) BUL - 18% private forest includes church forest and school forest
2) CZR - 65% of state forest includes also school forest, 2.6% of unresstituable/unknown owner forest is also included
3) LAT - State forests include 1.7% of forests with unknown owner
4) POL - no significant changes of the present situation are expected
5) ROM - Potential area individual categories within corporate forest is unknown. Calculated on the basis of absolute ha.
6) SLK - State forests include 10% of woodland with unresstituable forest and forest with unsolved ownership situation
x) EST and SLK - Company owned forest on small area or no assessment

In most OECD-countries, the question of forest ownership structure has been rather stable. The variation is rather large between countries - Canada has more than 90% of its forest land of 244 mill. ha owned by the government (80% by provinces and 11% by the federal government), whereas for example Norway has 77% of the forest land as privately owned.

There are several arguments for and against private or government forest ownership. A good overview is given in Cubbage et al. (1993:42-73).

In many OECD-countries we have various types of forest ownerships (private, government, common owned), and an interesting question is: Do we have some empirical evidence indicating differences between the various kinds of ownership with regard to goods and services produced and production costs? The equally interesting answer is that to our knowledge there are no empirical studies on this issue.
In general, however, most people would agree that private forest ownership will have problems regarding securing public goods for which there is no market price (recreation, clear water, biodiversity, etc.). Likewise, very small forest ownership will have problems with economics of scale in timber production (harvesting, as well as silviculture), and in lacking sufficient knowledge of prices and forest management aspects. To counterbalance such situations, proponents of private ownership could argue that government could compensate such shortcomings with various types of policy instruments like legal regulations of harvest operations and silviculture, subsidies, taxes, information and stimulation of forest owner cooperations.

Likewise, opponents of government ownership might argue that it is too costly and bureaucratic. Another interesting issue here is the growing interest in common-pool ownership - i.e. ownerships where inhabitants in local communities own forest land together under certain rules. Ostrom (1990, 1998, 1999), and Ostrom et al. (1994) give an interesting overview of this issue. One aspect of special interest here is the focus on self-governance and analysis of what is robust, self-governed institutions. However, most studies are from tropical countries, with limited relevance for ECA-countries.

Phare (1998:83) observes that with the exception and Bosnia and Poland, all other Phare countries have already established the legal basis for a systematic restitution of forest land. Important questions, however, are still left in several of the countries concerning the legal basis and structure/type of ownership, which are of considerable interest also for other ECA-countries,

- Is there a limit for the size of restituted or privatized forest land per property (e.g. in Lithuania it is 25 ha and in Romania it is 1 ha)? This determines possibility for efficient forest management and profitable harvesting, as well as the possibility for implementation of appropriate forest environmental policies,

- What kind of ownership rights are subject to restitution/privatization (e.g. full property rights to land and forests, user rights only to the forests, share holding to big forest estates),

- What other obligations or restrictions should apply to the restituted land (e.g. free common trespassing),

Rykowski (1999) points at fragmentation of forest estates due to the ongoing privatization process as one of the greatest challenges facing forestry in «countries in transition». The challenge is to create appropriate legal frame of private forest management in the new ownership situation securing important public environmental services from forestry.

Also, Rykowski op.cit. reports of Poland as an interesting legal case in connection with privatization of forest land. In Poland’s Forest Act of 1991 it was regulations which gave back all property rights to the owners. This legal move was not followed by any regulations, however, and the new private forest owners increased logging so much that it created severe negative environmental impacts and reduced forest sustainable harvest significantly. Therefore, when the Forest Act was revised in 1997, a new paragraph was introduced concerning harvesting: All timber harvested should, independent of ownership, be marked by a forest officer. In the case of private forest the marking right is given to the head of the regional state administration who justify the harvesting volume by a special document.

In fact, the trials and negative effects of private forestry in Poland since the forest act from 1991, has lead to public protests and initiatives to build a new legal regulation («Act on national character of strategic natural resources of Poland») which, if implemented, will effectively prevent any increase of the forest land under private forest ownership.

Pearce (1996) discusses forest tenure with public ownership and private enterprises in a Canadian perspective. His main conclusions include the following points:

- The history of forest resource development in Canada fits rather well the ideas of economists of the property right school, explaining the evolution of property rights. The basic idea is that as demands on resources grow, users begin to interfere with each other’s production/use unless they develop ways of allocating the scarce resources among themselves. When a resource is abundant relative to the demand on it so its value is low, the
system of users’ rights will remain crude, and appropriately so. But as resource values rise, the potential gain from improved allocation arrangements will increase, and more sophisticated systems of property rights can be expected to emerge.

- Improvements in the forest tenure systems can direct users’ incentives more closely toward the kind of forest management that the public seeks, reducing the burden on governmental regulation and improve the efficiency of forest management.
- One should not search for single forest tenure solutions, as there is in most countries (and in particular in vast forestry countries like Canada and Russia) scope for many approaches. A robust, competitive forest industry will be best served by a wide variety of forms of tenure, suitable for enterprises of varying scale, specialization and degrees of integration.

Luckert and Haley (1996) gives an overview of Canadian forest tenures systems with particular reference to problems governments face in designing such systems. The following are among the conclusions drawn:
- A general principle guiding the design of tenure policies may be to concentrate regulatory policies on correcting divergence between private and public interests, while paying specific attention to the effect such policies may have on influencing the behaviour of firms in areas where public and private interests coincide.
- In designing tenure systems, the debate should not be limited to questions of public/private or common/private property. Numerous possible combinations beyond these dichotomous choices exist - as numerous as are the variations in conditions which may be placed on the resource user.
- In Canada numerous different types of tenure policies have been adopted. The vast variety of different arrangements suggests that tenure policies are tailored to local resource conditions and governmental objectives.

Landell-Mills and Ford (1999) discusses privatization of forestry drawing on information collected through a global survey. They find that private sector participation in the forestry sector has increased markedly over the past ten years. The changes are in three main areas: Increased private ownership, the adoption of market-based policy instruments, and moves to restructure forest institutions to increase their exposure to market forces through contracting out, corporatisation and privatisation.

Yin, Newman & Hyde (1999) shows how land tenure security influence farmers’ planting activity in a comparative study of two regions of China. In the first region secure tenure was given to farmers in a very smooth and uniform manner, whereas in the second region, farmers received the same improvements in their land tenure, but the transfers of rights were unpredictable. Farmers behaved as would be expected from rational behaviour theory: In the first region they harvested timber but also replanted; in the second region they harvested without replanting.

3.1.3 Concession systems and market forms

Introduction

In cases where governments initially own forest land but wish to have timber processed in the private sector, the major means of transferring ownership of timber to processors are auctioning the standing timber for near-future harvest, sale of cutting rights through long term leases, and outright sale of forest land. The United States Forest Service auctions standing timber, and timber land leases are common in Canada. Examples of public timber land sale are found in New Zealand, although some of these are akin to long-term leases, due to unresolved claims to the land by indigenous people (Bilek and Horgan 1992).

In any lease or stumpage sale, carefully worded contracts have to specify conditions like length of contract period; amount and timing of payments; who pays taxes; status of regeneration, roads, erosion control, and other environmental concerns after contract termination; where and when harvesting can occur; special areas where only specific harvest types are allowed (e.g. partial cutting or no cutting in scenic or streamside management zones); and refundable bonding for possible non-compliance (a financial deposit to be used to non-compliance problems). In the following, we discuss four aspects in particular: Timber sales, appraisal methods to estimate minimum market prices, timber auctions, and timberland leasing, as we believe they are of considerable importance in many of the ECA regions, where the state forest service has a strong role in most countries.
Timber sales

Direct government participation in private markets raises a number of questions about how the government can participate without unduly distorting markets and causing inefficient allocation of resources. These issues are discussed by Wear (1997) in connection with how timber is managed out and sold from national forests in USA. He describes three main stages. The first stage of the process is the strategic planning that defines how much timber to be produced and where timber harvesting will be permitted. This stage combines a public investment-participation process with a scientific planning approach. Public involvement is used to illicit the range of opinions regarding competing demands for the forests. Scientific planning applying various analytical model techniques is used to elaborate the implications of various forest management approaches. Through a process that involves careful analysis of various management alternatives and resource-use trade offs, a compromise management plan is defined. As the process must elicit public opinion at each step, these plans may take 2-3 years to complete. New plans are constructed approximately every ten years - for each of the 129 national forests covering about 80 million ha.

The second stage is deciding harvest volume and designing the timber scale. Timber production from the National Forests is accomplished by first designing specific timber sale packages and then auctioning the timber sale to individuals or firms. Designing a timber sale is a complex undertaking, involving a team of resource specialists including engineers, soil scientists, hydrologists, biologists, etc.

The final timber sale design defines a set of guidelines for where and how timber will be harvested. This includes defining the boundaries of sale units and which trees will be harvested using, for example, shelterwood, selection or clear cutting regeneration methods. In addition, timber sales may include requirements for building permanent or temporary roads to access the timber. After a timber sale has been designed, the rights to the standing timber are sold to a private firm or individual. The timber sale is advertised and then sold through an auction. Before being sold, the value of the timber must be appraised to define its fair market value. All public agencies, and the public at large, want to receive as much revenue as possible from the sale of publicly owned stumpage. This leads to the need for a method to determine a fair value to be paid for federal stumpage. «Fair value» is defined to be a value that would be paid by the highest bidder in a competitive auction with two or more bidders:

There are several important reasons to estimate this «fair value» prior to offering the stumpage for sale. An estimate of fair stumpage value is useful when sales are being designed to get an early indication of whether the sale is likely to be purchased. It may also be important for the government to know whether all the management costs incurred in designing and offering the sale, will be recovered by the expected timber revenue. If it appears that the sale will not recover all these costs, the government may choose to not offer the timber for sale, unless other overriding goals and objectives would be met by the sale like changing forest structures to reduce fire risk or improve ecosystem function may justify the additional costs.

Perhaps most importantly, an estimate of timber’s fair market value allows the government to set a minimum price that will be accepted for a timber sale. This is especially critical in areas where the number of bidders is small, limiting competition for the timber sale. In some cases, only one bid will be received for a timber sale. Here the minimum bid ensures that the federal government receives reasonable compensation for the resource. For example, one problem in selling timberland or timber cutting rights in Russia will be to estimate true market prices for stumpage, since competitive markets are unlikely to have been formed in many areas. And even in well-established market economies like the U.S., when public stumpage or leases are offered in remote areas, there often may be a small number of bidders or sometimes only one; this tends to keep bid prices below competitive levels. Also, when bidders are few, they may collude to keep bids low.

In the countries of the EU/ECE region, in order to increase competition, it is not allowed to make central price agreements between buyers and sellers of roundwood.

Appraisal Methods to estimate minimum market prices

Two different methods have been used by the U.S. Forest Service to determine a minimum fair market price for timber offered for sale. The older method is called residual value appraisal and the more recent method is called transaction evidence appraisal. These are described in turn below.
Residual Value Appraisal. With this method, standing timber is priced by determining its eventual value as a product and subtracting all relevant harvesting, transportation, and production costs. The remainder, or residual, is the value assigned to the standing timber or stumpage. As long as the markets for the final product are competitive and all costs are included in the calculation, then the residual value is the expected fair market price for the timber.

Residual values are typically calculated from two different types of final products. One is finished lumber (or other products) derived from the timber. The other is the value of the logs when they are delivered to the mill. Clearly, it is easier to calculate the stumpage value from a starting point of delivered logs because there are fewer production costs to consider. The only reason to use products instead of delivered logs as a starting point for the residual value appraisal is if delivered log prices are unavailable or if markets for delivered logs are not competitive. Ultimately the choice between these starting points depends on where the best information is available. Without reliable final product price and cost estimates (which may be expensive to determine), residual value appraisal cannot provide useful stumpage value estimates.

Transaction Evidence Appraisal. Over the last decade, the residual value approach to appraising timber has generally been replaced with an approach that focuses directly on the prices that have actually been paid for recent timber sales. This approach called «transaction evidence appraisal» uses statistical methods to predict the price that would be offered for the timber sale (cf. Jackson and McQuillan 1979). This requires a database of information on timber sales in the recent past.

To predict the price that would be offered for a timber sale, regression analysis is used to relate several specific features of a sale to the resulting price. These features include site characteristics, sale design characteristics, and the present market price for finished products. The regression analysis has the following general form:

\[ \text{Timber Value} = f(\text{finished product market information, sale characteristics, site characteristics}) \]

These data along with actual prices paid for several historic timber sales are used to estimate the timber value equation. Once this equation is estimated with historic data, then the features of a new sale can be entered as independent variables and the equation will predict the sale price.

In contrast to the residual value approach to appraisals, transaction evidence appraisals do not require detailed predictions of the various costs of logging, hauling, and manufacturing. Instead it requires a data base of timber sale features and the resulting price. Accordingly it would be difficult to implement this method initially in a developing market where observations of competitive prices may be scarce.

In cases where competitive markets are established, transactions evidence appraisals are strongly preferred for estimating values. This is because they are based on actual competitive pricing. They also avoid the problems and expense of correctly predicting technologies and costs. However, in cases where there are very few bidders, then competitive pricing may be untenable. Rather, here the history of prices may reflect market imperfections and therefore not reflect fair market values. In such cases, residual value appraisals may be preferred, as long as the planner can define a competitive starting point price. With limited competition in a local market for timber this may be the regional finished product price.

Timber Auctions

Appraisals define the anticipated price for a timber sale and serve as planning tools and to define a minimum fair market price for timber. The actual sale of the timber takes place through an auction. In USA two types of timber auctions are used to sell timber, oral and sealed bid. In both cases there is a minimum acceptable bid that is determined from the appraisal. In an oral auction a purchaser will start by offering at least the minimum bid price. Another purchaser can then offer to pay more. The original (or another) bidder can then increase the price that they will offer. This procedure will continue until one of the bidders offers more than anyone else is willing to pay. In a sealed bid auction, each purchaser will submit a bid to the government for the timber. The bid is sealed and the purchaser cannot change the bid once the bid is submitted. The highest sealed bid is awarded the timber. In some cases the highest bid is considerably above the next highest bid. In that case, the sealed care bid may result in a higher price for the government than would have been the case with an oral auction, because the high bidder would have stopped bidding the price up once other potential purchasers quit bidding.
Oral auctions have the benefit of directly engaging competitive behavior. That is, as long as there are two or more bidders (who are not colluding), then the price will rise through the auction until it reaches the point where it is priced equal to its highest marginal benefit to a buyer (i.e. the competitive price is obtained). However, in cases where there are few bidders and therefore there is a chance that only one bidder will participate, then the sealed bid auction would be preferred. With one bidder, an oral auction would result in selling the sale of the minimum price. With a sealed bid sale, the single bidder would have to make his bid with the anticipation of competition, likely increasing the resulting price. In this case then, the «threat» of competition, rather than competition itself leads to fair market pricing.

Murphy (1998) gives an outline of the elements of the new electronic based roundwood auction system developed in Ireland, based on its performance the first 18 months in operation. The auction structure is characterized by a double round sealed bid mechanism where lots are offered in a random sequential manner, allowing real time price bidding on all individual lots. The auction structure also provides for inbuilt reserve prices. The highest bid above or on the reserve price for each lot is declared sold. If the highest bid is lower than the reserve price, the lot is withdrawn and the next lot is put up.

Before choosing the above auction structure, all the main auction types were reviewed. There are four basic auction types: the English auction (also called the oral, open or ascending-bid auction); the Dutch (or descending-bid) auction; the first-price sealed-bid auction; and the second-price sealed-bid (or Vickerey) auction. This review included an analysis on the theorem of revenue equivalence which states that all auction types should yield the same revenue. This theorem is based on four assumptions: Bidders are risk neutral; the independent private value model applies; the bidders are symmetric and payment is a function of bids alone. Analysis showed that some of the assumptions underlying the theorem did not hold in this Irish market. Case studies examined from US literature supported this conclusion. No substantial European research was discovered in this area for roundwood and forest products.

The experience from Ireland after the first 1½ years of operation are positive. In particular in countries with many buyers and sellers, or with many buyers and one dominant seller (like in Ireland) this system seems promising for many countries to learn from.

**Timberland Leasing**

Governments often sell timber cutting rights to private firms for a specified period in return for annual lease payments and/or an initial lump sum. Additional payments may also be due at harvest times. Leasing can place public timber in private markets without having to prepare auctions for each timber harvest and allows a government to maintain long-term control over its land.

Table 3.2 shows several types of leases on private forest lands in the southern United States in the mid-1980s. The most popular type of private land lease involved initial lump-sum purchase of mature timber with annual or periodic payments for leasing the land for further timber production. Many past leases were unsatisfactory for land owners because lease payments did not increase with rising timber prices. More recent lease contracts solve this problem by having lease payments increase with certain price indexes.

When timber yields the only income, the idea of leasing forest land is to adjust lease payments so that the net present value (NPV) of payments to the landowner (the «lessor») equals the net present value of future harvest income foregone, given some interest rate. Similarly, for the leasing firm (the «lessee») the net present value of lease payments should be offset by the net present value of expected timber harvests.

The main problem is in predicting future harvest revenues. Also, lease payment calculations can get complicated if one consider that lessor and lessee will usually have different tax rates, discount rates, ideas for payment escalators, projections of harvest income, and opinions on dealing with future harvest values which differ from projections.

Table 3.2. Types of Timberland Lease Contracts as Rated by Firms.
<table>
<thead>
<tr>
<th>Contract type</th>
<th>Percent of firms giving top three rating as most acceptable to them and landowners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lease of land with annual or periodic payments plus initial lump-sum purchase of timber</td>
<td>82</td>
</tr>
<tr>
<td>Lease of both land and timber with annual or periodic payments with no additional payment when timber is cut</td>
<td>45</td>
</tr>
<tr>
<td>Sale of timber cutting rights with payment on a volume basis as cut</td>
<td>35</td>
</tr>
<tr>
<td>Share crop contract: firm manages land and harvests timber; harvest value at current market price is shared with landowner as contracted</td>
<td>35</td>
</tr>
<tr>
<td>Lease of land with annual or periodic payments plus timber cutting rights with timber paid when cut</td>
<td>33</td>
</tr>
<tr>
<td>One initial lump-sum payment that covers both land lease and timber purchase for term of contract</td>
<td>24</td>
</tr>
</tbody>
</table>

Adapted from Meyer et al. (1986).

Various types of leases would require different equations to determine starting points for payment negotiations. If there is great uncertainty about distant future stumpage prices, e.g. as in Russia, one could also provide for payments from the lessee (lessor) at harvest dates if real stumpage prices were higher (lower) than originally assumed. Management assumptions and responsibility for taxes and other expenses can vary. Some have suggested adjusting lease payments downward and having the lessee receive, say 50% of the harvest volume, the landowner selling the remaining 50% to the highest bidder. See Klemperer (1986) for details on different lease payment indexing schemes. Examples of other leasing schemes are in Greene (1979), Luckert and Haley (1996), Zinn and Miller (1982), Shaffer et al. (1995), Klemperer and Greber (1986).

Sometimes governments sell timberlands, relinquishing title to the land, but retaining the right to impose environmental regulations. In those cases, it would also be advisable to calculate minimum acceptable bid prices in case bidding is not competitive. When the major projected use is timber production, the general approach would be, for any proposed timberland sale, to project a reasonable harvest schedule over time, to multiply these harvest volumes by projected real stumpage prices, and compute the net present value. Projected nontimber income and costs and taxes should also be included, and a reasonable real after-tax discount rate chosen. On small properties with mature timber, an appraisal could be made by adding the estimated land value and the current stumpage value. But this approach would be inappropriate where volumes are too large for immediate harvest or where timber is immature and to be cut in the future.

**Some concluding remarks**

This section has provided an overview of how timber sales could be managed in national forests referring in particular to experiences by the U.S. Forest Service. General harvest schedules are determined through multiple use planning which engages public opinion and considers the impacts of forest management on several different resources. Planning analysis weighs economic as well as other quantitative and qualitative information in prescribing a strategic course of action for each national forest.

In the U.S. then, the government maintains a large share of the control over the planning and management of national forests - especially in contrast to countries like Canada that lease large tracts of public forests for long periods. The costs of this degree of control may be high and include the costs of maintaining large staffs of resource managers and specialists as well as the opportunity costs of public rather than private management. Benefits also accrue.
By maintaining control over specific resource management plans, the government may respond to rapidly changing public concerns and resource demands without modifying large-scale contracts. Forest managers may also constantly monitor the ecological consequences of management and readily fine-tune their plans. Being able to actively engage the public in discourse over resources use is especially important in areas where relatively large populations use or live near a national forest. This is increasingly the case in the United States.

The general rationale for national forests is that these public lands can provide goods and services that private lands do not provide enough of (or too much of in the case of environmental degradation). In some cases this relates to classic production externalities such as recreation, biodiversity of water quality. In others it has had more to do with stabilizing production - e.g. early concerns for stabilizing timber production. Many of these goods are not complementary, so that management decisions involve tradeoffs between various resource values. Strategic planning is an attempt to weigh different values and to define tradeoffs.

Having national forests comes at a costs. If there was not substantial costs involved, private landowners would simply produce all desirable goods and services from their forests and there would be no need for public lands. The challenge for government, in general, and public forestry in particular, is to provide public service as efficiently as possible. In effect, the goal should be to provide the highest return as possible on these public assets - where returns include both financial and nonmarket benefits.

In the case of marketable assets, such as timber, the focus needs to be on returning the maximum value while also providing other benefits and protecting environmental quality. Managers generally trust competition through timber auctions to achieve these highest values. However, the use of an auction does not guarantee that the highest value will be obtained. In some cases there may be a scarcity of bidders, for example in remote areas where forests are plentiful but wood-using firms are few. Here, the task of defining appropriate prices falls heavily on the government. Managers must define what the value would be if competition was applied in this particular area. This involves appraisal techniques that essentially model the effects of competitive bidding.

Cost efficiency however, is not guaranteed by this system, as government agencies unlike private firms are not forced by competitive pressure to produce efficient plans. Policies can however be designed to encourage efficiency within government agencies. One area where inefficiency can often be found is in the design of timber sale contracts. Contracts define there responsibilities of sellers and buyers. Usually, complexity of contracts is inversely related to the return on the timber sale. Sale contracts need to balance the various resource objectives against the costs these objectives impose on resource management.

### 3.1.4 Reforms of the state forest service

In several of the ECA countries the state forest service is based on the old centralized top-down type of administrative structures, with limited experiences regarding how to operate in a more market-oriented and democratic society. Some, but not many, analyses exist regarding which changes are most needed.

Krott, Kermavnar & Matijasic (1998) gives a comparative analysis of reforms of the state forest service (defined as both the state forest enterprise as well as the state forest authority organizations) in light of the emerging new democracies in Europe, based on experiences from the nine countries Albania, Austria, Czech Republic, Germany, Hungary, Lithuania, Poland, Switzerland, Slovakia and Slovenia.

The following are among the points emphasized:

- The approach of «forestry products» means at least three innovative ideas for the state forest service. First of all the concept of product press the state forest service to describe all its activities in a new way making them better understandable for the public and the stakeholders. Secondly, the concept of products means to look at the forest activities with the eyes of the consumers. The demand of the consumers will gain more importance than the ideas of the forestry experts. The orientation according to the demands will push the state forest services to offer products only which either are bought on the markets or are supported by public programs. Thirdly, the development of products is a dynamic never ending process. The state forest service cannot fix the products in a
bureaucratic program. But every year new forestry products have to be described in order to get attention for the forestry activities and the support of the markets, the public and stake holders.

- It will be necessary to find new income resources for the state forest service. If only based on the shrinking income from wood sales, the institution will be forced to shrink. Increasing the amount of the deficit spending for the state forest service, which is common in many European states, will politically become more difficult in the future. Economists are developing new concepts to sell non-wood goods and services, but the size of achievable income from these activities is still unknown. An alternative is a special budget (financed by public resources) within the state forest service for non-wood goods and services. An even further reaching alternative are projects for non-wood goods financed by the public and services formulating a demand which can be supplied by both state and private forest enterprises in a competitive way. Creating such new instruments the financing of public goods and services within the forest can be successful in states having a strong enough budget.

- In the state forest service there is in most countries still a great potential for increasing the profitability. For that, one has to stimulate for recruiting high qualified workers and reduce low qualified positions. Education and motivation of the staff are very important strategies for the reforming process. From the state’s point of view success depends also on the creation of new opportunities for the people who are forced to leave the state forest service. To meet this goals new social programs are inevitable.

- The concept of «deregulation» imposes new duties on the state forest service as a comprehensive service institution offering solutions for all problems related to forest protection and use. Diminishing the regulations will produce better outcomes only if additional forest extension strengthens the ability and willingness of forest owners and other forest users to implement sustainable forestry. The increasing demand for extension offers new chances for the state forest service if it is competitive with private suppliers who are mushrooming on this market.

- The ideas of the «New Public Management» are widely seen as a promising concept to reform the state forest service. Such models are taken from experiences within the industry and are adapted to the whole duties of a state forest service. How fit the new principles are as guide for the production and management of the state owned forests is an open question. The activities of a public authority are only partly aimed at marketable products. Most of the activities are focused on public goods which are legally defined. The adaptation of the principles of new public management to these public duties and the formulation of the limits of the new public management is an important ongoing process in many states today.

- Reforming the public administration has to solve the paradox that the renewal has to be designed and be carried out to a large extent by the very public administration which is the old one. The state does not have an alternative administration for forestry which could replace the old one. Therefore it is a major challenge to overcome the strong influence of the old interests and concepts during the reforming process which can only be met by new coalitions and supporters.

- Important supporters have to be organized inside the state forest service. The staff must become aware of the deficits of the existing institutions. The increasing number of external forestry experts offering new solutions, helps to realize the internal deficits. In the young democracies the generally high uncertainty offers the chance to accept new solutions. Outside the state forest service the forestry interest groups are important supporters in the old democracies. In the young democracies the forestry interest groups are still too weak to play a major political role, and the state forest service does not yet look for active co-operation beyond the limits of the forestry sector.

- Forest scientists have not become important consultants for the stake holders of the reform process. The sciences of forest policy and forest economics have developed new ideas, but they have not been able to offer them in a suitable form to the stake holders. Forestry sciences have in general been considered to be too strong biased toward forestry interests to be accepted as independent scientific expertise. A scientifically sounder based forestry research in policy and economics supported by a
research management which offers professional consulting in the reforming process, could be more important in the future.

- The goal of the reform is a more efficient state forest service with higher impact on guiding sustainable forestry. Such a new state forestry service will become more competitive than private institutions in solving the problems of forestry. Therefore, despite the goal of a new «slim state» a new push toward the growth of the state forest service is an implicit aim of the reform.

Krott, Marosi and Golya (1996) analyses the role of the forest authority in relation to the increase of private forest owners which has occurred after the end of the communist system in Eastern Europe. The analyses is based on experiences from 10 countries (Austria, Czech Republic, Germany, Italy, Latvia, Lithuania and Hungary), and includes the following findings:

- The private forest owners are in many countries becoming important decision makers and the forest authority has to cope with the independent interests of the private forest owners and their production potentials. In this process it is important to build up appropriate partnerships of mutual interest.

- Major motivations of the private owners are (i) the idealistic value of private ownership, (ii) the freedom and (iii) the profit and property value. Freedom requires restriction of state activities if the policy is aimed on strengthening private ownership. Also, profit can be expected from private enterprises only if they have freedom from state intervention.

- Today in the young democracies forestry production is below the potential of sustainable profitable wood production. The new forest owners lack the ecological and economic knowledge and abilities as well as resources that would be required for profitable forestry. They are unable to make use of the opportunities offered by high level forest stands and low labor costs. The state programs focus on protection against exploitation and on supply with recreation and ecological non-wood products. There is, however, very few if any special program existing to support profitable wood production.

- Today in the old democracies the change in the interests of the private forest owners requires new strategies of the forest authority which have yet to be found. The growing group of forest owners living in urban areas do not look to their forests any more with the eyes of farmers. They ignore the wood production and are much more interested in the ecosystem as such and in recreation. The forest authority will provide help to this new group of forest owners only as far as the extension service is adapted to the new values. In addition, the inactive market in forest real estate blocks new forest owners to buy the land they are looking for and simultaneously doesn’t give the right price signals for selling to forest owners who have lost their interests in forests.

- Common ownership in forestry could solve many structural disadvantages of the small scale forestry, but is not accepted by owners who, based on recent history, in general are sceptical to “cooperatives”. Larger units offer better chances for profitable wood production and multiple use forestry and extension service and control can be much more effective within larger units. But to build up larger units through common ownership shrinks the freedom of the private owners’ participating. Therefore, as soon as the private owners get their full rights of ownership for their small forests, many of them refuse to join common ownership. These experiences are the same in the old and in the young democracies.

- In practice it is much easier to bring forest owners together only for specific common forestry measures and guaranteeing them their private property. Nevertheless, even such limited common forestry action needs strong support by the forest authority. The state has to offer information, money and technical support. The rationality of creating common units for private forestry is seldom profit. In many old democracies the political goal to keep up the distribution of forest ownership in many different hands is much more important.
• The major duty of the forest authority is to control and ensure the implementation of the forest law in private forestry. In the old democracies the legal restrictions of the private forest owners are relatively small and the forest authority is relatively strong to guaranty the implementation. In the new democracies this relation is the other way around. The legal restrictions are very high and the forest authority is very weak. The owners and the politicians are not familiar with a strict legal bound authority. The authority is not combined with extension activities which could improve the relations to forest owners and support the implementation. Therefore, implementation deficits are large. A strategy for improvement is not to formulate more legal restrictions, but the opposite. Fewer legal restrictions accompanied by a stronger authority would diminish the heavy implementation deficits in the young democracies which now endangers the credibility of the state as well as sustainable forestry.

• The forest authority is active in the private forests through their extension services. Shrinking interest of private owners in the old democracies and not yet fully developed interests of the private owners in the new democracies opens up space for enlarging state activities. The forest authority is well equipped for intensifying its activities. Restraints are the increasing costs for the state budget and legal guaranties for the independence of private owners. All in all in the old democracies the state influence on private owners through the extension service goes beyond the influence of the legal regulations. In the new democracies, however, the weak extension service is not able to fulfill the duties within the influence that would be required by strong legal restrictions for private owners.

• Associations of forest owners and interest groups are new for the forest authorities in the new democracies. In a system with private ownership and market economy the interest groups are important for formulating and securing the interest of private owners. Strong forest authorities will soon recognize this support in information for policy making, but they will most likely insist on the right of the state on the final decision. The cooperation with interest groups can go further if the forest authority realizes that the real challenge is the implementation of the programs. The forest authority could bargain informally with the interest groups and exchange compromises in the programs with the promise to support the implementation. Such options exist for the forest authorities in the young democracies only if strong interest groups of forest owners will develop in the future.

• The cooperation with interest groups can cover many activities. The forest authority can invite the interest groups to participate in the formulation of forestry programs. It can delegate self-regulation of specific tasks to the interest groups. This enables the interest groups to offer special services for their members and to gain new members. Interest groups can join the forest authority in defending forestry interests in the political process. The lack of forestry interest groups which could support the forest authority is a major reason for the political weakness of the forest authority in the young democracies. Also with other interest groups e.g. environmental groups forest authority could cooperate in specific political issues. In the future the strength of the forest authority to shape policy will depend to a high degree on its ability to win new allies within the different interest groups. This challenge exists in the old democracies as well as in the new ones.

According to Rykowski (1999) Hungary appears to be presently one of the most advanced countries in the ECA region regarding forest authority’s structural reform where ownership, administrative regulation and management functions are institutionally separated. Ownership is designed to the Ministry of Finance. Forest management is carried out by 22 state owned forest share companies, which all are obliged to comply with regulations issued by the Ministry of Agriculture and Regional Development - the institution responsible for the administrative regulations within the forestry sector. The implementation work is performed by the State Forest Service, which was combined with the former forest management planning bureau. The harvesting and the transportation and partly the silviculture activities are increasingly done by contractors, who also mainly earlier state employees presently supported by a public share company to become private contractors and invest in the necessary equipment. It seems that the overall evaluation of the Hungarian experiences from economic point of view are altogether positive, whereas some problems have occured regarding forest environmental services.

Carlsson & Olsson (1998) gives an interesting comparison between the official organizational charts and how the flows of resources, finances, and decisions actually are in a Russian oblast (Tomsk oblast). One main point of the
study is that it illustrates how the profit realized by the various forest enterprises in the oblast, are «milked» by various levels - from the managers of the enterprises, the regional administration and financial leaders, to the organizations in Moscow controlling export administrative and financial facilities. As a consequence, very little of the surplus generated at the enterprise level is channeled back as investments at this level. The same point is emphasized by Krott et al. (2000) for Belarus, Ukraine and Russia.

3.1.5 Support of cooperation of private owners

In most OECD countries, forest owner associations have been very important for knowledge dissemination to and support of small and medium sized forest holdings. Grayson (1993) and Wilson et al. (1999) give an overview of existing systems. In ECA countries this kind of organizations are rather few and limited in scope, and public financial support for such organizations would be preferable in an initial phase.

Flasche (1998) emphasizes this point, and that the main tasks of the organizations should be to facilitate forest management, ranging from forest planning to harvesting and marketing of products, and to defend the interests of the small forest owners.

3.1.6 Arranging for arenas for public participation and conflict resolutions

Forestry provides several types of goods and services, and the various stakeholders rank them differently. It is therefore quite natural that conflicts occur regarding what is optimal forest management. To get a reasonable balance between competing views, it is important that appropriate institutional arrangements exist for public participation and conflict resolution in forestry. This is discussed more in detail in Cubbage et al. (1993) and Solberg & Miina (eds.) (1997). To our knowledge very few ECA countries have done that yet.

Hellström (1999) is one of the few European analysis on forest conflicts, comparing environmental forestry conflicts in seven different regions (Finland, France, West-Germany, Minnesota, Norway, the Pacific Northwest USA, and Sweden). The purpose is to describe the forestry conflict, and the discourse related to such conflicts, analyze their role in transforming forest policies and forest use, and develop strategies for forest conflict management and forest policy use.

A particular challenge for ECA countries is how to organize well-functioning participatory processes as many of the countries still are rather top-down centrally-planning oriented. More openness, increased and improved information about alternative plans/scenarios, and cooperation with NGOs are examples of factors which could improve the situation.

3.1.7 Interface between research and policy making

There is increasing recognition that sound scientific information is an essential foundation for building reasoned and accepted policy positions. This increased importance of research information is affected by several trends:

- The amount of scientific knowledge has been growing very rapidly.
- The objectives of forest policy and management have become more complex.
- Citizens demand to be much more involved in forest policy deliberations.

It is important to build a collaborative infrastructure between research and policy-making. This is discussed rather detailed in ICRIS (1998), Mills & Solberg (1998), Solberg (1997).

The latter emphasizes among other the following points:

- Today, national policy makers, in both industrialized and less industrialized countries, face the challenge of managing forests for their multiple benefits that include cross-sectoral policy harmonization, facilitating
participatory decision making, and responding to international demands and deliberations concerned with forests. This is, indeed, a complicated task with many unknown parameters. In trying to reduce risks and arrive at good decisions, the policy makers need and have to rely on more research than before, and the interface between research and policy making has emerged as an issue of high importance.

- Of several aspects regarding the interface between research and policy making, the following three questions are of high importance in most countries: (i) What kind of information from research do policy makers in the forest sector mostly need today? (ii) How adequately is research meeting those needs? (iii) How can the present situation best be improved?

- The interface between research and policy making differs a lot between countries and regions. It seems, however, that regarding improvements the following points are relevant for most countries: (i) Improving research, (ii) improvements related to decision makers (and their advisors), and (iii) mutual improvements by research and policy-making. These points are discussed in details op.cit.

3.1.8 Corruption

There is a close mutual relationship and enforcement between badly functioning institutions and legal systems on one side and corruption on the other side.

Very few studies in forestry deals with corruption. Nilsson & Shvidenko (1998) is an exception in their analysis of the Russian forest sector, referring to the following studies:

The EBRD (1997) states that corruption in the countries of the Commonwealth of Independent States (CIS), including Russia, is higher than in any other region of the world and that «public corruption and arbitrary government behavior continue to be major impediments to private sector development». Gunther (1997) reports that in a survey on obstacles to business, 84 % of the respondents reported corruption as a strong obstacle to business. This is 30 % higher than reported for developing countries. A study done by the Center for Strategic and International Studies (CSIS 1997) reports that the Russian Ministry of Interior estimates that 40 % of private businesses, 60 % of state-owned enterprises, and between 50 % and 85 % of banks are controlled by organized crime. The study also concludes that, «corruption has infected every level of the Russian bureaucracy».

Nilsson & Shvidenko (1998:41) refer to the concept of patrimonialism to explain the present difficult situation in Russia: «Patrimonialism can be defined as the case where a sovereign of a patrimonial state regards himself or herself as both the ruler of the country and its proprietor. «Political authority is seen as an extension of the rights of property ownership, with both land and people at the Sovereign’s disposal» (Jensen 1997). Russia has a long tradition of patrimonialism. Before 1917, the tzar «owned» the nation, its vast resources, and its people. During the Soviet era, the state and party owned everything. The Russia of today has to take care of this inheritance to achieve a sound transition. Jensen (1997) shows examples of ongoing patrimonialism in Russia, namely, the manner in which privatization is carried out, the infamous «trans-for-shares» transactions, and the state’s reliance on nominally privately authorized banks to handle large amounts of the state’s money. Jensen (1997) concludes, «patrimonialism fosters a close relationship between business and politics». The government holds large chunks of stock in key industries, and state efforts to regulate entrepreneurial activities are half-hearted. «Patrimonialism means that political authority often depends on a leader’s business contacts and leads to the dominance of clan politics, whereby politicians and business men, media entrepreneurs, and security forces use the political process to vie for control over the economy». Jensen (1997) states, «the patrimonialism also drives white-collar crime, such as bribery, embezzlement, and the extortion of protection money».

This type of patrimonialism is in our opinion not only occurring in Russia. Several ECA-countries could be said to classify for this concept, of course to varying degree. And the forest sector - with its rather complicated infrastructure involving large industrial enterprises as well as complex spatial, socio-economic and environmental interrelations, are very vulnerable for such kind of institutionalism.

Corruption is also rather closely linked to lack of secured property rights. Nilsson & Shvidenko (1998:46) points to the following fact: «Some 80 % of all enterprises in Russian Federation (and 95% of those in the forest industry) no longer formally belong to the state, although in reality very few are privately owned. The new
«owners» are largely managers from the old era who consider their new possessions to be like collective farms of the past. They do not attempt to gain profits from their firms, but rather to maximize personal wealth. World Bank (1997 b) points out that «robber baron» capitalism in Russia today is fundamentally different from the «robber baron» capitalism in the USA a century ago. The World Bank points out that in the US case, the «robber barons» build huge industrial complexes (by flaunting the law) of real value for the society. But in the Russian case, former officials and managers have privatized the industry into their own hands, selling off assets rather than building up new ones and exporting capital instead of creating new capital. In 1996, Russia transferred some US$ 50 billion abroad (Gunther 1997). Glasiev (1997) estimates the capital flight in 1997 to US$ 50 billion.»

According to Nilsson & Shvedenko (1998) this overall development in the Russian economy is also evident in the forest sector. It is also rather evident that if under strong influence of corruption, any discussion of what is optimal or appropriate policy instruments, becomes difficult.

3.2 Economic incentives

3.2.1 Subsidies

Examples of activities which according to Harou (1986) and Grayson (1993) were subsidized in the European Community around 1990, either as direct grants or favourable loans to private forest owners are:

- Increase of timber production
  - First afforestation
  - Conversion or improvement
  - Reafforestation after disasters
  - Normal reafforestation
  - Planting outside forest areas
  - Soil preparation, clearance of vegetation

- Opening up and maintaining existing forest areas
  - Construction of roads and tracks
  - Fire protection
  - Protection (insects, diseases, game)

- Assisting forestry associations
  - Aid in forming associations
  - Supplying special equipment

- Other measures
  - Recreational forest
  - Drawing up economic plans
  - Aid after disasters
  - Owners retention of forests, land purchase
  - Fire insurance
  - Day-to-day expenditures
  - Improvement of forest- of meadowland
  - Conferences, research, and other projects

Krott & Riedel (1995) gives a comparative overview of subsidies as an instrument for administrative policy making in forestry. The study covers Czech Republic, Germany, Hungary, Lithuania, Austria, Poland, Switzerland and Slovakia, and main findings are:
The present forest authorities should be more active in getting subsidies for the non-priced non-wood services forestry provide. Today, one is too traditionally focusing on the wood production with positive external effects on the environment. As a consequence, forest enterprises have a weak position compared to nature conservation authorities and optimal forest management is made difficult. For this, more and better information is needed for policy-makers and people in general knowing little about forestry.

Forest subsidies have the additional goal to support private ownership. In the old democracies the forest owners traditionally formulate their interest in a strong manner, whereas in the young democracies forest owners must detect their new role again. Due to the extremely weak economic position of the new small forest owners, many of them need financial support from the State to manage their forest appropriately seen from both the owners’ and the society’s point of view.

In some countries the forest authorities have developed an increasingly complex bureaucratic implementation procedure for the forest subsidies which are highly inefficient. Often this can be improved significantly by introducing a new strategy focusing on goals. The central institutions just formulate the goals (for example regarding regeneration a minimum nos. of young trees per ha after 10 years) and the field officers respectively private forest owners can freely choose the most effective measures to meet these goals (for example choosing planting or natural regeneration, or a combination). This will support the innovative power of the foresters in the field. In addition, the central institutions will be forced to formulate detailed goals that give information for evaluating the success afterwards and to set priorities.

Specific forest funds are considered to be institutions which can implement programs for subsidies very well. The funds are forced to formulate clear goals. They can create competition between the best projects and because of their simpler duty they are much more transparent than the forest authority in implementing subsidies. Therefore, the old funds created by the former planning economy still offer some advantages for the young democracies. Especially for subsidies given by international institutions the funds can support the efficient implementation within the young democracies.

The instrument of subsidies has important positive synergistic effects with the regulative and informational instruments of the forest authority. On the one hand the forest authority supports the implementation of subsidies to a high degree with the informational instruments - the forest extension service. On the other hand the forest authority raises the interests of the private forest owners accepts the information and some advice. Simultaneously, the contact between forest authority and private owner is established that enable the control function of the forest authority. Especially for the forest authorities in the young democracies the instrument of financial subsidies is indispensable to win back the trust of the private forest owners.

3.2.2 Taxes

There is a long range of various types of taxes which can be used as policy instruments in the forest sector. Tables 3.3 and 3.4 give an overview of various types of forest related taxes used in some countries around 1990.

Amacher (1997) gives an overview of studies in forest taxation. Ovaskainen (1992) focus on how forest taxation influences timber supply and economic efficiency. Nilsson & Shvidenko (1998) claims that the Forest sector enterprises in Russia complain that the tax burden is too high (up to 90 % of profit), and there are no incentives to continue business or to start entrepreneurial activities. The existing taxation system does not encourage normal business operations in Russia or new investments (Westberg 1997; Sojakka 1997). Taxation rules are also very complicated and rarely understood by Russian managers. In reality, tax recovery is very poor in the forest sector. However, the World Bank (1997a) argues that the potential for tax revenue from the forest sector is substantial through stumpage charges, taxes on harvesting companies, and industrial enterprises. The World Bank (1997 a) estimates the tax potential to be between US$ 1 billion and US$ 4.4 billion per year (depending on production level), which can be compared with tax collection from the forest sector in 1994 of US$ 180 million.
Norway has perhaps more than most other countries used economic instruments in forest policy. Solberg (1995) gives an overview of forest policy evaluation studies in Norway, and reports the following results:

- Most of the various policy means analyzed have had physical effects in forest management - i.e. their effectiveness have been empirically verified.
- Subsidies alone do not always give results unless they are followed up by extension service advice and proper implementation efforts.
- The time element (or expected «life-time») of a subsidy might be important for its effectiveness and efficiency.
- Subsidies may in several cases be cost-increasing - e.g. the loggers or machine operators may (through increased logging costs) take a substantial share of harvesting subsidies initially given to the forest owners.

In a more recent study of forest policy instruments used in Norway, Solberg et al. (1998) concludes that the economic instruments used (taxes and subsidies) have been effective. Their cost efficiencies (measured as costs per extra unit output obtained) has not been analyzed.

One of the most effective policy instruments for Norway have been the so-called Forest Trust Fund - i.e. an obligatory fund based on each forest owner having to allocate from 5 to 20 % of his gross roundwood sales to investments on his forest property. The amount paid into the fund, can be directly withdrawn from the forest owner’s income tax if used for investments in forestry (planting, tending, road building, forest plans, etc.). This system - which actually is a certain type of tax - was introduced in Norway already in the Forest Act of 1932, and has proven to be rather effective. However, estimates in Solberg et al. (1998) indicate that the transaction costs (for administrating the system) of this policy instrument is rather high - in the order of 25 % of the actual fund amounts used.
Table 3.3. Selected income tax features benefiting timber and forest land.
*Source: Cabbage et al. (1993).*

<table>
<thead>
<tr>
<th>Income tax</th>
<th>Australia</th>
<th>Brazil</th>
<th>Canada</th>
<th>Finland</th>
<th>France</th>
<th>Germany</th>
<th>Japan</th>
<th>New Zealand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower tax rate applies</td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>«Demand» income favorably defined by formula</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
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<td></td>
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<td>Special deduction based on income</td>
<td>x</td>
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<td></td>
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<tr>
<td>Special deduction or credit allowed in addition to actual costs</td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Forest management costs treated as period costs (expensed)</td>
<td>x</td>
<td></td>
<td>x</td>
<td>N/A</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Special loss carryforward or income averaging rules</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Timberland/forest sales quality for capital gain treatment</td>
<td>N/A</td>
<td>N/A</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>N/A</td>
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</table>

Note:
N/A signifies that the country does not have the indicated tax at all; therefore, the benefit is «Not Applicable».

*aReforestation costs not included in this category. Only certain landowners «active in the timber trade or business» qualify for this benefit.

*bSince 1987 capital gains are taxed at the same rate as ordinary income.
Table 3.4. Selected other tax law features benefiting timber and forest land.

*Source: Cabbage et al. (1993).*

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<tr>
<th></th>
<th>Australia</th>
<th>Brazil</th>
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<tr>
<td><strong>Inheritance and transfer taxes</strong></td>
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<td>Favorable valuation</td>
<td>N/A</td>
<td>N/A</td>
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<td>Low rates for transfers to family/relatives</td>
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<tr>
<td>Exemption for timber</td>
<td>N/A</td>
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<td>Favorable valuation</td>
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<td><strong>Property of land taxes</strong></td>
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<td>Favorable valuation</td>
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<tr>
<td>Exemption for timber</td>
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<td><strong>Value added/sales tax</strong></td>
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<tr>
<td>Exemption from one or both</td>
<td>x</td>
<td>N/A</td>
<td>x</td>
<td>x</td>
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<td>x</td>
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<tr>
<td>Lower rates applied</td>
<td>N/A</td>
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</table>

Note:
N/A signifies that the country does not have the indicated tax at all; therefore, the benefits is «Not Applicable».

### 3.3 Informational instruments

3.3.1 Extension service, planning, information
Public financial and institutional support for extension service, forest planning and information to private forest owners have for a long time been rather successful policy instruments for better resource utilization in most OECD countries, in particular perhaps Scandinavia. In ECA countries such support is much less, reflecting the period when private property as a principle had to be below standard value in relation to state property.

The new emerging private forest owners have often very limited forestry knowledge/experience, and many of them may seem to be more impressed by their new property rights than by their corresponding duties. Also, they may feel unsure about the long-term security of their property and want to make money of their forests as soon as possible, as what happened in Poland after the first edition of the new Forest Act in 1992. Another problem is that the fragmentation of land has been so strong that many of the forest properties are so small that they cannot contribute much to a living for a family. According to Eronen (1996) the fragmentation in some countries (like Czech Republic, Hungary, Croatia, Slovenia) has reached an extent which makes it rather difficult to get sustainable forest management.

It is important to build up a good extension service. One need to assess the needs of the new forest owners, and design and lead training courses with different topics aimed at different types of forest owners. Assistance in practice are also essential - related to harvesting, silviculture, economics, bookkeeping, trading and market information, access to loans and subsidies, legal knowledge of rights and duties, etc. One could here preferably benefit from cooperation with the forest extension service in for example the Nordic countries, which have a long tradition on such matters.

The most difficult problem here is probably who will pay for the extension service – should it be over the state budget directly, or should the state forest service be charged to provide service and assistance to the non-state forest owners? In many of the ECA countries (like Armenia, Czech Republic, Slovakia, Poland) the reorganization of the state forestry started with the separation of silviculture from wood processing, the latter being privatized whereas forestry remained state-owned. This has created at least two types of problems related to extension service procurement: First, less of the added value from forest products transformation has been channeled back into state forestry as the forest industries have captured most of the value added from forestry. This has made the state forest service less capable of providing extension service. Secondly, there is no incentives for the state forest service, being the largest forest owner and thus benefiting in the roundwood markets of a strong market position (in some regions 70-80% of the market), to assist private forest owners as that would only weakened the profit of the state forest service.

One challenge here is to create incentives for making the forest service motivated to provide extension service to private forest owners. In Chapter 3.1.4 this is discussed some more.

Krott and Bloetzer (1997) compares how the state forest services in European countries are and could be used in regional forest and land-use planning. It is argued that:

- The forest services have good opportunity to play an important role here in most of these countries, as forests are one of the most important natural resource providing private and public goods and services of high importance.
- Often these benefits are conflicting, and proper planning procedures contributes by enhancing rationality in solving user conflicts, and strengthening democracy through improved public participation processes.
- Conflict resolution requires special skills which at present are not common among foresters. This should, however, be built up.

3.3.2 Education and research

Education and research have proved efficient policy instruments in most OECD countries. For most of the ECA countries one main challenge is getting proper research financing. Also the content of research and education is important here. For research see also Chapter 3.1.7.

3.4 Mix of several forest policy instruments
The effect of a policy instrument depends on the size and type of other policy instruments in use. For example experiences from Czech Republic and Romania show that changing the forest law for privatization of forests, has to be supplemented with proper sanctionary and monitoring policy measures to secure e.g. environmental public goods.

Csoka (1998) argues that the transition countries should change not only their political system, but develop new legal framework, build new capacities in research, education, planning, forest management, supervision, extension, financing and public relation. The forest sector should be adjusted to the market economic conditions. Based on Korotkov and Prinz (1994) he gives the following overview of weak and strong points of the forest sector of the countries in transition relative to the other European countries:

**Strength and opportunities**
- Strong forestry traditions and education
- Biologically and environmentally modern forest management
- Long-standing forest plantation policies
- Physical potential to increase felling
- Low labour costs
- Proximity to major markets
- Fairly intensive network of research institutions

**Weak points**
- Lack of institutions and capacities in planning, management, statistics and policy analysis
- Cost demanding management techniques
- Lack of integrated land use policies
- Outdated and/or inefficient capital equipments
- Lack of domestic capital
- Insufficient skills in marketing and pricing
- Weak budgetary conditions

When designing the mix of forest policies such weak and strong points should be given due consideration.

Weiss (1999), studying policy instruments for natural hazards protection in Austria, shows this interrelationship rather clearly. He draws three major conclusions from the study regarding the use of policy instruments: (i) The informal functions of policy instruments are often more important than their formal functions, (ii) policy instruments must not be analyzed isolated as they are not applied independently from each others, (iii) a topology of policy instruments is useful as a reference model, but must neither be mistaken for an explanatory nor for a normative concept.

Wibe and Jones (eds.) (1992) points at two type of failures: market and intervention failures. Market failures are failures which occur where the market does not produce the socially optimal level of a particular forest service or product. This could happen for several reasons, the most common are:

- Non-competitive markets
- External effects
- Incomplete information and «sticky» prices
- Public goods and services

A market failure is the point of departure for understanding an intervention failure, because the objective of government intervention is generally to correct a perceived market failure. The basic difference between market failures and intervention failures according to Wibe and Jones op. cit. is that the degree and type of intervention is usually determined by a partisan political process, rather than through impartial markets. They mention the following as the most prominent examples of policy intervention failures:

- Erroneous reasoning (the whole premises for an intervention might be wrong - for example there may be no market failure from the beginning)
• Group interest (some groups - for example forest owners, environmentalists or forest bureaucrats - try to influence decisions in their favour)

• Incomplete information of costs and benefits of the intervention

Each of the five case studies (from the five OECD countries Germany, Italy, Spain, Sweden and UK) in Wibe and Jones op.cit. discusses market and intervention failures as defined above. The most common types of failure that were encountered in these case studies were:

**Market failures:**
- Incomplete information on biological consequences
- Uninterested and ignorant owners
- Scale disadvantages due to small holdings
- Too much concentration of the production of priced products and services
- Destruction of ecosystems by establishing monocultures
- External effects from other sectors, e.g. air pollution

**Intervention failures:**
- Unequal treatment of sectors (e.g. stimulating agriculture, use of fuelwood, etc)
- Inappropriate use of forestry in regional policy
- Too tight management regulations
- Below-cost sales from public forest owners
- Heavy regulation of the market for forest land
- Too much stimulation of the creation of large holdings

To our knowledge, these failures are of high relevance also in ECA countries today.

### 3.5 Policies in other sectors

In most ECA countries forestry and forest industries are just small parts of the total economic activity, whereas their contribution to regional/rural development might be high. Likewise, in most of these countries forests provide important environmental benefits.

Consequently, the policies implemented in other sectors of the economy is in most of these countries very important for the forest sector. This is discussed rather detailed by Peck & Descarques (1995). In particular the policies related to agriculture (land use), energy, environment, trade, transport, rural/regional development, and the general economy heavily influence the functioning and potential of the forest sector. When considering forest policy changes, it is important to include analyses of policies/policy instruments in these other sectors, as the policies might be significantly more important than those planned to be introduced in the forest sector.

A recent example is related to climate change and the role of forestry in sequestering carbon. As shown in e.g. Solberg (1997) what happen in the global climate change issue, might influence forest management and forest policies rather strongly.

Another interesting aspect here is the possibilities and considerations for those ECA countries having applied to become members of the EU. The first round of enlargement may be expected to take place between 2003-2006. The six applicant countries (Cyprus, Czech R., Estonia, Hungary, Poland and Slovenia), as well as countries which are listed as possible candidates (Bulgaria, Latvia, Lithuania, Romania, and Slovakia) expect economic and political advantages from their accession, but they are also aware of the risks for some sectors of their economy that are unavoidable connected with this decision.

Among the first group of ECA countries Poland and Czech R. have the largest production of forest industry products. Both countries produce more industrial roundwood, sawnwood, and wood based panels than they consume.

The first six applicant countries (Cyprus, Czech R., Hungary, Poland and Slovenia) with their some 63 mln inhabitants are considered as a rather large potential market for forest industry products in Europe. The annual
The per capita average consumption of paper and paperboard today is as low as 61.5 kg (from 30 kg in Estonia to 120 kg in Slovenia) - i.e. less than a third of the per capita consumption of the major EU countries.

The applicant countries have to take under consideration the impact of the ongoing global harmonisation of trade progress. The EU has agreed in the Uruguay Round to a sectoral solution on pulp, paper and paperboard for the removal of all import duties for these products in the year 2004. This means free entry of products outside the EU to the European internal markets. As members of the WTO – Poland, Slovenia and Cyprus, or as applicants to the WTO – Hungary, Czech R. and Estonia, and in addition as members of EU, these countries will have to tackle the difficult transition problems to a free market economy.

The candidates have to adapt to the internal markets of EU. There are already important technical standards, like the Construction Product Directive, Directive on Packaging and Packaging Waste, Directive on Environmental Impact, Directive on Integrated Pollution Prevention and Control and others. New legislation and directives are constantly appearing which have an impact on forestry and forest industries. Among them there are the Directive of Measurement and Classification of Timber, the Directive concerning materials which come in contact with food stuffs, etc.

The candidates also will have to take into account the needs of the environmentally more and more sensitive European markets, e.g. the options and thoughts of Europeans in regards to old-growth forests, clear cuttings and the certification of sustainably managed forests.

To overcome these barriers and to tackle with success all challenges, it seems important that the candidate countries get a period of adaptation and meet during negotiation and screening process mutual understanding and technical as well as financial assistance.

The ECA countries will have to change not only their political system, but develop a new legal framework, build new capacities in research, education, planning, forest management, supervision, extension, financing and public relations. As mentioned in Chapter 3.4, referring to Csoka (1998), it will be important to consider the weak and strong points of the applicant countries. Adjustment to the market economy of EU is a particularly difficult task in the field of forestry, due to not only its long-term nature but also to the ownership structure with state-owned forests domination and a centralized decision making process. Accession to the EU of new member states do not only affect the new members, but also require processes of adjustment for the EU. The accession to the EU of new forested countries like Sweden, Finland and Austria (1995) have already changed the viewpoint of EU on forests and forestry and attached a higher importance to the forestry issues in the Community than before.

3.6 Overall coordination - National Forest Programs

The combination of single forest policy instruments and their coordination with policies in the other sectors of the economy to fulfill overall development objectives of the society, is a great challenge for forest policy. Few countries, if any, have yet managed that properly. Unclear objectives, special interests, conflicting preferences, financial shortages, and historical/institutional constraints are examples of factors which make an appropriate coordination difficult.

The concept of National Forest Programs (NFPs), which was introduced by the UN-CSD Intergovernmental Panel on Forests (IPF) and has got increasing attention, may be viewed as such an overall coordination effort. There is no clear definition of NFPs, but IPF (1997) specifies two sets of principles which characterize NFPs. The first set contains six specific elements that need (but not have) to be considered during the development and implementation of NFP:

1. Appropriate participatory mechanisms which should involve all interested parties
2. Decentralization, where applicable
3. Empowerment of regional and local government structures consistent with the constitutional and legal frameworks of each country
4. Recognition and respect for customary and traditional rights of indigenous people, local communities, forest dwellers and forest owners
5. Secure land tenure arrangements
6. Establishment of effective coordination mechanisms and conflict-resolution schemes.

The second set of principles contains five key elements that should be recognized in NFPs:
7. National sovereignty and country leadership
8. Consistency with national policies and international commitments
9. Integration with the country’s sustainable development strategies
10. Partnership and participation
11. Holistic and intersectoral approaches.

Almost every major document from the international deliberations and discussions on forests includes the recommendation to develop NFPs. According to FAO (1999), NFPs may be viewed from two different perspectives: 1) Broad: The term «national forest program» encompasses the full range of policies, institutions, plans and programmes to manage, utilize, protect and enhance forest resources within a given country. 2) Restricted: The term refers to a specific national process for planning, coordination, institutional reform and capacity building in the forest sector in accordance with internationally recognized principles and guidelines. The first perspective can apply to nearly all countries who have some kind of forest policy, whereas the latter assumes that some minimum standard has to be fulfilled.

The results of a survey by FAO reported op.cit. indicate that 11 ECA countries which responded to the survey had NFP in the advanced stage of implementation (Croatia, Czech R., Hungary, Latvia, Lithuania, Poland, Belarus, Russia, Slovakia, Slovenia, Ukraine). Most of these countries, if not all of them, interpret the NFP concept in the first perspective mentioned above. If using the second, more strict interpretation they have not a NFP in implementation. The report op. cit. have no information on the status of NFPs for 13 ECA countries (Bosnia & Herzegovina, Macedonia, Moldova, Romania, Yugoslavia, Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan). In comparison, about one third of the OECD countries surveyed op.cit. are planning NFPs, while 44% of the countries report that NFPs are implemented. Some of the OECD countries (like for example Sweden) use the above mentioned first broader perspective of NFP.

Gluck (1999) looks upon NFP as a new policy tool where the novelty consists of the focus on sustainable forest management (SFM) and the paradigm of policy planning based on a series of ambitious principles such as participation, decentralization, and holistic and intersectoral orientation. The chances of NFPs to make substantial contribution depends, in his opinion, upon the capability of countries to agree on operational definition of SFM, the existence of an international legally binding instrument on forests, pressure from outside, financial incentives, and the structure of decision making.

Schanz (1999) argues that the significance of NFPs at the country level depends very much on how the aspects of policy planning and of coordination inherent with NFPs can be brought in concordance, and the institutional arrangements put into effect.

In our opinion, the concept of NFPs seems promising for ECA countries, particularly as an overall frame and coordination tool to cover the main stages of the whole policy formulation and implementation process.

3.7 Summing up - what can be learned?

The previous sections have presented a brief overview of existing studies, and although the picture given is far from clear, we think some lessons can be learned:

- A long range of studies is found of various forest policy instruments, but nearly all studies are only describing the instruments. Very few studies exist which analyze the effectiveness and cost efficiency, not to say the costs and benefits, of various policy instruments. And even less studies exist which evaluate alternative policy instruments in the same country, or compare the same policy instrument or set of instruments as applied in two or more countries. Statistical testing of hypotheses about the impacts of forest policy instruments hardly exist. Policy makers do not make good experiments - often only one option is implemented and it is often difficult, if at all possible, to make statistical testing. One must therefore to a large
degree rely on piecemeal or anecdotal information, and be cautious when giving recommendations on the use of forest policy instruments/options. Also, country-specific conditions (ecological, historical, socio-economic, and institutional ones) are decisive for choosing good policies.

- Policy makers can choose among a long range of available policy instruments. The challenge is to choose the most appropriate ones - or more realistically in practice: to avoid choosing too bad instruments. A basic factor is to consider properly the country’s historical, ecological and socio-economic condition.

- The studies undertaken on effectiveness and efficiency of policy instruments in OECD countries show that policy instruments have been effective, and the following results are among those reported:
  - The various policy means analyzed have had physical effects in forest management - i.e. their effectiveness have been empirically verified.
  - Subsidies alone (or other single economic policy instruments) do not always give results unless they are followed up by other policy means like extension service advice and proper implementation efforts.
  - The time element (or expected «life-time») of a subsidy might be important for its effectiveness and efficiency, as it influence forest owners’ expectations.
  - Subsidies may in several cases be cost-increasing - e.g. the loggers or machine operators may (through increased logging costs) take a substantial share of harvesting subsidies initially given to the forest owners.
  - The impacts of a single policy instrument depend upon which other policy instruments are applied.

- The present forest authorities, both in OECD and ECA countries, could preferably be more active in getting subsidies for the non-priced non-wood services forestry provides. Today, one is in most countries too traditionally focusing on the wood production with only mentioning forestry’s positive external effects on the environment. As a consequence, forest enterprises often have a weak position compared to nature conservation authorities, and optimal forest management is made difficult. To improve on this aspect, more and better information is needed for policy-makers and people in general knowing little about forestry, in particular its importance for environmental benefits and nature protection.

- Of the three main types of policy instruments mentioned above, laws and institutional instruments are the strongest if accompanied by appropriate sanctional mechanisms. The main drawback of this group of instruments is their relative low degree of flexibility. Combinations of appropriate law/institutional instruments and economic ones, have in several OECD countries proved to be effective, and given more flexibility. The impacts of the informational policy instruments (extension service, information, education and research) are more long-term, but also important.

- Clearly defined property rights and transparent and fair legal arrangements are a prerequisite for good resource management and for the other policy instruments to have any effects. This is specially important in ECA countries, where the awareness of property rights is quite new and sometimes doubtful.

- Whenever corruption starts to dominate, most policy measures become rather irrelevant.

- When public goods, often having no fair market price, are involved, one should be extra careful when designing policies based purely on market incentives, in particular if irreversible impacts may occur. In the new ownership situation in several of the ECA countries, one main challenge is to create, preferably before privatization, an appropriate legal framework for private forest management securing vital public environmental services from forestry.

- Forestry is characterized by many stakeholders and complicated ecological, economic, institutional, and social relationships which often are dynamic and stochastic by nature. It is therefore particularly important to avoid that one (or just a few) stakeholder(s) get too dominant positions - it being in the markets for economic goods as monopolists or monopsonists, or in the institutional/organisational «market».

- Among the most important market and intervention failures in both OECD and ECA countries are:
  
  Market failures:
  - Incomplete information on biological consequences
  - Uninterested and ignorant owners
  - Scale disadvantages due to small holdings
  - Too much concentration of the production of priced products and services
  - Destruction of ecosystems by establishing too much monocultures
  - External effects from other sectors, e.g. air and water pollution

  Intervention failures:
  - Unequal treatment of sectors (e.g. too strong stimulation of agriculture, too low energy prices, unequal treatment of the public and private forest sectors)
  - Inappropriate use of forestry in regional policy
• Too tight management regulations
• Below-cost sales from public forest owners
• Heavy regulation of the market for forest land

• Comparing OECD and ECA countries on forest policy issues, it is our impression that they differ particularly on the following points:
  • Ownership and land tenure systems are in general more settled and thus less up for discussion in OECD countries.
  • The legal framework in most of the ECA countries needs changes in particular regarding how to combine the private and public forest economy and environmental and market issues.
  • OECD countries have more experiences on various forms of concession systems and market forms.
  • In several of the OECD countries the legal restrictions on the private forest owners are relatively flexible but the forest authority is relatively strong to guarantee the implementation. In several of the ECA countries it is opposite: The legal restrictions are very high and the forest authority is rather weak regarding implementation and sanction possibilities.
  • Forest owner cooperation and arenas for public participation and conflict resolution are less developed in the ECA region.
  • Corruption seems to be a higher problem in some of the ECA countries.
  • Economic incentives are more used in OECD countries, although to varying degree.
  • Extension service for private forest owners is inadequate in most ECA countries - in particular for new private forest owners having very limited forest management experience.

4. CHOICE OF OPTIONS

4.1. Introduction

The purpose of this chapter is, based on the experiences outlined in Chapter 3, to develop a range of policy options which could be of use to ECA decision-makers.

What is appropriate forest policies will vary a lot between countries, depending upon the ecological, socio-economic, institutional, historical and political setting. Therefore, instead of giving country-specific policy recommendations, this chapter is focused, first, on discussing how, in practice, the decision makers could structure the search for appropriate policy instruments in his country. Then, based on the findings in Chapter 3 and our own general policy experiences, we discuss what in our opinion seem to be the most important factors to consider in ECA countries when going for forest policy reforms.

4.2 Structuring the search for appropriate forest policy options

We have structured the search for appropriate forest policy options as a two-stage process: First, it is discussed how to evaluate forest policy instruments in general. The second stage is to evaluate the existing policy instruments and potential new ones. At that point, we present, for each main set of policy instruments described in Chapter 3, some important questions to consider in practice.

4.2.1 How to evaluate forest policy instruments in general?

The following procedure is proposed:

A. Create and keep a comprehensive policy process view

During the whole work of choosing policy instruments, it is important to keep a comprehensive process view. By that we mean three issues: To be aware of the various stages in the policy process, to be adaptive, and to be proactive. This is elaborated some in the following:
a. Be aware of the various stages in the policy process. It is important that forest policy-makers have the various stages in the policy process in mind when choosing policies. These stages are illustrated in Fig. 4.1, and consists of:

- problem formulation (how problems or issues are perceived and demand for action made by various stakeholders);
- policy agenda acceptance (how demand for policy changes is accepted and entering the political scene or placed on the political agenda);
- goal specification (identifying what is wanted);
- policy adoption (the actual choice of policy instruments);
- policy implementation (implementation by appropriate agencies).

Under each of these stages some sort of evaluations are needed by one or several stakeholders, and the stages are often rather closely interlinked. Also, the implementation stage has to be considered - only policy adoption is not sufficient.

b. Be adaptive: Policy issues are often complicated and considerable uncertainty exists both regarding dose/response effects of policy means, goal specification, policy adoption, policy implementation, and future trends influencing the forest sector. In addition public and private objectives and preferences change over time, and new knowledge is obtained. It is therefore important to follow an adaptive approach, based on the following premises:

- Forest policy decisions are taken more or less continually - even a decision to do nothing is still a decision.
- These decisions should be based on the best possible scientific knowledge available at the time, including assessments of relevant future trends influencing forestry and forest industries, and an appreciation of the uncertainties involved.
- As times go by, we learn more, and the new knowledge improves the basis for our decision-making in the next period. The likelihood of learning over time should be taken explicitly into account when taking policy decision today, and places a particular value on keeping options open. In forestry and forest policy, these options are particularly important when they concern irreversible changes, such as loss of biodiversity, as at present we have limited knowledge about the impact of alternative management regimes on threatened species. A considerable amount of research is underway on such issues, and will most likely give improved knowledge in the future. As such there is a benefit of retaining flexibility by leaving options open, where possible, so that new forest policies can be reformulated and implemented when new knowledge is available.

c. Be proactive: By this we mean that the policy makers should try to anticipate which policy issues are likely to emerge in the not too distant future, and try to design the forest policy so it can address these issues without too much difficulties and costs. As such, this point is linked to the above mentioned adaptive approach, but put more emphasize on knowledge about main driving forces in society influencing the forest sector.

B. Decide criteria for choice

Here it is important to clarify two issues: The first is the goals of the forestry. They should refer as directly as possible to the national development goals for the society as a whole as decided upon in the overall political process. Vital and difficult here is to operationalize the overall development goals into sub-goals for forestry which are clear enough for forest policy evaluation and implementation. Usually, these goals can be divided in three categories/dimensions of sustainable forest management and development: a. environmental goals, b. economic goals, and c. social goals (including distributional aspects). Very important here is to identify possibilities for irreversible impacts.

The second issue is to decide on which criteria to use for estimating degree of goal achievements. Here, we advocate at least three criteria: effectiveness, cost efficiency and risks related to the estimate of the effectiveness and cost efficiency (note that this is another type of risk factor than the one mentioned above related to the
goals). By cost efficiency we mean the costs per unit of goal factor achieved (or the inverse). Risk is more difficult
to define, but as a first crude approximation one could use a qualitative scale of high and low risk.

C. Making the choice of policy instruments.

This means, first, to get an overview of what is technically feasible as policy instruments in the respective
country. This could be a long list of possibilities as given examples of in Chapter 3. Then such a list in most cases
has to be reduced, taking into consideration the actual social, institutional, financial, and political settings. This
is not a trivial reduction, and should be done with care. As a guiding principle, it is better, in case of doubts, to
include too many instruments than exclude at this stage.

Finally, one has to make the detailed evaluation of the feasible policy instruments, using the criteria and process
view discussed above.

4.2.2 Evaluation of the present policy instruments and potential new ones

The main question to ask here is what are the weak and strong points of the present policy instruments, and the
potential new ones remaining after the first screening described above. This evaluation could preferably be done
based on the principles discussed in the previous section 4.2.1.

To guide the search for improved policy options in practice, we present below some questions which we think
could be of particular importance in several of the ECA countries, related to the main groups of policy
instruments described in Chapter 3:

Laws and regulations.
- How detailed should the laws/regulation be? Can some flexibility be build in so the law could be changed
  without too strong difficulties if necessary?
- Who should enforce the law? Are existing institutions/organizations strong enough to enforce the new
  regulations?
- Are there high risks of irreversible negative effects if regulation are not changed? (If so, could strong law
  enforcement be better than using other policy instruments?).

Property regimes - land ownership
Vital questions to consider here include:
- What are strong arguments for/against increased forest land privatization?
- Is there an optimal share of private and state owned forest land? Is it good to have both types of land owners
  to get a check on economic efficiency and environmental impacts?
- How preferable are sorts of common ownerships as alternatives to private or state owned forest land?
- Is it preferable to have a limit for the minimum size of privatized land?
- What kind of ownership and public rights are part of the privatization?
- Are public goods and services adequately secured in a privatization of forest land?

Concession systems and market forms
- How is the market functioning - are some buyers or sellers dominating too strongly?
- How to organize the timber sales? What are the responsibilities of each of the participants/agents?
- Which auction system to use - how to get a fair price?
- What types of leasing are appropriate?
- How to secure vital environmental forest services?
- How to secure rural income and employment?

Reform of the state forest service
- How dominating is the state forest service (SFS)
- How to get a good separation in SFS between doing and controlling functions?
- How to get SFS' economic efficient?
- How to increase income from sales of market and non-market goods and services?
- How can SFS get new «alliances»?
Support for private forest owners cooperations, arenas for public participation, interface between policy and research.

- How can the state stimulate to get established proper forest owners associations or cooperations?
- How can better arenas for public participation and conflict resolutions be developed?
- How can the interface between research and policy making be improved?

Corruption

- How large is the corruption?
- How can it be reduced?

Taxes and subsidies

- What are the present direct and indirect subsidies?
- Which types of subsidies are most convenient - for whom?
- Are forest subsidies sustainable - is the state finance good enough to support forest subsidies in the medium to long term?
- Are the public and general policy makers adequately informed about the justification for forest subsidies - e.g. for public environmental services?
- How can the costs of administering subsidies and taxes in forestry be reduced?
- What types of forest taxes are most convenient - for whom?

Extension service, planning, information, teaching and research

- What is an optimal forest extension system?
- How to reach those forest owners who are most important to inform?
- To what degree can increased information and planning reduce conflicts and stimulate to better utilization of the forest resources?
- Is the forest education and research adequate?

Mix of forest policy instruments

- What are major interlinks between the various forest policy instruments?
- What is an appropriate/optimal mix of forest policy instruments?

Policies in other sectors and overall coordination of the policy process

- Which policies in other sectors are most important for the forest sector?
- How can these policies be influenced or must forestry just adapt?
- How can National Forest Program be of use?

4.3 Most important factors - some personal views

In theory, the number of policy options are many, and the second main point in Chapter 4 is a discussion of what we, based on the literature review and own experiences, consider to be the most important forest policy issues for ECA countries. Great variation exist between the countries, and one should be cautious in generalizing too strongly. But a first step could preferably be to structure both the ECA and the OECD countries into groups which are more homogeneous in relation to criteria like types of main forest ecosystems, ownership structure (size and types of ownership), importance of forestry, forestry tradition, social condition (degree of unemployment, income level), legal and institutional setting, development of wood industries. We suggest the following groups of the ECA countries as potential useful for the purpose of this report:

1. Armenia, Azerbaijan, Kazakhstan, Uzbekistan, Moldova, Georgia, Kyrgyzstan, Turkmenistan – which need almost everything new related to forest policy and sustainable forest management: legislation, forest conservation, protection, and management, education, research and exchange of information, wood processing industry, non-wood forest products.
2. Albania, Belarus, Bulgaria, Bosnia-Herzegovina, Croatia, Romania, Russia, Ukraine – which are still subject to deep economic and political recessions.
3. Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia – which are the most advanced in the process of reformulation of forest policies and improvements of institutional and legal instruments as well as practical changes (partly because of the adaption and screening process before accession to EU).

Practical options for these groups could be: a. Recognition of the level of needs by elaboration of country profiles on priorities in forestry related issues; b. organization of expert exchange between ECA countries and stimulation of their mutual learning from each other and from experiences in relevant OECD countries.

In general for the group of ECA countries, it is our opinion that the following policy options are more important than others:

1. Goals for sustainable forest management. The goals for forestry should be as clear as possible, and derived consistently from the overall development goals of the respective country. It is important to utilize the comparative advantages of the countries. For example are labour costs relatively cheap compared to capital costs, and this should stimulate to the use of more labour intensive (and domestically produced) harvesting and processing technology than the newest and most capital intensive equipment imported from high-salary countries.

2. Rights of property regimes/land tenure. The rights of property/land tenure regimes have to be clearly defined and followed. If not, the effects of the other forest policy instruments will easily be negligible.

3. Forest policy responsibilities between government institutions. Overlapping and unclear legal and institutional arrangements between governmental institutions are major stumbling blocks for forest policies.

4. Forest investments. A problem facing most countries is to secure that investments in forestry for long-term industrial wood production and environmental services are kept at a sufficient level. Regarding wood production, a certain part of the surplus generated from wood sales could be earmarked for such investments. Regarding environmental services various legal and financial policy means could be used. For the state forest service it will in most countries be necessary to find new income resources than wood sales, or if only based on the shrinking income from wood sales, the institution will be forced to shrink. Increasing the amount of the deficit spending for the state forest service, which is common in many European states, will politically become more difficult in the future. Economists are developing new procedures to sell non-wood goods and services, but the size of achievable income from these activities is still rather uncertain, and it may have politically difficult distributional impacts. An alternative is a special budget (financed by public resources) for non-wood goods and services, or combination of these two approaches.

5. Fragmentation of forest estates. Due to the ongoing privatization process in many of the ECA countries, fragmentation of properties is an important challenges facing forestry there. The challenge is to create appropriate legal frames of private forest management in the new ownership situation securing important public environmental services from forestry, and efficient forestry practices.

6. Forest owner associations and extension services. In most OECD countries, forest owner associations have been very important for knowledge dissemination to and support of small and medium sized forest holdings. In most of the ECA countries this kind of organizations are rather few and limited in scope, and public financial support for such organizations could be preferable at least in an initial phase.

7. Public participation and conflict resolution. Forestry provides many types of goods and services, and the various stakeholders rank them differently. It is therefore quite natural that conflicts occur regarding what is optimal forest management. To get a reasonable balance between competing views, it is important that appropriate institutional arrangements are created for public participation and conflict resolution in forestry.

8. Role between forest authorities and interest groups. Associations of forest owners and interest groups are new for the forest authorities in most of the ECA countries. In a system with more private ownership and market economy the interest groups are important for formulating and securing the interest of the
various stakeholders. Strong forest authorities will soon recognize this in information for policy making, but they will most likely insist on the right of the state on the final decision. The cooperation with interest groups can, however, go further if the forest authority realizes that the real challenge is the implementation of the programs. The forest authority could bargain with the interest groups and exchange compromises in the programs for promises to support policy implementations. It can also for example invite the interest groups to participate in the formulation of forestry programs or delegate self-regulation of specific tasks to the interest groups, enabling them to offer special services for their members and to gain new members. In the future the strength of the forest authority, and forestry in general, will depend to a high degree on its ability to win new allies within the different interest groups.

9. Corruption. If corruption gets foothold, one arrives very easily in situations where forest policies have no meaning.

10. Knowledge of the likely impact of each of the policy instruments available. The lack of empirical knowledge of impacts is a serious problem. In practice, one has to use best judgement and learn over time from implementations in own and other countries. Note that as we see it, the choice of implementation strategy is a policy instrument.

11. Mix of forest policy instruments. The effect of a policy instrument depends on the size and type of other policy instruments in use. For example, experiences from several countries show that changing the forest law for privatization of forests, has to be supplemented with proper sanctionary and monitoring policy measures to secure environmental public services. It is also important that the different forest policy instruments are not seriously conflicting each other. Among other things this demand that the number of forest policy instruments are high enough.

12. Policies in other sectors. In most ECA countries forestry and forest industries are just small parts of the total economic activity, whereas their importance regarding regional/rural development and environmental aspects are high. Consequently, the policies implemented in other sectors of the economy are in most of these countries very important for the forest sector. In particular the policies related to agriculture (land use), energy, environment, trade, transport, and the general economy heavily influence the functioning and potential of the forest sector. When considering forest policy changes, it is important to include analyses of policies/policy instruments in these other sectors.

13. Overall coordination – National Forest Programs. The combination of single forest policy instruments and their coordination with policies in the other sectors of the economy to fulfill overall development objectives of the society, is a great challenge for forest policy. Few countries, if any, have yet managed that properly. Unclear objectives, special interests, conflicting preferences, financial shortages, and historical/institutional constraints are examples of factors which make an appropriate coordination difficult. The concept of National Forest Programs (NFP) being introduced in several countries now, is a promising coordination tool for covering the main stages of the whole policy formulation and implementation process. However, the concept is defined and practiced differently in different countries, and could develop into another “paper-tiger” in the international forestry debate.

5. SOME NOTES ON FUTURE RESEARCH NEEDS AND IMPLICATIONS RELATED TO THE FOREST POLICY OF THE WORLD BANK

As mentioned in Chapter 3 most of the literature on forest policy instruments is of descriptive nature focusing on describing the various instruments used, and very little exist on their impacts. More research is urgently needed - in particular studies on the effectiveness, cost efficiency and distributional impacts of various forest policy means. This should be done in several ways - e.g. by analyzing single policy instruments, by comparing alternative (sets of) policy instruments in the same country or as applied in two or more countries.

This research could preferably concentrate on policy instruments which seem to have given extreme results - either very good or very bad - and the main reasons for these results. Examples of important questions to address are:
- Must certain necessary conditions be fulfilled to provide successful policy reforms?
- Are certain combinations of policy instruments preferable/not preferable?
• What are the transaction costs of various sets of policy instruments?
• What are their short- and long-term impacts?

Regarding implications for the World Bank’s forest policy towards ECA countries, we consider the following points of high relevance:

• Stimulate the countries (by building up and providing expertise and financial support) to evaluate their present forest policy instruments and potential policy reforms on the issues outlined in Chapter 3 and 4. It is important that the OECD experts brought in have relevant experiences for the task, including sufficient knowledge of the historical, ecological, economic and social conditions of the country.
• Secure, before going in with financial assistance to forest sector projects, that such evaluations are done, and that appropriate policies are likely to be implemented.
• Monitor the implementation of projects and policies, and build in procedures for possible changes to benefit from potential learning over time.
• Provide financial support for research on the impacts of forest policy means - as outlined above.

Figure 4.1. Illustration of the policy process.
LITERATURE


