Title: Scenarios for the Future Lithuanian State Forest Sector

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Abstract

Three alternative scenarios to the much debated present organisation of the Lithuanian State forest sector are examined: (i) *the integrated*, where all functions are delegated to one central administrative authority – the Danish prototype, (ii) *the commercialised*, where State forests are managed by a commercial State company – the Irish prototype, and (iii) *the minimalistic*, where only negligible forest areas of special importance remain in State ownership – the Swedish prototype. The scenarios are assessed according to six imperatives: (i) sort out the ambiguity of the present structure, (ii) increase the profitability, (iii) reduce the level of public spending, (iv) accommodate changes in ownership structure, (v) rely on a holistic approach, and (vi) comply with the national forest policy. If adopted, any of the scenarios would most likely improve the various elements of State forestry, although in substantially different ways. Politicians will take the final decision that may be supported by the findings of this study.

Key words: State forestry, Lithuania, Europe, institutional framework, scenario analysis.

Introduction

Like the rest of the Society, Lithuanian forestry has undergone significant changes since restoration of independence 10 years ago and radical changes are still in progress. The key drivers to this development are the fundamentally altered economic conditions and the ongoing forest privatisation. By January 2000, some 20 per cent of Lithuania's forest area had been privatised. Other 27 per cent are reserved for privatisation although the exact structure of future ownership to this substantial forest area is still uncertain.

The remaining 53 per cent is managed by State Forest Enterprises, SFEs, that are direct descendants of the Soviet leskhozes. In addition to the traditional tasks of forest management, SFEs have the functions of consultancy and control of private forest owners, e.g. issuing of felling permissions. This arrangement is in discordance with market principles as SFEs gain authority over their only rivals in the production of timber.

Contrary to lower administrative levels, top forestry administration has experienced significant structural changes in the 1990s. In 1996, the Ministry of Forestry was changed into a department at the Ministry of Agriculture and in 1998 transferred to the Ministry of Environment, as Department of Forest and Protected Areas, DFPA. These changes were made in an attempt to optimise Ministerial structures rather than as a result of deliberate sector policy. The most decisive institutional rearrangement occurred in 1996, when General Forest Enterprise, GFE, was established to better co-ordinate the commercial activities in SFEs, whereas DFPA was given the administrative function with respect to formulation of the national forest policy and provision of services to the public administration. SFEs, DFPA, Forest Inventory and Management Institute (FIMI) and Forest Control

Section at the State Environmental Protectorate share the implementation of the national forest policy (Figure 1).

[Insert Figure 1 about here]

However, the division of functions is not as clear as it might appear at the first glance. Administrative function is, as expected, fulfilled mainly by DFPA, which is responsible for, e.g. the formulation of legal documents related to forestry. DFPA also holds a certain degree of jurisdiction over SFEs, e.g. in regard to extension and control functions towards the private forest sector and the adjustments of the overall administrative framework such as appointment of SFE managers. In addition, the commercial game management in State forests is coordinated by DFPA.

The role of GFE in commercial matters becomes even fuzzier due to the system of financing. The economic turnover from commercial forest management is gathered in the Forest Fund, which basically is working as "bank account" for each SFE. The economic independence of SFEs is, however, somewhat modified as some of the surplus on the "bank account" of a SFE is transferred to the central part of the Forest Fund, for use in covering possible deficits of other SFEs. Further, part of the Forest Fund is used to finance other elements of the State forest sector such as FIMI and the consultant service to private forestry. The administration of the Forest Fund is done mainly by DFPA.

The present structure has brought little else than overlapping of functions and tensions between the two main administrative authorities. The deficiency of the institutional framework is regarded as one of the most serious issues in Lithuanian forestry and is subject to ongoing debate, e.g. (Vasiliauskas 1999, Brukas 2000a). Vested political interests rule the debate, as the issue has not been subject to scientific investigation. This paper addresses the future development of the Lithuanian State forest sector by examining several scenarios as alternatives to the present structural framework.

Theoretical prerequisites

Addressing the formation and implementation of forest policies, Merlo and Paveri (1997) stress the importance of choosing not only one most appropriate policy tool for solving a certain problem, but searching for an optimal tools mix consisting, e.g. of various juridical-mandatory and economic-financial tools. They acknowledge that the institutional framework has essential importance for the application of any possible forest policy tool. Insufficient research on adequate topics often is the root of failure in forest policy. Similar concern is expressed by Hagenstein (1989) who underlines the *descriptive* nature of research on institutions, which to a great extent applies also to this study.

Classifying the main functions and policy instruments facilitates analysis of the structural organisation. The functions of State forestry may be divided into three main groups: (i) *The administrative function* is twofold: inwardly directed towards administration of physical management

structures of State forestry itself; outwardly directed as a part of public administration, e.g. in regard to private forestry. (ii) *The commercial function* has traditionally been to contribute to the economic base of the State, by appropriately utilising the forest resource. (iii) *The function of contribution to policies in other sectors* is the primary objective in many countries. State forestry usually has a substantial weight in contributing to a country's environmental and economic policies, including nature conservation, regional development, trade policy and redistribution of wealth. Social policy is also affected, e.g. by the provision of recreational facilities.

Structural organisation of the State forest sector is linked with forest policy but exact determination of the relationship is difficult. Ideally, the structure of the sector is a political decision arising from national forest policy. In practice, the opposite link is often observed, as top forestry authority plays the key role in formulating the forest policy and, like any other institution, attempts to persist its routines beyond the historical moment and conditions (March and Olsen 1989). In any case, implementation of national forest policy is a core responsibility of the State forest sector. The available instruments may be grouped as follows: (i) *juridical*, mainly expressed through supervision of the national forest law, (ii) *normative* or *demonstrative*, by which the imitation of good stewardship is created, and (iii) *incentives*, extension or financial initiatives.

Materials and methods

Analytical process

The overall methodological approach is a scenario analysis, i.e. several alternative structural arrangements of the State forest sector are compared. The analytical process comprises five steps (Figure 2).

[Insert Figure 2 about here]

1. Analysis of the existing situation in the Lithuanian State forestry.
2. Identification of a number of imperatives, or evaluation criteria.
3. Drawing up scenarios for the future structure of Lithuanian State forestry.
4. Evaluation of the combined effects – a scorecard assessment.
5. Interpretation of the results obtained, leading to recommendations and conclusions.

Step 1 relies on the background and contents of the forest policy and institutional framework in Lithuanian forestry. Based on this, imperatives are identified in *Step 2*. Experiences of selected European countries are the sources for creating the scenarios in *Step 3*. Findings of *Steps 3 and 4* could be regarded as partial results of the analysis but are here considered to be material for the core *Step 4*,

where the principal results are obtained. Finally, *Step 5* brings the general recommendations seen as an input to the debate on the future structure of the Lithuanian State forest sector. Details on materials and methods can be found in Larsen (2000).

Imperatives

Imperatives are here defined as general principles on which any chosen strategy for change should depend. Regarding the present situation and the future aspiration for a balanced sustainable development of Lithuanian forestry, six such imperatives may be outlined. Thus, the future structure of the Lithuanian State forest sector should:

(i) Sort out the ambiguity in respect of the distribution of responsibilities, both within the State forest sector and in the relationship between State and private forestry.
(ii) Increase, or at least maintain, the present profitability of State forestry.
(iii) Maintain, or preferably reduce, the level of public spending in the State forest sector.
(iv) Accommodate the future changes in ownership structure and be flexible enough to work under any possible end result of the ongoing restitution process.
(v) Take a holistic approach to the entire forest sector, not forgetting the effects of State forestry on the emerging private forest sector.
(vi) Be in compliance with the national forest policy and support its implementation.

Apart from all this, the future structure should not conflict with any of the fundamentals of other sector policies or national political foundations of the Lithuanian Society.

Scenarios

Continuation of the present organisational structure (as found by January, 2000) serves as a zero scenario, i.e. a benchmark for comparison with other scenarios. As sources of inspiration, three European countries have been selected whose State forestry is organised in fundamentally different ways. Key figures on the forest sector of these countries are presented in Table 1.

[Insert Table 1 about here]

Denmark – an integrated approach

One of the fundamental changes introduced to Danish forestry with the 1996 Forest Act was the equal priority given to wood production and non-wood benefits (Helles 2000). In State forests, even greater emphasis is put on the latter. Forestry administration is concentrated in the Forest and Nature Agency at the Ministry of Environment and Energy, relating its responsibilities to the management of

nature resources in a broad sense. State forest districts carry out the physical management of State forests and the implementation of the national forest policy. The integrated structure complies with policy priorities, where support of other sector policies, especially environmental, plays a major role. Policy implementation relies mainly on incentives and normative actions, while the supervision of the Forest Act is relatively indulgent.

Ireland – a commercialised approach

Contents of the strategic forest documents (Department of Agriculture… 1996) imply a production-focused national forest policy with a clear multifunctional fingerprint. This orientation was confirmed in 1989 when Coillte - The Irish Forestry Board Limited, IFBL was established. Despite the commercialisation, IFBL remains in public ownership and fulfils a number of non-commercial functions related to State forestry. National forest policy is implemented by the Irish Forest Service that relies on strict supervision and strong financial incentives, whereas the normative role is less apparent. The dominant market position of IFBL is not harmful at present as mature timber is almost absent on private estates, yet market discrepancies will likely ensue the revision of the current structure in foreseeable future.

Sweden – a minimalistic approach

The fact that the Ministry of Industry and Commerce is overall responsible for forestry indicates emphasis on commercial timber production, even if the latest Forestry Act (1994) propagates the importance of non-market outputs. Major structural change occurred in 1993/94 when the former State forest property (3.3 million ha or 13 per cent of the total forest area) together with State forest industries was transferred to the private company Assi-Domän (Carnegie AB 1999). Two major objectives were to improve the commercial performance of State forestry and to inject capital to the Exchequer. In 1999, circa 900,000 ha was transferred from Assi-Domän to the newly created State company Sveaskog and State shares in Assi-Domän were reduced from 50.2 to 35 per cent. Assi-Domän could increase profitability, since much of the transferred area was low-productive. The State, on the other hand, got some area at its disposal, e.g. for assigning land for conservation purposes. However, the firm tradition of strong commercially oriented private forestry, and the minor extent to which State forestry owns or manages forestland, allows depicting the Swedish approach as minimalistic.

The National Forestry Board implements the national forest policy and, together with its regional offices, is responsible for forest inventory and environmental matters. The Board relies on rather strict supervision, e.g. forest owners are obliged to notify the regional office of all major silvicultural operations. Normative means and forestry extension are also well developed.

European overview

It is interesting to clarify how the three approaches above overarch the variation of institutional forestry organisation in the rest of Europe. A number of countries have been overlooked and the findings are shown in Table 2. Sometimes organisational structure may not be assigned strictly to one of the approaches, as in the case of Poland. Without going into details, it is seen that the commercialised approach is the most common, especially in countries where structural change has been carried out in recent years: Austria (1997), Estonia (1999), Latvia (2000), Finland (1992), and Norway (1993).

[Insert Table 2 about here]

Results

Application of scenarios in Lithuania

Scenario A: The Integrated

The integrated structure means that all functions of the State forest sector are represented in one central administrative agency (Figure 3). In this case, GFE is abolished and the State forest holdings transferred directly to DFPA. The forestland is divided into a number of forest regions comprising: (i) a number of forest districts, formed on the basis of former SFEs, and (ii) any national park and other protected area, located within the physical boundaries of the forest region. The forest district is organised in a number of management units, dealing only with State forest holdings, and a unit for control and extension directed towards the private forest owners.

[Insert Figure 3 about here]

The economic contribution to the State budget from the national forests comes primarily from tax revenues, as State forests are taxed in the same way as private forest owners. Apart from this, the forest regions contribute to the financing of the central DFPA and associated institutions. This is done through budgeting, where the Division of Accounting and Finances, in cooperation with the Planning Division, sets out the annual budget for the individual forest regions. In this, the contribution from the region to the financing of the central administration for the following year is specified. It is hereafter up to the forest region to seek the best possible financial result in fulfilling these overhead costs.

Scenario B: The Commercialised

In Scenario B, GFE is transferred to a State company structure, holding the sole responsibility for the management of all State forestland, except for national parks and other forests with non-

commercial status, e.g. within protected areas. The Lithuanian State Forest Company, LSFC, concentrates on the commercial function of the State forest sector, other functions being left to the responsibility of DFPA (Figure 4).

[Insert Figure 4 about here]

LSFC is working under the same conditions as any other private limited company within the forest sector, e.g. in regard to stewardship regulations and taxation. In addition to commercial forest management, the company can expand its business into other forestry related areas such as wood processing, contracting, and extension services. LSFC is, however, owned by the Ministry of Environment, which affects the running of the company in a number of ways, e.g. the Minister appoints and removes the directors and the chairman of the company's board of directors.

Within DFPA, the loss of SFEs leads to a need for an alternative structure of local representation throughout the country. A system of regional offices of DFPA secures the implementation of the forest policy, thus serving as the link between Society's interests in forestry and the management of all forestland.

The economic contribution to the State budget comes primarily from taxation of LSFC. However, the Minister has the power to assign part of the revenue from the company to the financing of other parts of the forest sector or other sectors. As a general rule, the revenue remains with the company, enabling its further consolidation.

Scenario C: The Minimalistic

Scenario C results in the creation of two new companies, abolishment of GFE and reduction of the tasks carried out by DFPA (Figure 5). The Private Limited Timber Company, PLTC, is created as the State sells all its commercial forestlands, except those having binding status, e.g. in national parks. The purchase of shares in PLTC is open to anybody but the Government retains a relatively large proportion of the shares, though not the majority. This secures the possibility to affect the management of the substantial part of the country's forest resources now managed by PLTC, and allows expecting future dividends from the shares.

[Insert Figure 5 about here]

Seeking to manage the remaining State forest area efficiently, the State company Nature Parks of Lithuania Limited, NPLL, is formed under the Ministry of Environment. NPLL is in theory self-financed, getting its earnings from commercial forestry within its area, fees from visitors, and compensation from the State budget for the additional forest management considerations with respect to recreation, amenity, biodiversity, etc.

The main contribution to the State budget stems from taxation, including taxation of PLTC. Apart from this, the Government obtains dividends from the stocks of the company. A minor contribution to the Exchequer comes via taxation of NPLL. One major issue regarding the economics of this scenario is the one-time contribution to the Exchequer, arising from the selling of State forest property to the private company.

Imperatives versus Scenarios

The combined scores of the three scenarios are presented in Table 3. In the following, the findings are briefly commented on seeking to provide an impression of the key elements of evaluation.

[Insert Table 3 about here]

Imperative i: Sort out the ambiguity of the present structure

The ambiguity primarily arises due to the elements of doubling in duties and functions of DFPA and GFE, the double submission of SFEs to both DFPA and GFE, and the conflicting role of SFE towards the private forest owners, being simultaneously controller, provider of extension and competitor on the wood market. The two-sidedness of the imperative is best addressed by dividing it into two parts, where *i*a is the relations within the State forestry sector and *i*b is the relations between the elements of State and private forestry.

Regarding *i*a, all three scenarios would result in a reduced ambiguity of the structure within the State forest sector. In scenario A, this is achieved by reducing the number of highest administrative authorities within the Ministry, thus clarifying the areas of responsibility and simplifying the chain of command between the administrative and the physical management levels. Scenarios B and C create a very clear division in the organisational structure between the administrative and the commercial function, where the latter is directly linked to the management of the State forest properties. Regarding *i*b, Scenario A results in no change in relation to the present structure. On the other hand, the clear distinction of the functions under Scenarios B and C enables DFPA to concentrate its efforts on control and implementation of the national forest policy, where all ownership forms are treated in similar ways.

Imperative ii: Increase or at least maintain profitability

Comparing the profitability of State forestry in different countries is somewhat troublesome, as commercial preconditions (composition of tree species, age class distribution, price structure, labour costs, etc.) and accounting principles differ among the countries. This should, however, not prevent the attempt to make such an evaluation. The profitability is well described by the profit ratio (*pre-tax profit / turnover x 100 per cent*) that shows the capability of making money with whatever natural

resource is available. Table 4 shows that Sweden and Ireland are doing significantly better than Lithuania and Denmark. Interestingly, Sweden has the lowest net annual increment per hectare but the best economic performance. The annual increment of the Swedish forests is a mere half of that in Ireland, 55% of the Danish equivalent, and two thirds of the increment of Lithuanian forests (UN/ECE 1992; Forest Inventory… 1998). The findings lead to a tentative conclusion that the profitability of the forest management is increasing parallel to the degree of private ownership.

[Insert Table 4 about here]

The scores of Scenarios B and C are consistent with the findings in Table 4, whereas Scenario A has been given one point, even though the figures from the Danish State forestry indicated a very poor financial performance mainly resulting from the low priority of the commercial function. In Lithuania, Scenario A is likely to increase profitability since individual budgetary demands on the forest regions should replace the present system where a great part of profits is transferred to the central Forest Fund. In this way, motivation for economic efficiency is created, as forest regions have at their disposal any would-be surplus of the commercial activities.

Imperative iii: Maintain, or preferably reduce the level of public spending

One of the key figures in evaluating the level of public spending in the State forest sector is the number of officials dealing with policy and other general issues of the sector, as well as people employed with the implementation of the national forest policy. Applying Scenario A, the restructuring can be based on the existing structure of State forestry. SFEs can merge and be transformed into forest regions and the number of forest districts can likewise be reduced, as privatisation of the forestland proceeds, which in turn would reduce the public spending. Nevertheless, even if the present structure is maintained, reduction of SFEs is expected, as the land area under their management is gradually reduced. However, the simplification of the higher administrative structure within the Ministry will yield additional savings as compared to the continuation of the present structure.

Scenario B results in creation of an entirely new organisation in order to represent DFPA on a local level to ensure supervision of the forest law and extension to the forest owners. In return, the creation of LSFC is expected to reduce the number of employees at all levels due to increased efficiency. The combined effects of Scenario B are likely to result in decreased number of employees in the forest authority. Similar effects might be expected under Scenario C as well. However, according to the general principles of the link between ownership type and economical performance (as outlined under the analysis of *imperative ii*), a further efficiency gain should be expected, as part of the State owned land is transferred to the company structure of NPLL.

The general assumptions described above are backed by empirical figures of the number of employees in the forest authority in Lithuania, Denmark, Ireland, and Sweden, indicating an increased efficiency in the forest authority as functional distribution between administrative units is increased (Larsen 2000).

Imperative iv: Accommodate changes in ownership structure

The imperative stems from the uncertainty of future ownership to more than 500,000 ha forestland that adds to the general ambiguity within the forest sector and leads to a direct annual loss of some 1-1.5 million m^3 of timber harvest. Under Scenario A, the gradual reduction of area in State ownership would be handled by simply merging forest districts and adjusting the number of forest regions, which is very similar to the capabilities of the present system. Having a company structure in all commercial forests as in Scenario B, uncertainty and constant changes in land resource are very likely to cause unnecessary precariousness in LSFC's activities. The somewhat worsened management would be expressed through, e.g. delay of development and cancelling of new investment projects which would otherwise have been carried out.

The minimalistic approach in Scenario C would, however, result in a significant worsening of the situation because of an additional serious problem. Having purchased the land from the State, PLTC would require some kind of compensation if forced to give up production capacity of the company as restitution proceeds. Since the restitution of property is free of charge, the Government would be expected to pay the compensation, or the initial selling price to PLTC should be heavily discounted, which implies a significant loss to the Exchequer.

Imperative v: Rely on holistic approach

Besides various legal and administrative inequities between the State and private forestry (Brukas 2000b), the central issue with regard to *imperative v* is the relative size of the commercial units. If a budgetary demand is levied on each of the forest regions under Scenario A, the increased competition between the regions will reduce the discrepancies between the large and the small units, leading to general improvement of market conditions. Scenario B will apparently result in deepening rather than settling the imbalance of holding size since gathering of all commercial activities in one unit would give a highly dominant market position. The adverse conditions may, however, be somewhat softened as the State owns LSFC and may affect the company's management by appropriate regulations.

Possibilities for such regulation would be sharply reduced under Scenario C, where the State holds only a minority of shares in PLTC. In addition, the restriction of PLTC activities would partially contradict the State's interests, since the State would seek to maximise its income from the shares in PLTC. This would imply a constant risk of making decisions that are unpopular among either its fellow shareholders in PLTC or the forest owners in the rest of the sector.

Imperative vi: Comply with the national forest policy

Lack of a joint document describing main directions of forest policy highly complicates the assessment of scenarios with regard to the overall national forest policy. After reviewing appropriate legal acts and statements by executives, Mazeika (2000) concludes that the general objectives of Lithuanian State forest policy are: (i) optimisation of forest cover, (ii) harmony in landscape values and biodiversity, (iii) efficient forestry, not disturbing ecological and economic balance, and (iv) development of multiple and sustainable forest use. It is still difficult to deduce what are the main priorities, as they remain a matter of personal judgement. We believe that the economic issues are of primary importance at this stage of the country's development, however, other opinions are present too. Therefore, *imperative vi* is divided into two parts: *vi*a, which assumes higher priority for economic development and *vi*b with greater emphasis on environmental issues.

Before assessing imperative *vi*, we preclude the possibility of choosing the maximum value 3, as none of the scenarios may perfectly comply with the national forest policy in all respects. Assessment of *vi*a draws from evaluations of all previous imperatives, the highest weight being on imperatives *ii* and *iii*. All scenarios bring improvements in economic development, Scenarios B and C being superior to A, which also complies with the overall economic performance of State forestry in Denmark, Ireland, and Sweden. If environmental aspects are underlined (*vi*b), improved division of functions in Scenario A is likely to positively effect forest management also in respect to environmental matters. Reduction of State control over forest resource may have negative environmental effects in case of Scenario B and especially C. However, the effects may be substantially lessened if the State retains non-commercial forests in its ownership.

Using the Scoreboard

When adding up the scores of each imperative, the immediate impression is that Scenario B comes in first with 9 points, followed by Scenarios A and C, both summing to 7 points. Such result is conditioned by the equal weighting of each imperative as well as of the two parts of imperatives *i* and *vi*. This is not in good consistency with the political reality. The different priorities of State forestry depend on political standpoint and possibilities of counteracting the poor scores for various scenarios and imperatives. Thus, just adding the scores is not adequate. It should at least be combined with a weighting of the relative importance of each imperative, which is a purely political process.

The obtained scores indicate that Scenario C is the one that will lead to most change in both positive and negative direction. Scenario A, on the other hand, is likely to improve the present status without having to fundamentally change the entire system and thereby reducing the risk of unforeseen negative side effects. Furthermore, the scoreboard implies that if the privatisation process is finished quickly, some of the gravest disadvantages of Scenarios B and C will become irrelevant.

In conclusion, the scoreboard does not provide a definite answer to the question of structural change in the Lithuanian State forestry, but rather is a useful tool for further political discussion, eventually leading to a final informed decision on the subject.

Discussion and conclusions

The present scenario analysis of the Lithuanian State forest sector yields two important insights. First, the identification of the six imperatives provides a list of important issues that should be addressed when outlining the strategic framework of Lithuanian State forestry. Second, the assessment of the scenarios allows evaluating the combined effects of different priorities.

The main finding is that all of the three scenarios would most likely result in the State forest sector better fulfilling the various needs and expectations of the Lithuanian Society. The fundamental reason for the overall improved economic performance is the abolishment of the Forest Fund system. By exchanging the Forest Fund with either a budgetary demand as in Scenario A or with a direct aim of pure profit-maximisation as in Scenarios B and C, the leaders of the physical management units are being turned away from the zero-profit generating system of the Forest Fund. The newly introduced profit-motivating system benefits the physical management units and the entire State forest organisation. Hereby, the return to Society as such will also be increased.

The general European trend shows a favour for the commercialised approach to the State forest sector. However, at least one issue strongly differentiates Lithuania from most other countries. The ongoing process of land reform implies a vast element of uncertainty regarding the overall framework for the future State forest sector. Furthermore, the time perspective for resolving this problem is almost impossible to predict, as estimates vary from two to ten years, depending on the source of information.

Therefore, the structural reform of the State forest sector should be divided into two stages. The strategy should be to adapt a certain solution until the land reform is completed. Hereafter, the described analytical process should be repeated, in order to accommodate the structure to the new circumstances. While adopting this step-wise structural reform, efforts should, however, also be made to speed up the process of land reform. There are two main reasons for wanting this speed-up. First, the uncertainty of the future ownership structure highly degrades the otherwise attractive Scenarios B and C (cf. Table 4). Second, the speed-up of the land reform would reduce the loss of income resulting from the harvest ban on a very significant forest area. The primary remedy for this would be to set a firm final date for giving in claims of land to be restituted. Authorities could then decide the status of the land, where no former owners have claimed ownership rights and which is not permanently reserved for State ownership. This land could then either be transferred to State ownership or sold.

The need for increased administrative efficiency and better transparency in the administration of the State forest sector speaks in favour of functional division between the administrative and the

commercial function as done in Scenarios B and C. However, the conflict between selling all State commercial forestland and the public opinion *de facto* rules out the minimalistic approach of Scenario C. The capitalisation of the vast forest resource would almost certainly have to involve foreign entities, which appears to be colliding with the fundamentals of Lithuania's general policy towards land ownership. Scenario B will therefore be the most attractive when responding to the above need. On the other hand, demands on securing efficient formation and implementation of the national forest policy speak in favour of an integrated structure as in Scenario A.

Regarding the present uncertainties in ownership structure, the application of an integrated structure is recommended in the first stage of institutional reform, i.e. until the process of land reform is completed. This would lead to the abolishment of GFE and the full subordination of SFEs to DFPA. Simultaneously, the number and internal structure of SFEs should be assessed in compliance with the new settings within the State forest sector. When implementing the national forest policy, SFEs should put more emphasis on extension, education and normative means, and not only on the strict regulation, such as issuing of felling licences. Furthermore, the distinction between the newly established Forest Management Unit and Forest Control and Extension Unit at the Forest Regions should be made very clear.

The analysis of State forestry in the context of the entire forest sector reveals an urgent need for initiatives related to private forestry. First, effort should be made to equalise the taxation and trading conditions for the State and private forest sectors, in order to create the prerequisites for a fair competition. Second, a moderate land tax should be introduced on all forestland, based on the site productivity and stand characteristics, rather than on the revenue generated from utilising the land. Hereby, the needed process of concentrating the forest holdings into larger management units would be stepped up, as owners are forced to make the choice whether to manage the forest commercially or sell it to more motivated entities. Third, the Land Law should be amended in order to enable private companies, and not just private individuals, to own forestland. Companies presumably are more capable of accumulating the capital needed for acquiring sufficient areas of forestland and, consequently, another prerequisite for improved efficiency of the private forest sector is created.

The resulting more efficient and well-founded private forest sector will make the holistic consideration less pressing, as the private sector becomes strong enough to stand up for itself. Consequently, the freedom of choice regarding the structure of State forestry will be improved when the time comes for the second stage of institutional reform of the State forest sector.

It is, however, suggested that the overall choice should rely on the weighting of *pros* and *cons* of the various scenarios. This weighting can never be entirely objective since it expresses a political standpoint, resulting from the ideology of the decision-maker. A possible framework for development of the forest sector could be the planning concept of National Forest Programmes provided by The International Panel of Forests (e.g. Egestad 1999; Boon et al. 1999).

Whatever mode of strategy formation is chosen, research on institutions should be further strengthened in order to reduce the subjectivity of decisions. Failure of a political decision may be very costly, which is confirmed by the present deficiencies of the institutional organisation in the Lithuanian State forest sector.

Acknowledgements

This paper has been prepared on the basis of a M.Sc. thesis defended at the Royal Veterinary and Agricultural University in Copenhagen (KVL), Denmark. We express sincere thanks for significant contribution and support by Professor Finn Helles (KVL) and Per Rasmussen, Land Development Service. Furthermore, crucial information and valuable discussion have been provided by forestry professionals in Lithuania. Among them, we are particularly indebted to Algirdas Brukas, Donantas Dudutis, Algis Gaizutis, Gintaras Gibas, Andrius Kuliesis, Arvydas Lebedys, Stasys Mizaras, Benjaminas Sakalauskas, Kestutis Sakunas, Albinas Tebera and Valdas Vaiciunas.

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СЦЕНАРИИ БУДУЦЕГО РАЗВИТИЯ ГОСУДАРСТВЕННОГО СЕКТОРА ЛЕСНОГО ХОЗЯЙСТВА ЛИТВЫ

П.В. Ларсен, В. Брукас

Резюме

На основе анализа настоящей организации государственного сектора лесного хозяйства Литвы, предлагаются три алтернативные варианты его будущего развития: 1) интегрированый, где все функции делегированны одной административной институции – Датский вариант, 2) комерческий, где государственные леса управляются государственной комерческой компанией – Ирландский вариант, 3) минималистический, где толъко незначителъные площади лесов специалъного назначения остаются в государственной собственности и незначителъные функции выполняются государством – Шведский вариант. Сценарии оценены по шести критериям: 1) устранение противоречии в настоящих структурах управления; 2) увеличение доходности сектора; 3) снижение государственных расходов; 4) приспособление к изменениям в структуре собственности; 5) сбалансированостъ и комплексностъ в развитии сектора; 6) соответствие националъной политике лесного хозейства. Каждый сценарии может улутшитъ разные элементы лесного хозяйства различными способами. Политики получают возможностъ принятъ окончателъные решения обоснованные данными, полученными в этой работе.

Ключевые слова: лесное хозяйство, государственный сектор, Литва, Европа, организационная структура, сравнителъный анализ.

Figure 1 for the paper Scenarios for the Future Lithuanian State Forest Sector

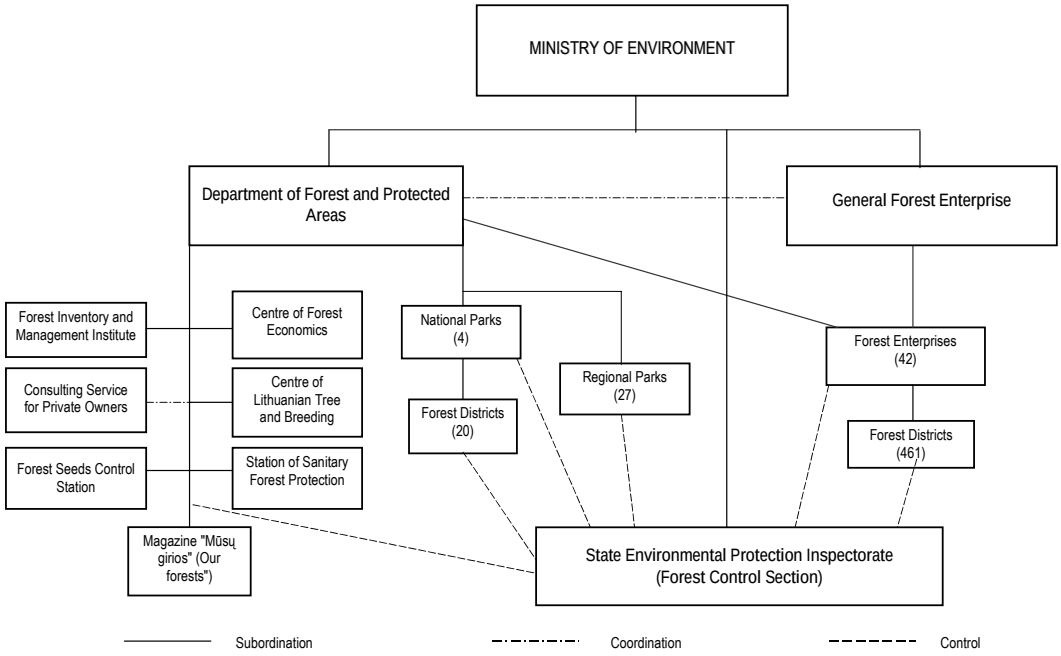

Figure 2 for the paper Scenarios for the Future Lithuanian State Forest Sector

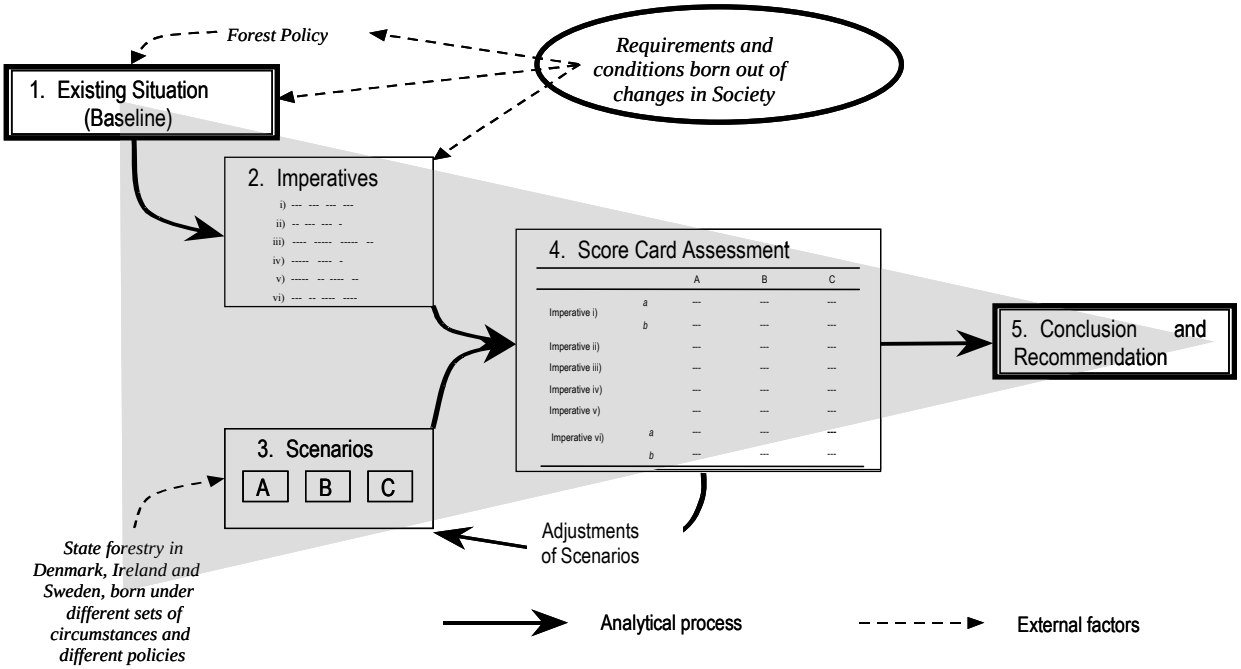

Figure 3 for the paper Scenarios for the Future Lithuanian State Forest Sector

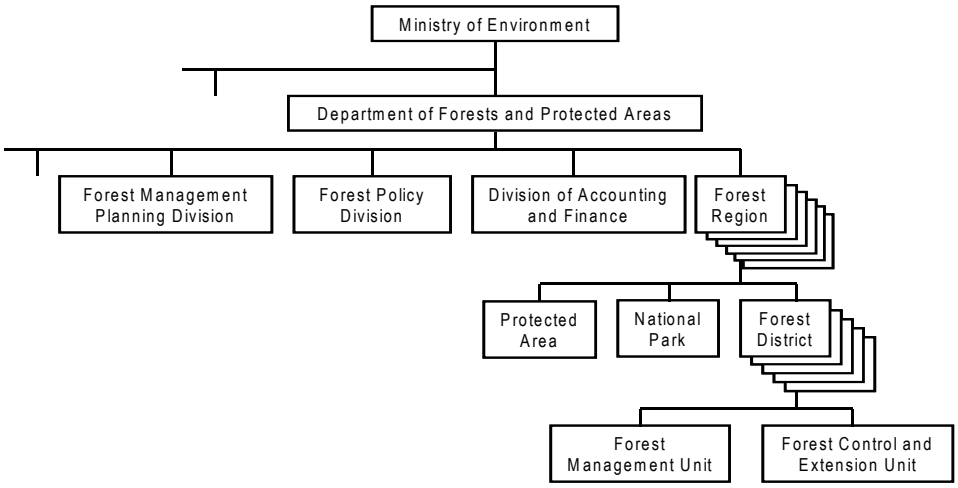

Figure 4 for the paper Scenarios for the Future Lithuanian State Forest Sector

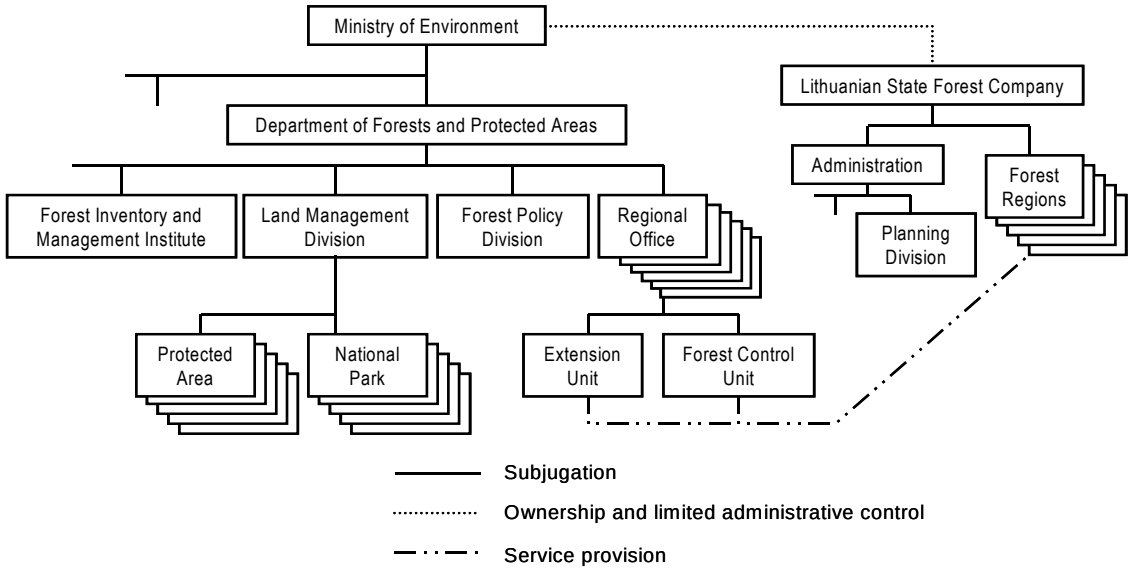

Figure 5 for the paper Scenarios for the Future Lithuanian State Forest Sector

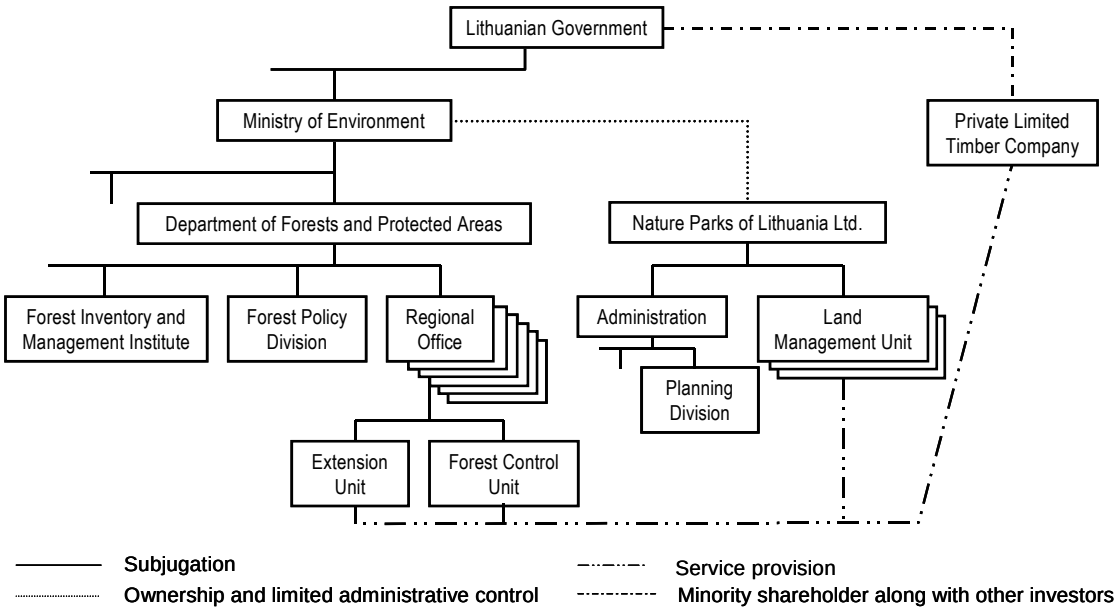

Figure captions for the paper Scenarios for the Future Lithuanian State Forest Sector

Figure 1. The present organisation of the Lithuanian State forest sector. Modified from Brukas (1999).

Figure 2. The five steps of the analytical process

Figure 3. Organisation of the State forest sector under Scenario A: The Integrated

Figure 4. Organisation of the State forest sector under Scenario B: The Commercialised

Figure 5. Organisation of the State forest under Scenario C: The Minimalistic.

Table 1. Key figures on forest sector in selected countries (1998-1999)

	Lithuania	Denmark	Ireland	Sweden
Forestland, 1000 ha	1,980	450	600	22,610
Forest cover, %	30	11	9	65
Share of State forests, %	53	25	70	3
Self-sufficiency on forest products, %	152	23	66	300

Table 2. The approach to State forestry in selected European countries. Parentheses indicate differing elements in addition to the dominant approach.

	Integrated	Commercialised	Minimalistic
Austria[1]		X	
Bulgaria[2]	X		
Denmark	X		
Estonia[1]		X	
France[3]		X	
Finland[1]		X	
Flanders	X		
Germany[4]	X		(X)
Ireland		X	
Latvia[1]		X	
Norway[1]		X	(X)
Poland[1]	X	(X)	
Sweden			X
UK[1]	(X)	X	

References: 1) Kosenkranius (2000), 2) Stoyanov (1999), 3) Office National de Forêt (2000), 4) Westphal (2000)

Table 3. The combined scorecard for all scenarios

		Scenario A	Scenario B	Scenario C
Imperative i)	a	2	2	3
	b	0	3	3
Imperative ii)		1	2	3
Imperative iii)		1	2	3
Imperative iv)		0	-1	-3
Imperative v)		1	-1	-3
Imperative i)	a	1	2	2
	b	1	0	-1

Table 4. Key figures on profitability in commercial State forestry (1998)

	Lithuania[1)]	Denmark[2)]	Ireland[3)]	Sweden[4)]
Commercial state forestland, million ha	0.98	0.13	0.35	3.30
Turnover*, million EUR	80.5	24.7	104.8	575.3
Turnover per hectare, EUR/ ha	82.1	190.0	299.4	174.3
Profit before tax*, million EUR	3.8	-5.8	19.0	173.8
Profit per hectare, EUR	3.9	-44.6	54.3	52.7
Profit ratio	4.8	-	18.1	30.2
Number of employees	10,700.	1,429.	1,068.	1,063.
Employees per 1,000 ha of forestland	5.8	11.0	3.1	0.3

*Wood-processing activities are excluded.

References: 1) Forest Inventory… (1998), Misku ir Saug… (1999); 2) Skov- og Naturstyrelsen (1999); 3) Coillte (1999); 4) AssiDomän (1999).