International Institute for Applied Systems Analysis
IIASA www.iiasa.ac.at

Institutions and the Emergence of Markets: Transition in the Arkhangelsk Forest Sector

Carlsson, L., Lundgren, N.-G., Olsson, M.-O. and Varakin, M.Y.

IIASA Interim Report
June 1999

International Institute for Applied Systems Analysis
Schlossplatz 1 • A-2361 Laxenburg • Austria
Telephone: (+43 2236) 807 342 • Fax: (+43 2236) 71313
E-mail: publications@iiasa.ac.at • Internet: www.iiasa.ac.at

Interim Report IR-99-021/June

Institutions and the Emergence of Markets – Transition in the Arkhangelsk Forest Sector

Lars Carlsson (carlsson@iiasa.ac.at)
Nils-Gustav Lundgren (lundgren@iiasa.ac.at)
Mats-Olov Olsson (olsson@iiasa.ac.at)
Mikhail Yu. Varakin (varakin@mail.sts.ru)

Approved by

Sten Nilsson (nilsson@iiasa.ac.at)
Leader, Sustainable Boreal Forest Resources

June 22, 1999

Contents

Foreword

With this report on the forest sector institutions in Arkhangelsk Oblast the second study in a series of case studies that IIASA has initiated in different regions of the Russian Federation is completed. The first study was conducted in Tomsk Oblast and was reported in IR-98-027 Carlsson and Olsson (eds.) 1998; IR-98-084 Carlsson and Olsson, 1998; IR-99-010 Carlsson, Lundgren and Olsson, 1999. Studies are currently being conducted in the Karelian Republic as well as in the regions of Moscow, Murmansk, Krasnoyarsk, Irkutsk, and Khabarovsk. All these studies deal with institutional aspects of the Russian forest sector.

The research has been made possible through generous financial support from the Swedish Kempe Foundation, the Swedish Council for Planning and Coordination of Research (FRN) and the Royal Swedish Academy of Sciences (KVA). A large number of people have provided valuable information and given useful comments on earlier drafts of the report.

About the Authors

Lars Carlsson, Ph.D., is a research scholar at IIASA where he is engaged, together with Mats-Olov Olsson, M.A. and Nils-Gustav Lundgren, Ph.D., in a study on institutional aspects of the Russian forest sector within IIASA's Forest Resources Project. Dr. Carlsson is an Associate Professor and Dr. Lundgren is a Professor at the Division of Political Science, Department of Business Administration and Social Sciences, Luleå University of Technology, Sweden. Mr. Olsson, is a research scholar at the Centre for Regional Science, Umeå University, Sweden. Dr. Mikhail Yu. Varakin is an Associate Professor at the Institute of Economics, Finance and Business Management, Arkhangelsk State Technical University, Russia.

Institutions and the Emergence of Markets – Transition in the Arkhangelsk Forest Sector

Lars Carlsson (carlsson@iiasa.ac.at)
Nils-Gustav Lundgren (lundgren@iiasa.ac.at)
Mats-Olov Olsson (olsson@iiasa.ac.at)
Mikhail Yu. Varakin (varakin@mail.sts.ru)

1. Introduction

The working hypotheses for this study can be summarized in two statements:

1) The restructuring of the Russian economy can hardly be successful without fully integrating the forest sector.
2) The abundant Russian forests cannot be regarded as a "resource" in an economic sense without the establishment of a suitable institutional framework.

Starting with the latter statement, trees and forests are not an economic resource just as they stand out there in nature. All types of forest use require regulatory systems to constrain the activities of those who use the resource, and, correspondingly, without any regulating mechanisms we can hardly claim that a particular forest is a "resource," neither in an economic sense nor in the sense of representing a use value. As we shall see, the mechanisms regulating the forest use in Russia today is largely deficient or malfunctioning. Thus, as a matter of fact, today the Russian forest sector does not represent such a huge and important economic resource as is often claimed. Statements about Russia's huge forest "resources" that are commonly heard rather reflect the fact that Russia within its territory holds an immense area covered with forests, which, under certain favorable conditions, might generate income and welfare. Therefore, it may be more accurate to say that the Russian territory holds an asset in the form of forests that doubtlessly has the "potential" of serving as a resource for the creation of welfare among the people. But, this is not the same as to equalize the existence of a large forest fund with resource abundance.

Contemporary research indicates that the wood supply from traditional suppliers will probably decline. Russian forests are underexploited and have the potential to fill the expected supply gap (World Bank, 1997:44). Whether they will actually be able to do so or not is, however, primarily depending on whether adequate *institutional arrangements* will be developed in order to smoothen the entrance of the Russian forest sector on this new market. In this context it is important to emphasize that

institutional arrangements are not primarily to be understood as formal organizations and formally written laws and regulations. Institutions are "the rules of the game" (North, 1990), i.e., those formal or informal rules that are *de facto* used by a set of actors. With Pejovich (1998:23) institutions can be defined "*as the legal, administrative and customary arrangements for repeated human interactions.* Their major function is to enhance the predictability of human behavior. The prevailing institutional framework in a society consists of formal and informal rules" (emphasis in original). Such an institutional framework, well functioning, is a basic prerequisite for the future development of Russian forestry. Logically, a poorly governed Russian forest sector will be a severe obstacle for the transition to a market economy.

The aim of this project is to describe and analyze the current institutional framework of the Russian forest sector. This is done through a series of case studies in several Russian regions. In this report we present the results of a study in the Arkhangelsk region in northern Russia. (See map on p. 27.)

Historically, Arkhangelsk has been one of Russia's most important forest regions. Therefore, what happens within the forest sector in this region will presumably mirror a broader set of problems and possibilities related to the current state of economic transition. Arkhangelsk has been selected as one among a number of case studies, the common goal of which is to provide knowledge and insights based on regional experiences that may be useful for policy making ultimately aimed at an institutional restructuring of the Russian forest sector. The knowledge and analyses that these case studies contribute may constitute an intellectual foundation for a series of policy exercises (Duinker, 1997) with federal, regional and other stakeholders in the Russian forest sector. In this way, the result of the research will hopefully make an impact on the development of a modern Russian forest policy.

The Structure of the Report

The report consists of eight chapters structured in the following way. In the next section of this introductory chapter the logic and methodology of the study are outlined. In the second chapter we will depict the structure and distribution of the forest resources in Arkhangelsk Oblast. Since plenty of good information about the forest resources can be acquired by consulting the results of a number of studies specifically conducted for analyzing such matters, the description made here is rather broad and sketchy. The primary purpose of the description is to establish a general foundation for the discussion in the following eight chapters in which we mainly concentrate on institutional questions.

In the third chapter, the socioeconomic characteristics of the region are analyzed. Here the main objective is to clarify to what extent the Arkhangelsk region differs form other regions of the Russian Federation. For example, is the population of Arkhangelsk more educated than the inhabitants in other regions, are they older, healthier, and so forth? Presumably such socio-economic qualities are important prerequisites for successfully developing the forest sector.

The fourth chapter focuses on institutional aspects. Starting with a short summary of the organization of the forest sector in the Soviet system it is described to what extent, and how, it has changed after the collapse of the Soviet Union. In this chapter we also try to clarify the actual configuration of the Arkhangelsk forest sector.

In the fifth chapter, “The Political Profile and the Forest Sector” the political situation in the oblast and the relation between political arenas and the forest sector is discussed.

In the sixth chapter “Forest Enterprises in Arkhangelsk Oblast,” we give an overview of how forest enterprises are organized in terms of holding companies, export organizations, etc. We also discuss a number of typical problems within the sector and how authorities have tried to solve these problems.

The seventh chapter of the report contains the results from a survey among forest sector enterprises in Arkhangelsk. The chapter is aimed at clarifying to what extent previously discussed features and shortcomings in the forest sector are reflected in the behavior of the single firms.

In the eighth and final chapter, “Conclusion and Recommendations,” a number of features are discussed that we found during the course of the study and that can be regarded as obstacles for a successful modification of the forest sector. The basic principles for identifying and evaluating whether or not a feature is to be regarded as a “problem” or an “obstacle” are described more thoroughly in the subsequent methodology section of the present chapter. It turns out that some of the problems (and advantages) connected to the organization of the Arkhangelsk forest sector are due to specific regional ways of handling things while others might be attributed to a more general set of problems related to the present transition period. The report ends by a number of suggestions on how to improve the development of the forest sector.

To achieve an ordered and carefully considered transformation of the old Soviet system is a tremendous task forcing the Russian people to simultaneously grapple with three problems: 1) economic restructuring, 2) state-building, and finally, 3) nation-building, i.e., to establish Russia as a nation (Breslauer, 1995). In our report these more general issues are discussed only when they coincide with, or assist, our analysis of the Arkhangelsk forest sector. Albeit these three tasks are, indeed, intertwined with regional problems the present report mainly deals with the forest sector of Arkhangelsk, not with the general question of restructuring the entire society.

The point of departure for the discussion in the final chapter is that changing the forest sector is basically a matter for the Russians themselves to handle and our aim is by no means to provide ready-made solutions to the great number of problems that currently besets the sector. Nevertheless, the report is aimed at contributing results and arguments useful for a wide circle of stakeholders within the Russian forest sector, and especially for those who are particularly interested in the future of the sector in Arkhangelsk Oblast.

Methodology

Studying institutional aspects of the Russian forest sector requires a methodology suitable for investigating the sets of rules that govern the actors involved. In the case of Arkhangelsk, a basic question to be addressed is what types of rules and norms do *actually* guide the activities in the regional forest sector. Thus, the question is not how these actors *supposedly* behave (or should behave) according to some *formal* regulation, such as the Russian forest code.

In order to design the case study we have taken the *Institutional Analysis and Development Framework* (IAD) as a point of departure. The IAD framework is a

thoroughly tested tool for institutional analysis (Oakerson, 1992; E. Ostrom, 1995, Ostrom *et al.*, 1994; Sabatier, 1991; Thomson, 1992; Bogason, 1994). This framework is sufficiently broad to be compatible with a wide range of theories, such as, collective action theory, transaction cost theory, game theory, and constitutional choice theory. The framework is described in detail elsewhere and will only be briefly outlined here with special emphasis on how we use it as an analytical tool. (For a comparison with other frameworks, see Sabatier, 1991 and Sproule-Jones, 1993.)

The focal point of the IAD framework is a specific *action arena* (cf. Fig. 1:1), in this case the Arkhangelsk forest sector.

Action arenas are supposedly composed of two clusters of variables: 1) an *action situation* involving participants, positions, actions, information, etc., and 2) *actors* who have preferences, information-processing capabilities, and so forth (Ostrom, *et al.*, 1994:29 ff.).

The IAD framework seeks to understand action arenas with reference to three "factors:" *attributes of the physical world*, *attributes of community*, and *rules-in-use*. All together, this constitutes a complex set of relations that can be observed as patterns of interaction. Thus, it can be assumed that physical attributes, such as the structure and amount of forests in Arkhangelsk, affect the forest sector – our action arena – in particular ways. Similarly, a number of attributes of the Arkhangelsk "community" (the second box in the framework), such as people's level of education, their skills, habits, and norms, will affect activities performed within the sector.

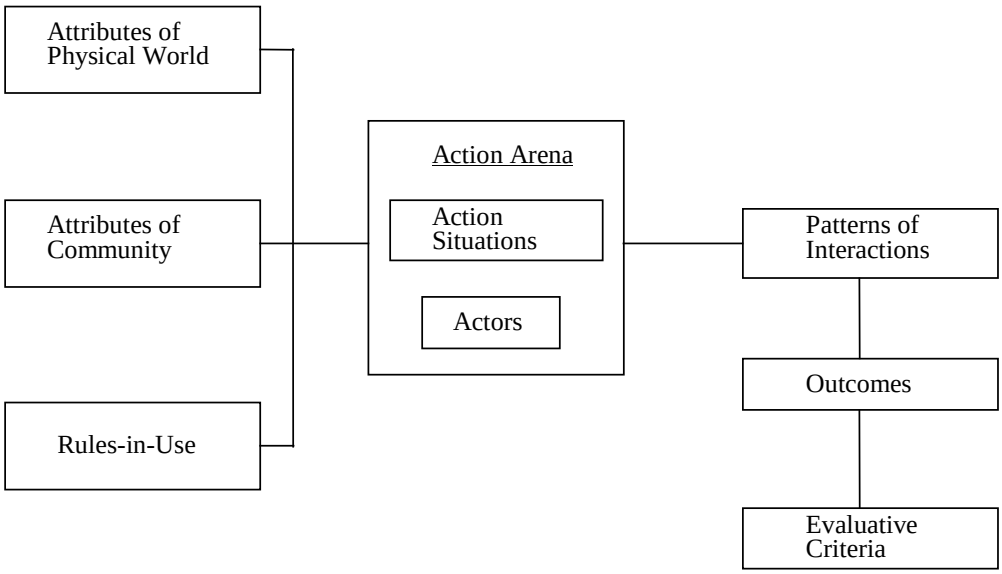

Figure 1:1. A framework for institutional analysis (Source: Ostrom *et al.*, 1994:37)

In this way the IAD framework enables us to capture both social and political order, i.e., to reveal *how* and *why* various actors organize their relations to the forest sector in the way that they do. All together, these activities generate specific *outcomes*, and by applying a number of evaluative criteria, such as economic efficiency, fiscal equivalence, and equity, these outcomes can be assessed. In this study of the Arkhangelsk forest sector a set of rather general criteria is applied.

The arguments for this choice are the following. One should not expect that the Russian forest sector can – or ought to – be changed in accordance with any blueprint provided, for instance, by the forest sector in various western countries. Nevertheless, assessing whether the development is for the "better" or the "worse" will require some evaluation criteria. Since it would be presumptuous to judge Russia simply by comparing it to the situation in western countries the evaluation criteria that are applied in this study are more of a "baseline principles" type. Thus, we assume that a specific institutional configuration is conducive to a sustainable Russian forest sector and useful for the whole economy if the following conditions are met:

- Constitutional rules are acknowledged and transparent.
- The structure of property rights is settled and well defined, i.e., private actors can acquire property or get the right to utilize property for their own benefit.
- Rules and regulations from official authorities are regarded as legitimate, and apply equally to similar actors.
- The market decides prices of property and goods.
- Decision-making regarding collective choice and operational rules is decentralized.
- Private investors can realize the returns on their investments.
- Rules are enacted aimed at preventing the devastation of natural resources.
- Legitimate authorities take measures against violations of rules.

However, it is unlikely that unambiguous statements can be made whether or not individual conditions are really met. Using them for assessing the institutions embedding the forest sector of Arkhangelsk is more a matter of discretion. Thus, in this report the listed criteria are looked upon as devices that indicate how close to an ideal the forest sector has developed.

Data Collection

The guiding principle for the collection of data has been the idea of "tracing the timber from the forest to the market." For every link in this "forest-to-market chain" we concentrate on the various kinds of institutional features that affect the actors involved. The bulk of data that has been collected can be divided into four types:

I) The first kind of information concerns the socio-economic situation of the Arkhangelsk Oblast, its economic geography as well as the formal political, administrative structure that relates to the forest sector. Here the *IIASA Russian Forest Study Database*[1] as well as a number of secondary sources have been used.

II) The second type of information consists of forest data. Likewise, for the gathering of this type of data, a number of secondary sources have been consulted. The data have been supplemented with information from the IIASA database.

III) The third type of data is supposed to depict the formal as well as informal institutional configuration of the Arkhangelsk forest sector. Here information has

[1] See description of the IIASA Russian Forest Study Database published on internet at URL: http://www.iiasa.ac.at/Research/FOR/dbdoc

been gathered during field visits and with the help of local collaborators who have collected information according to a specific instruction developed within the project (cf. Appendix 1:1).

IV) Finally, interviews have been conducted with management representatives of 25 enterprises in the Arkhangelsk region (cf. Appendix 1:2). Since the forest sector consists of many sub-sectors and branches the selection of the enterprises has been guided by the idea that the total series of interviews should reflect different aspects of the sector. Thus, the interviewed enterprises are selected in order to cover the whole "forest-to-market chain" (cf. Fig. 1:2). We have also deliberately incorporated both small and large companies, new enterprises as well as old, consultants as well as processing enterprises, and so forth. Accordingly, conclusions solely based on these interviews can only be generalized to the interviewed enterprises themselves. However, by adding this information to the broader set of data described above, we assume the results of our analysis to be relevant for the regional forest sector as a whole.

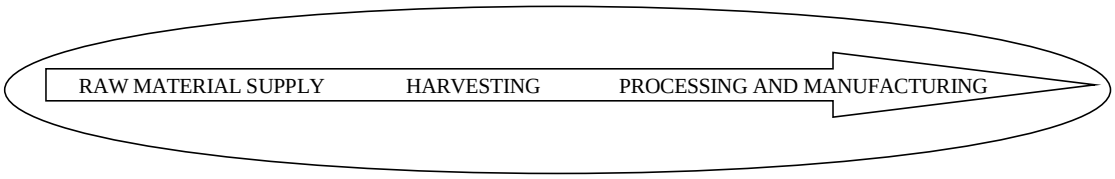

Figure 1:2. The action arena of the Arkhangelsk forest sector, the focus of the study

We now turn to report the results of our study of the Arkhangelsk forest sector. Here we will consult and "unpack" the analytical framework described above. In the next chapter we will describe some of the "physical attributes" of Arkhangelsk Oblast and, in particular, its forest resources.

2. The Resource Base – Forests and the Forest Sector in Arkhangelsk Oblast

At the beginning of the 20th century Arkhangelsk was the most populated area in the circumpolar north. In 1926, the region had 429 thousand inhabitants. Still today, with its 1.5 million inhabitants and 587.4 thousand km^2, Arkhangelsk is one of the largest administrative units in this part of the world. In 1937, it got the status of an *oblast* (Goskomstat Arkhangelsk, 1997). During the Stalin period Arkhangelsk became an important area in the system of prison camps (the *Gulag*) that was developed. The deportation of prisoners increased the population even further. Still there exist prison camps, for example in Plesetsk, where prisoners are occupied with forest work (Bjorvatn & Castberg, 1994:61).

Within the territory of Arkhangelsk we find three large areas which have a special status. Like Arkhangelsk Oblast the *Nenets Autonomous Okrug* is regarded as a "subject of the Russian federation" and the large islands of *Novaya Zemlya* and *Franz Josef Land* are in practice controlled by the military authorities.[2] The Nenets Autonomous Okrug has around 50,000 inhabitants.

For a long time Arkhangelsk Oblast has been one of Russia's most important forest areas. By the turn of the century Arkhangelsk was the center for the timber trade in northern Russia (Björklund, 1994). This has not changed during the present era of transition. Still in 1993, the region ranked second of all Russian regions in terms of output from the forest sector (Granåsen *et al.*, 1997:110). Out of a total area of 58.7 million hectares 29.3 million (50%) belongs to the so-called "state forest fund" (*Goslesfond*).

Table 2:1. Forest resources in Arkhangelsk, area totals and growing stock, 1993.[3]

Forest Resources	Managed by FFS	All Areas
Forest fund (mill. ha)	27.4	29.3
Forested area (mill. ha)	19.9	21.6
Growing stock (mill. m^3)	2150.6	2392.1

Source: IIASA Russian Forest Study Database

According to the group classification system used in Russia since 1947, this fund is distributed as follows (Table 2:2).

[2] The regional authorities attempted to gain control but were turned down through a presidential decree of March 1992 (Bjorvatn & Castberg, 1994:9).

[3] The result of the 1998 Forest State Account have not yet been published.

Table 2:2. Distribution of the forest fund in Arkhangelsk by group classification and land user (100 ha), 1993.

Land owner	Group I	Group II	Group III
Arkhangelsk Forest Management	70222	0	204148
Forest industry	0	0	0
Environmental protection agency	412	0	0
Agricultural cooperatives	4975	2699	9838
Hunting cooperatives	0	0	0
Other federal organizations	25	0	218
Other	45	0	0
Total	75679	2699	214204

Source: IIASA Russian Forest Study Database.

Basically, Group I forests consist of lands that are set aside for non-industrial use, such as specially protected forests, municipal forests, parks, etc. The second group, Group II, consists of lands in densely populated areas with scarce forest resources in which forests must be especially protected. Group III, finally, consists of forests with a significant industrial potential. In Arkhangelsk the majority of the forests belong to the third group. The percentage distribution among the groups is 26, 1 and 73 percent respectively. It must emphasized, however, that the entire forest fund is not forested. Bogs, pastures, etc., are also incorporated in the fund. In total these non-forested areas comprise 24percent of the forest fund in Arkhangelsk (VNIITslesresurs, 1995:18).

In Arkhangelsk Oblast, as in the rest of the Russian Federation, virtually no forest land has been privatized. As can be seen in Table 2:1 and Table 2:2, the Federal Forest Service (FFS) through its regional organization, the Arkhangelsk Forest Management, owns the main part of the forest fund. The responsibility for the management of this fund is divided among 28 state enterprises (*leskhozy*), each one responsible for a specific area. Only two of these *leskhozy* lack industrial (Group 3) forests on their lands. There is also a national park, Kenozersky, occupying 138,000 ha of land.

Species Composition

Along with the Komi Republic Arkhangelsk possesses the largest amount of exploitable forests in north-western Russia. Around 50 percent of the area is regarded as pre-tundra or northern taiga (Strakhov *et al.*, 1996:15). Accordingly, we have a predominance of spruce, pine and birch (listed in order of importance). As can be seen in Table 2:3 and Diagram 2:1 a significant part of the forest fund in Arkhangelsk consists of spruce (65%). Spruce and pine dominate the total forest stands (65% and 25% respectively) while birch and aspen occupy a minor part of the area and they also comprise a minor part of the growing stock.

Table 2:3. Species composition in Arkhangelsk in 1993. Arkhangelsk compared to the rest of North-West Russia for forests managed by the Federal Forest Service of the Russian Federation. (Percent of forested area and percent of growing stock.)

Species	North-West Russia		Arkhangelsk		Vologda		Murmansk		Komi		Karelia	
	Area	Stock-ing	Area	Stock-ing	Area	Stock-ing	Area	Stock-ing	Area	Stock-ing	Area	Stock-ing
Pine	31,99	28,61	27,20	25,22	24,99	24,55	43,33	44,53	24,94	22,56	64,0	58,3
Spruce	47,96	54,13	56,91	65,33	29,67	31,07	30,45	41,68	56,21	60,91	25,6	32,0
Fir	0,22	0,27	0,00	0,00	0,00	0,00	0,00	0,00	0,54	0,66	0,0	0,0
Larch	0,37	0,47	0,28	0,42	0,02	0,01	0,01	0,00	0,69	0,82	0,0	0,0
Birch	17,30	13,31	14,55	7,81	37,14	35,36	26,19	13,78	15,29	11,35	9,7	8,8
Aspen	2,16	3,22	1,06	1,22	8,18	9,00	0,01	0,01	2,33	3,71	0,7	0,9
	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,0	100,0

Source: IIASA Russian Forest Study Database

This can be compared to Siberia where the growing stock to a greater extent consists of birch and aspen. During a period of more than twenty years, until 1989, only 29 percent of the clear-cut areas in Arkhangelsk were artificially regenerated. Today, more than 95 percent of these regenerated areas are dominated by Scots pine (Strakhov *et al.*, 1996:34–35).

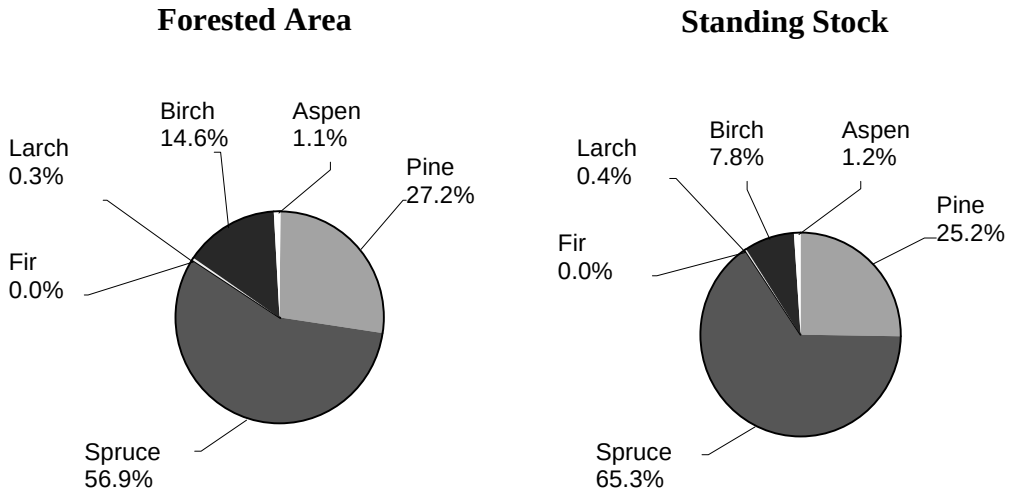

*Diagram 2:1 Species composition of the forest fund in Arkhangelsk Oblast (Percent). (*Source: IIASA Russian Forest Study Database)

Strakhov *et al.* (1996) report that for a long period of time there has been a substantial overcutting in many regions in North-West Russia. In Arkhangelsk this has been the case in around half the number of *leskhozy*. In combination with the established harvesting practice this has caused notable changes in the age distribution and a following reduction of the forest productivity. During the last forty years the forest resources have been diminished by 25 percent (Bjorvatn & Castberg, 1994:63). In addition, the predominant utilization of clearcutting in combination with poor

technology, inadequate skills, and lack of means of implementing forest laws have caused major inefficiencies. For example, in 1994 between 2.1 and 2.6 million m^3 of harvested timber in the oblast were left on the harvesting sites (Strakhov *et al.*, 1996:76; 84).

The custom of clear-cutting in combination with poor regeneration programs was – and still is – governed by the desire of getting cheap raw material neglecting the fact that forest resources are exhaustible (Barr & Braden, 1988). As has been reported for West Siberia and many other Russian regions (Carlsson & Olsson, 1998) such a systematic over-cut has also taken place in Arkhangelsk, mainly along the most important transport lines, railways and rivers. However, here this type of local over-harvesting has been "compensated" and thereby hidden by an undercutting in other areas. In 1981, and despite criticism from forest researchers and others, the overcutting became "legalized" as a result of a decision to raise the *Annual Allowable Cut* (AAC) to 28.8 million m^3 (Bjorvatn & Castberg, 1994:65). The habit of overcutting is not unique. Based on estimates made for a number of areas, Pisarenko and Strakhov (1996:29, 43) concluded that overharvesting in Russia has led to a depletion of forests in the European part of Russia. In their sample of enterprises and regions actually harvested volumes exceeded the AAC by around 35 percent.

However, reflecting the general decline within the Russian forest sector harvesting has been significantly reduced in Arkhangelsk as well. When the general level of harvesting declines so does clear-cutting, but, unlike Tomsk, for instance (cf. Carlsson & Olsson, 1998), Arkhangelsk has not increased the proportion of regenerated areas; it is still around 50 percent of the clear-cut areas (Bjorvatn & Castberg, 1994:33).

Harvesting

The harvesting in Arkhangelsk reached a peek in 1987/88 with a total volume of around 25 million m^3. Since then, harvesting has decreased significantly and in 1996, it was only about 29 percent of the 1988 level. Between 1990 and 1996 the production of commercial wood dropped from 19.4 to 7.2 million m^3 (Arkhangelsk Oblast, 1997). Already in 1992 the production fell below the level of 1940 (Goskomstat Arkhangelsk, 1997)! Earlier, harvesting volumes in Arkhangelsk were close to the *Annual Allowable Cut (AAC)*, but currently the level of harvesting is only 38 percent of an AAC volume of 21.3 million m^3 (Arkhangelsk Forest Management, 1996; Arkhangelsk Oblast, 1997).

Although the proportion of mature and overmature forests stands has been reduced with 30 percent since the 1950s, still 59 percent of the area is covered with this type of trees (Strakhov *et al.*, 1996:19). In combination with a rather low degree of regeneration this has caused changes in the species composition resulting basically in an increased inflow of birch and aspen. However, these changes are said to be hidden in the statistics by the habit of regarding stands as coniferous even though they might be comprised of only 30 percent of such species (Bjorvatn & Castberg, 1994:63).

At the same time as overmature forests are less productive they are also the most densely stocked. This provides an incentive to continue to harvest the most pristine forests. However, since overmature forests are more exposed to pests, diseases, and forest fires causing significant environmental and economic losses all over Russia, it might anyway be rational in a sustainable forest management perspective to allow a certain harvesting of these areas (Kiseleva, 1996).

The Forest Sector in the Economy of Arkhangelsk Oblast

Although Arkhangelsk might earlier have been important for the Soviet economy, nowadays the oblast plays a less important role in the Russian economy. It accounts for only 0.8 percent of the Russian national income. For the entire Northern Region the corresponding figure is 4.9 percent. The per capita national income for Arkhangelsk is 23 percent lower than the Russian average. In the Northern Region the Republic of Karelia comes closest with a per capita national income which is 6 percent higher than the average for Russia (Bradshaw & Palacin, 1996:60).

About 718,600 people constituted the economically active population in Arkhangelsk in 1995. (At the end of 1997 this figure was 702,000 according to Goskomstat Arkhangelsk, 1998:141.) This means a labor force participation rate of approximately 80 percent[4], a figure which is significantly lower than the 1995 Russian average which was 87 percent (Goskomstat Arkhangelsk, 1997; Goskomstat Rossii, 1996). In Arkhangelsk Oblast 28% of the employed are working in Industry, 6.8% work in Agriculture and Forestry, 6.5% in Construction, 12.5% in Transport and Communications, 10.2% in Trade and Public Catering. The remaining 35.6% work in various other service sectors like Culture, Health, Education and Banking (Goskomstat Arkhangelsk, 1997).

Diagram 2:2 illustrates the relative change in employment among different sectors of the economy. It can be seen that mainly "Industry" but also "Agriculture & Forestry", "Construction" and "Transport & Communications" have experienced a decline. Not unexpectedly, "Trade", "Housing" and "Other" branches have increased their share of total employment.

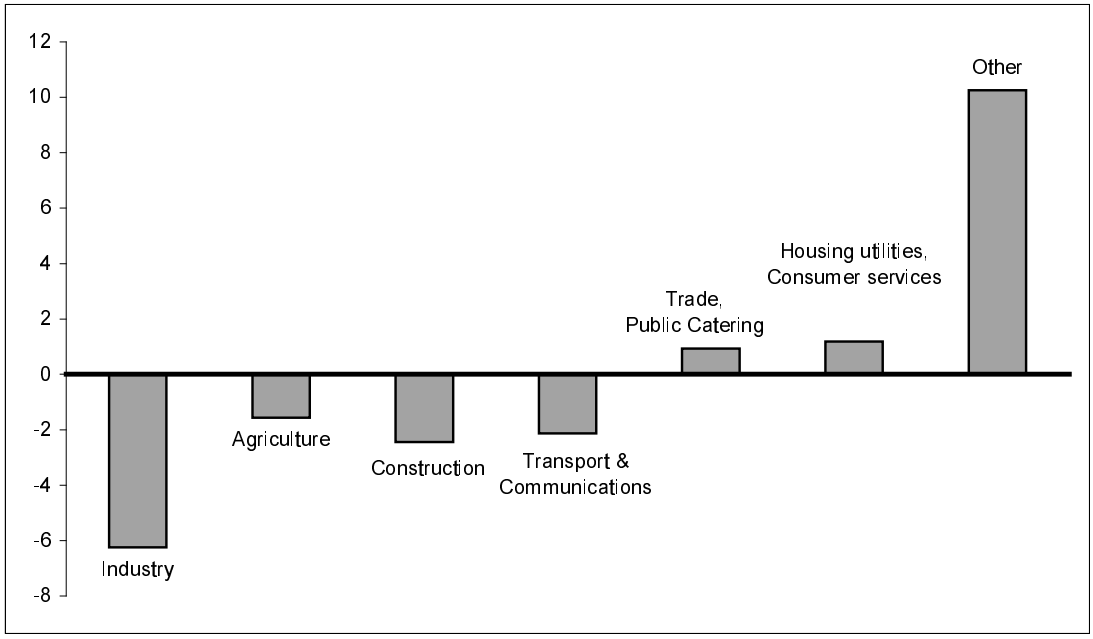

Diagram 2:2 Relative change in employment in Arkhangelsk Oblast between 1980 and 1996, In percent of total employment. (Source: Goskomstat Arkhangelsk, 1997.)

[4] The labor force participation rate is equal to the economically active population in percent of the total population in the relevant age groups.

While “Electric Power” and “Fuel” together more than doubled its share of the regional industrial output between 1992 and 1996 (from 11.8 to 24.4%), the “Machine and Machine building” sector experienced a drastic decrease in relative importance. Its output share fell from about 25 to 7 percent between 1991 and 1995. The “Food” sector also experienced a drastic decline in relative importance. From a share of around 15 percent in 1991 and 1992 it at first increased but then decreased its relative importance and, in 1997, food production made up less than 8 percent of total regional industrial output. The “Wood, Cellulose and Paper” branch had a high share of total regional industrial production throughout the period. It stayed between about 40 and 53 percent with peaks in 1992 and 1995 and troughs in 1991 and 1996. In 1997 its share of total industrial production was 45.8 percent.

Table 2:4. Industrial output in Arkhangelsk, share of various branches 1991–1996, percent.

Branch of industry	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**
Electric power generation	3.7	8.2	10.0	11.8	12.3	19.2	18.1
Fuel	2.4	3.6	3.9	5.2	9.4	5.2	5.6
Ferrous metals	0.1	0.1	0.1	0.1	0.1	0.1	1.6
Non-ferrous metals	0.2	0.3	0.2	0.2	0.2	0.3	0.2
Chemical	0.4	0.5	0.2	0.2	0.2	0.3	0.2
Machine and machine building	26.5	10.3	14.1	11.0	7.7	N/A	N/A
Wood, cellulose and paper	39.5	52.0	42.3	46.9	53.4	40.6	45.8
Building materials	4.3	3.6	3.9	3.6	2.9	2.3	2.0
Glass and ceramic	0.0	0.0	0.0	-	-	-	-
Light industry	4.8	1.8	1.7	1.2	0.6	0.6	0.8
Food	14.6	15.3	17.8	15.0	10.2	9.0	7.8
Flour grinding and mixed fodder	1.7	1.4	1.7	0.9	0.3	0.6	0.2

Source: For 1991-1993: IIASA Russian Forest Study Database; For 1994: Bradshaw & Palacin, 1996:71; For 1995: Goskomstat 1996:970-71. For 1996: Goskomstat Arkhangelsk, 1996:15; For 1997 Goskomstat Arkhangelsk, 1998:17

The forest sector, ship building, fishing, oil, diamonds, and space research are the most important branches of the Arkhangelsk economy. However, the forest sector constitutes the backbone of the regional economy. In 1995, it contributed about 48 percent of the total production volume in the region. In 1996, this share came down to 36 percent (Goskomstat Arkhangelsk, 1996:18). The share of the population in working age that is in one way or another engaged in activities related to the forest sector has been estimated to around 60 percent (Tsarev, 1996). This would mean that around 420,000 people in Arkhangelsk Oblast are directly and indirectly dependent on the forest sector.

In relation to the whole *industrial* sector in Arkhangelsk, the forest sector is the largest employer, (47% of the working force) followed by machine building, including ship building, (30%), and food production (8%) (cf. Diagram 2:3).

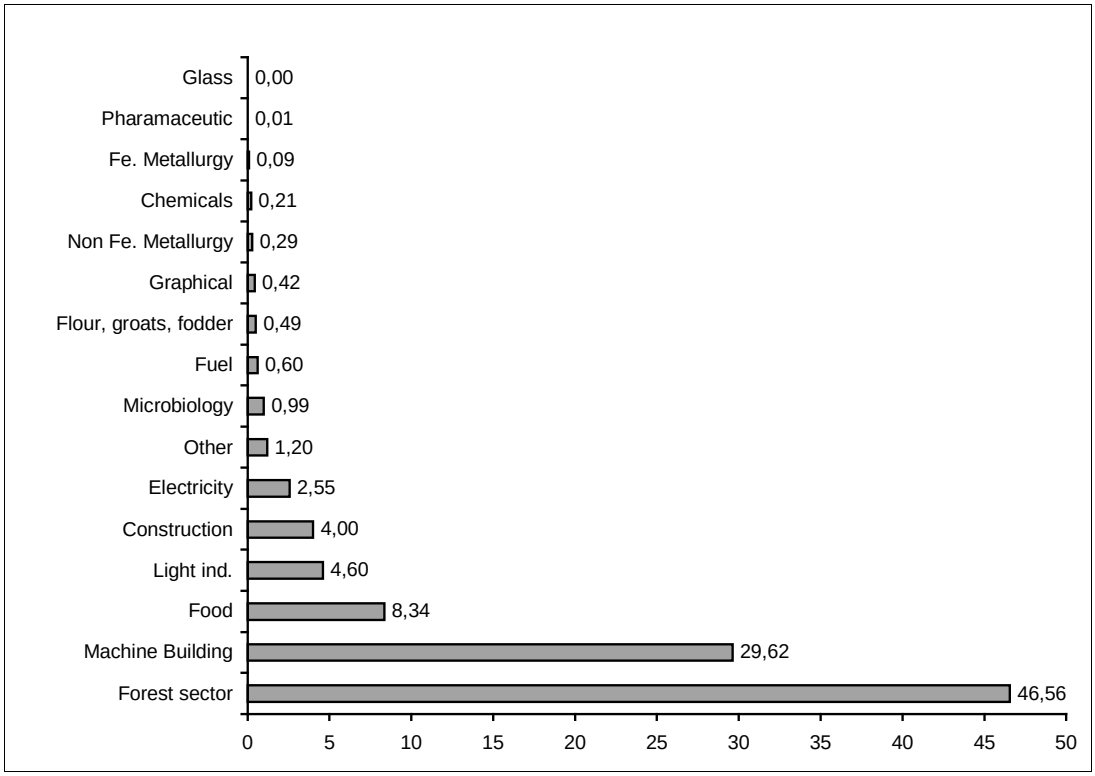

Diagram 2:3. Industrial employment in Arkhangelsk, 1993, percent. (Source: IIASA Russian Forest Study Database.)

As can be seen in Table 2:5 the forest sector has kept its relative dominance. Figures for the first nine month of 1998[5] also indicate that, in terms of employment, the sector now has about the same relative size as it had at the beginning of the 1990s. Can this be explained by an increased activity within the forest sector or does it reflect that the crisis in other sectors has been worse? Table 2:5 tells us that there has been a general decrease in industrial employment. It might also be worth emphasizing that the size of the work force does not automatically reflect success or failure in the economy. For example, it is a common pattern in the forest sector in industrialized countries that production increases while the work force is simultaneously reduced. Some answers to the questions above can be acquired by consulting production figures etc. for the forest sector. This is the topic for the next section.

Table 2:5. Industrial employment in Arkhangelsk during the transition (Percent).

	1994	**1995**	**1996**	**1997**
Total industrial employment	191591 (100)	176537 (100)	162821 (100)	149663 (100)
Total forest sector	94794 (49)	80696 (46)	55472 (34)	69076 (46)
Harvesting	44850 (23)	39858 (23)	37667 (23)	35695 (24)
Woodworking	27162 (14)	22244 (13)	17805 (11)	15261 (10)
Pulp and paper	22782 (12)	18594 (11)	17623 (11)	18120 (12)

Source: Reports from Arkhangelsk Regional Employment Service.

[5] Source: Reports from Arkhangelsk Regional Employment Service.

Production

In general, the contribution to the total Russian economy from Arkhangelsk and North Russia is rather modest, 0.9 and 5.6 percent respectively. However, of the total production value of wood, cellulose, and paper in the Russian Federation, 21.1 percent comes from North Russia and 9.2 percent from Arkhangelsk. Apart from Irkutsk in East Siberia (contributing 11.2% of the value) no other region in Russia contributes as much as Arkhangelsk Oblast (Bradshaw & Palacin, 1997:79-82). This was true in 1987 and six years later, in 1993, the situation was unchanged (Huber *et al.*, 1996: 35).

As was noted above the forest sector dominates the industrial sector in Arkhangelsk and despite a general downfall in the production it is still a corner-stone of the regional economy (making up around 46% of total regional industrial production and employing 46% of its industrial labor).

In general, the Russian industrial output has declined dramatically since 1990 – it was reduced by around 50 percent between 1990 and 1995. In Arkhangelsk this decline has "only" been around 40 percent for the same period (Bradshaw & Palacin, 1997:114-116). From Table 2:6 can be concluded that the relative decline in production has been significantly smaller in Arkhangelsk compared to the Russian average and, for instance, the Murmansk, Moscow, Tomsk and Khabarovsk regions. How can this be explained?

Table 2:6. Change in industrial production. (Volume of output in 1995 in percent of 1991).

Russia	Arkh-angelsk	Mur-mansk	Moscow Oblast	Tomsk	Irkutsk	Krasno-yarsk	Khaba-rovsk
50	60	58	32	53	66	66	34

Source: Bradshaw & Palacin, 1997, pp. 114-116.

The general decline in the Russian industry has been most severe in the "light industry" sector, while, for example, "fuel" has succeeded fairly well (Hanson & Kirkow, 1997). In Arkhangelsk Oblast the sector "light industry", is small and today it contributes only 0.8 percent of the industrial output (Table 2:4). Fuel production only accounts for 5.6 percent of the industrial output and can hardly explain the fact that the output reduction in Arkhangelsk has been relatively small. "Electric power generation" has significantly increased its relative importance and another explanation is that, due to favorable geographical circumstances that provide good export facilities, Arkhangelsk has succeeded to keep a significant part of its export. This will be discussed further with a special focus on the forest sector but first the general changes in the forest sector production shall be discussed.

Changes in Forest Sector Production

As can be concluded from Diagram 2:4 the downfall in the production of forest products started long before the dismantling of the Soviet Union. For example,

already between 1970–1990 the general removal of wood[6] dropped with around 30 percent. However, during the post-Soviet period, between 1990–1996, the removal has continued to decrease but now by around 60 percent. Taking the whole period into consideration the downfall has been significant, about 70 percent. The same pattern can be seen for other products except for cellulose. The production of cellulose increased well into 1990 but has fallen significantly since then. The current production of around one million ton is tangent to the figures of the 1970s.

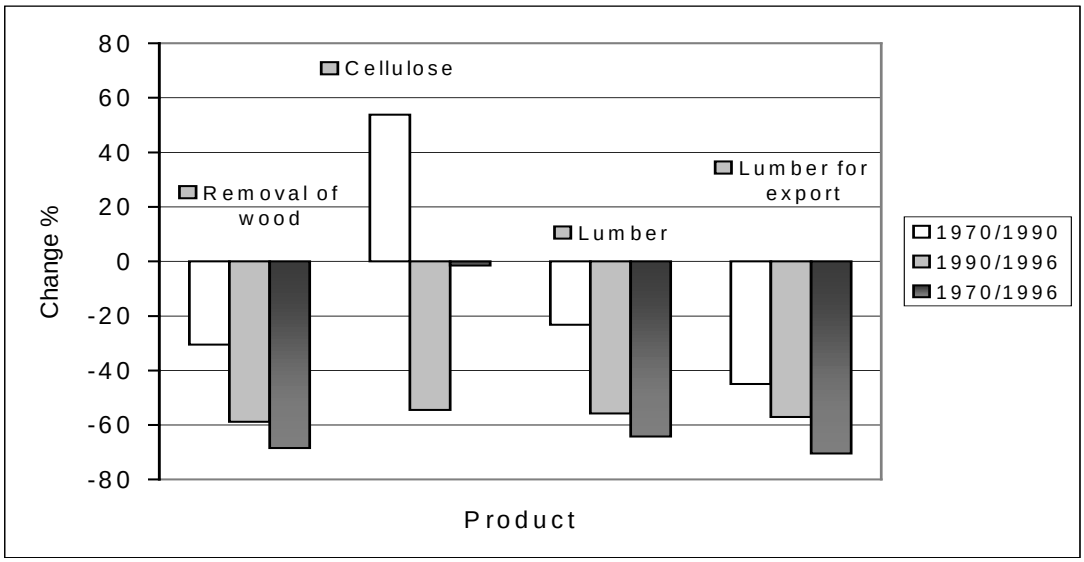

Diagram 2:4. Changes in forest sector production in Arkhangelsk Oblast between 1970–1996 (Source: Tsarev, E.G., 1997.)

In Table 2:7, which displays the whole transition period, production is broken down into more detailed categories. As can be seen from the table, with no exception, the production of all types of forest products has fallen during the transition period, some products more than others. When it comes to the production of fiber board, paper and cardboard more than 50 percent of the production has been retained. This can be compared to the production of lumber and chip board. The output of those products has been retained merely by around 30 and 3 percent respectively. It is close at hand to assume that the "winners" are those sectors which have succeeded to continue to export their products.

[6] *Removal of wood* is not equivalent to harvesting. The term stands for removal of commercial wood. For many reasons – low commercial value as well as production inefficiencies – parts of the harvested wood is never removed from the forest.

Table 2:7. Forest industrial production in Arkhangelsk Oblast, 1990–1997

Year / Product	1990	1991	1992	1993	1994	1995	1996	1997 to 1996 %*
Timber transportation, cub.m 000	19567.0	16441.1	15627.8	11892.9	9341.4	9012.6	8003.6	86.0
Level to 1990, %	100	83.6	76.5	60.2	47.4	45.9	40.7	-
Commercial timber production, cub.m 000	19395.5	15605.9	13930.1	11417.0	8117.5	7990.7	7228.3	90.0
Level to 1990, %	100	80.5	71.8	58.9	41.9	41.2	37.3	-
Round timber, cub.m 000	16788.9	13662.0	12400.9	9557.1	7327.2	7265.4	6504.2	-
Level to 1990, %	100	81.4	73.9	56.9	43.6	43.3	38.7	-
Lumber, cub.m 000	4309.4	3693.4	3018.8	2674.4	2293.7	1737.4	1533.1	91.0
Level to 1990, %	100	85.8	69.7	62.0	53.2	39.5	34.8	-
Lumber (export), cub.m 000	1824.2	1430.0	1120.0	1000.0	862.0	603.0	517.0	-
Level to 1990, %	100	78.4	61.4	54.82	47.2	33.0	28.3	-
Fiber board, sq. m 000	22400.0	18257.0	17662.2	18012.5	15083.9	13474.0	12865.2	103
Level to 1990, %	100	81.5	78.8	80.4	67.3	66.2	57.4	-
Chip board, cub.m 000	170.4	171.8	140.8	133.4	40.4	21.2	5.2	6.3
Level to 1990, %	100	101	82.9	78.2	23.5	12.3	3.0	-
Pulp, tons 000	2154.3	1881.2	1657.0	1529.4	1211.6	1344.4	1021.0	132
Level to 1990, %	100	87.3	79.9	71.0	56.2	62.4	47.7	-
Market pulp, tons 000	912.9	771.1	730.15	659.2	548.3	602.9	409.4	172
Level to 1990, %	100	84.4	79.9	72.2	60.0	66.0	44.8	-
Paper, tons 000	396.5	364.4	299.1	304.1	177.1	211.1	208.4	77.0
Level to 1990, %	100	91.9	75.5	76.8	44.7	53.3	52.5	-
Cardboard, tons 000	628.1	559.4	460.1	417.3	367.7	399.7	333.0	134
Level to 1990, %	100	89.0	73.2	66.4	58.6	63.7	53.0	-
Furniture, mln roubles (prices 1990)	42.3	-	-	-	-	-	1.5	-
Level to 1990, %	100	-	-	-	-	-	3.5	-

* Based on data for the first six months of the respective years.
Source: Arkhangelsk Oblast (1997), Goskomstat Rossii (1996b).

Export of Forest Products

The main part of the wood that is exported from Russia consists of round wood and sawn wood. Japan, Finland, and Sweden are the most important buyers of Russian wood. Arkhangelsk accounts for one third of Russia's total export of forest products (Bjorvatn & Castberg, 1994:133). Still in 1997, 82 percent of the regional export value, or 370.5 million USD, could be attributed to the forest sector (Kologreev, 1997).

It has been noticed that the export of wood follows the general level of harvesting in the country. Accordingly, falling levels of harvesting coincide with reduced export. The first years of the transition, between 1989–1993, the export of logs fell by 73 percent while the saw timber export was reduced by 61 percent (IIASA Russian Forest Study Database). As can be seen in Table 2:8, however, the situation regarding

pulp, cardboard, and lumber has improved to some extent during the last couple of years.

Table 2:8. Export of forest products from Arkhangelsk 1993–1998.

	1993	**1994**	**1995**	**1996**	**1997**	**1998**
Pulp, 1000 ton	359	442	410	319	397	309
Cardboard, 1000 ton	135	149	143	77	162	175
Lumber, 1000 m^3	1532	1207	813	858	854	895
Round wood, 1000 m^3	322	587	457	124	160	384
Plywood, m^3	74257	181810	41529	9077	16436	22128
Particle board, m^2	25031	5398	958	46	-	-
Paper, 1000 ton	170	119	191	101	149	103

Source: Statistical reports of Arkhangelsk regional Custom House.

Table 2:9 shows that during the last five years there has been a relative change among products exported from Arkhangelsk. Pulp, paper and cardboard has virtually doubled its share of the export while forest products has decreased correspondingly.

Table 2:9. Structure of the regional exports (percent) 1993–1997.

	1993	**1994**	**1995**	**1996**	**1997**
Total	100.0	100.0	100.0	100.0	100.0
Forest products	50.0	34.1	10.4	25.0	21.2
Pulp	13.3	37.7	49.7	32.1	28.2
Paper and cardboard	9.3	13.7	27.9	22.3	21.1
Others	27.4	14.5	12.0	20.6	29.5

Source: Arkhangelsk Region in 1997. Statistical data. Official issue. Arkhangelsk, 1998.

Arkhangelsk has always been a large exporter of lumber. In 1993, more than one third of the production (41.7%) was exported, 35.5 percent was produced for the internal market while the rest (22.8%) went to other parts of Russia (Diagram 2:5).

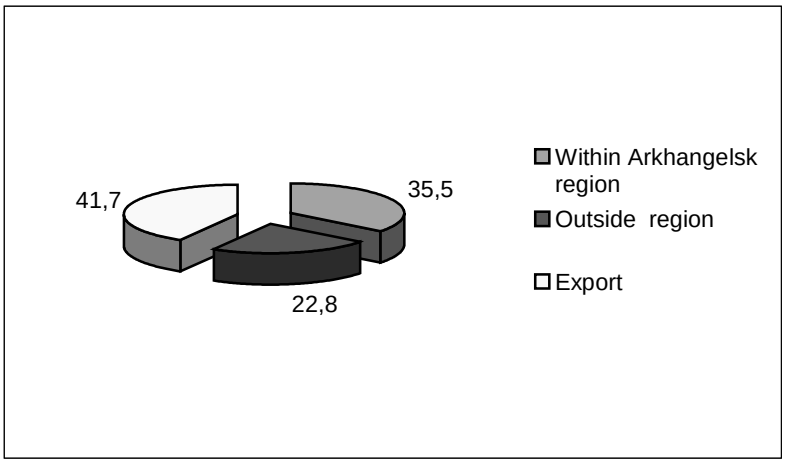

Diagram 2:5. Sales distribution of lumber produced in Arkhangelsk Oblast in 1993. Percent. (Source: IIASA Russian Forest Study Database.)

Today, there are 156 exporters of lumber in the Arkhangelsk region. Only 20 of them can be regarded as professional and qualified in export trade. These exporters account for 66 percent of lumber export to 12 European countries. The remaining 136 exporters account for 34 percent of lumber exports. These actors are not as knowledgeable about the real market situation, the rules of trade, etc., and they have a tendency to supply low quality production at artificially low prices (Kologreev, 1997).

The current export of lumber is directed to the following countries (Kologreev, 1997):

Europe:
Netherlands (33.2%)
Germany (16.6%)
Great Britain (12.5%)
France (10.2%)
Belgium (5.6%)
Austria, Spain, Iceland, Denmark, Ireland, Sweden, Finland.

FSU:
Ukraine, Lithuania, Azerbaijan, Moldavia, Latvia, Estonia, Uzbekistan, Turkmenia.

Asia and Middle East:
Egypt (7.5%)
Israel (1.8%)
Iran (1.7%)
Saudi Arabia, Turkey.

Other countries (2.7%)

When it comes to timber, however, only an insignificant part of the production (1%) is exported while the main part of the production remains in the region. This has of course to do with the local processing of timber, e.g., into board and paper. Eventually, parts of these volumes are exported as well.

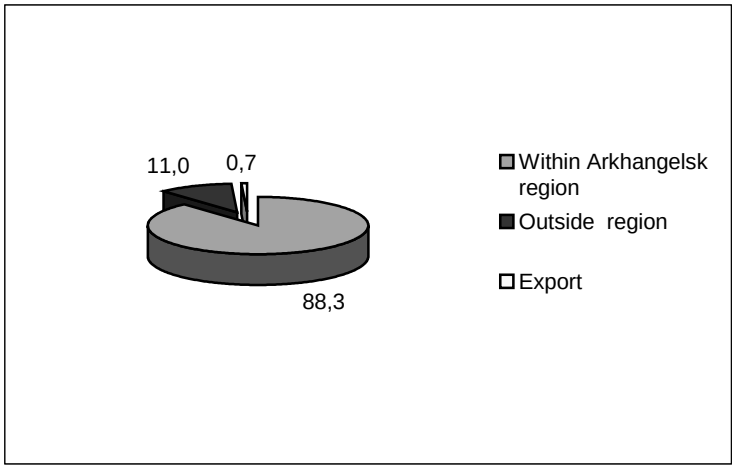

Diagram 2:6. Sales distribution of commercial timber produced in Arkhangelsk Oblast in 1993. Percent. (Source: IIASA Russian Forest Study Database)

Currently, there are 40 exporters of round timber in Arkhangelsk region. Six of them, accountable for 62.9 percent of the exports, supply more than 5,000 m^3 per year. Totally, only 13 traders export more than 1,000 m^3 (24.4%). Since they are fairly small it is likely that the remaining 21 suppliers (accountable for 12.7% of the exports) use different intermediaries in their export trade (Kologreev, 1997).

The current export of timber is directed to the following countries: Finland (73%), Norway (20.2%), Germany (4.7%), Austria, Belgium, Latvia, Lithuania, Moldavia, Uzbekistan, Ukraine, Sweden, and Estonia (2.1%).

Finally, to this picture of the relative importance of the forest sector in the Arkhangelsk Oblast it can be added that although production decreases might have been more severe in other regions, the productivity of the industry has not been significantly improved. The sector is still far from productive. Using data from 1994, Huber *et al.* (1997:107 ff.) have calculated the productivity of different industrial sectors of the Russian economy. They found that in terms of capital as well as labor productivity the forest sector has the lowest figures of all sectors, followed by light industry. This fact might be explained by the relatively low rate of further processing in the sector, its labor intensity, and a generally weak demand for forest products.

Infrastructure

The size and quality of the transportation network influence the ability to access forests as well as the possibilities for realization of their industrial potential. In general, the North Russia region has a very low road density, 28.2 km/1,000 km^2. (This is roughly equal to 5 percent of the Scandinavian average.) It has also been noticed that the quality of these roads are very low, a significant part of the roads lack hard cover, they are poorly maintained, and so forth. There are also a number of waterways and railways (see Map 2:1 page 26).

Table 2:10. Road (with hard cover) and railway density, km/1,000km^2 (1992)

	Russia	**North Russia**	**Far East**	**Arkhangelsk**
Railways	9.2	10.8	1.9	7.8
Roads	40.9	28.3	8.1	15.5

Source: The IIASA Russian Forest Study Database.

As can be seen in Table 2:10 both road density and railway density is fairly low but significantly higher than in the Far East to which the region has been compared.[7] The reason for comparing Arkhangelsk with the Far East is another feature of the transportation system, namely its scope, i.e., the extent to which municipalities and settlements have road access to the capital of the region. In the Far East only 59 percent of the settlements have an all-year-round connection to the regional capitals. In North Russia the corresponding figure is 75.6 percent and in Arkhangelsk 50 percent (Bjorvatn & Castberg, 1994:22). Only one major road, the one to Vologda,

[7] The condition of roads is a big and general problem. In Russia many haulage roads have a short useful life and many are also winter roads. Our data show that, in some cases, the road density has, in fact, decreased over the years. In Arkhangelsk, however, the road density has increased significantly since 1987.

crosses the oblast border.[8] Thus, we can say that Arkhangelsk has a rich but a geographically rather concentrated system of roads.

Arkhangelsk was the first export harbor in Russia and the country's first shipyard was established here already in 1870. The largest harbor is open the year around and is mainly used for export of forest products. In addition there are four smaller, non military, harbors that are partly used for timber export. These are the harbors of Onega, Mezen, Naryan Mar, and Amderma. There are two shipping companies. The Northern Shipping Company and the JS Northern River Shipping Company. The first was established in 1870 and on December 1992 it became a join stock company. It employs around 7,800 people (5,500 sea personnel and about 2,300 land based) and it has almost 100 cargo ships which provide regular shipments (i.a. of timber) to some ten European harbors.

The JS Northern River Shipping Company is mainly engaged in river shipping along the river ways of Arkhangelsk and the rest of European Russia, but it also runs traffic in Europe (e.g. in the Baltic Sea and the Northern Sea). This company is younger, "only" 75 years old. It became a joint stock company in 1998, 25 percent of the stock is owned by the state and among the rest of the shareholders we find shipyards and a smaller shipping company, however having around 200 cargo and passenger boats as well as around 100 barges.[9]

Arkhangelsk has a system of waterways with many ramifications. Much of the 3,770 km long waterways (IIASA Russian Forest Study Database) are navigable and some parts are used for timber floating. Partly due to the low road density these waterways are also used for passenger traffic but this traffic has been heavily reduced. In general, most modes of transportation have been affected by the decreased activity in the central sectors of production. Between 1990 and 1995, freight transports were drastically reduced, railway transports by 64 percent, automobile transports by 60 percent and internal waterway transports by as much as 87 percent (Goskomstat Arkhangelsk, 1997).

Forest Roads

The existence of a rich net of forest roads is essential for the development of the forest sector. Arkhangelsk Oblast is vast, however, and many areas are very far away from the capital and, as we have seen, the general road density is fairly low. This is true also for roads on forest lands. The Arkhangelsk figure of 0.08 km forest roads/km^2 is tangent to the North-Russian average. However, significant volumes of wood are transported on winter roads and if Arkhangelsk's around 5,000 km of winter roads are added we get a road density of 0.1 km/km^2 (IIASA Russian Forest Study Database). Even if this figure is relatively high it is significantly lower than what is regarded as an optimum, 0.5 km forest roads/km^2 (Strakhov *et al.*, 1996:95).

According to current standard the harvesting of one million m^3 of wood requires 48.5 km of new, permanent roads (Strakhov, *et al.*, 1996:94). This means that if, in the future, the harvesting in Arkhangelsk would increase to only 50 percent of the AAC

[8] For a discussion about possible developments of the railway system, see the report "Future Rail Traffic in the Barents Region" published by The Swedish Railways, printed in Umeå, Sweden, January 1998.

[9] Source: Advertising material from the Northern Shipping Company and the Northern River Shipping Company.

one would need to construct around 500 km of new roads![10] A production level tangent to AAC would require around 1,000 km of new permanent forest roads.

Earlier in the report we have discussed the accessibility problem and its connection to harvesting behavior. It was assumed that in the long run local over-harvesting along transportation routes would drive harvesting operations into increasingly remote areas. Thus, the costs for the construction of new transportation roads would affect the profitability in the forest sector. In order to "verify" this hypothesis we have calculated the relation between exploitable forest lands and road density. The logic would be that if there exists a local over-cutting one would expect to find a strong, negative correlation between road density and remaining forest resources, i.e., more exploitable forests – less roads.

Using the variables "kilometer roads per hectare" and "percentage of mature and over mature forests in relation to forested areas" (from the IIASA Russian Forest Study Database) we get a correlation coefficient of –0.62 (Spearman's Rank Correlation ranges from –1 to 1). Thus, it seems that where one finds the highest density of exploitable forests one also has the greatest need for road construction. However, if winter roads are excluded the figure changes significantly (–0.32). This might indicate that the use of winter roads is not primarily, in fact, a way of getting access to remote forest areas thus facilitating local overcutting. They constitute an integrated part of the existing but criticized harvesting policy that so far has created undesirable environmental outcomes. Thus, the opening of more remote logging areas would still require permanent transportation lines. Taking into account that the overall road density is fairly low in Arkhangelsk it can be concluded that future forest exploitation will require significant investments in the transportation system.

Summary:

The situation of the Arkhangelsk forest resource and its physical environment can be summarized as follows:

- Vast forest recourses are available for possible exploitation. Most of the forested lands have not yet been exposed to industrial harvesting.
- The present species composition is partly caused by poor regeneration after clear-cutting the coniferous stands.
- Around 60 percent of the forest fund consists of mature or overmature forests.
- Due to extensive harvesting along the major transportation lines, areas of local over-harvesting can be found. A future harvesting in more remote areas will cause increased costs for wood supply.
- Still around 80 percent of all harvesting is by means of clear-cutting. Lack of deliberate regeneration programs causes a general degeneration of the forests and will possible affect future wood supply. Still, methods such as thinning and pruning are conducted more as experiments rather than as a means of long-term investment.

[10] The Annual Allowable Cut is 21.3 mill. m^3 (Arkhangelsk Forest Management, 1996).

- Extensive investments in the infrastructure – especially in forest roads – are needed to develop the forest sector but also for the securing of a sustainable forestry.
- Significant losses of forest recourses are caused by pests, diseases, and forest fires as well as inefficient management methods.
- Around 60 percent of the population in working age, i.e. around 420,000 people are directly dependent on the forest sector. The export of forest products accounts for more than 80 percent of the total export value. During the last two years the forest export has shown a tendency to recover.
- Due to a relatively diversified industrial structure the decline in the industry has been less severe in Arkhangelsk compared to the Russian average. When it comes to the forest sector, however, production has been reduced by around 60 percent since 1990.
- The forest sector in the Arkhangelsk region is very important both as an employer and as a provider of income for the region. In terms of forest resources the oblast is one of Russia's richest areas.
- In general, the forest sector has a rather low productivity, and the poor availability of wood is reinforced by an insufficient infrastructure.

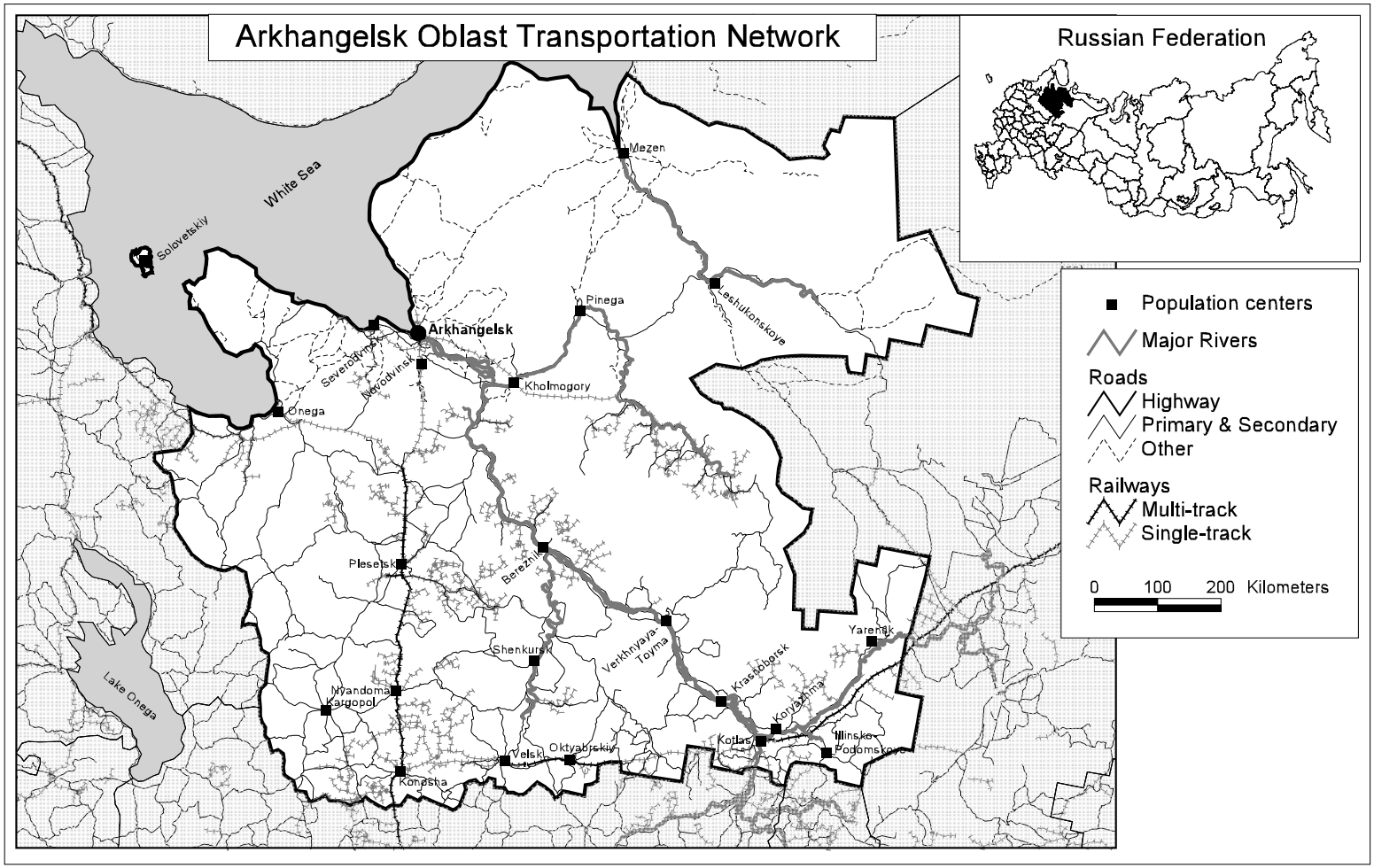

Figure 2.1 Transportation network in Arkhangelsk Oblast.

(Data sources: Oblast boundary from IIASA Russian Forest Study Database, all other data from the Digital Chart of the World, Environmental Systems Research Institute Inc. (ESRI).

3. Socio-Economic Characteristics of Arkhangelsk Oblast

Including the Nenets Autonomous Okrug Arkhangelsk Oblast covers an area of 587,400 km^2. (This is slightly larger than the area of France.) The oblast is sparsely populated – the average population density is 2.6 persons per km^2, which can be compared to the Russian average of 8.7.[11] Of the total regional population of 1.5 million people 27 percent live in rural settlements. The region is subdivided into 20 administrative districts, *raiony*. The city of Arkhangelsk, which was founded already in 1584, today hosts around 400,000 people. Of the other 11 cities in the region only Severodvinsk (245,000 inhabitants) has a population larger than 70,000 people. The population consists of 92 percent ethnic Russians, around 3 percent Ukrainians, and various other ethnic groups, of which the Nenets and Komi comprise the largest part (IIASA Russian Forest Study Database).

In terms of demographic change Arkhangelsk has been severely hit by the transition. As can be seen from Diagram 3:1 the population has decreased significantly since the beginning of *Perestroika*. While Russia has seen its population increase by around 1 percent the Northern Region has faced a notable downfall. The demographic situation is worse than in Siberia, for example, but comparable to the Far East.

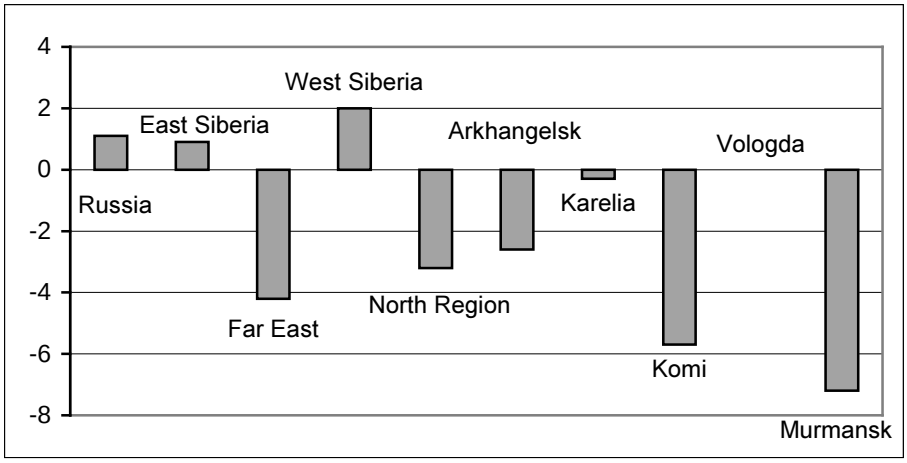

Diagram 3:1. Changes in population between 1987 and 1995. Percent. (Based on Granåsen *et al.*, 1997)

The drop in population is directly affected by three factors, birth rates, death rates and migration. Between 1987 and 1995, the Russian death rates increased by nearly 50 percent while birth rates dropped from 17.2 to 9 per 1,000 inhabitants. During this period life expectancy fell by seven years for men and three years for women. In 1991, the increasing population trend was broken and despite a positive migration Russia's population declined by more than one million people (Granåsen, *et al.*, 1997). This is an important change in the socio-economic situation caused by *Perestroika* and the subsequent transition period (cf. for instance Shapiro, 1995).

[11] Sources related to this paragraph: RUSSLINE – Russian Internet Directory http://www.rusline.com/oblast/arkhange/arkhang.htm (27 January, 1999) and Bradshaw & Palacin, 1996.

Arkhangelsk Oblast has experienced a similar demographic development. From 1987 to 1996, birth rates dropped from 18.3 to 8.5 births per thousand inhabitants while death rates rose from 9.3 to 13.7. Within four years only, from 1990 to 1994, life expectancy fell from 69.6 to 62.4 years (Granåsen, *et al.*, 1997:42). Migration has also contributed to the decrease of the population in Arkhangelsk. The present migration ratio is –2.6 per 1,000 inhabitants or an annual outflow of around 4,000 people.[12] However, this has not yet affected the distribution between age groups in any significant way. Around 58 percent of the population is between 18–60 year. This figure is about the same as the Russian average (57%) (Bradshaw & Palacin, 1996:35).

To sum up, the demographic situation in Arkhangelsk is worse than in many other Russian regions. This also supports a conclusion made by Bradshaw and Palacin (1996), Huber *et al.* (1997:19 ff.) and others that the central parts of Russia, to which we might refer Arkhangelsk, have suffered more serious demographic deterioration than more remote parts of the Federation, such as Siberia.

Education

Arkhangelsk has four institutes of higher education, the Pomor International University, Arkhangelsk State Engineering University, Arkhangelsk State Medical Academy, and a branch (*filial*) of the St. Petersburg based Admiral S. Makaros State Naval Academy. The first three enroll around 15,000 students while the fourth together with 26 other specialized schools enroll about 18,000 students. The Arkhangelsk State Engineering University is the successor of the former Arkhangelsk Forest Engineering Institute and has retained a strong emphasis on forestry and related disciplines. In total there are at least 10 different research organizations that directly deal with forest related topics in the oblast.[13]

In comparison with many other Russian regions Arkhangelsk has succeeded fairly well to retain its education level. While Russia lost 12 percent of its students between 1987 and 1993 Arkhangelsk increased the number of students in higher education establishments. In fact, after 1993, the oblast has further increased the proportion of people involved in higher education. In 1997, 16,960 students were involved in higher education which gives a ratio of 110.5 students per 10,000 inhabitants (Goskomstat Arkhangelsk, 1997:31). However, this figure is significantly lower than the Russian average of 190 students per 10,000 inhabitants (Goskomstat, 1997) but also lower than many other population centers in forested areas, such as Novosibirsk or Tomsk (Carlsson & Olsson, 1998:23).

[12] Source: RUSSLINE – Russian Internet Directory (http://www.rusline.com/oblast/arkhange/arkhang.htm), 27 January 1999.

[13] A question to BARENTS-L, a mailing list devoted to discussion about the development of the Barents Euro-Arctic Region, produced references to 10 forest related institutes and organizations in Arkhangelsk Oblast. A compilation of the answers to our question can be found on the list's archive at URL: ftp://ftp.umu.se/home/mao-ftp/BARENTS-L-Archive/arkhfor (April 7, 1999).

Table 3:1. Students in higher educational establishments per 10,000 inhabitants 1987-1993, index.

Region	1987	1988	1989	1990	1991	1992	1993	Students per 10,000	Change 1987–93
Russian Federation	100	98	99	98	96	92	88	171	-12
Arkhangelsk	100	97	101	102	107	107	107	96	7
Karelia	100	103	109	107	109	107	103	121	3
Komi	100	98	96	91	92	91	95	88	-5
Murmansk	100	100	102	98	100	98	113	63	13
Vologda	100	100	103	100	102	100	107	128	7

Source: IIASA Russian Forest Study Database

The relatively low education profile is also reflected in the work force. Typically, the level of education is relatively low in the Russian forest sector. This is reflected in the proportion of workers in the sector. In Siberia the proportion of workers in relation to all personnel in forest enterprises is around 87 percent (Nilsson *et al.*, 1994:54). However, if we look only at silviculture, which is virtually the responsibility of the Federal Forest Service, we find that the relation is reversed; employees with higher education dominate. In Siberia around 80 percent of the personnel in forest management have higher or secondary education (Nilsson *et al.*, 1994)[14].

One might perhaps expect the situation in Arkhangelsk to be the same. However, as Table 3:2 indicates the general level of education is comparatively lower. In fact, no other oblast or republic in the Northern Region has as few specialists with higher education as has Arkhangelsk – 44 specialists per 1,000 inhabitants. This can be compared with the Russian average of 56 or Karelia's 55 specialists with higher education per 1,000 inhabitants. In general, the education level in a region reflects a potential resource that might be valuable in the restructuring of the economy. Thus, in this respect the situation in Arkhangelsk seems somewhat problematic.

Table 3:2. Higher education, 1989

Region/oblast/republic	Specialists with higher education	Specialists with higher education per 1,000 inh.
Russian federation	**8,241,880**	**56**
Karelia	43,840	55
Komi	62,633	50
Arkhangelsk	69,066	44
Vologda	61,560	45
Murmansk	64,623	56

Source: IIASA Russian Forest Study Database

[14] Nilsson *et al*. are referring to Isaev, A.S. (ed.) *Forecast of the utilization and reproduction of the forest resources by economic regions of the USSR*, Academy of Sciences of the USSR and State Forestry Committee of the USSR, Vol. 1 and Vol. 2, 1991.

The Work Force

In 1997, the officially registered unemployment level in Arkhangelsk was 8.1 percent of the economically active population (Goskomstat Arkhangelsk, 1998). This figure was the highest in the Northern Region and significantly higher than the Russian average of 2.2 percent. Out of Russia's 87 administrative regions only nine had a higher unemployment rate (Bradshaw & Palacin, 1996:131–132). Estimates of actual employment are also published nowadays. As is shown in Table 3:3 the share of registered unemployed almost trebled between 1993 and 1997 (from 3 to 8%) while the estimated total unemployment more or less doubled, increasing from 6.1 percent of the economically active population to 12.6 percent in the same period. The figures also indicate that people are increasingly making use of the public employment agencies.

Table 3:3 Employment and unemployment in Arkhangelsk Oblast 1993–1997 (percent).

	1993	**1994**	**1995**	**1996**	**1997**
Economically active population:	100	100	100	100	100
- employed in the economy	93.9	89.9	88.7	87.5	87.4
- unemployed *	6.1	10.1	11.3	12.5	12.6
of which officially unemployed (i.e. those registered in the Employment Service)	3.0	5.2	8.2	7.8	8.1

* People who are 16 years or older and who have no work, are looking for work, or are ready to start work are considered as unemployed.

Source: Goskomstat Arkhangelsk (1998).

Even so, a registered unemployment of 8.1 percent might still be seen as artificially low. Quite obviously, a great number of Russian enterprises would simply not continue to exist if normal market economic principles were really guiding their decisions to continue or discontinue their activity. Under such a regime many enterprises would simply not be considered profitable enough to warrant a continued existence. And yet, despite the fact that unprofitable enterprises have been allowed to continue their activities, there has been a significant increase in unemployment. On the other hand, the mass unemployment rate that was feared to be the result of the Russian transition has not materialized either (Manning, 1995).

Some western observers (cf. for example Layard & Richter, 1995) claim that, in general, it seems that the Russian labor market has been sufficiently flexible to mitigate mass unemployment of the kind that could (theoretically) be expected. However, other western observers have claimed that unemployment rates might be substantially higher than what is indicated both by the official estimates and by the estimates made by many western observers. Thus, in certain regions the real unemployment may well be higher than 30 and sometimes even higher than 50 percent of the economically active population (cf. Hedlund & Sundström, 1996).

If one takes into account that many frequently used economic parameters are likely to be flawed the situation might be close to catastrophic especially in the light of the severe downfall in the economy that occurred by mid 1998. Gaddy and Ickes (1998) have launched the notion of "virtual economy" to underline the fact that the greater part of the Soviet economy is still intact.

> The new system can be called Russia's virtual economy because it is based on an illusion about almost every important parameter: prices, sales, wages, taxes, and budgets. At its heart is the pretense that the economy is much larger than it really is. This pretense allows for a larger government and larger expenditures than Russia can afford. It is the real cause behind the web of wage, supply, and tax arrears from which Russia cannot seem to extricate itself. (Gaddy and Ickes, 1998:1)

This type of economy might continue to work only if it is insulated from market competition, e.g., through an extensive use of barter, which effectively breaks the market based price signals and allows the use of fictitious prices of goods and services quite separated from their market values. This practice maintains the "pretence" of value creation while industry is in fact a "value destructor." Consequently, if Gaddy and Ickes are right, there exists "hoards" of potentially unemployed workers, engineers, bureaucrats, and others.

There has been a documented increase of unemployment among people with higher education in Russia, but unemployment has increased significantly more among people lacking secondary education, especially in the age group 20-49 years. Thus, better educated people are better off (Radaev, 1997; Vishnevskaya, 1997). One important contributing factor is that new, small and medium sized enterprises (SMEs)[15] have succeeded in attracting a number of educated people and thus to some extent alleviating the unemployment situation (Radaev, 1997:34). If this is a reality also in Arkhangelsk is really an open ended question. However, according to statistics from September 1996 there are 3,900 SMEs, with 40,000 employees, in the oblast. Most of them (47%) are engaged in service and trade, 17 percent in industry, 15 percent construction and 5 percent in consultancy (Goskomstat Arkhangelsk, 1998:81).

Up to 1996, 1,079 enterprises have changed ownership (Goskomstat Arkhangelsk, 1998). Already in 1994, around 80 percent of the enterprises were privatized (Bradshaw and Palacin, 1996:134). However, of the whole apartment stock only 22.4 percent has been privatized (Goskomstat Arkhangelsk, 1998). This indicates that important features of the Soviet system still remain. For example, many of the larger companies still provide housing and a number of other social services, for their employees. This will be discussed later.

It can be assumed that the slower pace of privatization in Arkhangelsk compared to other parts of Russia depends on the dominance of military industries.[16] Many of the military enterprises will not be privatized at all, and if they are, the process may be more time consuming than is normally the case (Vishnevskaya, 1997). Especially in the city of Severodvinsk the military industrial complex is important and employs a great number of workers and people with higher education who are used to work with advanced technology. However, due to the general economic situation and the disintegration of the armed forces there is a limited demand for the products from Severodvinsk, e.g., nuclear powered submarines. However, places like Severodvinsk which have lots of specialists, have a potential in its work force that might be useful in other sectors of the economy.

---

[15] SMEs are defined as having up to 200 employees.

[16] For example, in 1994, 32% of all apartments were privatized in Russia, but only 18% in Arkhangelsk. The same year 9% of all Russian enterprises were state owned, while the corresponding figure for Arkhangelsk was 20% (Bradshaw and Palacin, 1996:134).

In general, nominal wages are higher in Arkhangelsk than they are in the Russian Federation. Wages are not the same as income, however. While the wage level in Arkhangelsk is equal to the Russian average, incomes are 22 percent lower (Bradshaw & Palacin, 1996:120–123). One way of comparing standards of living is to look at income relative to established subsistence minimum. This will adjust for costs of living which are normally higher in the Northern Region than, for example, in Siberia. Using this measure one can conclude that while the Russian figure is 238 percent, the figure for Arkhangelsk is "only" 185 percent. This indicates that while Arkhangelsk does have a high wage level, the subsistence minimum level is also relatively high. Moreover, during the entire transition period the income figures have fallen significantly in most Russian regions with the exception of Moscow where incomes have risen with 47 percent (Bradshaw & Palacin, 1996:123).

What is the wage level in the forest sector? The so-called "forest complex" of Arkhangelsk Oblast consists of 136 enterprises, of which in June 1997 a mere 38 (28%) were making a profit, the remaining 98 enterprises (72%) were running at a loss (Arkhangelsk Oblast, 1997). In no other industrial sector in the region there are as many firms. However, the wage level in the "forest complex" is relatively low, 21 percent lower than the average for the industrial sector in the region (see Table 3:3). Although the figures in Table 3:3 are from 1993 they reflect the current situation fairly well. Thus, it can be concluded that the forest industrial sector will have problems to attract people using its wage level as a "carrot" – something that will be needed in order to get an inflow of specialists (for example people trained in modern marketing and engineers specialized in logistics).

The situation at the lespromkhoz *Svetlozerskles* illustrates some aspects of contemporary reality (see the following box)[17].

[17] In 1998, we commissioned an article on a *lespromkhoz* in Arkhangelsk Oblast from Yuri Lvov, the resident correspondent of *Lesnaia Gazeta* in Arkhangelsk. The article is reproduced in this and following "fact boxes".

The Lespromhkoz "Svetlozerskles" 1998:

Chief forester Ivan Shenyakov, director of the "Svetlozerskles" southern harvesting site, came to Lake Svetlyi from the Leningrad region in 1981. He was lured to come by the perspective of getting an apartment in a house with conveniences. At the time it was the dream of many a young man who had no living quarters of their own, while here the state had just put up a new *lespromkhoz* with a powerful at the time resource base. Surrounded by swamps and obscure taiga, not far from a lake by the name of Svetlyi (meaning "bright"), a settlement went up. It consisted of several five-storey apartment buildings and duplexes. They had running water, central heating provided by a furnace room. To a person not used to conveniences, it seemed very comfortable.

For 11 years Ivan Nikolayevich worked as a feller and when his health began failing he became a chief. He has three sons. It is obvious that the eldest two will not follow in father's footsteps. One of them has moved to Vladimir and entered a military school, the other is taking a farming course in the district center Kholmogory. The youngest still goes to school. The family has its personal plot, a small farm with a cow, a pig and a goat.

In contrast to chief forester Ivan Shenyakov, Mikhail Odegov his operator of the feller-buncher "Timber Jack-618", has no personal plot. He claims that he has no time for it. He is still young and has given no consideration to the future. He claims no one knows what awaits us even in a month, to say nothing of the close future. At the same time many are already deserting the Svetlyi settlement in search of a better life. The rent has fallen to 5 thousand rubles, while in Arkhangelsk, 125 kilometers from Svetlyi, rents are 10-20 times higher. Mikhail is one of the most highly-paid operators not only in the timber industry of "Svetlozerskles", but in the region as a whole. In the winter months (approximately from November to March), working 12 hours a day, his labor brings in about 3000 rubles a month (in the spring of 1998 this was roughly equal to 500 dollars), while in 1997 the average earnings at this enterprise amounted to 1070 rubles a month.

– Three thousand is not what should be paid for operating such complex technology. You need instantaneous reaction, measurement by eye. Working in the darkness when the trees are snow-covered is extremely tiring. Switch off the antenna of your TV and just try to make out the picture for 12 hours non-stop – that's the "picture" I see behind the glass of my machine. It really looks nice when observed from the side, when the glimmering green-painted machine "grabs" a tree and the next moment fells it, raising a cloud of snow. And although it is warm and comfortable in the cabin, where you can even switch on a tape and treat yourself to a music break, Mikhail considers himself cheated. A Canadian operator by the name of Earl helped him to master the machine. He is paid 10 thousand dollars a month for the same job, "while I, – says Odegov, – can't even afford to buy myself a car, or go somewhere for a vacation".

(by Yuri Lvov)

Obviously other industrial sectors such as "fuel" and "microbiology" have much higher wages. The situation is virtually the same in the other oblasts and republics in the North Region with one exception, Murmansk, where the forest sector has a wage level 24 percent higher than Arkhangelsk (IIASA Russian Forest Study Database). This might be explained by the fact that Murmansk is a very small producer of wood while Arkhangelsk has a significant amount of manual workers engaged in harvesting, etc.

Table 3:3. Monthly wages in the industrial sector of Arkhangelsk, 1993.

Branch	Rubles per Month	Index
The whole industrial sector	79206.3	100
Electricity	141472.0	179
Fuel	176412.8	223
Oil	179548.9	227
Turf	29828.7	38
Iron processing	60722.3	77
Non-iron processing	80704.2	102
Chemical and petro-chemical	70569.3	89
Machine building	95689.5	121
Forest	62920.2	79
Building material	77824.4	98
Light	41907.7	53
Food	100741.6	127
Microbiological	141090.9	178
Flour and fodder	115447.9	146
Graphical	59882.0	76
Glass	8083.3	10
Pharmaceutical	67539.7	85
Other	64927.9	82

Source: IIASA Russian Forest Study Database

Summary:

With reference to the description and analyses above the socio-economic situation in Arkhangelsk might be summarized as follows (see also Table in Appendix 3:1):

- The demographic problems in Arkhangelsk is worse than the average for the Russian Federation.
- The education level of the workforce is significantly lower in Arkhangelsk compared to many other areas as well as compared to the Russian average. However, during the transition Arkhangelsk has succeeded fairly well in retaining its education level in comparison with many other Russian regions. The Oblast also has a strong emphasis on forest education.
- The proportion of educated people is lower in the forest sector than in most other branches of the economy.
- The unemployment situation in Arkhangelsk is as severe as in the rest of the Russian Federation.
- In general the wage level is higher in Arkhangelsk than in the Russian Federation, but taking the costs of living into account, the *oblast* occupies a 49th position of Russia's 80 administrative areas in terms of wage income.
- With respect to the relatively high proportion of state employees, the low proportion of privatized apartments, and the relatively low number of new small and medium sized enterprises, Arkhangelsk can be said to have kept many of the features from the old Soviet economy.

- It cannot be concluded that the general standard of living is significantly higher in Arkhangelsk than in the rest of the Northern Region. For example, although we find lower percentages of poor households we find about the same housing space, fewer cars, and more alcoholics.[18]

[18] Karelia has a higher rate of alcoholism.

4. Institutional Configuration of the Forest Sector in Arkhangelsk

In this chapter we describe the formal institutional setting that relates to the forest sector in Arkhangelsk Oblast. The chapter starts with a short résumé of the Soviet forestry system and how it emerged. We also give an account of how this system has changed and how it works today. The purpose of the chapter is to provide a basis for an analysis of the interactions between the various actors in the system, dealing with its formal as well as its informal qualities.

The General Organization of the Forest Sector

In 1947, ten years after Arkhangelsk was assigned the status of *oblast*, the USSR Council of Ministers adopted a resolution that made forest management uniform in the whole union. After a short period of "decentralization" under the Khruschev era, the forest management system returned to be heavily centralized. The system reached its peak in the first years of the 1970s. The institutional history of the system has been scrutinized in many publications and should not be recapitulated here (see e.g. Nove, 1977; Blandon, 1983; Barr & Braden, 1988; Sheingauz *et al.*, 1995; World Bank, 1997). Here we will concentrate on the situation as it appeared at the beginning of the 1980s.

The Soviet Union was known for its "parallel" system of government, i.e., its intertwined triple lines of political administration – the communist party, the formal political hierarchies and their bureaucracies. Accordingly, the Central Committee of the Communist Party and the Council of Ministers were the supreme units of the forest sector. Since political, administrative, and managerial units were assumed to belong to the same "family" it was sometimes difficult to functionally separate one unit from another. For example, although industrial ministries and committees were authorized to govern all industrial activities while the Federal Forest Service was in charge of silviculture, it was the communist party that in the end confirmed the five years plans under which the whole forest sector operated. The forest sector was governed by political decrees, there existed virtually no special forestry laws between the 1920s and 1977 (Sheingauz *et al.*, 1995:1).

In the beginning of the 1980s, "The Ministry of Timber, Woodworking, Pulp and Paper Industries" (*Minlesbumprom*) was responsible for forest industries and their activities while another central unit, *Gosleskhoz*, the USSR State Forestry Committee (earlier the Ministry of Forest Management, *Minleskhoz*) was accountable for forestry. More chemically oriented forest industries were directly subordinated to the "Chief Administration for Microbiology" (*Glavmikrobioprom*) (Barr & Braden, 1988:20).

The organizational features of the Soviet State were duplicated on lower administrative levels. Through all levels down to the single district the system of government consisted of three parallel hierarchies, the representative units, executives, and the communist party (Campbell, 1995). Another feature that was typical for the system was its principle of "dual subordination" (Nove, 1977:20). For example, the ministry of forestry in the Russian republic was subordinated both to the central ministry of forestry and the republic council of ministers. In cases where the ministries were not organized in this way the local unit was always subordinated to the hierarchical structure of the communist party. The same principle was also applied for the huge apparatus of

planning with *Gosplan* as its nucleus. The five-year plans were worked out by central and regional Gosplan authorities. Finally, when the party had confirmed the plans, they received the status of law.

We have previously deliberated on the "forest fund" concept. Formally, *Gosleskhoz* (which is today labeled the Federal Forest Service, *Rosleskhoz*) was the official "proprietor" of this fund from which resources were sub-allocated to enterprises. At the regional level harvesting areas were allocated to harvesting enterprises, timber was allocated to sawmills, board to industries, and so forth. This was a very complicated system with many authorities involved and, since there existed no real markets, suppliers and users had to be coupled by administrative means. This also meant that "users" were, in fact, no customers in the normal sense of the word. As Alec Nove has emphasized "an allocation decision which 'attaches' (prikreplyayet) a supplier to a customer contains within itself an instruction to produce as well as to deliver" (Nove, 1977:62). Although *Gosplan* and all its subunits elaborated specific production plans the task of assigning, for example, a certain amount of timber to a particular sawmill fell upon another important organization, "The State Committee on Procurement" (*Gossnab*). We shall later see to what extent this idea of "attaching" suppliers to customers has survived in today's forest sector.

The forestry management system was, and still is, organized in a hierarchical system from a central, Moscow, level down to the regional and municipal levels. During Soviet times the central level, *Minleskhoz* and subsequently *Gosleskhoz*, had to coordinate its activities with the Council of Ministers of the Union Republics as well as with the parallel party structure. Although the system in operation in Russia today differs in significant ways the main parts of the organizational structure of the FFS are still the same, see Figure 4:1.[19]

The Federal Forest Service is organized in 81 regional bodies. In Arkhangelsk this forestry committee is called "Arkhangelsk Forest Management" (*Arkhangel'sk upravlenie lesami*). It should be noticed that the old system of "dual subordination" still exists in that the committee is subordinated both to the FFS (or *Rosleskhoz*), the central authority, and to the executive authority of the oblast. On behalf of the central *Rosleskhoz*, these forestry committees are basically responsible for the protection and regeneration of forests. In total, the Federal Forest Service and its committees are accountable for around 94 percent of the Russian "forest fund." Regional committees, like the Arkhangelsk Forest Management, still assign areas for harvesting but nowadays to privatized harvesting enterprises. As was already mentioned, the agricultural sector, the military, and some other authorities possess parts of the Russian forest fund. No forest lands have yet been privatized. However, the property rights situation with respect to the ownership of the Russian forests is unclear. What is clear is the fact that the forests belong to the state, but it is not clear to which part of the state they belong. In a federation the property rights issue is particularly problematic. The forest code states that the forest resources are jointly owned by the "Russian Federation and the Subjects of the Russian Federation." Accordingly, the forest lands of Arkhangelsk belong to the Russian federation as well as to the oblast. This ambiguous situation did not change with the new forests code adopted on January 22, 1997.

[19] There are a number of Federal Forest Service organizations which are not included in Fig. 4:1, such as ten Forest Inventory and Planning units (*lesoustroistvo*), eight forest research institutes and eighteen air forest protection units.

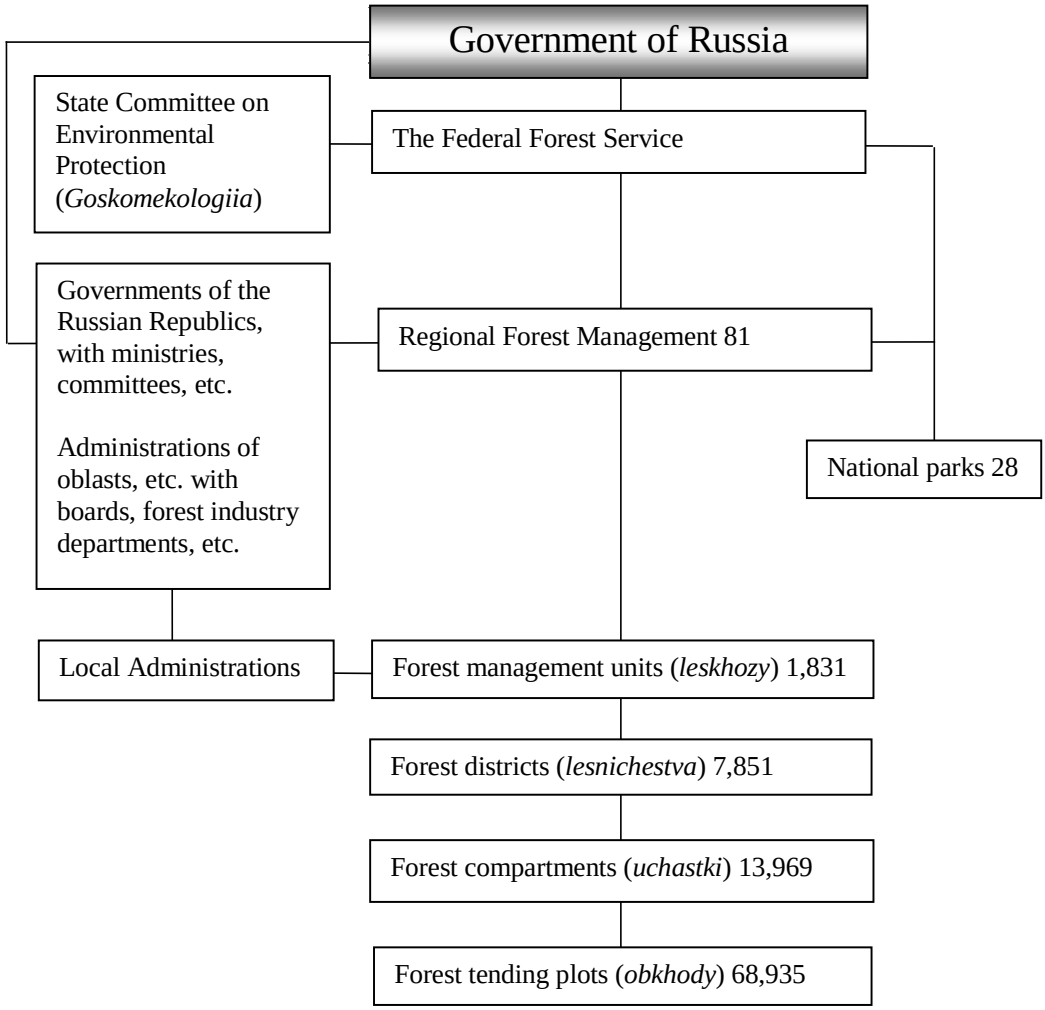

Figure 4:1. Forest Management Structure of the Russian Federation (Based on Strakhov *et al.*, 1996; World Bank, 1997.)

At the federal level the Russian forest fund is divided into 1,831 management units, *leskhozy*. The geographical areas they possess often coincide with the lower administrative areas of an *oblast*, the *raion*. For example, Arkhangelsk Oblast is partitioned into 28 *leskhozy*. The forest lands that a *leskhoz* possesses is in turn divided into districts (*lesnichestva*), forest compartments (*uchastki*) and numerous tending plots (*obkhody*). The *leskhoz* is an entity with independent accounting and separate funding. During Soviet times forest industries, *leskhozy*, sawmills, and state harvesting enterprises (*lespromkhozy*) formed an integrated forestry system. It is this system that is now disintegrating. In the more sparsely forested parts of the union not only silviculture but also logging and timber production was left to the *leskhoz*. In the beginning of the eighties their annual logging was 70–80 million m^3 (Blandon, 1983:85). It should be noticed, however, that during Soviet times harvesting and forest management, e.g., regeneration, was separated and there were basically no financial relations between logging enterprises and the *leskhoz*.

The Harvesting System in the Late Soviet Era

At the beginning of the 1980s *Minlesbumprom* was the central ministry responsible for the forest industrial sector. As was the case in the forestry sector, with its *leskhoz* system, the forest industrial sector was organized in a sophisticated hierarchical administrative complex down to the individual enterprise. The system that was in place in the eighties, just before the beginning of *Perestroika*, was organized in three levels of management (cf. Figure 4:2).

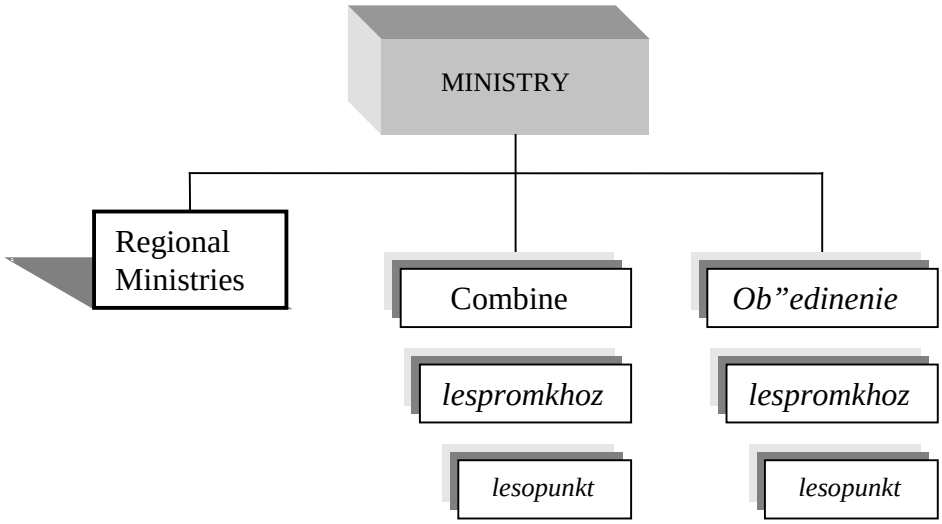

Figure 4:2. Organizational structure of forest harvesting before Perestroika (Source: Blandon, 1983:58)

This system had replaced an even more complicated arrangement composed of five management levels (Blandon, 1983:51). Through its *leskhoz* system the predecessor of today's Federal Forest Service formally controlled all forest maintenance activities. The main part of logging activities, however, were performed by *lespromkhozy*, i.e., state owned logging enterprises that were assigned particular harvesting areas. As indicated in Figure 4:2, there was also a management level between the enterprises and the central authorities, either combines or *Ob"edineniia*. The latter units were larger than combines and consisted of a large number of enterprises in a specific region. In some regions there could also be combines that formally sorted under an *Ob"edinenie*. There were also a number of combines under direct control of the Ministry.

In Arkhangelsk Oblast there was an *Ob"edinenie* (*Arkhangel'sklesprom*), a state owned forest complex consisting of 180 enterprises, including sawmills, board factories, and forest harvesting enterprises (*lespromkhozy*). At the end of the 1980s almost 134,000 people were employed by the regional forest complex (Bjorvatn & Castberg, 1994:62) . The *lespromkhoz* worker brigades formed the basis of several settlements in the region. In the "darker periods" of Soviet history these settlement were populated with a significant number of prisoners. In fact, many *lespromkhozy* were once established as prison camps. In the course of time a more flexible system was introduced where the

workforce only stayed a couple of weeks at the logging site without actually living in the area.

Logging operations were organized in particular *lesopunkty*. A *lesopunkt* consisted of a fishbone pattern of lorry roads and skidder tracks where the main transportation line ended in a landing site along a railway track, a river, or a main road. Most of the roads were built to last for only a fairly short time. Each *lesopunkt* was designed to produce (on the average) between 50 and 150 thousand m^3 of wood annually, but, according to estimates from the 1970s, a significant part of them produced amounts well above the upper limit (Blandon, 1983:58). This practice left the new Russian Federation with "a legacy of overuse" (World Bank, 1997:27). Earlier forest management practices have caused local overharvesting and the need for future road construction to new but more remote forest areas (cf. Chap. 2).

Breaking up from the old Soviet system of forest management has resulted in a poor funding of the Federal Forest Service which has affected, for example, the level of forest fire fighting (Nilsson *et al.*, 1994). Many forest management units are unable to pay wages to their employees. Around 60 percent of the funding emanates from the budget of the Russian Federation, 30 percent from other regional sources, and 10 percent comprise a budget gap (Obersteiner, 1997:33). Pisarenko and Strakhov (1996) report that the federal funding was around 70 percent in 1993. Since the proportion of federal funding has decreased the Federal Forest Service and its management units (the *leskhozy*) increasingly have to rely on other sources. Every *leskhoz* has its own budget and they should not be engaged in commercial forestry. They are, however, allowed to sell wood produced through so-called "commercial thinning." Today, the *leskhozy* in Arkhangelsk receive their funds from:

- the budget of the Federal Forest Service transferred via its regional establishment, the Arkhangelsk Forest Management (*Arkhangel'sk upravlenie lesami*);
- the oblast budget, i.e., from the regional administration;
- their own activities, such as sanitary cutting (thinning), services, the leasing of equipment, and 40 percent of the charges for the stumpage fees.

The new 1997 Forest Code has not significantly changed the role of the *leskhozy*. However, through the Code they have been given more favorable conditions for procuring their own funds.

The Organization of the Forest Sector in Arkhangelsk

In the previous section the general organization of the Russian forest sector was described. In this part we concentrate on how the sector is configured in Arkhangelsk Oblast.[20]

[20] Sources: Federal Forest Service of Russia, Moscow, 1997; *The Forests of Arkhangelsk Region*, Arkhangelsk, RA "KonTrust", 1996; *Welcome* (illustrated magazin of Arkhangelsk region), No. 1-2, 1997, pp. 45-48; "The allocation of duties of the direction of Federal Forest Service of Russia," *Lesnaia gazeta*, 28 Jan. 1993; Interviews with E.G. Tsarev (General Director of JSC "Severolesoexport") and O.A. Nevolin (Professor of the Forestry Department, Archangelsk State Technical University).

Figure 4:3 indicates how the Arkhangelsk forest management is related to the federal forest service of Russia while Figure 4:4 illustrates the organization of the regional forest management.

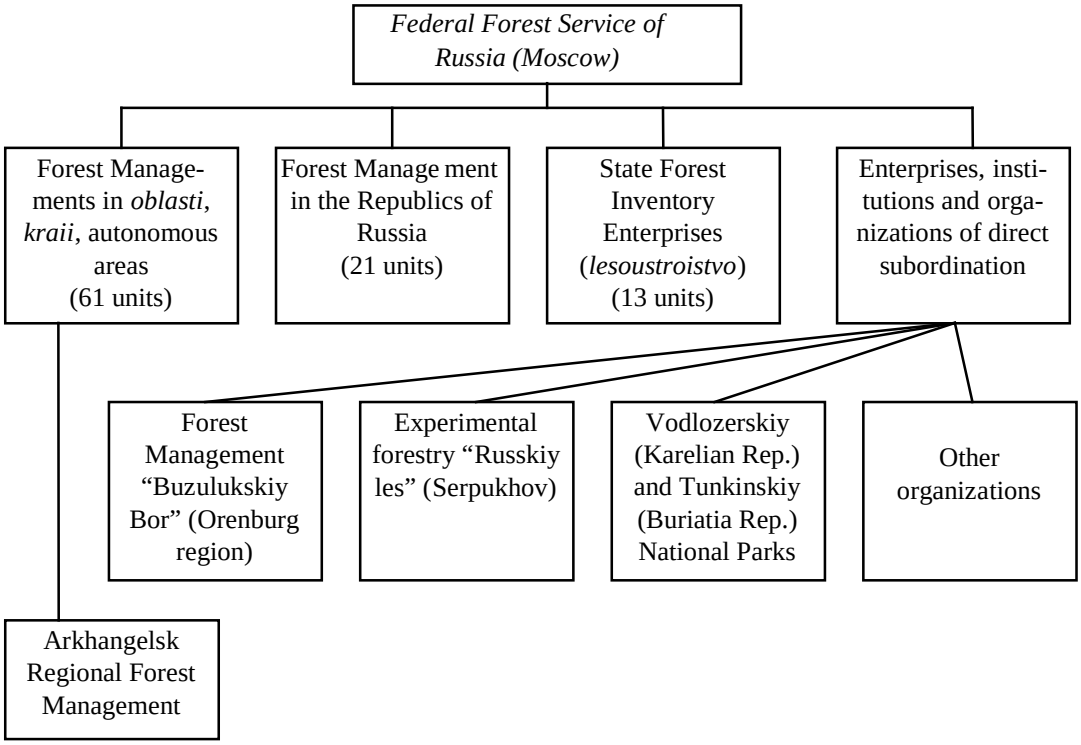

Figure 4:3. The structure of the state forest authorities.

As has already been mentioned there are 28 state forest management units (*leskhozy*) in the region, each one of them divided into several districts (*lesnichestva*). The head of the district is a forester with higher education while the head of a forest compartment (*uchastok*) is a specialist with college education. Each tending plot (*obkhod*) is managed by a forest-guard who normally has an education from a special forest school.

As has been said above the Regional Forest Management (*Arkhangel'sk upravlenie lesami*) is submitted to the Federal Forest Service of Russia (in Moscow) and to the Head of the regional administration. It cooperates with the Forest department in the administration but is not submitted to it. As can bee seen in Table 4:1 each *leskhoz* manages areas of significant size.

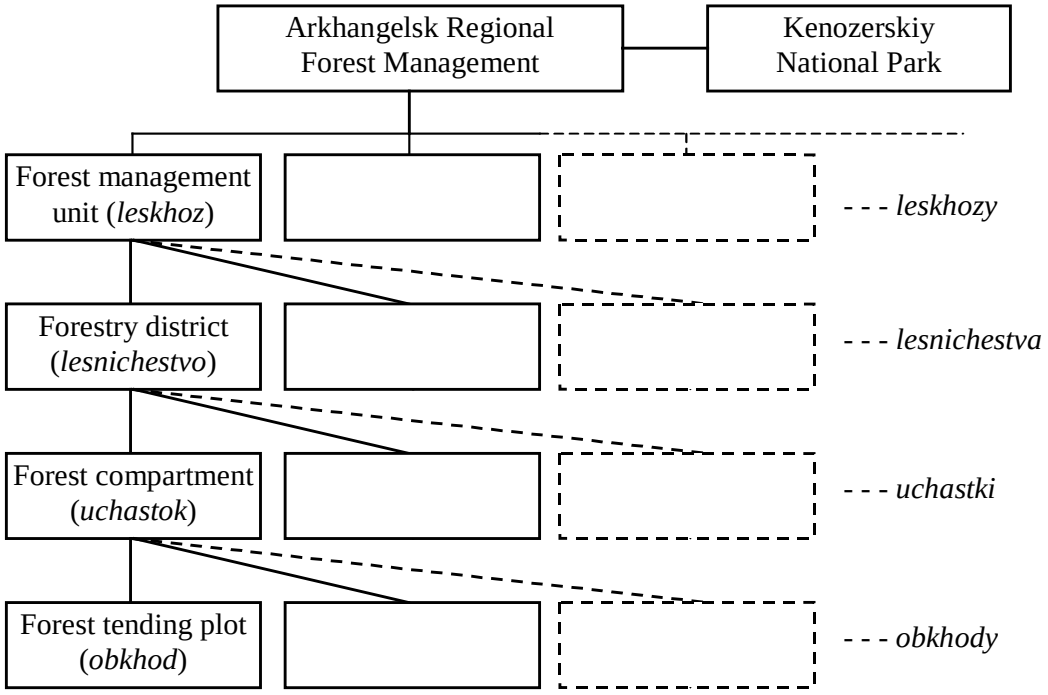

Figure 4:4. The structure of regional Forest Management

Table 4:1 The forest management system in Arkhangelsk

No.	Name of the enterprise (*leskhoz*)	Number of forestry districts (*lesnichestva*)	Area (1,000 ha)
1.	Arkhangel'skiy	10	1,090
2.	Bereznikovskiy	10	1,150
3.	Vel'skiy	12	671
4.	Verkhne-Toemskiy	9	980
5.	Vilegodskiy	3	305
6.	Vyiskiy	5	963
7.	Emetskiy	7	772
8.	Kargopol'skiy	6	580
9.	Karpogorskiy	8	957
10.	Konoshskiy	11	961
11.	Kotlasskiy	7	443
12.	Krasnoborskiy	6	724
13.	Leshukonskiy	7	2,677
14.	Mezenskiy	10	3,733
15.	Niandomskiy	8	687
16.	Obozerskiy	10	742
17.	Onezhskiy	12	2,197
18.	Pinezhskiy	5	961
19.	Plesetskiy	6	331
20.	Priozerskiy	5	783
21.	Puksoozerskiy	5	349
22.	Severodvinskiy	4	910

No.	Name of the enterprise (*leskhoz*)	Number of forestry districts (*lesnichestva*)	Area (1,000 ha)
23.	Solovetskiy	-	27
24.	Surskiy	6	798
25.	Ust'ianskiy	12	810
26.	Kholmogorskiy	8	956
27.	Shenkurskiy	11	1,037
28.	Yarenskiy	9	959
	Kenozerskiy National Park	2	138

Source: Arkhangelsk Forest Management (1996)

Today, there are 54 harvesting enterprises (*lespromkhozy*) in Arkhangelsk Oblast. These enterprises buy timber (or they lease a forest plot) from the *leskhozy* at fees decided by the Regional Forest Management. In 1992, most of these *lespromkhozy* were privatized and converted into joint stock companies.

The Forest Department is one among several departments within the Regional Administration. Formally, the Forest Department can collaborate with the privatized forest enterprises, but it cannot decide about their activities. Naturally, the department has close connections with other organizations, such as the Regional Forest Management, the Union of Forest Industrialists, export companies, etc. Through its Forest Department the Regional administration can influence the activities of forest sector enterprises in many ways. It can, for instance:

1. determine the size of funds allocated to the forest sector in the regional budget;
2. assist in attracting new investments to the sector;
3. manage the shares belonging to the Regional administration. (However, the number of state enterprises in the forest sector is constantly decreasing.);
4. suggest reductions in regional taxes (with the help of the Regional Deputies Council);
5. take over shares (or emit new shares) in enterprises which have debts to the "regional budget", i.e., in reality affect changes in the ownership of indebted enterprises;
6. replace the leaders of enterprises through bankruptcy procedures. This is a method which is only rarely used because the procedure is handled by the Court of Referees and it is rather time consuming.[21]

Only by looking at the list above it becomes evident that here are plenty of opportunities to establish "personal unions" and informal relations in the business life of the region. One example is the existence of "the Komsomol group" formed by a number of businessmen who in former days were the regional leaders of the Young Communist League (*Komsomol*).[22]

[21] One of the regional leaders said that it might take about five years to carry out all the bankruptcies in forest sector of Arkhangelsk.

[22] Interview with the manager of one of the holding companies who wished to remain anonymous.

The Arkhangelsk Regional Forest Management has 3,000 employees in the Arkhangelsk region. It has a general responsibility for fire/disease protection, reforestation, arrangement for forest harvesting, preparation of harvest plans and cutting zones, evaluation of forests (fixing stumpage fees, etc.), evaluation of the quality of harvested timber, examinations of harvested areas, decisions about penalties for violations of rules, arrangements for replantation (including a forest tree nursery).

Permits for forest harvesting are given by the Regional Administration (via its Department of Forestry). Leaseholders, however, decide themselves how much they want to harvest on their leased areas. The Regional Forest Management decides how this harvesting should be performed. Harvesting companies are required to plant new trees after harvesting but they are paid to do this by the Regional Forest Management. The reason for this is that (still) all forest land is owned by the state and leaseholders do not (yet) think about themselves and act as forest owners.

The Regional Administration has a powerful position in the allocation of forest lands through leasing. Large areas could be leased on long term contracts – up to 50 years. The leasing price is set by the Regional Administration on the advice of the Regional Forest Management, which estimates a "market price" for the area on the basis of calculations performed by a department in the Northern Institute of Forest Research (cf. below) taking climate and soil conditions, transportation costs, etc. into account. According to information obtained from the Regional Forest Management[23] the final price agreements are then reached through an auction type of procedure.

The Regional Administration decides on stumpage fees. In the absence of a true market price the Regional Administration acts on estimates (*normativy*) calculated by the Northern Institute of Forest Research. It should be noted that some *lespromkhozy* have special privileges, such as lower stumpage fees and certain state transfers to cover costs related to the maintenance and operation of roads, schools, etc.

Forest harvesting procedures have changed considerably these last few years. Earlier there were about 50 harvesting enterprises (*lespromkhozy*). Many of them have been closed down during the transition period, others were split and new harvesting companies have been established. Svetlozerskles is such an enterprise (see the following box).

[23] Interview with Chief forest officer, Mr. D.V. Trubin of the Arkhangelsk Forest Management on October 9, 1997.

The Lespromhkoz "Svetlozerskles":

- Our timber is devalued, – says operator Mikhail Odegov. – It is sold dirt cheap. By whom? Our directors, managers. Yes, I'm one of the shareholders, but my share is so small that no one cares about my opinion, and there's actually no time for me to express it: at 7 a.m. I'm off to the woods and return only at 11 p.m.

The situation in which operator Mikhail Odegov has found himself is characteristic of the joint stock-holding company "Svetlozerskles" as a whole. On the one hand, this enterprise is considered the leader among scores of other timber enterprises in the region. While several other timber-producing enterprises have come close to insolvency, made huge debts, have next to no current assets and owe their workers monthly and even annual wages, "Svetlozerskles" operates with stability. During the past few years it has produced 180–210 thousand cubic meters of timber, which is in keeping with the annual allowable cut, that is, with the volume which guarantees long-term, non-devastating forest exploitation. The *lespromkhoz* "Svetlozerski", as it was called prior to becoming a joint-stock company, was among the Soviet "shock constructions" in the 70-s and 80-s. The so-called Arkhangelsk industrial center comprising a number of saw-mill enterprises, requiring up to 5 million cubic meters of timber plus two cellulose-paper plants was not satisfied with the quantity of timber coming from earlier developed areas. To appease the growing appetites of this industrial center new *lespromkhozy* were created along the hastily built Arkhangelsk – Karpogori railroad: "Svetlozerski", "Ustpokshengski", "Siiski" and "Lukovetski".

During the liberalization of the economy the huge communist-created centralized management system collapsed. Gaining their independence, enterprises are carving out their own way towards the market, each in its own fashion. "Svetlozerskles" can be considered one of the most successful.

(by Yuri Lvov)

Now, processing industries sometimes arrange their own harvesting. The Regional Forest Management continuously evaluates the consequences of harvesting but it is difficult to monitor and to get valid information about the new harvesting companies. New rules are discussed that would increase the ability of the Regional Forest Management to make such evaluations. The resources available to the Regional Forest Management for monitoring are very scarce.[24] For instance, in 1997, there was not enough money available to monitor forest fires from the air and, consequently, there were many small fires that developed into serious problems. Occasionally, it has been necessary to take back decisions on leasing since harvesting companies did not function well. However, since the companies still have to take their "social responsibility" their leasing contracts could therefore not be cancelled. Nowadays, there are also financial companies (regional, Moscow based, or foreign) that wish to buy harvesting rights.

Summary:

- Virtually all forests are owned and managed by the Russian Federal Forest Service but, as in most Russian regions, virtually all forest enterprises have been privatized.
- Although most forest enterprises are privatized the forest management system in Arkhangelsk is to a significant extent structured by the principles established in the former Soviet Union.
- To a significant extent timber prices are set by means of administrative procedures.

[24] See previous note.

- The forest management system is heavily centralized giving few opportunities to adapt to local circumstances.
- Due to a relatively low profitability forest enterprises are especially affected by the general problems of the fragile Russian market economy, e.g., ambiguities in the legislation, poor enforcement of business rules, and the “draconian” taxation policy.
- An anti-crisis program has been initiated in order to come to terms with some of the most acute problems. The results of these efforts are still to be assessed.

5. The Political Profile and the Forest Sector

In terms of political preferences the population of Arkhangelsk is somewhat different from the Russian average.[25] While the communist party received 22.3 percent of the votes in the 1995 State Duma election the corresponding figure for Arkhangelsk was 14.1 percent. Likewise, "Our Home is Russia" received a somewhat smaller support in Arkhangelsk compared to the Federation at large. However, both for "Yabloko," and to a greater extent for "Women of Russia," the situation is reversed. Thus, it could not be argued that Arkhangelsk is significantly more "conservative" or "radical" than the rest of Russia. For example, the ultra-conservative "Liberal Democratic Party" received virtually the same support in Arkhangelsk as compared to the Russian average, i.e., around 11 percent.

Table 5:1. Result of the State Duma election in 1995. Percent.

	Russia	**Arkhangelsk**
Turnout	64.37	64.99
Communist Party	22.30	14.09
Our Home Is Russia	10.13	7.98
Liberal Democratic Party	11.18	10.84
Yabloko	6.89	7.72
Women of Russia	4.61	8.85
Communist-working Russia	4.53	2.89
Party Workers' Self government	3.98	8.30
Russia's Choice	3.86	4.99
Congress of Russia's Communists	4.31	3.08
Agrarians	3.78	2.79
Derzhava	2.57	1.71

The same similarity could be found in the 1991 referendum concerning the preservation of the Soviet Union. About the same proportion in Arkhangelsk as in the rest of the Federation, i.e., around 71 percent, was in favor of keeping the union. However, in the referendum in December 1993 concerning the new constitution, the population of Arkhangelsk gave a significantly greater support (71.61%) for the new constitution than the Russian average (55.22%). In the 1996 presidential election Arkhangelsk gave Boris Yeltsin a considerably greater support (64.5%) than the rest of Russia (53.7%). As in most Russian Oblasts, etc., there are a number of local parties and groups on the political scene. In Arkhangelsk we can find the following parties:

- The Agrarian Party of Russia;
- The Democratic Party of Russia;
- The Communist Party of the Russian Federation;

[25] If not reported differently this chapter is based on the following sources: a) *Political parties, social unions in Arkhangelsk region,* ed. by Y.F. Lukin, Arkhangelsk: Publishing house of Pomor University, 1995; b) Interview with Dr. M.I. Tsvetkov (Arkhangelsk State Engineering University). Data have aslo been collected from the web pages of t he Centre for Russian Studies Database at The Norwegian Institute of International Affairs (NUPI), URL: http://www.nupi.no/RUSSLAND/russland.htm (1 February 1999).

- The Liberal-Democratic Party of Russia;
- The People's Party "Free Russia" (formerly the Democratic Party of Russian Communists);
- The Democratic Choice of Russia;
- The Democratic Union of Russia;
- The Russian Christian Democratic Movement;
- The Party of Economic Freedom;
- The Republican Party of the Russian Federation;
- The Free Democratic Party of Russia (until 1991 it was the part of the Democratic Party of Russia);
- The Socialist Workers' Party;
- The Russian Party;
- The Party of Workers' Self-government.

There are also a number of very small parties (orthodox communists, etc.) and even parties like the "Party of Parents", the "Party of Beer Lovers", but they do not exert any influence on the political life of the region. There are no exact data on party membership in the region. In 1994, it varied from a few members up to 300 people (communists, liberal democrats). Today, the situation is believed to be the same.

There is, in fact, a constant coming and going of new political parties and movements. This is especially true during election campaigns when new groupings mushroom. A recent example on the federal level is the Moscow Mayor Yurii Luzhkov's "Otechest-vo" (Fatherland).

By looking at the relatively numerous movements and associations that exist in Arkhangelsk one might get the impression of a vital society in terms of participation in public affairs. However, it has been argued that huge groups know nothing about the majority of these associations. One indication of the presumably low participation rate is that only around 50 percent of the eligible voters in Arkhangelsk participated in the 1996 presidential election. However, in October 1997, the ASI Bulletin reported the following which seems to indicate that the picture is mixed.

> Recently a citizen's initiative in Arkhangelsk was given legal recognition: the head of the oblast's administration signed a bill allowing citizens to gather and discuss general government issues (on both the federal and local level) and also to pass resolutions regarding decisions made by the local government. To participate in the "town meetings" one must be 18 years of age and a legal resident of the oblast. Arkhangelsk citizens will be able use the meetings to elect members of the local administration, to hear reports of local government activities from deputies and administrators, and to discuss projects and proposed legislation created by local government organs. At the meetings, citizens will have the opportunity to meet with deputies, administrators and other members of the local government and question them about government activities and issues. The officials will be obliged to give answers to these questions within a month. [26]

However, it can be concluded that the over-all participation is fairly low, especially on the municipal level, where participation in some elections has been below the required 25 percent (Jacobsen, 1998:17).

---

[26] ASI Bulletin No. 42 October 17–23, 1997. Agentstvo sotsialnoi informatsii, Kutuzovskiy pr. 22 pod. 14a, Moscow, 121151.

Many of the numerous organizations in Arkhangelsk are, of course, directly or indirectly associated with political parties. To some extent it is possible to range them from left to right, for example as follows:

Communists and sympathizers. The Communist Party of the Russian Federation, the Agrarian Party of Russia, the Social Political Movement "Justice", orthodox communists, etc. The majority of their members are middle-aged or elderly people.

Social-patriots. For example, "State Power to the People" consists of former communist and soviet leaders, etc.

Regional-patriots. For example, the "Pomor Consent". The main goal of these is to defend regional interests. Their political orientation could be said to be "left center".

Democrats. A number of social-political movements, such as, "Democratic Revival of the North", Social-democrats, Christian-democrats, "Ecology of the North", Cultural and Educational Union "Nord", former Komsomol leaders and others.

National-patriots. For example, "The Union of Archangel Mikhail" which joins liberal-democrats and the "Russian National Cathedral".

The Formal Political Structure

In Russia all bodies of local and regional power are governed by both executive and elected (legislative) bodies. The governor (*Gubernator*) is the head of the regional administration while the *mayor* fulfills this role on the municipal level. The mayor is regarded as "strong" when he/she heads both the legislative and executive bodies. However, the implementation of the Municipality Code of 1995 introducing the principles of parliamentarism has been associated with a number of problems including interventions by the president, etc. (Jacobsen, 1998:20 ff.).[27]

The components of the executive and legislative power of the Arkhangelsk Oblast are shown in Figures 5:1 and 5:2.

[27] "Local government essentially has no power, according to Arkhangelsk Mayor Pavel Balakshin, who also serves on the President's Council on Local Government. He argues that the federal government is not interested in strengthening local government because effective local governments would weaken federal power. To make local government a reality, Balakshin says federal laws must define how much tax revenue local governments should receive. Currently, the oblast governments determine those tax issues. He also advocated giving local governments the right to own land. Under proposed legislation, oblasts would own land. The mayor also complained that he wanted greater power vis-a-vis the city council." (Pravda severa [Arkhangelsk], 25 March), *IEWS Russian Regional Report*, Vol. 3, No. 13, 2 April 1998:

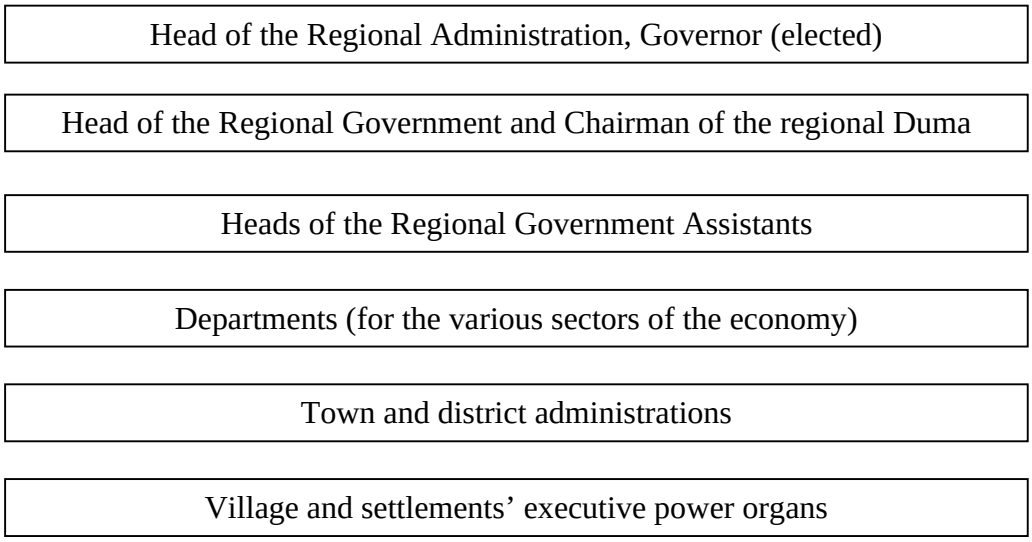

Figure 5:1 The structure of the regional legislative power.

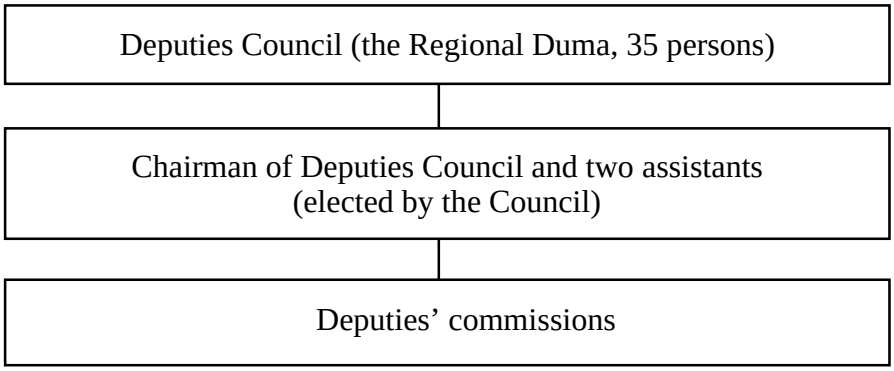

Figure 5:2. The structure of the regional executive power

In Figure 5:2 we have listed the executive powers that pertain to political affairs in the Arkhangelsk Oblast. Although there exist no formal links, for example, between the Governor (i.e., the head of the Regional Administration) and the chairman of the Deputies Council (the regional Duma) or the town executives it is common to describe the relation as a formal hierarchy. This reflects the Soviet state governance system which virtually lacked any principle of local self-government in the normal sense of the word. It is also close at hand to believe that this image of a hierarchy, in fact, reflects the contemporary "rules of the game." The following story from *Pravda Severa* seems to indicate this:

> The long-running scandal surrounding the selection of the Arkhangelsk Oblast commissioner on human rights is finally winding down. The scandal began on 2 October 1997, when the oblast legislature appointed the governor's deputy and chief of staff, Oleg Petrov, as human rights commissioner. The public responded with outrage and protest, and some civil rights groups appealed to the procuracy, claiming the rules of procedure were

violated during the selection process: The legislative session ended earlier than planned, and Petrov's opponents were never given a chance to address the body.

Additionally, a very important provision was omitted from the text of the oblast law on the human rights commissioner that had been widely published in the media. The omitted provision stipulates that the legislature's committees, with public consultation could nominate candidates. In the published version of the law, only the governor could nominate candidates. Few believed that was a simple typo, but the oblast procuracy decided there had been no conspiracy. However, the procurator officially protested and the full text of the law was finally published, after which the legislators reconvened for their winter session and revoked Petrov's appointment.[28]

The Existence of a "Forest Lobby"?

The Arkhangelsk Regional Duma has 35 deputies, only a few of which have been elected as representatives of political parties. There exists a powerful forest lobby that dominates the Duma as well as the Department of Forestry in the Regional Administration. For example, the head of the Department of Forestry is also a member of the Union of Forest Industrialists. Earlier he was a senior engineer in one of the larger pulp and paper plants.[29] Another senior engineer is now the chairman of the Duma committee on industry, construction, and infrastructure. This person, a director of a forest enterprise, is also elected chairman of the "Union of Archangel Mikhail," which is a local organization of producers. As chairman of the committee he has worked a lot with taxation issues.[30] As a result the Regional Duma reduced some special taxes of importance for small enterprises, such as the tax on capital (equipment, buildings), the road tax (which is 3.4% on turnover). Many of these persons sit on several chairs – they "have many hats", as the Russians would say. The self-interest is by no means hindered by any constitutional arrangement. In fact, these individuals can often benefit personally from the confused situation and the jurisdiction in which they operate is somewhat unclear.

The Duma is elected as a "regional" parliament but the Regional Administration is the "long arm" of the state. Formally, however, it is not the executive of the regional parliament. But, as we have exemplified, roles are sometimes confused by the existence of personal unions, and other non-formal arrangements. In many of our interviews respondents talk about a "forest family" consisting of The Regional Duma, the Department of Forestry of the Regional Administration and the Union of Forest Industrialists. Together they prepared a crisis program which was adopted by the Duma and the Regional Administration in 1996. This document played a very important role in the election campaign since the main part of the population in the region is dependent on the forest sector. However, the program had nothing to say about small business, something that might reflect the position of the big-enterprise forest lobby.

---

[28] IEWS Russian Regional Report, Vol. 3, No. 8, 26 February 1998 (Internet Edition). (Gleb Tiurin in Arkhangelsk, who is the author of this note, mentions the following sources for his story: *Arkhangelsk*, 21 February; *Pravda Severa*, 18 February; Pomorye TV, 19 February.)

[29] When this report was finalized the Head of the Department of Forestry had left his position to become General Director of the Solombala sawing and woodworking combine.

[30] Based on interviews conducted with representatives from the regional Duma, October 9, 1997

For example, on October 9, 1998, the Democratic Movement (led by the deputy chairman of the Duma Finance Committee) organized a seminar to review the results of the "anti-crisis program." No one from the "forest family" came to this meeting. The directors of the big enterprises concentrate on relations with the Regional Administration rather than with the new democratic movement. During the meeting it was concluded that the anti-crisis program had been designed in a way that prevented the assessment of its results. Formally, however, it was possible for the Regional Administration to conclude that the program had produced intended effects. Some 10 new regional laws were passed on the basis of the program. Whether or not these laws have really changed the situation in any respect was not even discussed. The part of the program devoted to the forest sector resulted in some new laws allowing tax reductions for certain companies. Formally this is a concrete effect, but in reality the law did not change anything (even according to the directors themselves).

The large enterprises in the region have huge debts to the regional budget (hundred millions of rubles). This sum is constantly increasing due to penalties for not paying on time, etc. Consequently, bankruptcy should become a prominent feature in the economy, something that would lead to a debt restructuring. The head of the Department of Forestry in the Regional Administration, has suggested that the entire debt should be reconstructed. Some enterprises should be exempted from penalties, some should be allowed to pay during 5–10 years, some should be closed down permanently (which in many cases should have happened years ago). Those in favor of radical changes argue that the problem is that the "red directors", who are still in charge of most of the large enterprises, do not understand the idea behind the market reforms and are unable comprehend what is going on.[31]

The general situation in which many forest enterprises find themselves can, once again, be illustrated by the *lespromkhoz* Svetlozerskles although this enterprise might be in a better position that its fellow companies (see the following box).

[31] To clarify whether this opinion reflects the reality would require more investigations. See Mashkina, 1998, for a suggestion on how such an investigation might be conducted.

The Lespromhkoz "Svetlozerskles":

The company owes nothing to the regional and local budgets, wages are paid in due time and they are among the highest in the timber industry. But, on the other hand, a serious threat is impending: that of coercive extraction of a federal tax debt and a surtax dragging on from as far as 1996. The current payments into the federal budget are made in time, but the fines for delayed payments keep growing. Out of the approximately 20 million rubles (in new currency) received from the realization of output, about 5 million rubles go into the state coffers. Still the enterprise remains a debtor. In 1996, the Interdepartmental arrears commission went so far as to attempt to bring bankruptcy action against "Svetlozerskles", but it passed without consequences as it was evident that this enterprise is solvent and quite capable of functioning.

In 1997, the "Svetlozerskles" directors attempted to take advantage of the situation to reconstruct the debts. In March of the same year a government act permitted a delay in tax payments if the enterprise carries out an emission of shares, if 50 percent of the shares plus one pass over to state property. Simultaneously fines would keep growing. "Svetlozerskles" rejected this variant. From the forestry department of the region, it is said that only a few enterprises in Russia took advantage of the government proposed restructuring. In former years the enterprise produced timber with home made machines (LP-49), which were unreliable in exploitation and caused great harm to the forests. Finally, the natural resource authorities forbade using them. Later new felling machines (LP-19) were purchased. The most substantial purchases of the past few years were felling machines "Timber Jack-618" and three self-loading skidders of the same "Timber Jack" company. Buying foreign-made machines exerted great financial demands on the enterprise. They were connected not only with paying for the equipment proper, but also with covering the huge customs fees, which e.g. amounted to 100 percent of the skidder prices, as in our practice they are not considered technological, but transport means. Nevertheless the enterprise took these expenses upon itself and today 70 percent of the harvested volumes is produced by machines and 30 percent by hand-operated chain-saws. Limbing and loading long-tailed timber on trucks is done by home-made machines, which, as the director considers, meet the demands of the enterprise to the full.

Prior to privatization the enterprise had 600 workers. The number was not economically justifiable. They had to down-size to 370. As Alexander Trenin put it, the number of workers "was brought into accord with production volumes and the market situation". This naturally caused deterioration in social welfare and services in the Svetlyi settlement: unemployed persons appeared for whom there simply were no other jobs to be had.

(by Yuri Lvov)

So far the typical reaction when an enterprises becomes insolvent has been the following:

1. The first method is to convert the debts into shares in the debtor enterprise. These shares can also be "bought" by the authorities. In this way authorities increase their share in the newly privatized businesses. This institutional circumstance has caused a counter current that can be labeled "deprivatization" (cf. Carlsson & Olsson, 1998:63 ff.).
2. An external leadership is established. Generally, this person is someone (a bureaucrat) with a personal interests in the business. His task is not to reconstruct the enterprise but to make it function independently of any profitability requirement. In practice, actual liquidation does not exist.
3. The third solution is just to let the debts grow, with a resulting increase of barter trade (cf. Aukutsionek, 1998; Gaddy & Ickes, 1998). This seems to be the main solution.

This situation is preserved because the Duma is largely populated with people who are stakeholders in many of the enterprises in question.

In the next section we shall discuss how the forest enterprises of Arkhangelsk Oblast are organized and what problems are associated with this organization.

Summary:

- In terms of political preferences the political profile of the Arkhangelsk Oblast does not significantly deviate from the Russian average.
- Although organizations are numerous popular participation is low, especially at the local political level.
- The forest sector plays an important role on the regional political scene. There exists an informal alliance – an influential "forest family" – consisting of The Regional Duma, the Department of Forestry of the Regional Administration and the Union of Forest Industrialists.
- Forest enterprises have huge debts to the regional budget and in combination with the fact that jurisdictions are unclear and that many officials are stakeholders in the industry, political efforts are often designed at temporary alleviations of day to day problems caused by the lack of a proper market mechanisms.
- Since a significant part of the population is literally dependent on the survival of the forest industries they are likely to give support to individual members of the "forest family" pleading for temporary remedies rather than those which favor long-term changes of the sector.

6. Forest Enterprises in Arkhangelsk Oblast

In this section the forest enterprise sector in Arkhangelsk is briefly described.[32]

In accordance with a Presidential decree (No. 1392) from 16 November 1992 holding companies were introduced at the intermediary level between the central *Roslesprom* and individual enterprises in the Russian forest sector (Romanov, 1995). However, the decree was implemented in various ways in different regions. In general, the process of establishing these holdings seems to have been very slow, but a number of them were eventually established in Arkhangelsk as well, some of which are still in operation, such as:

- Severoles (the largest holding comprising 36 enterprises);
- Kotlasles;
- Vel'skles;
- Nauchdrevprom (on the basis of the Central Scientific-Research Institute of Mechanical Wood Processing (TsNIIMOD);
- Severnaya tsellyuloza (Northern Pulp); and
- Konoshales.

These holding companies joined together a number of harvesting enterprises, sawmills, etc. However, the holding companies were never able to fulfill the intentions of the authorities. They were mainly used to take over shares which belonged to the state (the Regional Administration, etc.). This construction has been described as a "dead-born child" of the first period of property redistribution. In practice, these holding companies only exist "on paper".[33]

After this failure a new holding company called *Solombalales* was established in 1997. The company joined the large Solombala Pulp and Paper mill with all its suppliers. The new company aims at reducing the total cost of pulp and to make its business more competitive. The company supports harvesting enterprises where they invest in new technology, it provides good credits, etc.

In 1991–92, practically all forest enterprises in Arkhangelsk were privatized. Only five small enterprises remained state owned and in the absence of a "coordinating structure"

---

[32] If not reported differently this section is based on the following sources:

a) The official list of leaders of regional forest sector enterprises.
b) Lvov, Yu. "Vse my v odnoi sviazke" (We are all in the same boat). *Gazeta ATK*, weekly newspaper of the Arkhangelsk telecompany, No. 48 (105), Dec. 6, 1997, p.1-2. (Interview with Prof. Alexander V. Plastinin, chairman of the board of the Solombalski TsBK.)
c) Popov, I. "Otrubilis', ottorgovalis' – poslednie shchepki na eksport letiat" (They cut down and bargained out – the last slivers are flying off to export), *Komersant' Daily*, No. 106, June 10, 1994.
d) V. Bardin, K. Smirnov. "MVES stremitsia sdelat' soiuzy eksporterov svoimi soiuznikami" (The Ministry of External Economic Affairs tries to make the Unions of Exporters its allies), *Komersant' Daily*, No. 110, June, 17, 1994.
e) Popov. I. "MVES budet kontrolirovat' eksport po-novomu" (The Ministry of External Economic Affairs will use the new method of export control), *Komersant' Daily*, No. 111, June,18, 1994.
f) Popov. I. "Lesoeksportery nachnut torgovat' kak priniatno v Germanii" (The forest exporters start to do trade as they do in Germany), *Komersant' Daily*, No. 113, June,22, 1994.
g) Kologreev S.F. *Potoki lesnykh gruzov iz Arkhangelskoi oblasti* (Flows of forest products leaving Arkhangelsk Oblast), JSC "Severolesoexport", Paper presented at an international conference on marketing held in Arkhangelsk in November 1997.
h) Interviews with E.G. Tsarev (General Director of "Severolesoexport"), A.A. Kalinin (Chairman, Union of Forest Industrialists and Director, Lesobank), A.I. Orlov (Union of Forest Manufactures), A.V. Plastinin (Chairman of the Board, JSC "Solombala Pulp and Paper mill" and Professor of the Arkhangelsk State Engineering University), N.I. Pavlovskaya (Vice-Director of Sawmill No. 3), S.F. Pavlov (JSC "Severolesoexport").

[33] Interview with the Chairman of the Union of Forest Industrialists and Director of Lesobank, Mr. A. Kalinin, October 8, 1997.

forest enterprise directors "came together" to create a forum for "intra-region regulation and coordination."[34] The Arkhangelsk *Union of Forest Industrialists* is a corporate organization with about 30 members.[35] Members are *physical persons* (mainly enterprise directors, etc). The Union was established as a "successor" to *Arkhangelsklesprom*, the former state forest complex with its 180 enterprises.

The Union lobbies the regional and federal administration where it tries to influence financial issues, taxation, legislation, pricing policies, etc. Although it has a corporate character it is often described as a *public* organization. The board consists of nine members mainly from forest enterprises. However, among its members one also finds the head of the Forest Department of the Regional administration, the leader of the Trade Union of Foresters, and the director of the floating office. The chairman of the board is also the director of *Lesobank*, the most important bank in the Arkhangelsk forest sector. The bank was established in 1994 to facilitate the funding of investments and business in the Arkhangelsk forest sector. *Lesobank* is owned by 34 enterprises.[36]

As was mentioned earlier, during Soviet times, Arkhangelsk was the dominating timber producing region in the country. About 12 percent of the total timber export from the Soviet Union came from Arkhangelsk, the region contributed 25 percent of the total Soviet timber production and 30 percent of its cellulose was produced in Arkhangelsk. The Arkhangelsk forest sector has always been export oriented but earlier all exports were handled by Moscow. Still today, some of it goes via Moscow, but the main part goes directly from the companies in the region to their destination abroad.

Quite recently a regional Union of Forest Exporters was organized. It has nine members, JSC *Severolesoexport* and a number of Arkhangelsk sawmills. As mentioned in Chapter 2 there are 156 exporters of lumber in the Arkhangelsk region, but of these only around 20 are skilled and qualified in export trade. This was the reason for establishing the new organization. The main forest exporter in the region is JSC *Severo-lesoexport*. The enterprise was established during the Soviet period by the 17 main sawmills in the region. Now it is a joint stock company. *Severolesoexport* is a member of both the Union of Forest Industrialists and the *Rosekportles*[37] in Moscow and it has close relations with JSC *Exportles* (which owns 30% of the shares of *Severolesoexport* while *Severolesoexport* has 7% of the shares of *Exportles*). The main activities of *Severolesoexport* are shown in the Figure 6:1.

[34] See note 32.

[35] The exact name of this union is "The Union of Employers of the Timber Industry Complex of Arkhangelsk Region" (*Soiuz rabotodateli lesnogo kompleksa Arkhangel'skoi oblasti*).

[36] Information about *Lesobank* can be found on the bank's web page at URL: http://www.lesobank.ru

[37] *Rosekportles* is a subsidiary organization of *Roslesprom*, which in the beginning of the transition period became what has been described as a "quasi-state committee". Athough being a commercial actor *Roslesprom* was also given the right to issue export quotas while *Rosekportles* was the central export agency. (For a description and analysis of the development of these units, see Lembruch, 1998:35 ff.)

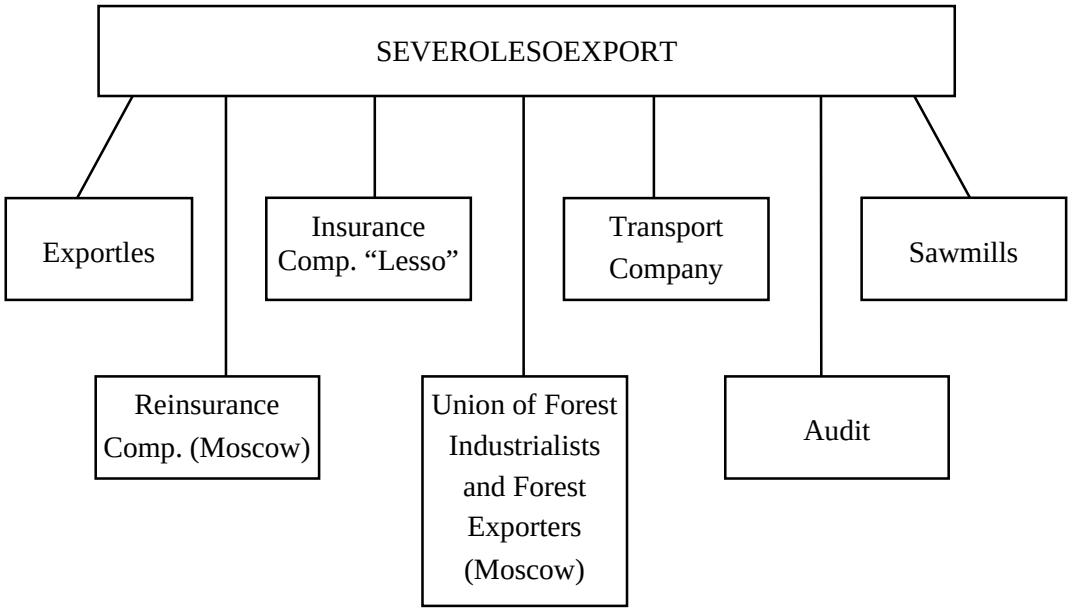

Figure 6:1. Activities of Severolesoeksport

Until quite recently both *Exportles* and *Rosekportles* had branch organizations in Arkhangelsk. Now all of them have disappeared. The policy of the Ministry of External Economic Affairs has been to establish special export cartels, but it is not clear to what extent the ministry has been able to control developments in the sphere of exports.[38]

The structure of the Arkhangelsk forest sector is currently in a state of continuous change. Many enterprises (especially small ones) appear and disappear all over the region. The gathering of data about new enterprises (established after 1991) is the subject of a special investigation and is expected to take a long time.[39]

A major problem for the forest sector in the region is the insufficient supply of raw materials. So, the enterprises have to make special agreements with state forestry organizations (*leskhozy*) concerning cutting areas and restoration of wood, fires, etc. For instance, during the Soviet period, Sawmill No. 3 was the best sawmill in the region. At the beginning of the 1990s it established the company "Promles, Ltd", which joined a number of harvesting enterprises. The sawmill had no problems with timber until 1995, when the economic situation got worse. Now, Sawmill No. 3 has huge debts and is practically bankrupt.[40] "Promles, Ltd" has been closed down. Some of the harvesting enterprises (belonging to "Promles") joined the *Solombalales* holding company. This picture is rather typical. There is a "battle" between forest enterprises for good

[38] The pros and cons of these coordination efforts were discussed in the press during 1994 (cf. for instance articles in *Kommersant' DAILY*, June 10, 17, 18, 22 1994). For a critical discussion of the development of Russian forest (export) organizations 1992–1996, see Lehmbruch (1998).

[39] Interview with the Chairman of the Union of Forest Manufacturers and Director of Lesobank, Mr. A. Kalinin, October 8, 1997.

[40] The financial crisis of August 1998 helped Sawmill No. 3 in that it increased the ruble value of its exports. The critical situation of this enterprise – as in some other forest enterprises, like e.g. Maimaksanski Sawing Woodworking Combine – actually improved through the 1998 financial crisis.

suppliers. Every sawmill tries to have its "own" suppliers among the harvesting enterprises.

Sometimes payments for timber purchases is done through the provision of (often not very modern) harvesting machinery, etc. In addition to these "traditional" suppliers there are a great number of small harvesting and trading intermediaries which sell small amounts of timber (less then 1,000 m^3). The *lespromkhoz* called *Svetlozerskles* is one of the enterprise that has to cope with the problems and which deliberately has tried to refine its management methods (see box below).

The Lespromhkoz "Svetlozerskles":

An important measure was the change to 100 percent bucking on the enterprise's own sites. While a state enterprise the *lespromkhoz* fulfilled the orders of high standing authorities by dispatching half of the timber to consumers long-tailed, without any sorting. When the enterprise became independent, its management considered that by increasing its own bucking capacities the enterprise could partially alleviate the problem of down-sizing in the first place and, besides, make additional profits from selling its produce, the price of assorted goods being higher than that of long-tailed timber. At present bucking on three bucking lines in two shifts a day produces up to a thousand cubic meters of saw logs and pulpwood.

Consistently introducing measures to make more efficient use of materials and resources meant that the company had to revise other stereotypes enrooted in the Soviet period as well. For example, it was considered that timber-harvesting should be carried out the year around, proceeding from the simple argument that each Soviet citizen should be provided with a job twelve months a year excluding a three-week vacation.

Two-track plank roads were built into the most inaccessible marshy parts of the region. Along such roads timber trucks resembling railway trains pushed forward tens of kilometers. These roads required a huge amount of the best timber, man force, and expenditure. That is why, when the opportunity appeared to solve such problems independently, the director set a new task: 85 percent of the annual volume of timber-cutting was to be done in the winter period. This would make it possible at minimum expenditure to drive timber out of remote areas along temporary winter roads as soon as the swamps are covered with thick layers of ice and snow.

This does not mean that road-building has been completely stopped since production sites are scattered over vast territories and there has never been a normal transportation system. In the summer months a part of the workers relieved from the winter logging sites is engaged in road-building and repairing, others in the overhauling of machinery, some take vacations. Tractors and machines are hired out, for example to the forest management to carry out silvicultural works.

(by Yuri Lvov)

The Social Responsibilities of the Forest Sector [41]

The forest sector can be described as a "closed" process, totally dependent on timber harvesting. As we have seen, during the last five years total harvesting in Arkhangelsk Oblast decreased by two thirds. It is significant that only about 30 percent of the existing production capacity is used. When wood prices fell on the world market and the state introduced currency restrictions a large part of the enterprises became unprofitable. As a consequence all financing must come out of the work performed by the enterprises themselves. The state investment policy is strict and it might take 9–12 months before the State pays out the credits given to enterprises.

[41] If not reported differently the source for this section is Arkhangelsk Oblast (1997).

Another problem is the seasonal character of the sector. Seventy percent of the harvesting is done during the winter. According to the director of Arkhangelsk *Lesobank* most enterprises have debts, but to enforce a strict bankruptcy policy would in practice not improve the situation. That would often mean that whole villages or small towns would die since they are entirely dependent upon a single *leskhoz* or *lespromkhoz*. It is therefore necessary to find more "civilized" forms for solving the problem. Most actors believe that the only possibility is restructuring and reorganization. In such restructurings, debts might be "paid" for by shares in the debtor company. This is also true for the state, which again might become the main shareholder in recently privatized enterprises. This is, in fact, a countercurrent to the official movement towards privatization.

Investments by foreign companies (mostly German and French) are the only available alternative today since, in the present turbulent situation, foreign technology (machinery) must be pre-paid by Russian enterprises. Long term investors are not attracted due to ambiguities in the legislation which make forecasts of future developments difficult or impossible.

In 1996, the activities of the Arkhangelsk forest sector enterprises resulted in a loss of 479.5 billion rubles (an increase of more than 250 percent compared to the previous year). During the first five months of 1997 the loss amounted to 194.6 billion rubles. In 1997 there were 38 profitable and 98 unprofitable enterprises with total debts of 2.62 trillion rubles (511.59 billion were debts to the state budget). Only 5 percent of all forest enterprises operate at a standard liquidity ratio, 7 percent have a liquidity ratio close to standard. The remaining 88 percent are practically bankrupt. The existing tax system is unacceptable for forest enterprises (especially for harvesting enterprises). A majority of these enterprises have no working capital with which to buy raw materials, fuel, new equipment, etc. The capital stocks has been depreciated to more than 50 percent (57% in harvesting, 50% in woodworking, 57% in the pulp and paper sector). The existing customs rules make the acquisition of modern foreign technology practically impossible.

One of the main obstacles for a fast restructuring of the forest sector is the "social responsibility" that still rests with the enterprises. In areas dominated by raw material based production the "social sector" (education, health care, child care, etc.) is largely maintained by the enterprises. In fact, sometimes these enterprises constitute the economic basis for whole communities. Thus, single enterprises might provide fuelwood, housing, day care, etc. in the areas in which they operate. These engagements contribute to making the crisis in the forest sector even deeper. In Arkhangelsk, the engagement by the enterprises of the forest sector in the social sphere can be illustrated by the following facts (as of Jan. 1, 1997):

- Provision of housing 2127.45 m^2
- Kindergartens 40 units
- Schools 15 units
- Clubs 77 units
- Baths 108 units
- Other facilities 264 units

In 1996, the cost of the above arrangements was 203.4 billion rubles. Harvesting enterprises, like the *lespromkhoz Svetlozerskles*, are also involved in providing social services (see box below).

The Lespromhkoz "Svetlozerskles":

Following the break-down of the Soviet centralized system of ORS-s (*otdely rabochego snabzheniia* – departments providing for workers' needs in food and clothing), commercial trading appeared in the settlements. But it could not meet the demands of the population, since stores specialized in selling only the most profitable goods – alcohol, cigarettes, sweets. At the same time the Arkhangelsk pulp and paper plant, the main consumer of "Svetlozerskles" pulpwood, came out with proposals to substitute food staples for money as payment – for many months the plant had not been able to transfer any money to the *lespromkhoz* to pay for wood deliveries. (The plant itself got these staples on a barter basis in payment for its produce on the domestic market and in the countries of the former Soviet Union). That is how in "Svetlozerskles" the idea emerged to create special trade services, including a few stores, a bakery and a cafeteria. Since the local authorities, also experiencing a financial deficit, had not for months paid salaries to budget dependents – teachers and doctors – the following resourceful scheme was invented: "budget dependents" get food staples and other goods free of charge at the enterprise stores while in the local budget a corresponding sum is taken down as the enterprise's payments of local taxes.

"Live money" is a term which industrialists and financiers have begun making ample use of ever since money accounts have been replaced by bills of exchange, barter and mutual agreement accounting, that is replacing "live money" with substitutes. For the year 1997 "Svetlozerskles" received only 31 percent of the total sum of its sold produce. All the rest came either in the form of substitutes or natural exchange, among which fuel and food products come first. That is why it was easier for the enterprise to square accounts with the local and regional budgets than with the federal, which acknowledges only money transactions.

As compared to numerous other enterprises in this field, which rushed "to rid themselves" of Soviet-period agricultural subsidiaries, "Svetlozerskles" has retained its agricultural production and is taking good care of it. It has a highly mechanized farm with automatic feeding-troughs and milking machines, an automatic diesel power station, hay warehouses and other structures and agricultural technology five million rubles worth. Thirteen farm workers, including two managers, not shunning manual labor either, maintain and provide for 135 heads of cattle. In 1997, the farm produced 80 tons of milk and 10 tons of meat. In the winter they sell whole milk, while during summertime the milk is processed into cream, cottage cheese and other produce. Under local conditions producing agricultural products is paying only on specialized farms with elite cattle or if conducted by farmers who combine field-crop cultivation with commercial activity. "Svetlozerskles" not only reaps no profit from its farm, but subsidizes about 180 thousand rubles annually. But still Alexander Trenin puts forward arguments in favor of maintaining the agricultural section.

The agricultural section provides inhabitants of Verkhnaya Palenga with jobs. There is no other possibility of employment for them. The produce of the farm is of higher quality than that which is brought from other places and it is always fresh. Besides, the farm land provides people with plots where enterprise workers can grow potatoes and vegetables for their own needs, harvest hay for their cows. The farm also provides the plot-farmers with fertilizers at a low price and they can rent transport and agricultural implements. The milk and meat sold by the subsidiary farm is sold to its workers at prices lower than cost price. In a small eating house on a cutting site, situated in the forest at 40 kilometers from the settlement, the workers get hot meals practically free of charge – they only have to pay 3 rubles.

Dwelling houses and all so-called social objects formerly owned by the *lespromkhoz* and maintained through an increase in the cost-price of the enterprise's produce were handed over to the local municipal authorities. But the district and settlement administration has neither the strength nor the means to maintain buildings and equipment in a normal condition. The heating system installed hastily with a harsh violation of technology defunctions: it is cold in many an apartment in the winter. No one in the village is responsible for garbage disposal. People with complaints do not turn to the local administration but to the director of the timber enterprise. That is what they have grown accustomed to. I witnessed such a scene; in front of the office building entrance the director's car was encircled by some 20 women petitioners. Alexander Trenin heard them out patiently, promising to help. Later in his office he regretted the fact: people have grown used to relying on the state, they do not want to do anything themselves, they do not even clean up their own rubbish. And many of them no longer even work for the *lespromkhoz*.

(by Yuri Lvov)

General Problems in Forest Sector

Arkhangelsk is located in the far north with harsh winters and frozen waters. For its export the sector is dependent on ice free harbors.[42] Due to high prices of icebreaking, forest sector enterprises cannot perform export operations all the year around. This fact has made the financial situation more problematic and it has increased "mutual debts" between forest sector enterprises. In addition, most machine building enterprises, producing complicated wood and woodworking equipment, are practically bankrupt. Since 1993, there has been virtually no investments allocated to forest related scientific-research institutes and organizations. Although the volumes of manufacturing have decreased there has not been any corresponding reduction of workers and employees. Hidden unemployment now exceeds the official level by 3-4 times. The high level of labor costs in the total costs of forest products might be a consequence of this fact.

Another problem is that the restructuring of the forest sector has not been particularly successful, because a majority of the enterprises in the region are large and medium sized. New financial and industrial actors prefer to rent existing enterprises or to buy shares in such enterprises, but they do not want to invest money in the rebuilding of them. According to the official policy, as it is revealed in the anti-crisis program of Arkhangelsk region (Arkhangelsk Oblast, 1997), the forest sector has to cope with the following problems:

- to eliminate unprofitable enterprises;
- to concentrate people and technical resources in profitable enterprises;
- to introduce a "shift method" in harvesting and achieving a resettlement of the population;
- to attract new foreign and Russian investments in order to introduce modern equipment and technology, new types of products;
- to find new markets for forest products inside Russia and abroad;
- to concentrate the shares of forest enterprises in the hands of the regional administration in order to exert influence on their management, especially concerning their sales policy. (Since the majority of forest enterprises have large debts to the regional budget – about 400 billion rubles – they can issue additional shares and give them to the administration as payments for their debts.)
- to adopt a regional law on "Property use for making seasonal and safety stocks";
- to abolish taxes on motor vehicles to be used in the production process;

---

[42] Sources for this section: Arkhangelsk Oblast (1996); Arkhangelsk Oblast (1997); Tsarev E.G. (1996); "Meropriiatii po stabilizatsii raboty predpriiatii lesopromyshlennogo kompleksa Arkhangel'skoi oblasti v 1996 gody. Proekt" (Measures to stabilize work of the enterprises in the forest industrial complex of Arkhangelsk Oblast in 1996, Draft). (This document was worked out in the Regional Adminstration to President Yeltsin's visit to Arkhangelsk, but the recommendations were not implemented.); "Osnovnye napravleniia v rabote predpriiatii i organizatsii lesopromyshlennogo kompleksa na 1997-1998 gody. Prilozhenie 2, Odobreno resheniem kollegii Goskomlesproma Rossii ot 15 ianvaria 1997 g." (Main directions in the work of enterprises and organizations in the forest industrial complex for 1997-1998. Appendix 2, Approved by the extended collegium of Goskomlesprom Russia on 15 January 1997). This Committee was abolished and most of its decisions were never implemented.)

- to reduce the rate of property taxes;
- to change the use of the territorial road fund;
- to finish the transfer of the social sphere to the local administrations;
- to coordinate the list of paid services in forestry;
- to elaborate a system of registration of "mutual debts" between the forest enterprises and the transport and energy sectors.

In order to solve these problems several regional laws and decrees were adopted during 1996–1997. Merely by scanning this list of decisions it becomes obvious that the majority of them have an *ad hoc* character and have to do with tax relief, delays of tax payments, measures to increase tax discipline, etc.[43] The anti-crisis program for the forest sector is of course more elaborated and future-oriented. According to the opinion of the director of JSC "Severolesoexport" the main goals of this program can be described as follows (Tsarev, 1996):

- to achieve a 4–5 fold increase in incomes from wood bought by customers outside the Arkhangelsk region;
- to determine limits for pulp production according to the ecological situation and ask Komi Republic and Vologda region to take the same measures;
- to reduce taxes for profitable enterprises;
- to restrict transport tariffs for forest products inside the Arkhangelsk region;
- to create a Forest Sector Support Fund with money obtained through the value added tax. To use this fund for scientific-research works, new equipment, technology, products, utilization of waste products, etc.
- to exempt *leskhozy* and *lespromkhozy* from road tax and tax for owners of means of transport (technological);
- to find new external investments, especially in harvesting enterprises;
- to determine the annual lower price limit to round timber and all kinds of chip;
- to create a Regional Union of Forest Products Exporters and to stop the export of round timber.

In the next section we shall see to what extent the above intentions and efforts are reflected at the individual enterprise level. By looking at the actual behavior of individual forest enterprises it will be clarified to what extent the general problems described in the previous sections, in fact, compel them to act in a "market oriented" way. This will establish a foundation for the final discussion concerning the hurdles and prospects for developing a sustainable forest sector.

[43] Source: List prepared by The Arkhangelsk *Union of Forest Industrialists*.

Summary:

- The forest sector of Arkhangelsk is heavily export oriented.
- The export is handled by local agents and Moscow based export agencies play a minor role.
- Deliberate efforts have been made to reorganize the forest enterprises in holding companies but these efforts have failed. Recently new attempts have been made.
- The supply of wood is a problem and as a consequence harvesting companies, sawmills, etc., try to establish their own direct ties to individual wood suppliers, such as *leskhozy* or *lespromkhozy*.
- The social engagements of forest sector enterprises is significant and something that delays rather than promotes the unavoidable restructuring of the sector.
- Recently an anti-crisis program has been initiated in order to alleviate the most urgent problems in the sector.

7. Business Behavior

In order to give a more specific and refined picture of the Arkhangelsk forest sector we have to pay some attention to the behavior of individual firms. This is the task of the present chapter. The analysis is based on structured interviews with a stratified sample of 31 forest enterprises. These data are compared with data on 156 firms from six other Russian regions.[44] Since it can be assumed that a number of macro-economic variables have a general effect on all Russian enterprises irrespective of their location, it is essential to have some point of reference. For this purpose the same framework has been used for interviewing 25 forest enterprises in Northern Sweden. Thus, the Arkhangelsk material can be compared to the rest of Russia as well as to a sample of Swedish forest firms – the latter embedded in a well established market environment.

The 31 Arkhangelsk firms in our data set employ close to 24 thousand people, or around 30 percent of the workforce in the regional forest sector. The enterprises vary in size from eight employees to almost eight thousand, the median firm has around 400 employees. The majority of the firms (23 out of 31) are formerly state owned enterprises that are now owned by private actors, five enterprises are still state owned and only two could be regarded as genuinely new private enterprises. Six of the 31 firms have established joint ventures with foreign owners.

Most of the firms (60%) should be considered processing industries. The typical firm in our sample is an enterprise that does saw-milling in combination with some other type of processing, such as dressing. Eleven of the enterprises basically produce roundwood, nine sawnwood, and three pulp.

Production

It should be noted that while production in the interviewed firms has dropped by around 44 percent during the last five years, employment has decreased by only about 24 percent, which indicates inadequate restructuring efforts. The same pattern was found in a study by Nilsson and Shvidenko (1998).

In the following two diagrams changes in employment and production for 25 of the 31 interviewed Arkhangelsk firms are related to an estimate of productivity change (production volume in tons or cubic meters related to the number of employees in 1998 and 1993).[45] In that way the diagrams indicate restructuring efforts manifested in changes in the competitive position of the Arkhangelsk firms during the last five-year period.

As shown in diagram 7.1, totally 9 of the 25 firms have been able to maintain or increase their productivity since 1993 (i.e. those above 1 on the vertical axis). Only one of them has at the same time increased its employment. Six of the 25 firms expose a market behavior similar to that of a typical western forest enterprise, i.e., they decrease

[44] Other regions in our study are: the Karelian Republic, the Murmansk, Moscow, Tomsk, and Irkutsk Oblasti, and Krasnoyarsk and Khabarovsk Kraii. (At the time of writing data from Murmansk and Karelia were still missing.)

[45] Six *leskhozy* were left out of this comparison. A *leskhoz* should be considered a public authority rather than an enterprise operating in the emerging Russian market economy.

employment and increase productivity. From diagram 7.1 could also be concluded that 15 of the companies find themselves in a very difficult position of stagnating or decreasing productivity as well as decreasing employment. Three firms have even increased their employment despite decreasing productivity.

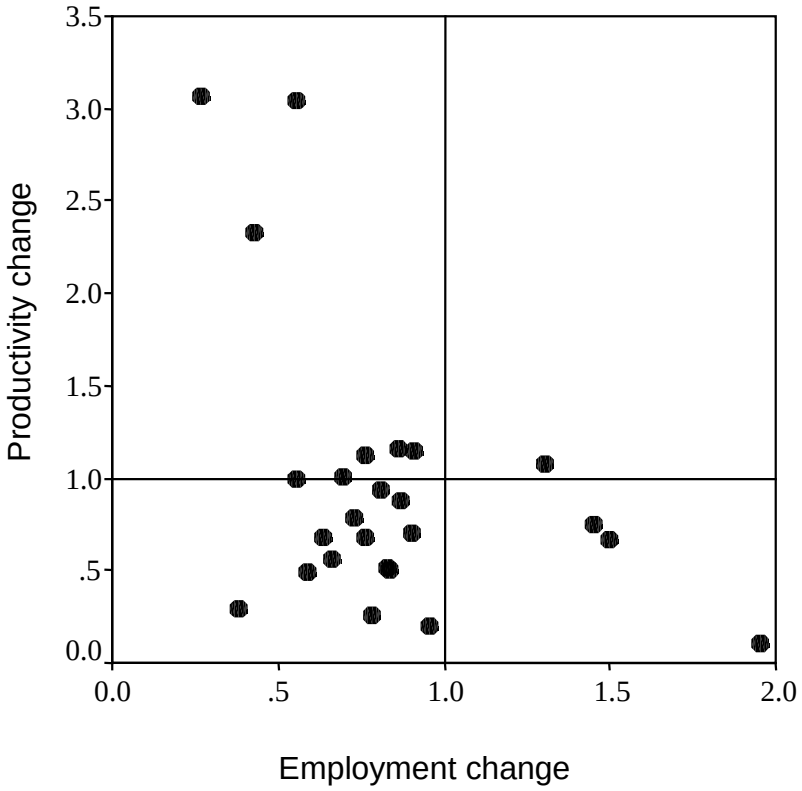

Diagram 7:1. Employment change related to productivity change in 25 forest enterprises in Arkhangelsk 1993–1998

In diagram 7.2, productivity changes are related to the changes in production volumes among 25 companies. Productivity decreases are obviously heavily dependent on the large reductions in production that have taken place during recent years in most Arkhangelsk forest companies. The simple cubic regression applied fits well to observed changes (Rsq 0.83) among the firms with decreasing production (i.e., those below 1.0 on the horizontal axis in diagram 7:2). The possibilities to reduce employment at the same rate as production decreases seem to have been limited in most companies. As shown in the diagram only one of the firms has been able to increase productivity along with a decreasing production volume.

From the two diagrams above we can conclude that the forest sector decline is more severe in Arkhangelsk than the analysis in previous chapters have indicated. Only about seven of the 25 companies in our data set seem to have started a restructuring and transition process in a market oriented direction.

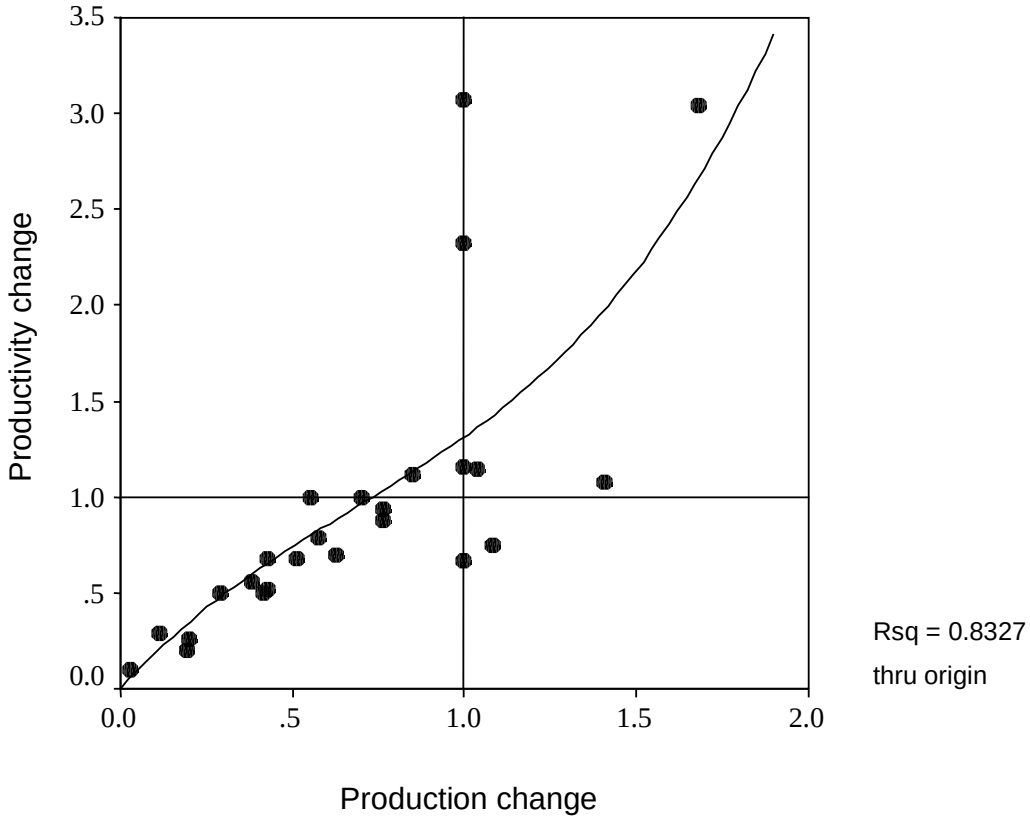

Diagram 7:2. Production change related to productivity change in 25 forest enterprises in Arkhangelsk 1993–1998

Wood Supply

In earlier chapters we have demonstrated how production of wood has dropped over the transition period. We have also indicated that there might be problems to acquire wood, especially for larger firms. The main providers of wood are of course the *leskhozy*, but along the chain starting in the forest and ending in the processing industry we find a number of intermediates, such as harvesting companies. What is interesting here is to learn to what extent the single firm can obtain the amount of wood it requires irrespective of who the provider might be. The fact that many firms cannot procure, or mobilize, resources enough to "buy" a sufficient amount of wood does not change our analysis. The base line hypothesis should be that there are always possibilities to get wood if one is willing, *and* is able, to pay enough. Thus, the perceived shortage of wood should be regarded as a good reflection of a dysfunction on the demand *as well as* on the supply side of the forest market.

From Diagram 7:3 can be concluded that forest users in Arkhangelsk face a larger shortage of wood than do other Russian forest enterprises, as well as their Swedish counterparts.

Diagram 7:3. Wood supply

Asked for the reason for this shortage 10 of 15 Arkhangelsk enterprises refer to financial problems. The rest attribute the problems to technological, logistical problems associated with the transition. Thus, it can be concluded that the main obstacle is not wood supply *per se* but rather the lack of financial resources to acquire it. This conclusion is also supported by the fact that only a minor part of the AAC is harvested (cf. section on "Harvesting" in Chap. 2). It should also be mentioned that around 23 percent of the firms have long term contracts with their suppliers, while 29 percent acquire their wood as stumpage sales. Remaining firms practice a number of other solutions.

Sales of Wood

Arkhangelsk is known as an important exporter of forest products. Accordingly, around 42 percent of the firms investigated sell their products on export. This is slightly more than the other Russian firms in our data set and more than the Swedish firms (cf. Diagram 7:4).

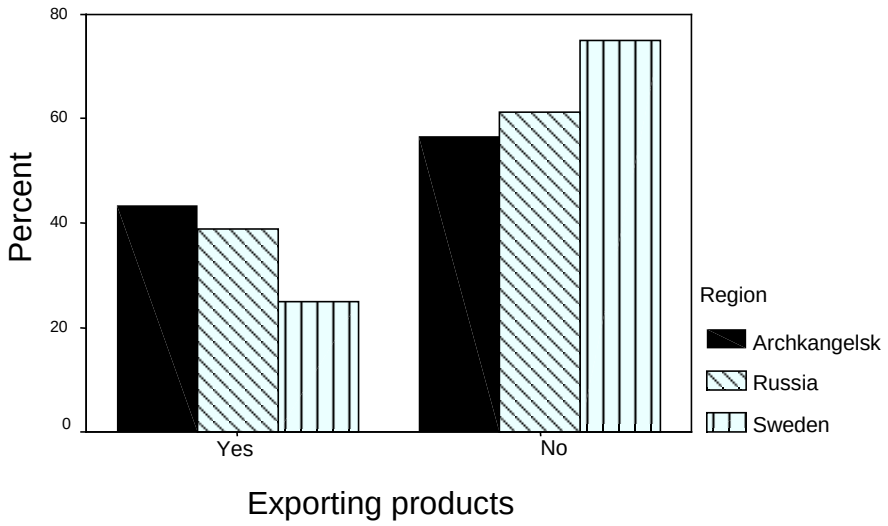

Diagram 7:4. Number of forest firms exporting their products

All of the exporting firms sell their products to European customers, two of them in combination with sales to Asian and North American customers. However, only five enterprises should be primarily regarded as exporters[46], while most firms sell both to domestic and foreign customers. Of all forest enterprises, 60 percent find their customers on the regional Russian market, two outside the region and three have a mixed group of Russian customers.

Investments

The level of investment could be looked upon as an indicator of ongoing restructuring, but all firms do not have the same incentive to restructure. Those firms that trade their products mainly through barter should typically have little incentive to invest in new equipment, etc., while those submitted to a cash economy strive to reduce the "distance" to the market (Gaddy & Ickes, 1998). One way to accomplish this is to invest to get a more effective production system.

Given the existence of a rather aged capital stock as well as a general lack of product development in the forest sector it is striking that only seven (23%) of the 31 Arkhangelsk enterprises invest in their firms. This level is lower than among the other Russian enterprises. If we compare with Swedish firms, more than 80 percent of which invest (despite the fact that they probably have already relatively modern equipment), the difference is strikingly large (Diagram 7:5).

[46] Total output of lumber from round timber is merely about 52% in any export sawmill in Russia (Prokof'ev, 1990). About 2/3 of total lumber output might be sold on export. The remaining 1/3 of the total lumber volume is of such a low quality that it cannot be sold on export. This lumber is sold on the domestic market or sometimes partly exported to Asian or African countries.

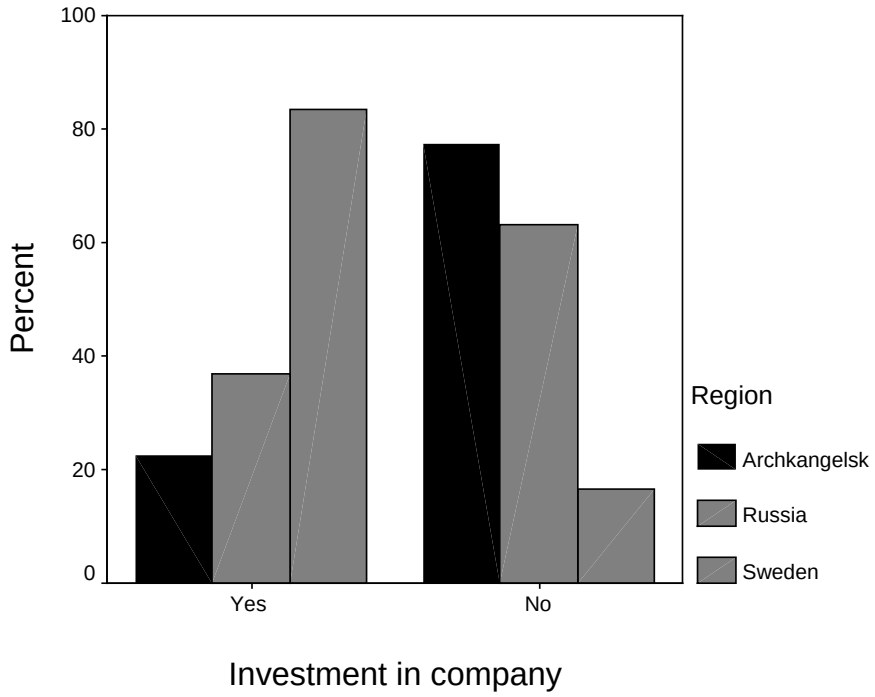

Diagram 7:5. Number of forest firms making investments

Of the seven firms that do invest only one finances its venture through bank loans. It should also be noted that among the firms that invest we find that 43 percent are joint ventures while only 13 percent of the non-investing firms belong to this category. This corresponds to an observation made by Buiter *et al*. (1998).

Payments, Banking and Social Responsibility

As been mentioned in previous chapters non-monetary transactions, such as barter, the use of money surrogates (*vekselia*), and offsets (*zachety*) have become more common during the last five years (cf. Aukutsionek, 1998; Commander & Mumssen, 1998). In the absence of developed, domestic and foreign markets for wood the cash economy is relatively small. This fact is reflected in poor interaction between firms and the banking system, but also in the existence of numerous social responsibilities that are connected to the ownership of enterprises. The cashless side of this is that various services, such as housing or child care, could be set off against tax arrears, provision of consumer goods against wage debts, etc.

In our questionnaire firms were explicitly asked about their relations with the bank system. It should be noted that only around 20 percent of the Arkhangelsk firms have any relations to the bank system, compared to Sweden, where almost 80 percent of the firms employ bank services related to loans, etc. The majority of the Arkhangelsk enterprises attributed their lack of bank relations to security and trust problems. Only two of the firms having no contacts explained that the reason was that they had no need of such relations.

Around 50 percent of all forest firms in our study, whether from Arkhangelsk or from the other Russian regions, sell their wood through barter. Since we do not have data about other forms of non-monetary transactions it is probably fairly safe to assume that the cash-less economy is larger than 50 percent, and thus in line with data from others studies (cf. Aukutsionek, 1998). While the majority of the Swedish firms practice a rule that wood should be paid within 30 days from delivery the payment practice in Arkhangelsk is dictated by a need to get paid before or in direct connection to the delivery of goods. Thirteen firms require their customers to pay before they deliver any goods while eleven practice payment upon delivery.[47] Only two of the 31 firms accept payments after the good has been delivered. The obvious implication for the prospects of moving towards a market economy is that such a change is hard to accomplish if most actors secure themselves via the described payment practices. As an obvious result trade is halted before it can even begin.

Another side of the non-monetary economy is firms' engagement in the provision of public goods and services. Thirteen of the 31 Arkhangelsk firms (50% of those who answered the question) say they provide social services. The most common engagement is provision of consumer goods, child care and schooling.

Trust

In a number of studies[48] the general lack of trust in the Russian society has been scrutinized. It has also been noticed that there are significant differences in the existence of trust among the former east European socialist countries, Poland being one of the "best" and Russia among the "worst" (Raiser, 1997)[49]. How might this be reflected in the behavior of the Arkhangelsk forest firms?

First, the payment practice described above can be attributed to a general lack of trust in the existing system. Another feature is the lack of trust demonstrated through broken agreements in commercial relations. As can be seen in Diagram 7:6 around 40 percent of the Arkhangelsk firms (15) have problems with broken agreements, typically payment, when they sell their products. However, these problems seem to be less severe in Arkhangelsk compared to the other Russian regions, but in comparison with western actors, e.g., the Swedish firms, the lack of trust is striking.

---

[47] Note that seven of the 31 firms practice a combination of these two systems, depending on the anticipated reliability of the customer.

[48] Cf. for instance the studies by Mishler & Rose (1995), Rose *et al.* (1997) and Mishler & Rose (1998) based on *The New Russia Barometer* surveys first undertaken in January/February 1992. This and subsequent surveys have been published in the University of Strathclyde Centre for the Study of Pulic Policy series "Studies in Public Policy" (no. 205, 216, 228, 250, 260, 272, 303).

[49] Raiser uses trust in the sense "social trust" (i.e. trust in the existing government and its formal institutions) and this is found to be low in Russia. Ickes *et al.* (1997:120) refer to a study (the "World Value Survey") in which the level of so-called "interpersonal trust" was found to be "moderately high" in Russia, in fact on par with Germany.

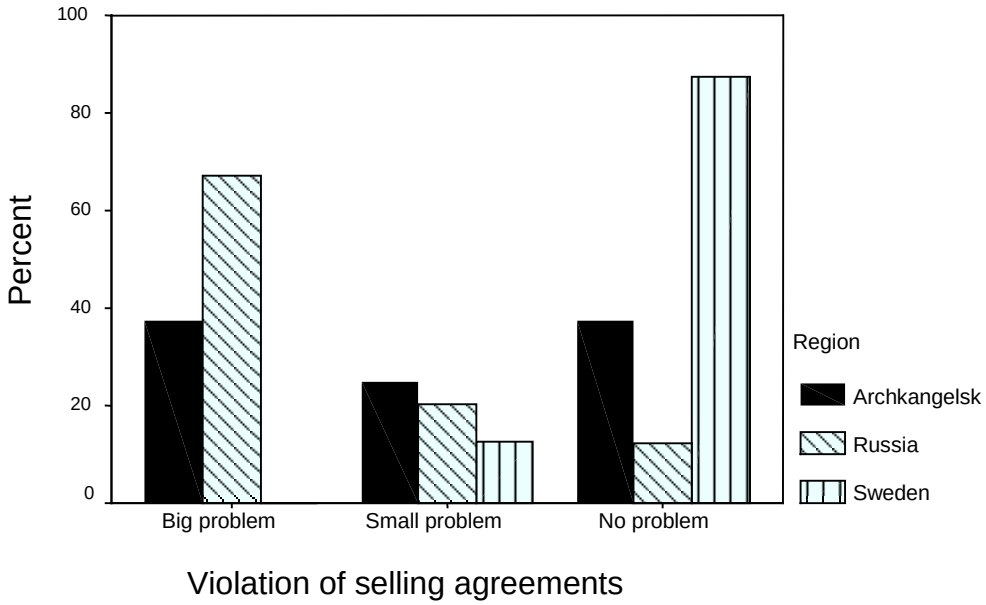

Diagram 7:6. Number of forest firms regarding broken agreements an a problem

Problems as Perceived by Forest Firms

In our survey the representatives of the forest firms were asked about obstacles for running their businesses, as well as what they regarded as the most urgent problem to be solved in order to make the forest sector more prosperous. They were also asked about what they believed was the *most* binding restriction in relation to their own enterprise.

Table 7:1 and Diagram 7:7 show the distribution of the answers to the latter question. Although it can be assumed that the suggested problems are not mutually excludable – for example transport problems can be regarded as a financial problem – it can be noted that only two of the firms mention "finding a market" as the most binding restriction. Asked specifically of whether they regarded any specific rules or regulations as binding for their business activities the taxation legislation was most frequently mentioned – around 30 percent of the Arkhangelsk firms mentioned this as their most severe obstacle. This indicates that a great deal of what is often labeled "financial problems" might equally well be attributed to the taxation policy.

Table 7:1. Problems perceived as the most binding restrictions for the operation of forest firms in Arkhangelsk.

Perceived problem	Number of Firms	Percent
Economy/transition disorder	3	9.7
Tax legislation/burden	1	3.2
Forest legislation	1	3.2
Business legislation	3	9.7
Transportation costs	2	6.5
Skill, competence	1	3.2
Enforcement of laws	1	3.2
Financial/lack of capital	11	35.5
Find market	3	9.7
No privilege	1	3.2
No answer	4	12.9
Total	31	100.0

It is also evident that the Arkhangelsk spectrum of problems deviates from that of the rest of the interviewed firms. While financial problems seem to be pertinent in Arkhangelsk they are less frequently mentioned by firms in the other Russian regions of our survey, and not at all referred to in Sweden. It should also be mentioned that while the forest legislation is regarded as a problem among Swedish enterprises this issue is mentioned by only one of the 31 interviewed firms in Arkhangelsk. One explanation may be that problems related to the forest legislation are overshadowed by other, perceivably more acute problems.

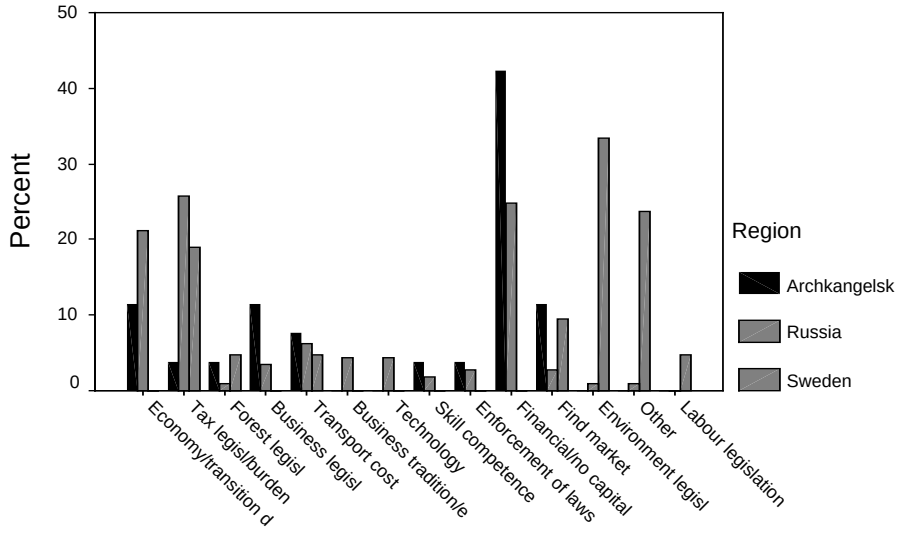

Diagram 7:7. Problems perceived as the most binding restrictions for operating forest firms in different regions.

Insufficiency or inadequacy of technology, machinery and skills are the most frequently mentioned problems apart from those already discussed above (cf. Diagram 7:8). Of course this reflects the need of a technical refurbishing of the Russian forest industrial enterprises as well as generally raising the competence among employees.

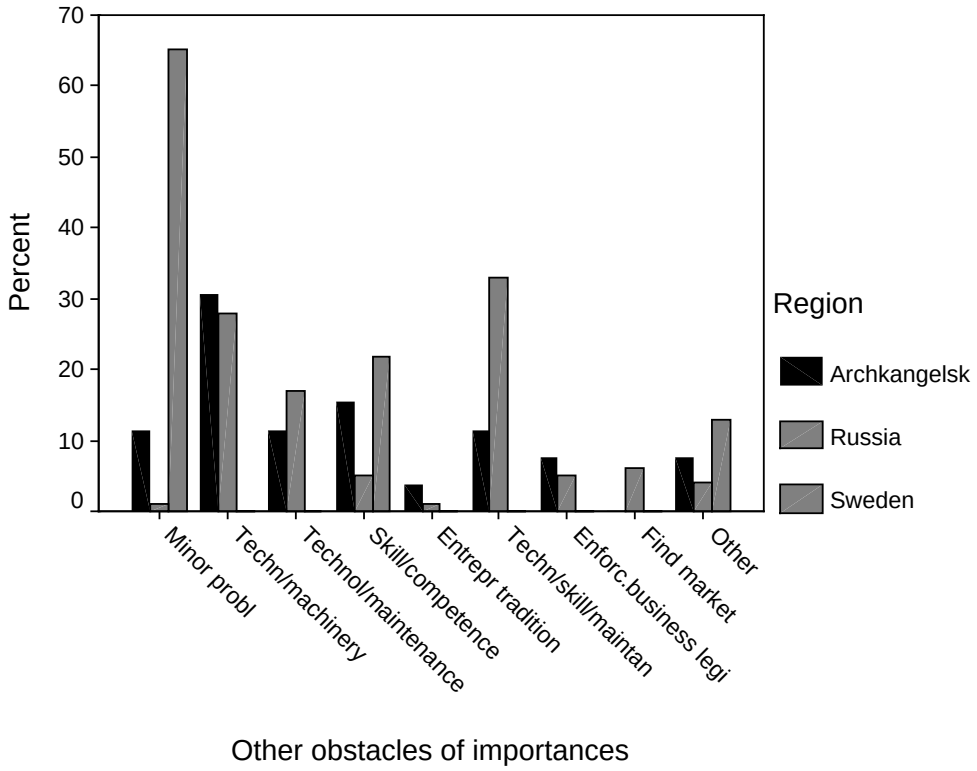

Diagram 7:8. "Are there other problems which you regard as obstacles for a successful business?"

What Should Be Done?

What can be done then? According to the interviewed firms in Arkhangelsk the existing taxation policy is the most urgent problem to be solved. Such a change, they believe, would benefit the forest sector the most. Of equal importance is to ease the financial situation, i.e., to get better abilities to borrow money. It should be noted that in Sweden the interviewed firms also regard taxation as a problem, but not, however, as the most urgent one. On the other hand, none of the Swedish firms insisted that banking policy ought to change. Likewise, a suggestion that is obviously not mentioned among the Swedish firms, is the option of reversing privatization, i.e., to make firms state owned again. This is the third most common suggestion in Arkhangelsk (Diagram 7:9).

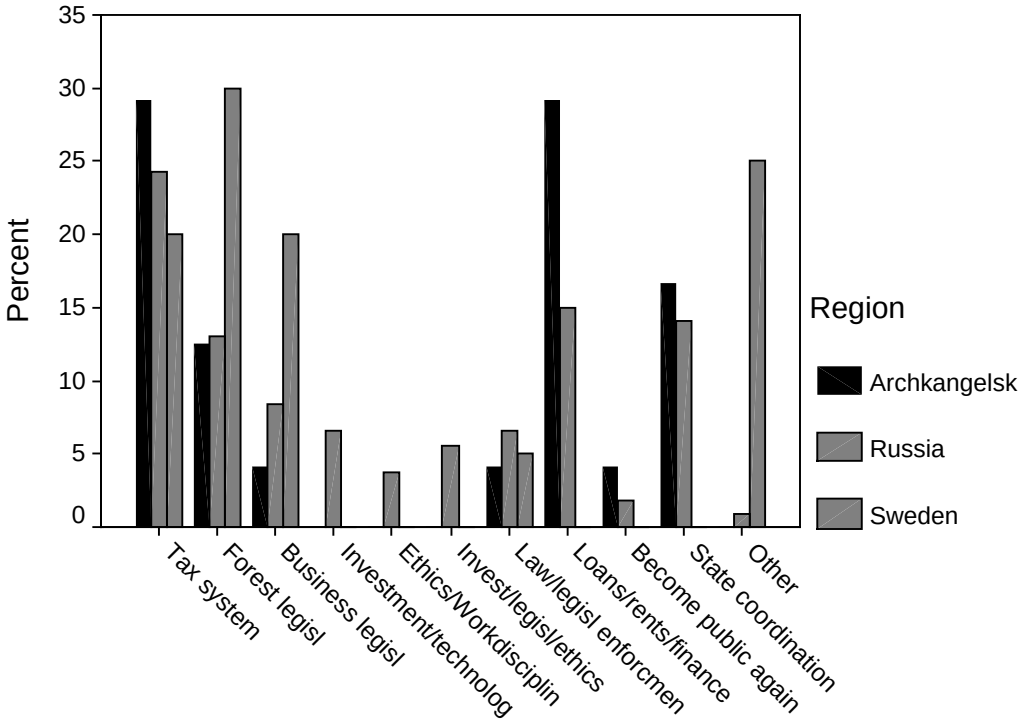

Diagram 7:9. The most urgent issues to be focused in order to make the forest sector more efficient

One obvious conclusion, which is also supported in previous chapters, is that the problems are mixed and intertwined. No single change could solve the problems as they are perceived by business leader, managers, and others. For example, one of the main reasons for the poor contacts with the bank system is simply that the value of assets of the forest firms is too low to serve as collateral for loans, something that affects investments, which, in turn, delays the restructuring of the forest enterprise sector, etc. This is discussed more thoroughly in the concluding chapter. Finally, it is also obvious that some of the business leaders, who supposedly would be the forerunners towards a market economy still wish they were operating under the old system.

Summary:

The result of the interviews with the Arkhangelsk forest firms are summarized below. It should be remembered, however, that all comparisons and statements made refer to the interviewed enterprises, which do not constitute a proper statistical sample.

- During the last five years production in the forest firms has dropped significantly more than employment. This indicates that *productivity* is still to be treated as an urgent issue.

- Only a minor part of the firms invest. Investments are more uncommon in Arkhangelsk than among the other Russian forest firms in our study. Joint ventures with foreign owners raise the likelihood of investment.
- Most firms have poor contacts with the bank system. Investments, for example, are rarely financed with bank loans.
- Due to financial, and, to a minor extent, to technological circumstances, around half of the firm experience a shortage of wood.
- Compared to other Russian forest enterprises, the Arkhangelsk firms more often export their goods.
- Non-monetary transactions, such as barter, is a significant feature of the forest sector. This is also coupled to the relatively common practice of provision of social services.
- Compared to Swedish forest firms the lack of reliability, in terms of broken agreements in sales transactions, is striking. This provides a source of deadlock in trade demonstrated by the fact that all parties to a trade transaction want to be paid in advance.
- The problem of finding markets is perceived as a minor problem in comparison with more urgent issues, such as the financial situation and the taxation system.
- The majority of the firms suggest that the most urgent tasks for government to handle are a change in the taxation system and provision of better opportunities to get bank credits.

8. Conclusion and Recommendations

The first task for this final chapter is to conclude to what extent the criteria launched in the first chapter are met in Arkhangelsk, i.e., to assess how close to market conditions the forest sector has moved.

- ***Constitutional rules are acknowledged and transparent?***

In terms of constitutional clearness the situation in Arkhangelsk is similar to other Russian regions (cf. Carlsson & Olsson, 1998; Sheingauz *et al.*, 1995). It is evident that a number of constitutional problems concern the forest sector. Some rules of the Russian constitution are contradictory. Consequently, the constitution itself is a source of uncertainty and confusion and subsequent rules add more confusion to the picture. The constitution might be acknowledged but different actors emphasize different qualities of it. For example, those who plead for a privatization of the forests as well as those who oppose such a policy can find support for their views in the constitution.

- ***The structure of property rights is settled and well defined, i.e., private actors can acquire property or get the right to utilize property for their own benefit?***

As in most other parts of Russia the property rights issue is not settled in Arkhangelsk either. Two separate state "bodies," the Russian Federation and the regions, are the legal owners of the forests. These bodies often pursue different goals. The dispute on who has the responsibility to clean up Novaya Zemlya, the oblast or the federal authorities, is a good illustration of these problems with unclear responsibilities. Property rights is not the same as ownership. Rather it is a matter of establishing clear and transparent relations among actors in relation to, in this case, the forest resources. Even if land acquisition is not allowed, private actors do have the right to utilize forest lands. However there are many barriers to overcome. Certain users enjoy special privileges, information is scarce and often of bad quality. Consequently, there exist big problems to attract foreign investors. It may also be questioned whether all recently privatized *lespromkhozy*, for example, really fulfil the criteria of being "private." Nevertheless it can be concluded that private actors do have the right to utilize property for their own benefit even if these rights are circumvented through excessive regulations, of which inappropriate harvesting rules is one example and taxation rules another.

- ***Rules and regulations from official authorities are regarded as legitimate, and apply equally to similar actors?***

In Arkhangelsk, as in many other Russian regions, rules and regulations do not apply equally to similar actors. Negotiations and special agreements with the authorities are a legacy from the past and are still making a clear impact on business behavior. The heavy emphasis on barter and other non-monetary transactions is an indication of this. Nor do our findings support the conclusion that official rules are regarded as legitimate. Taxation is the most apparent example of an area of regulation for which there is poor legitimacy and a low degree of compliance. In fact, it is likely that, even if a manager would have the intention to obey all rules his firm is supposed to follow, taxation included, it would simply not be possible to do so.

- ***The market decides prices of property and goods?***

Market mechanisms are weak and the price of forest products neither reflects costs of production nor actual demand. Taking the wide-spread barter system and the existence of its quasi-money into account it is easily realized that the pricing of many forest products is far from being decided in genuinely competitive markets. It might seem like paradoxes that there exists a shortage of timber and that few enterprises (in our sample) regard finding a market as a major problem. The reasons are financial, basically a reflection of the absence of a competitive market. However, we should acknowledge that since Arkhangelsk is still a big exporter of wood we can conclude that the price mechanism works in certain market segments, while it is still weak in other, especially in a large part of the domestic market where behavior is constrained by political administrative interferences.

- ***Decision-making regarding collective choice and operational rules is decentralized?***

As we have seen, the Federal Forest Service, which has a uniform administrative system all over Russia, even in detail regulates forest operations. On the other hand, the creation of the regional anti-crisis program and the rule-making regarding leasing and stumpage fees are two examples of decentralized decision making. A similar logic applies to environmental regulations; regional authorities can make rules if decisions of federal law allow them to do so or if such rules are absent. However, in many respects the forest sector is still heavily centralized and there is virtually no popular participation in decision making affecting the development of the sector. For example, the local forest lobby, exert great influence in the Duma as well as in the bureaucracy. At the genuinely local level public participation is very rudimentary.

It can also be concluded that the old patterns of centralization have been re-institutionalized. The structure and function of, for example, the Union of Forest Industrialists supports this conclusion. However, in Arkhangelsk forest exporters have developed their own organizations that are not (entirely) in the hands of Moscow based brokers, etc.

- ***Private investors can realize the returns on their investments?***

Private investors may have the legal right to realize the returns of their investments, but since political risks are relatively high, they have very limited possibilities to insure themselves for business failures. As our data show the general investment level is very low, bank contacts are poor, etc. It is also evident that the taxation system not only induce actors to hide income but also abstain them from transferring money to Russian banks.[50] The conclusion is that the political authorities have not yet succeeded to

[50] Based on own experiences in running this research project we know that a foreign "investor" intending to transfer money to a bank account in Arkhangelsk might be charged 75% in different types of fees, etc. We have also learned that any transfer of larger sums, albeit intended to be used for investment in local enterprises, increases the likelihood that one attracts criminal groups as well as bureaucrats having an incentive to find ways of fining the firm. Retroactive rule making in relations to custom fees is a third example of practices that definitely deter foreign investors to operate in Arkhangelsk.

minimize or eliminate political risks as a means of achieving economic growth. In principle, private investors should be able to realize the returns on their investments but the generally low profitability in the Arkhangelsk forest sector indicates that the likelihood that they will actually enter the market and do so is low.

- ***Rules are enacted aimed at preventing the devastation of natural resources?***

The institutional features of the legacy of overuse still govern many activities in the forest sector of Arkhangelsk. In fact, one can suspect that the main reason why the devastation is not even more severe is the economic crisis and the subsequently low levels of harvesting. Rules are, however, enacted to prevent devastation of the forests in the region. This is primarily done through the new forest code and its subsequent environmental legislation. Environmental groups and others argue that the new forest code is weakening the protection of the environment. For example, the clause forbidding timber operations in threatened and endangered habitats has been taken away in the new forest code of 1997. It is also obvious that the new forest code contradicts other environmental laws, such as the law on wildlife protection.[51]

- ***Legitimate authorities take measures against violations of rules?***

Rules-in-use are those rules that *are in fact sanctioned*; otherwise they would just be words on paper. Consequently, even "bad" rules and informal rules may be sanctioned. The rules of barter are one example of a system of rules that by no means is formally codified but which nevertheless is sanctioned. As for the sanctioning of rules of law applying to the Arkhangelsk forest sector it is a well-known fact that violations of rules are common and tolerated. A related behavior is the "zero-sum" practice used in relation to the fulfillment of AAC, namely, that local over-cutting can be "evened out" by under-cutting in other areas. Another example is the practice of concealing substantial changes in the species composition by stretching the definition of what is to be regarded as a "coniferous stand." The basic problem, however, is not the actual wording of the rules and regulations but rather the inability to implement them. Obviously the Federal Forest Service lacks means both to monitor and to sanction the behavior of the actors. The new financial solution giving *leskhozy* more of the revenue from forest operations will presumably improve the situation.

In our interviews we found that there are a general lack of "third party" solutions in the forest sector; at the same time as the breaking of agreements is regarded a significant problem virtually nothing happens if one breaks them, e.g., if one does not pay for delivered goods. This is also the case for the sanctioning of the taxation rules.

---

[51] Environmental groups are very active in discussing Russian forestry and related topics. For example, independent "environmentalists" have formed a "Forest Club" consisting of a broad spectrum of groups but also bureaucracies, such as Greenpeace Russia, The Socio-Ecological Union, the Kola Center of Biodiversity, the International University of Ecology and Politology, and others. The Forest Club is currently running a campaign in the northern part of European Russia focussing on certification, the establishment of conservation areas, fund raising for local ENVOs, support of new technology, information to the Regional Forest Management, distribution of information from Sweden and Finland about forest maintenance practices and the moratorium on harvesting in certain forests that foreign timber buyers now support in Russian Karelia (interview with representatives of the Forest Club in Arkhangelsk, October 1997). For opinions about contradicting laws etc., see e.g. Olsson, 1997.

According to a survey conducted within the framework of the New Russian Barometer (Rose *et al.*, 1998: 16 ff.) 56 percent of the population are of the opinion that there is no need to pay taxes if you do not want to do so. If caught, 27 percent think the problem could be solved by paying bribes. Our investigation does not indicate that the situation would be different in Arkhangelsk. The general conclusion is that in many important respects the authorities have to consider a whole range of problems whenever they want (or *if* they want) to take measures against the violation of rules. For example, the rules of harvesting that in practice prevent the introduction of a new and environmentally friendly technology is one example of sanctioning of the "wrong" rules. The weird taxation system might serve as another example of this kind of mistaken rule sanctioning. Thus, the problem does not only concern the sanctioning capability but also the rules themselves.

The Nested Character of the Problems

Based on our investigation there are no reasons to believe that the qualities of the institutional framework of the forest sector in Arkhangelsk is significantly different than in other parts of the federation. As in other regions there has been a dramatic downfall in production and harvesting. Almost half a million people in the Oblast are directly dependent on the forest sector and although forests are abundant there is still a shortage of wood for larger industries. In fact, today there exists some kind of battle among enterprises for good providers. This, however, does not reflect any market type of competition which presumably would have risen prices. Instead, the main feature of the "battle" is the prospects of establishing good relations and special agreements based on non monetary transactions, and so forth.

The institutional shortcomings of the forest sector have a nested character, in which different features are reinforcing each other. Many firms are trapped in a number of vicious circles creating a kind of institutional "deadlock" in the sector. One example is harvesting. Since harvesting is seasonal so are deliveries of timber. However, most actors cannot wait for payments and as money is required instantly in order to invest or to pay for wages and goods, this practice causes other problems in subsequent links to the end user. (For an illustration of the nested character of the problems, see Figure 8:1.) Another example is banking. A renewal of the forest sector requires investments but all investments must be financed. There are possibilities to borrow money but all commercial banks lend money on security. Since the assets of the firms often have a limited market value, no money could be borrowed in banks, and, since no money could be borrowed the necessary restructuring has to wait. As a result firms are trapped in the logic of the present "negotiated economy" making them unable to modernize production and thus to create the assets that would be needed in the first place.

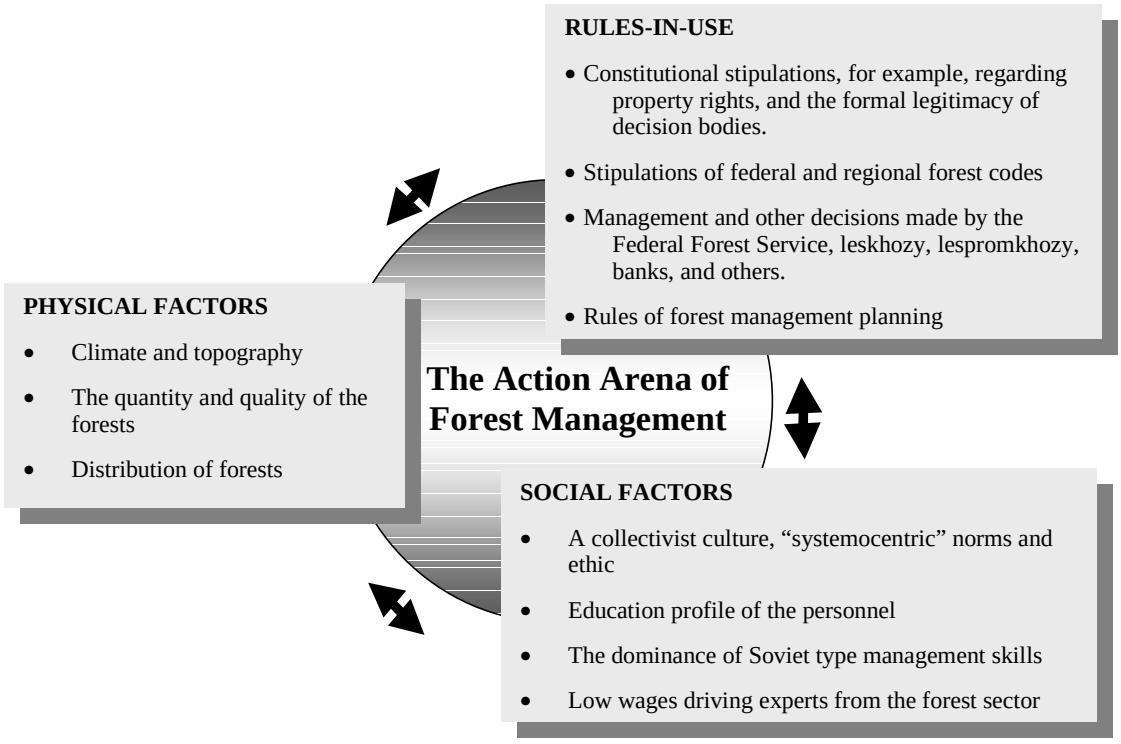

Figure 8:1. The action arena of Russian forest management, relations between factors affecting harvesting.(Source Carlsson & Olsson, 1998:53)

The situation in the Arkhangelsk forest sector can be summarized as follows:

- With its traditionally strong emphasis on export the forest sector has good potential for being one of the driving forces in the economic development. However, a number of institutional factors raise hurdles for such a progress. The main problem is not to find customers but rather to create a "critical mass" of functional and reliable relations with the potential customers. The same goes for other central *commercial* (nota bene) actors in the sector; "good" relations with *non-commercial* structures seem already to exist.
- The forest sector is characterized by a notable "personnel union," something that raises questions about the possibilities for a successful restructuring of the sector. Actors that are supposed to lead the restructuring may, in fact, constitute hurdles for its realization.
- The existing ambiguities in the legislation, in combination with the high levels of taxes, weird pricing and an absence of adequate transportation policies severely affect the enterprises' ability to benefit from and to become successful actors in the still rudimentary markets.
- Due to a general lack of transparency in the forest sector political risks are significant. This creates a hesitant behavior among foreign as well as domestic investors.

- The forest sector is organized in a way that promotes a type of enterprise behavior that aims at expanding one enterprise's control over actors adjacent to its position in the forest-to-market chain. This has to do with uncertain property rights ultimately leading to a general inability to capture the benefits of division of labor and specialization.

Business Behavior in a Virtual Economy

Much of the data that has been presented in this report give evidence for the conclusion that only a rudimentary restructuring of the forest sector has taken place in Arkhangelsk. The production apparatus is too old, management too inefficient and questions can be made about the skills of the personnel indicating a significant lack of well-trained executives. Thus, some argue that the explanation of the "lack of money" in the forest sector should mainly be blamed on bad management. This argument might have some merits but it might as well confuse us regarding the institutional aspects of the problem. In order to understand some of these institutional hurdles one must start from the assumption that individuals act in rational way, under given circumstances. Thus, with Gaddy and Ickes (1998:1), we assume "that managers are rational and that the environment induces them to postpone (avoid) restructuring". This is the basic idea behind Gaddy's and Ickes' work on the "virtual economy." The theory goes as follows.

The managers of Russian enterprises have strong incentives to continue to run their businesses independently of their profitability. The social responsibilities associated with running firms are part of the explanation. Our investigations, as well as other studies, show that barter, tax offsets and other non-monetary solutions are common features in the so called trade. Thus, firms can continue to produce although the outcome of the activities are paid with other means than cash. Such a production is aimed at generating "soft" goods that can only be traded in "quasi-markets" rather than in commercial markets. Why then do managers avoid restructuring?

Most firms have a substantial distance to travel before they can meet the conditions of competitive markets of wood. The first option would be to invest to make production more effective, but, as we have discussed above, this solution has its own problems. The other option is to invest in "relational capital", e.g., perform services for the local authorities etc. (Gaddy & Ickes, 1998:9 ff.). Thus, the more fraternizing with bureaucrats, the more tax offsets, privileges etc. one can obtain the more investments are made in this kind of capital. Moreover, given the fact that the distance to competitiveness is in most cases significant such "investments" are cheaper and, thus, preferred. These circumstances have the nasty effect that we cannot, in fact, conclude that an enterprise that shows relatively high production volumes is more successful than a similar enterprise producing smaller volumes. It might as well be a "value destructor" and a producer of "soft" goods still having a long "distance" to travel before it can survive in a competitive market.

Consequently, whether forest firms chose to invest in relational or physical capital depends on the initial (inherited) stock of such capital in their possession. The managers will simply prefer the type of investment that is cheaper and it is obvious that the Soviet type of integrated forest industrial system (that was inherited in 1991) provides a rich fund of relational capital to profit from. With reference to Tables 7:1 and 7:2 it can be concluded that the main part of the forest firms still operate in the "virtual economy

square" of the matrix. It has also been indicated that joint venture enterprises, which can be assumed to work under a different logic, invest more than other firms relying more on relational capital. Given that the situation in Arkhangelsk is as we describe it, what can be done in order to redirect the ship towards the open market?

Recommendations

If, as we have discussed, there exits a trade-off between investment in relational or physical capital the aim of the authorities should block the ways to the cornucopias of the political-administrative system. Following the same logic, of the existence of a trade off between the two types of investments, undertakings that solely promote investment might as well have the effect that more soft goods are produced. Igor's four principles of management planning in a virtual economy, borrowed from Gaddy and Ickes (1998:13), underpins this point:

1. *Have some percentage of your sales to the federal government*. Ideally, at about the level of your estimated federal taxes. You know you will not be paid for these sales, but you use it for offset taxes.
2. *Export something to a paying, hard currency market*. You need some cash for your operations, mainly for urgently needed inputs. Export may not be of your major product.
3. *Set up some barter operations for the rest of your inputs, especially fuels, electricity and so on*. It is best if you have some products that utilities need. Then they will pay you in *vekselya* that you can redeem for the inputs.
4. *Have the capability to provide municipal services so that you can offset local taxes*. An ideal method is to have a construction division that can fix schools, etc.

It is evident that these principles to a lesser extent apply to small private enterprises. The policy advise should be to promote these types of firms by making it easier for them to invest and operate. The guiding principle should be a conscious stimulation of a structure of actors who benefit from the existence of an open and transparent system of rules rather than from obscure informalities or even corruption. Smaller firms have this quality to a greater extent than large, old state enterprises.

This does not mean that authorities should abandon large industries. It rather means that engagements should be transparent and part of a plan outlining the future of these plants. Shock therapy will not work in communities totally dependent on single enterprises. One problem with many of the thinkable measures for improving the situation is that they presuppose the existence of an already well functioning institutional framework. This is the crucial problem. Having this in mind we recommend the following:

- Regional authorities and others should withdraw from most of their engagements in single firms. When such engagements are needed the reasons should be openly declared and justified.
- The overall task of political authorities in Arkhangelsk should be to minimize or eliminate political risks in order to achieve economic growth. For example, all types of *ad hoc* regulations, such as retroactive rule-making, should be immediately

stopped. Politicians and related officials should promote institutional stability and, thus, transparency of rules, which will subsequently increase predictability.

- In order to stimulate, or increase the likelihood of, the evolvement of "real" branch organizations officials should withdraw from the type of corporativist organizations that has been created.
- The authorities should pay great attention to the task of making regulations more simple and contradictions between various rules should, if possible, be eliminated.
- Together with other actors regional authorities should develop programs in order to stop the deterioration of education and to increase management competence in the forest sector.
- Activities of independent actors should be encouraged and supported, thereby counteracting a further bureaucratization of the forest sector. For example, programs deliberately aimed at stimulating the establishment and development of small and medium sized enterprises should be constructed, provision of economic guarantees should be considered as well as economic support of entrepreneurship.
- All private actors in the forest sector as well as the regional authorities must find ways of releasing industries from their social commitments. For example, privatization of apartments should be increased and supported.
- All concerned parties should try to find economic support for deliberate programs aimed at renovating apartment houses, repairing public buildings, roads, and other infrastructure facilities. As a side effect this might increase the regional demand of forest products.
- More emphasis should be paid to develop the export sector, for example, by widening the current range of products. Political authorities as well as the authority of the police should be used to secure that exporting firms have the possibility to reinvest the income of their export thereby making their production more efficient. Export firms have no incentive to generate money that in the end will end up in a draconian tax system or in the hands of organized crime.

References

Arkhangelsk Forest Management (1996). *Lesa Arkhangelsoi oblasti* (Forests in Arkhangelsk Oblast), brochure, Arkhangelsk: Arkhangelsk Forest Management.

Arkhangelsk Oblast (1996). "Arkhangelsk oblast'; Osnovnye napravleniia antikrizisnoi programmy" (Arkhanglesk Oblast; Main directions of the anti-crisis programme), Draft. 11.09.96.

Arkhangelsk Oblast (1997). *Razvitie i reformirovanie lesopromyshlennogo kompleksa Arkhangelskoi oblasti: Podprogramma No. 1* (Development and Reformation of the Forest Industrial Complex of Arkhangelsk Oblast: Subprogram No. 1), Arkhangelsk: Arkhangelsk Regional Administration.

Aukutsionek, Sergei (1998) "Industrial Barter in Russia." *Communist Economies & Economic Transformation*, Vol. 10, No. 2, pp. 179–188.

Barr, Brenton M. and Kathleen E. Braden (1988). *The Disappearing Russian Forest; A Dilemma in Soviet Resource Management*. London: Rowman & Littlefield.

Bjorvatn, Torbjørn and Rune Castberg (1994). Næringsliv og utenrikshandel i Arkhangelsk fylke (Economic Activity and foreign trade in Arkhangelsk Oblast), R: 002-1994, Oslo: Fridtjof Nansen Institute.

Björklund, Jörgen (1994). "Swedish Forest Exploitation in Norhern Russia Around 1900" in Jan Åke Dellenbrant and Mats-Olov Olsson (eds.) *The Barents Region; Security and Economic Development in the European North*, Umeå: CERUM, Umeå University.

Blandon, Peter (1983). *Soviet Forest Industries*. Boulder Ca: Westview Press.

Bogason, Peter (1994). "Nyinstitutionalisme, Public Choice og Bloomington-Skolen" (Neo-institutionalism, Public Choice and the Bloomington School). *Grus*, No. 44.

Bradshaw, Michael J. and J.A. Palacin (1996). *An Atlas of the Economic Performance of Russia's Regions*, Russian Regional Research Group, School of Geography and Centre for Russian and East European Studies, Working Paper 2, The University of Birmingham.

Breslauer, George W. (1995). "Aid to Russia: What Difference Can Western Policy Make," in Gail W. Lapidus (ed.) *The New Russia; Troubled Transformation.* Boulder: Westview Press, pp. 223–244.

Buiter, Willem H., Ricardo Lago and Hélène Rey (1998*) Financing Transition: Investing in Enterprises During Macroeconomic Transition*. European bank, EBRD Working paper No 35, December.

Campbell, Adrian (1995). "Regional Power in the Russian Federation," in A. Coulson (ed.) *Local Government in Eastern Europe.* Aldershot: Edward Elgar Publishing Ltd., pp. 145–167.

Carlsson, Lars, Nils-Gustav Lundgren and Mats-Olov Olsson (1999). *Forest Enterprises in Transition – Business Behavior in the Tomsk Forest Sector*, IIASA Interim Report (IR-99-010), Laxenburg, Austria: International Institute for Applied Systems Analysis.

Carlsson, Lars and Mats-Olov Olsson, eds. (1998). *Initial Analyses of the Institutional Framework of the Russian Forest Sector*, IIASA Interim Report (IR-98-027), Laxenburg, Austria: International Institute for Applied Systems Analysis, June.

Carlsson, Lars and Mats-Olov Olsson (1998). *Institutions and the Emergence of Markets, Transition in the Tomsk Forest Sec*tor. IIASA, Interim Report (IR-98-084), Laxenburg, Austria: International Institute for Applied Systems Analysis, October.

Commander, Simon and Christian Mumssen (1998) *Understanding Barter in Russia*. European bank, EBRD Working paper No 37, December.

Duinker, Peter (1997). "Policy Exercises and Their Potential Application in Studies of Russian Forest Policy," in Sten Nilsson (ed.) *Dialogue on Sustainable Development of the Russian Forest Sector – Volume I*, IIASA Interim Report (IR-97-008), Laxenburg, Austria: International Institute for Applied Systems Analysis, April.

Gaddy, Clifford G. and Barry W. Ickes (1998). "Russia's Virtual Economy". *Foreign Affairs*, Vol. 77, No. 5, September/October, pp. 53–67.

Goskomstat (1996). *Rossiiskii statisticheskii ezhegodnik* (Russian Statistical Yearbook), Moscow: Goskomstat Rossii.

Goskomstat (1997). *Rossiiskii statisticheskii ezhegodnik* (Russian Statistical Yearbook), Moscow: Goskomstat Rossii.

Goskomstat Arkhangelsk (1996). *Sotsial'no-ekonomicheskoe polozhenie Arkhangel'skoi oblasti za 1996 god* (The socio-economic situation in Arkhangelsk Oblast in 1996), Arkhangelsk: Goskomstat Rossiiskoi Federatsii, Arkhangel'skii oblastnoi komitet gosudarstvennoi statistiki.

Goskomstat Arkhangelsk (1998). *Arkhangel'skaia oblast' v 1997 godu. Statisticheskii sbornik* (Arkhangelsk Oblast in 1997. Sttistical Collection), Arkhangelsk: Goskomstat Rossiiskoi Federatsii, Arkhangel'skii oblastnoi komitet gosudarstvennoi statistiki.

Goskomstat Arkhangelsk (1997). *Arkhangel'skoi oblasti – 60 let; Kratkii statisticheskii sbornik* (Arkhangelsk Oblast 60 Years Old; Short Statistical Collection), Arkhangelsk: Goskomstat Rossiiskoi Federatsii, Arkhangel'skii oblastnoi komitet gosudarstvennoi statistiki.

Goskomstat Arkhangelsk (1998). *Sotsial'no-ekonomicheskoe polozhenie Arkhangel'skoi oblasti 1997 god* (The socio-economic situation in Arkhangelsk Oblast 1997), Arkhangelsk: Goskomstat Rossiiskoi Federatsii, Arkhangel'skii oblastnoi komitet gosudarstvennoi statistiki.

Goskomstat Rossii (1996). *Uroven' zhizni naseleniia Rossii; Ofitsial'noe izdanie* (The Level of Living of the Russian Population; Official edition), Moscow: Goskomstat Rossii.

Goskomstat Rossii (1996b). *Promyshlennost' Rossii; Ofitsial'noe ezdanie* (Industry in Russia; Official edition), Moscow: Goskomstat Rossii.

Granåsen, Jan, Sten Nilsson & Andreas Wörgötter (1997). Socioeconomic Development and the Russian Forest Sector", in Sten Nilsson (ed.) *Dialogue on Sustainable Development of the Russian Forest Sector – Volume I*, IIASA Interim Report (IR-97-009), Laxenburg, Austria: International Institute for Applied Systems Analysis, April.

Hanson, Philip and Peter Kirkow (1997). *Tomsk Province and its Economic Relations with Moscow, Preliminary report prepared for the OECD/CCET-project on industrial restructuring in Tomsk Oblast'*, CREES, The University of Birmingham, April.

Hedlund, Stefan and Niclas Sundström (1996). *Rysslands ekonomiska reformer; En studie i politisk ekonomi (Russia's Economic Reforms; A Study in Political Economy)*. Stockholm: SNS Förlag.

Huber, Peter, Sergei Nagaev and Andreas Wörgötter (1996). *The relocation of Russian industry 1987–1993*. IIASA Working Paper (WP-96-162), Laxenburg, Austria: International Institute for Applied Systems Analysis.

Huber, Peter, Sergei Nagaev and Andreas Wörgötter (1997). *Tomsk – A Regional Approach to Industrial Restructuring*, Interim Report – April 1997, Institute for Advanced Studies, Vienna.

IIASA Russian Forest Study Database. See description at URL: http://www.iiasa.ac.at/Research/FOR/dbdoc

Jacobsen, Birgit (1998) *Local, Self-government in Russia.* Working paper 1998:117, Oslo: Norwegian Institute for Urban and Regional Research.

Kiseleva, Vera (1996). *Environmental Stress to the Siberian Forests: An Overview*, IIASA Working Paper (WP-96-45), Laxenburg, Austria: International Institute for Applied Systems Analysis, May.

Kologreev, S.F. (1997). *Potoki lesnykh gruzov iz Arkhangelskoi oblasti* (Flows of forest products leaving Arkhangelsk Oblast), Paper presented at an international conference on marketing held Arkhangelsk in November 1997.

Layard, Richard and Andrea Richter (1995). "Labour market adjustment – the Russian way," in Anders Åslund (ed.) *Russian Economic Reform at Risk.* London and New York: Pinter.

Lehmbruch, Barbara (1998). "Ministerial Spin-Offs and Economic Transformation in the Russian Timber Industry, 1992–1996," in Lars Carlsson and Mats-Olov Olsson (eds.) *Initial Analyses of the Institutional Framework of the Russian Forest Sector*, IIASA Interim Report (IR-98-027), Laxenburg, Austria: International Institute for Applied Systems Analysis, June.

Manning, Nick (1995). "Social policy and the welfare state," in David Lane (ed.) *Russia in Transition; Politics, Privatisation and Inequality.* London and New York: Longman.

Mashkina, Olga (1998). "Measuring Attitudinal Diversity through Q-analysis – an Illustration of a Research Approach" in Lars Carlsson and Mats-Olov Olsson (eds.) *Initial Analyses of the Institutional Framework of the Russian Forest Sector*, IIASA Interim Report (IR-98-027), Laxenburg, Austria: International Institute for Applied Systems Analysis, June.

Mishler, William and Richard Rose (1995). *Trust, Distrust and Skepticism about Institutions of Civil Society*, Studies in Public Policy 252, Glasgow: Centre for the Study of Public Policy, University of Strathclyde.

Mishler, William and Richard Rose (1998). *Trust in Untrustworthy Institutions: Culture and Institutional Performance in Post-communist Societies*, Studies in Public Policy 310, Glasgow: Centre for the Study of Public Policy, University of Strathclyde.

Nilsson, Sten ed. (1997). *Dialogue on Sustainable Development of the Russian Forest Sector – Volume II*, IIASA Interim Report (IR-97-010), Laxenburg, Austria: International Institute for Applied Systems Analysis, March.

Nilsson, Sten and Anatoly Shvidenko, (1998) *Is Sustainable Development of the Russian Forest Sector Possible?* IUFRO, Occasional Paper No. 11, June. (The paper can be retrieved via internet from URL: http://iufro.boku.ac.at/iufro/publications/occ-p11/index.html (May 26, 1999).

Nilsson, Sten, Anatoly Shvidenko, Alexander Bondarev, and Igor Danilin (1994). *Siberian Forestry*. IIASA Working Paper (WP-94-08). Laxenburg, Austria: International Institute for Applied Systems Analysis, April.

North, Douglass C. (1990): *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.

Nove, Alec (1977). *The Soviet Economic System*. London: George Allen & Unwin Ltd.

Oakerson, Ronald J., (1992). "Analyzing the Commons: A Framework," in Daniel W. Bromely (ed.) *Making the Commons Work*. San Francisco: ICS Press, pp. 41–59.

Obersteiner, Michael (1997). *Forestry and Market Perspectives of the Forest Sector in Tomsk oblast*, Interim report – April 1997, Vienna: Institute for Advanced Studies (IAS).

Olsson, Roger (1997) *New Forest Code Preserves Federal Ownership.* Taiga-News 20, Internet version, March, URL: http://www.sll.fi/TRN/TaigaNews/News20/RussiaLaw.html (13 April 1999).

Ostrom, Elinor, (1995). "The Institutional Analysis and Development Framework: An Application to the Study of Common-Pool Resources in Sub-Saharan Africa." Paper, Bloomington Indiana: Workshop in Political Theory and Policy Analysis, Indiana University, October 10, 1995.

Ostrom, Elinor, Roy Gardner and James Walker (1994). *Games and Rules and Common Pool Resources.* Ann Arbor: University of Michigan Press.

Pejovich, Svetozar (1998). *Economic Analysis of Institutions and Systems.* London: Kluwer Academic Publishers.

Pisarenko, Anatoly I. and Valentin V. Strakhov (1996). *Socio-Economic Assessment of the Russian Boreal Forests*, IIASA Working Paper (WP-96-58). Laxenburg, Austria: International Institute for Applied Systems Analysis, July.

Prokof'ev, G.F. (1990). *Intensifikatsiia pileniia drevesiny ramnymi i lentochnymi pilami* (Intensification of wood sawing with frame and band saws), Moscow: Lesnaia promyshlennost'.

Radaev, V. (1997). *Entrepreneurship in Tomsk Region: The State of Small Business*, Paper prepared for the Experts meeting on "Regional Approach to Industrial Restructuring in Tomsk Region" arranged by the OECD in Tomsk, June 3-5. (The paper can be retrieved via internet from the OECD web site at URL: http://www.oecd.org/ sge/ccet/ tomsk/wp-entrepre.htm.)

Raiser, Martin (1997) *Informal Institutions, Social Capital and Economic Transition: Reflections on a Neglected Dimension*. European bank, EBRD Working paper No 27, August.

Romanov, E.S. (1995): "Kholdingovye kompanii v lesnom komplekse", *Izvestiia vysshikh uchebnykh zavedenii, Lesnoi zhurnal*, No. 2-3, pp. 179-183.

Rose, Richard, William Mishler and Christian Haerpfer (1997). *Getting Real: Social Capital in Post-communist Societies*, Studies in Public Policy 278, Glasgow: Centre for the Study of Public Policy, University of Strathclyde.

Sabatier, Paul, (1991). "Toward Better Theories of the Policy Process." *Political Science and Politics*, Vol. XXIV, No. 2, pp. 144–56.

Shapiro, Judith (1995). "The Russian Mortality Crisis and Its Causes," in Anders Åslund (ed.) *Russian Economic Reform at Risk*, London: Pinter Publishers.

Sheingauz, Alexander S., Sten Nilsson, and Anatoly Shvidenko (1995): *Russian Forest Legislation*, IIASA Working Paper (WP-95-045), Laxenburg, Austria: International Institute for Applied Systems Analysis.

Sproule-Jones, Mark, (1993). *Governments at Action*. Toronto: University of Toronto Press.

Strakhov, Valentin V., Viktor K. Teplyakov, Vladimir A. Borisof, Natalia I. Goltsova, Jussi Saramäki, Pekka Niemelä, Anna-Liisa Myllynen (1996). *On the Ecological and Economic Impacts of Wood Harvesting and Trade in North-West Russia*, OY FEG – Forest and Environment Group Ltd., All-Russian and Information Centre for Forest Resources, ARICFR, University of Joensuu, Faculty of Forestry, St. Petersburg State University, Institute of Biology, Russian Academy of Sciences, St. Petersburg Research Centre for Ecological Safety, Joensuu.

Thomson, James T., (1992). *A Framework for Analyzing Institutional Incentives in Community Forestry*. Rome: Food and Agriculture Organization of the United Nations.

Tsarev, E.G. (1996): "Khimiko-lesnoi kompleks Arkhangelskoi oblasti – Otsenka tekushchei situatsii i popytka prognoza" (The chemical-forest complex in Arkhangel'sk Oblast – Assessment of the current situation and an attempt to forecast). Paper presented at the conference "Timber, Pulp and Paper in Russia and the Baltics" in Brussels, February 15-16, 1996.

Tsarev, E.G. (1997). "Reshenie voprosov material'no-tekhnicheskogo obespecheniia marketingovykh meropriiatii i sbyta produktsii kak na otechestvennom rynke, tak i na eksport" (The solution of issues of material-technical support of marketing measures and product sales on the domestic market as well as for export), Paper presented at the Euroforum conference, Moscow, 25-26 October.

VNIITSlesresurs (1995). *Lesnoi fond Rossii (po uchetu na 1 ianvaria 1993 g.) Spravochnik* (The Forest Fund of Russia (calculated on 1 January 1993) Reference Book), Moscow: VNIITSlesresurs.

Vishnevskaya, Nina (1997). *The Changing Labour Market in Tomsk Oblast of the Russian Federation.* OECD, Centre for Co-operation with the Economies in Transition (CCET).
URL: http://www.oecd.org/sge/ccnm/programs/tomsk/wp_labour.htm (28 September 1998).

World Bank (1997). *Russia; Forest Policy during Transition.* A World Bank Country Study, Washington, D.C.: The World Bank.

Appendices

Appendix 1:1

Case Study Instruction

What data should be compiled about public authorities and organizations relating to the region's forest sector?

This *"Case Study Instruction"* is one of a number of instruments used in the collection of data in the IIASA project studying the institutional aspects of the Russian forest sector. The data compilation in the part of our study that concerns public authorities, organizations, etc. should be guided by the questions listed in this document. (To illustrate what kind of information we consider important and interesting we have separately listed a number of comments to the questions.)

Information provided with the help of this instruction should be based on the knowledge of the study's regional coordinator, but it should also (as far as possible) be based on official sources as well as on the knowledge and opinions of individuals (public officials, experts) contacted in the course of the study. All sources used should be explicitly recorded. The guiding principle is that it should be possible for a critical person to control the basis of our reports.

Much of the information we need about specific regions might be retrieved from the extensive project database situated at IIASA. Only data which is not readily available at IIASA is compiled through this field work.

Questions relating to this instruction should be addressed to:

Lars Carlsson <carlsson@iiasa.ac.at>
and/or
Mats-Olov Olsson <olsson@iiasa.ac.at>

or via telefax: +43 2236 71313

Questions to guide the data collection on the structure of the forest sector, public authorities and organizations in a specific region

1. What does the region's forest sector look like in relation to other sectors in the economy? Describe its position and development.

2. How is the forest sector organized in terms of public authorities and organizations?

3. What is the enterprise structure in the region's forest sector?

4. What other organizations exist in the region which are related to the forest sector? What are their duties and what principles govern their interactions with other organizational structures?

5. What are the most central features of the federal and regional legislation that applies to the forest sector in the region?

6. According to qualified assessments, which components of the forest sector regulations cause most problems for the region today? Why? What changes in the forest legislation are considered necessary in order to make it work more efficiently?

7. To what extent do the various organizations that you have discussed in questions 1-6 currently function in accordance with official intentions?

8. Considering the organizations discussed above, to what extent do leading representatives hold positions in several organizations? Where (by whom) are the most important decisions relating to the activity of these organizations taken?

9. What is the political structure in the region?

10. What aspects have been insufficiently covered in the answers to the earlier questions?

Appendix 1:2

Questions form used in the interviews with the Russian forest sector enterprises

Interview no.

Interview conducted by:
Date:
Name and address of enterprise:
Respondent:

SECTION A: GENERAL DESCRIPTION OF THE ENTERPRISE

1. Name of the enterprise?

2. What year was the enterprise established?

3. Give a short description of the enterprise.

4. Type of enterprise?
Forest owner/possessor/forest service
Harvesting enterprise
Processing industry
Consultant
Other type, describe

5. What are your main products?
Today:
One year ago:
5 years ago:
10 years ago:

6. What is the actual production volume of the enterprise?

Today:

One year ago:

5 years ago:

10 years ago:

7. Who is the legal owner of this enterprise?

The state, specify:

Private person/persons, namely:

The enterprise is a corporation

owned by other companies, namely:

Other, namely:

8. Number of employees? (Counted as full time personnel)

Workers, today:

Workers, 5 years ago:

Workers, 10 years ago:

Administration, now:

Administration, 5 years ago:

Administration, 10 years ago:

9. Do you have any engagements and responsibilities related to activities other than "production"?

Housing.

Provision of consumer goods:

Schools:

Health care:

Child care:

Other:

10. Do you currently make any investments in your enterprise?

No

Yes, describe content and scale

11. How are your relations to the ”banking system” – can you borrow money, from whom and on what terms? Describe:

SECTION B: INPUT SIDE OF THE ENTERPRISE

12. From whom do you acquire timber/wood?

Provider:	% of total volume:
Provider 1:	
Provider 2:	
etc.	

13. On what terms is the timber/wood normally acquired?

FOR CONSULTACY FIRMS:

12 b. From whom do you get your orders/tasks/assignments?

Client:	% of total volume:
Client 1:	
Client 2:	
etc.	

13b. On what terms do you get your orders/tasks/assignments? Describe:

---

14. Do you have any alternative supplier(s)?

Yes

No

15. Can you acquire a sufficient amount?

Yes

No, what is the explanation?

16. How is the timber/wood paid for?

Payment upon delivery:

Payment before delivery:

Other arrangement, namely:

17. How are payments arranged?

Via bank; name of bank:

Payments are done by the enterprise itself:

Other construction, namely:

18. What will happen if either part breaks the agreement or does not fulfill its duties?

19. Do you regard violations of agreements as a problem?

Yes, a big problem

Yes, but a small problem

Not really a problem

20. Describe how a typical purchase transaction is performed.

SECTION C: OUTPUT SIDE OF THE ENTERPRISE

21. To whom do you sell your 'products'? Name and type of customers in order of importance (as a percentage of total volume), name all.

Customer:	% of total volume:
Customer 1:	
Type:	
Customer 2:	
Type:	
etc.	

22. Can you describe how a typical sales transaction is performed?

23. What will happen if either part breaks the agreement or does not fulfill its duties? Describe

24. Do you regard violations of agreements as a problem?

Yes, a big problem

Yes, but a small problem

Not really a problem

25. How do you get paid for your products?

Cash or equivalent upon delivery

Cash or equivalent paid before delivery

Other arrangement, namely:

26. How are payments arranged?

Via bank; name of this bank:

Payments are done by the enterprise itself

Other construction, namely:

SECTION D: INSTITUTIONAL ASPECTS

27. Is this enterprise member of any branch organization or equivalent?

No

Yes, namely:

What are the arguments for this construction?

28. Are there rules or regulations that apply to your enterprise which you regard as an obstacle for your activities?

No

Yes, describe:

29. Are there other problems which you regard as obstacles for a successful business? Describe

No, only minor:

machinery/technology:

equipment/supply/maintenance:

personnel/skill/competence:

other:

30. What is the single most binding ”restriction” on the activity of your enterprise? Describe

31. Generally speaking, do you find the formal legislation regulating Russian forest enterprises adequate and efficient?

Yes

No, explain why.

32. If it would be possible to change anything related to the Russian forest sector, what would you change?

33. Other comments of relevance?

Appendix 3:1

Table:3.4. Selected socioeconomic variables for Arkhangelsk compared with the average for the Russian Federation and the other subjects of the Northern Region, 1993 and 1996.

	Russia	Arkh-an-gelsk	Kare-lia	Komi	Volog-da	Mur-mansk
Income below subsistence, % of househ.	28	14	14	18	30	10
Non-state enterprises, % of all	91	80	83	69	89	85
Share of privatized apartments, % of all	32	18	22	21	26	32
State employees, % of all	28	39	18	29	5	16
Library attendants per 100 inhabitants	41	37	45	35	44	50
University students per 1,000 inhabitants	17	10	12	9	13	6
Female students per 1,000 inhabitants	9	5	8	5	8	3
Female students, % of all students	52	53	62	58	61	48
Number of students per lecturer	11	11	9	12	12	13
Researchers per 10,000 inhabitants	113	19	56	30	23	55
PhDs (Dr nauk) per 100,000 inhabitants	11	0.6	3.0	3.0	0.3	4
PhDs (Kand nauk) per 100,000 inhabitants	80	12	40	27	4	40
Savings mill. R. per 1,000 inhabitants	27	17	14	31	17	45
Alcohol consumption, liter per inhabitant	6.0	4.8	7.7	5.1	8.7	5.1
Private cars per 1,000 inhabitants	75	51	89	58	50	93
Housing space per inhabitant, m^2	12	12	12	11	13	10
Urban households with running water %	83	74	83	91	82	98
Rural households with running water %	30	11	20	16	21	75
Physicians per 10,000 inhabitants	45	45	48	40	34	47
Alcoholism patients per 100,000 inh.	1657	1866	2271	1511	1390	1496
Drug addiction patients per 100,000 inh.	31	6	22	12	10	6
Cancer patients per 100,000 inhabitants	1209	970	1116	723	1233	735
Sick-days per 100 employees	903	945	1113	1068	986	965
Sportsmen per 1,000 inhabitants	77	84	109	122	60	89
No. of sport establishments per 10,000 inh.	14	15	16	14	13	6

Source: IIASA forest database, Rows 1-4 from Bradshaw & Palacin, 1996.