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Challenges and opportunities of wood harvesting in Karelia, Russia: focus on a small-sized enterprise

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<p>The project was assigned by LLC "SpecTransLes". The aim of the project was to collect and present data on the condition of logging business in the Republic of Karelia, increase understanding about the problems existing in the industry and influencing its logistics, as well as study and propose opportunities of the future development.</p> <p>Various sources of information such as books, journals, working and conference papers, scientific articles available both on-line and in libraries, as well Russian forest legislation, regulations and logging enterprise's documents were studied to deeply familiarize the author with the study field and formulated research problem. Observations during internship at a company, along with interviews in order to collect data, explore the problems at the root, understand professionals' experiences on the topic were done. The research was done based on qualitative and quantitative methods.</p> <p>As an outcome, the possible ways of development for LLC "SpecTransLes" were proposed. With the help of better technologies and innovations, investments, new educational policy in forestry field, federal support and development projects for wood harvesting enterprises, the timber production would be up-to- date and efficient, thus, allowing harvesting enterprises to utilize competitive advantage of the Republic at full extent.</p>		
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Acronyms

ACC – Annual Allowable Cut

CJSC – Closed Joint Stock Company

FF – Forest Fund

FFA – Forest Federal Agency

FMU – Forest Management Unit

IIASA – International Institute for Applied Systems Analysis

LLC – Limited Liability Company

LMU- Local Management Unit

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1 Introduction

Forestry is the substantial element of Russian financial success. Forest logging companies are the core element of the timber industry complex - association of wood harvesting and processing enterprises, performing full range of work from the forest growing to full- complex processing of wood. It provides with resources all the parties involved in Russian forest industry as a whole.

According to the statistics provided by Food and Agriculture Organization of the United Nations, Russia is considered to be a world leader in terms of timber resources and occupies only the fourth place in terms of its production. However, such substantial volumes of wood resources do not characterize the Russian forest sector as developed sector of economy. Country's forest industry is nowadays in a position of stagnation and experiences various difficulties. The wood harvesting in Russia undergoes substantial changes due to pressure concerning economical, ecological and social sustainability both inside Russia and outside (Gerasimov 2005, 1). In addition to large- scale enterprises, an increasing amount of small and middle-sized companies in the sector have to struggle for every contract more than ever due to tough competition.

The outline of the thesis work is as follows. The survey was conducted in a way of a case study on a base of a small- sized enterprise LLC "SpecTransLes". First, the purpose of the study is discussed, research methods are explained and the research questions, which induced the author to study the topic in depth, are listed. Secondly, the Russian forest sector structure and logging business in the Republic of Karelia are reviewed, the difficulties which small-sized wood harvesting companies face in the region are surveyed and demonstrated. As an outcome, the possible ways of development for LLC "SpecTransLes" are proposed. In order to describe the current state of logging business in Republic of Karelia on the whole and find out the problems existing in small-sized companies in particular, theory material was studied, personal experience during internship at a company was gathered and the interview with the representative of "SpecTransLes" was

conducted. The focus of this study is on forests and small-sized logging enterprises in the Republic of Karelia, however, some statistical information regarding the whole Russian forest sector is provided in order to expand the frame of reference into logging-related issues in the country.

1.1 Aim of the thesis

The aim of this paper is to collect and present data on the condition of logging business in the Republic of Karelia, increase understanding about the problems existing in the industry and influencing its logistics on the example of a company, as well as study and propose opportunities of the future development.

The author believes, that the current challenges in timber logging industry and the research development possibilities in wood production as well as adoption of the “Strategy of the development of forest sector of the Russian Federation until 2020” make the topic worth studying.

1.2 Company presentation

According to Federal law № 209-FZ of July 24, 2007 on developing small and medium scale entrepreneurship in the Russian Federation, LLC

“SpecTransLes” can be defined a small-sized company as it employs 20 persons and the year turnover lies within the allowable range for the “small-sized enterprise” category (Federal law № 209-FZ of July 24, 2007). The firm was established in 2002 and it operates in two key directions:

- Wholesale of wood
- Provision of logging services on a subcontracting basis

The company has its own logging machinery as well as logistics. As a subcontractor, LLC “SpecTransLes” collaborates with its main contractor Closed Joint- Stock Company (ZAO) ShujaLes – one of the biggest timber harvesting companies in the Republic of Karelia. The subcontractor aims at long-term mutually beneficial collaboration, however, current business relationship can scarcely be defined as advantageous for LLC “SpecTransLes” due to size inequality and aggressive competition in the field. The obstacles of such collaborating will be discussed further in this work.

1.3 Research problem

Formulating a research problem is a core factor in the whole research process. The way the research problem is expressed, defines the methodology and determines the path, which should be taken in order to complete the research journey successfully. (Kumar 2014, 17-25).

The author supposes that the optimal way to recognize the problem is to interview a professional in the field, a person, having knowledge on the subject. As well as literature review brings familiarization with the field of study and helps to get a deeper understanding of the subject. The problem, which is aimed to be solved, is dedicated to efficiency of wood harvesting processes in a small-sized enterprise.

The problem of this case study is divided into the following questions:

1. What is the current state of logging business in Karelia?
2. What are the challenges of logging in a small- sized enterprise? What are the reasons of such conditions?
3. What are the possible ways for development?

By answering aforementioned questions, as a result of this study ways of development for LLC “SpecTransLes” will be proposed. The thesis work is done on the base of the small- sized enterprise LLC “SpecTransLes”, however, the information provided in this study can assist any other enterprise operating in the forestry field.

1.4 Research methods

Different methods of data collection and analysis are required for diverse kinds of data (Bernard 2010, 433). In order to find out the answer for the given research problem, the research methods as a tool of achieving the goal are needed (Kothari 2004, 8).

Various sources of information such as books, journals, working and conference papers, scientific articles available both on-line and in libraries, as well Russian forest legislation, regulations and logging enterprise’s documents were studied to deeply familiarize the author with the study field and formulated research problem. Observations during internship at a company,

along with interviews in order to collect data, explore the problems at the root, understand professionals' experiences on the topic were done.

The interview is considered to be an efficient method of data collection and has variety of benefits. Interview as a qualitative method helps to get a deeper understanding on the topic through interviewee's perception. It also brings the understanding of interviewee's motivation and attitudes.

In this research, the face-to face semi- structured personal interview is used, conducted in a relatively open framework and providing the interviewer with the flexibility.

The structure of the interview with the representative of LLC "SpecTransLes" as well as discussion on the matter is presented in this work.

In this research, the main focus is on understanding the established way of practices in logging industry, perception of people experiences in the field. The author also analyzes countable information, measures numerical data and answers "How much?" question. (Hennink et. al. 2010, 10- 11). Thus, combination of quantitative and qualitative methods is used in this thesis work.

1.5 Research constraints

It is to be noted, that setting and describing context and research constraints are highly important. Due to unique geographical location and vast forest resources located in the area, logging companies in Karelia, operating close to Nordic countries, tend to adopt some Nordic logging technologies (Gerasimov 2005, 5). More than that, harvesting activities are adjusted to the climate circumstances of Northwest Russia. In addition, large- scale enterprises and small-sized companies have significant differences that have great effect on their operations, attitude towards risk, role in the business field and the way these enterprises overcome obstacles. Thus, the limitations are set on the territory of research and the scale of a company. Although we assume that some findings of this thesis work are applicable to large- scale enterprises or to other parts of Russia as some aspects of forest sector are country-wide in nature, the research is not focused on operation peculiarities due to

geographical and climate circumstances of other parts of Russia as well as on difficulties of operations in large-scale logging companies. All aforementioned constraints give an opportunity for further research in the field.

2 General overview of the Russian forest sector

2.1 Forest resources

Forestry plays crucial role for the Russian economy. Enormously huge volumes of forest resources as well as widespread use of wood in all the areas such as construction, agriculture, industry etc. allowed forest sector to take a unique position in the economy of the country (Zhemulin 2011, 119-124). Undoubtedly, Russia is the world power in terms of forest resources (Karjalainen 2009, 5). According to IIASA statistics, forests cover 49% of the total area of the country. The Federal Forestry agency states, that the growing stock comprises 83 bill m³ and make up 25% of the world's forests cover. Currently, the total area of forest resources in Russia comprises 1.2 bill ha, where actual forest land is 891 mill ha (Annual Statistical Bulletin of Russia 2015, 26). The allocation of forest lands in Russia can be expressed as follows: 22% of all the forests situated in the European part and 78% in Asian part of the country (Mutanen 2005, 6).

Major part of Russian forest resources consists of boreal coniferous species (76% of FF) such as pine, spruce, larch etc., the rest part cover treeless tundra forests (13% of FF), mixed and broad-leaved forests (7% of FF) such as burch, the rest is forest steppe and steppe, meadows (4% of FF) (Pisarenko 2001, 6-9).

Forest species in %

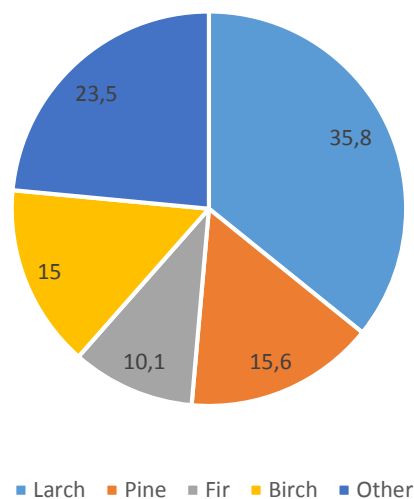


Figure1. Forest species allocation percentage (adapted from the page on Federal Statistics Service website)

Russian forests play vital role in regulation of environmental conditions, such as stabilization of global climate change and carbon cycle, being carbon sink (Palo 2012, 464). Existing forest resources of the Russian Federation allow not only satisfy current and future domestic demand for timber and its products, but also significantly expand the export to other countries.

According to statistics, provided by Food and Agriculture Organization of the United Nations, the volume of round wood exported from Russia during 2010-2015 as follows:

Table 1. Annual average industrial roundwood exports from Russia during 2010- 2015 (adapted from the page on FAOSTAT website)

Year	Coniferous		Non- coniferous-	
	Export Quantity,m3	Value, 1000 USD	Export Quantity, m3	Value, 1000 USD
2010	16482427	1515335	4500078	333982
2011	16283996	1634996	4144942	347405
2012	12902144	1190038	4749906	339197
2013	12386361	1184826	6658466	455599
2014	13676128	1288485	7233245	488198
2015	11952920	933453	7484172	405400

On the basis of export statistics provided by the Russian customs, the volume of wood sold abroad during the first half of 2016 comprises 9,7 million cubic meters, which was worth 666,3 million dollars. Russian's main forest trading partner is China, but Europe, especially Scandinavian and Baltic Sea regions are also significant importers of Russian round wood (Viitanen 2010, 7).

2.2 Forest ownership and organizational structure of forest management

2.2.1 Forest Fund

Currently, Russian forest sector is undergoing substantial transformations of administrative as well as legislative character (Karvinen 2006, 7).

According to International Institute for Applied System Analysis, Russia has unique, mosaically structured classification of the land areas, which cover vast territory of the country. It consists of Forest Fund and lands not included in the Forest Fund. Mutanen defines the term Forest Fund as all land areas, which are managed for forest production, which potentially might be covered with forests and used or possible to be used for forestry activities (Mutanen 2005, 6). The term might be considered as equivalent to Russia's forest resources. The total area of Forest Fund is a stationary value and slightly changes due to land transfer for agricultural or construction purposes. According to information provided by the Federal State Statistics Service, the total area of Russian Forest Fund comprises 1 183,4 million ha (end of year 2013) (Annual Statistical Bulletin of Russia, 7-10).

Depending on the land use, Forest Fund is divided into 2 categories: forest land and non – forest land (Karvinen 2006, 14). Concerning factual existence of forests (forest lands), the classification distinguishes stock (natural and man-created forests) and non- stock forests (lands, only temporarily not covered with forest, due to, for example, cuts or forests, destructed by storms (Pisarenko 2001, 10). Figure 1 clearly demonstrates the structure of Russian Forest Fund.

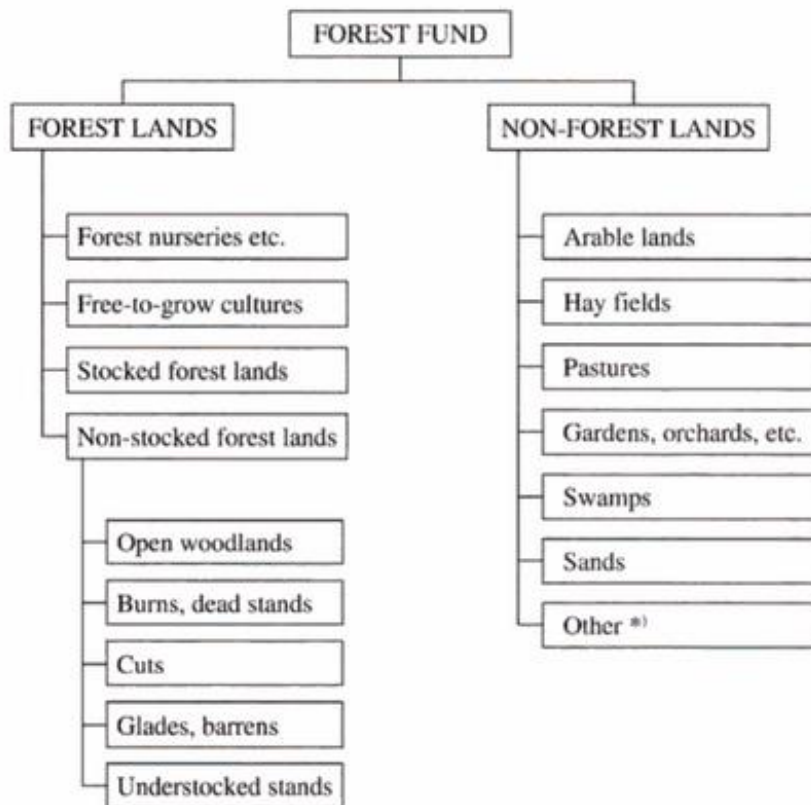


Figure 2. Categories of the Russian Forest Fund (adapted from Pisarenko 2001, 10).

2.2.2 Management groups I, II, III

According to intended forest usage, importance for ecology and national economy, forests are divided into 3 categories. Each of the groups applies restrictions on forest use (Mutanen 2005, 13).

Group I: Protection Forests. This group mainly consists of forests with water and soil protection functions. This group also includes recreational areas, forest parks, forests of green zones close to cities, national parks, forests scientifically and historically important, forests of sanitary protective zones of water supply and other forested areas out of economic use (Pisarenko 2001, 13). Clear cuts are forbidden on such territories, sanitary and selective cuts, aiming to improve overall condition of such forests, are permissible with limitations (Karvinen 2006, 15).

Group II: Multipurpose forests. Forests, situated in or close to intensively populated cities or industrial areas. Forest cut is permissible only if the volume

of cut is more or equals the annual growth (Karvinen 2006,13, Pisarenko 2001, 14).

Group III: Forests for commercial purpose. The main source of wood for industries. Clear cut is permissible. Comprises 51% of forest within all groups (Karvinen 2006, 15). The share of forest resources allocated for each group is not static and can be changed (Backman 1998, 10).

Forest resources are under federal ownership, which means they belong to The Russian Federation (Forest Code of the Russian Federation № 200- FZ of December 4, 2006). Their managerial and administrative functions are executed by the President of Russia and the Government. Currently, almost all the forests are controlled by the Ministry of Natural Resources (Mutanen 2005, 9). Ministry on Natural Resources is federal executive authority, performing policy making, protecting by laws, regulating and monitoring functions regarding forest resources (Ministry of Natural Resources). Ministry of Natural Resources of Russia is governed by the Minister, who is appointed by the President. Ministry of Natural Resources works in cooperation with the Federal Agency of Forestry (Rosleskhoz), which is also a federal executive body, responsible for forest administration.

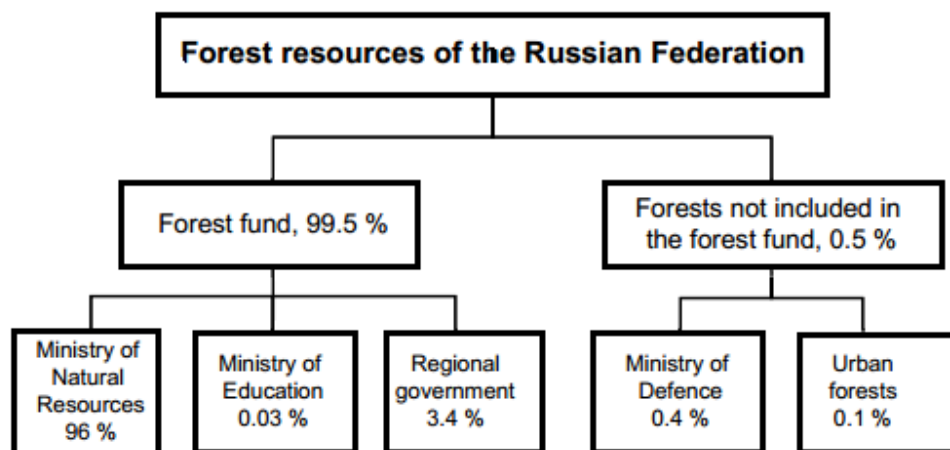


Figure 3. Administrative division of Forest Resources in Russia at federal level (adapted from Karvinen 2006, 9)

At the regional level, subjects (for example, republics) have their own administrative and managerial bodies. They are mainly responsible for protection and allocation of forest usage rights (Karvinen 2006, 10)

At the local level, forest management units (FMU) - are considered to be the significantly meaningful parties in terms of management of forest resources in practice. (Mutanen 2005, 10). Each forest management unit is traditionally divided into forest districts (IIASA). Among other functions, executed by the forest management units, is supervision of wood harvesting enterprises in terms of operations according lease agreements and ensuring, that such enterprises execute operations regarding regeneration of forests (Mutanen 2005, 10).

Hierarchical general structure of forest resources management system is shown below:

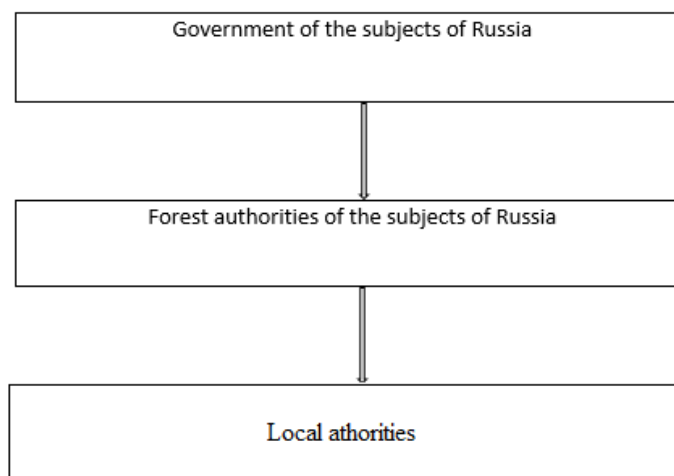


Figure 4. General structure of forest resources management system (adapted from Gerasimov 2005, 15)

2.2.3 Legislation

Forest legislation of Russia consists of the Forest Code, the Civil Code, other federal laws and laws adopted by the subject of Russian Federation in accordance with these federal laws (Forest Code of the Russian Federation № 200- FZ of December 4, 2006). Thus, laws and regulations passed by the

subjects of Russia are allowable, but should not be in contradiction with Federal Forest Code (Mutanen 2005, 9).

The Forest Code of the Russian Federation is the main document concerning forests usage and its regulation. The Forest Code determines questions regarding forest ownership, utilisation, replenishment, finance and administration of forest resources (Karvinen 2006, 8). One of the most essential objectives of Forest Code can be named sustainable use of forests for economic purposes by encouraging investments and long- term lease contracts, as the character of lease was normally short- term, which made long- term planning of forestry work complicated (Karjalainen 2005, 50).

2.2.4 Forest lease

As it has already been mentioned, particularly all the forests are owned by the state (Forest Code of the Russian Federation № 200- FZ of December 4, 2006). The main form of forest use is leasing (Mutanen 2005, 11-12).

Nowadays, the length of lease period is from 1 to 49 years. Forest utilisation for less than a year is considered as short- term use. Currently, 50% of all lease is long- term (Karvinen 2006, 40-41). The granting of forest resources use is allocated by competition (for example, tenders), rights to utilise forest resources on a short- term basis are issued by auctions (Mutanen 2005, 11-12). The forest user has to execute harvesting in accordance with harvesting plan. In case the user breaks this term, right of lease might be cancelled.

Silvicultural obligations vary depending on the length of lease and type of felling. Short- term right of use allows to execute harvesting without further reforestation. On the contrary, long- term lease obliges to regenerate resources according to management plan (Mutanen 2005, 11-12).

2.3 Wood harvesting and logistics

Forest industry is an essential component of the forest sector. There are approximately 20 branches and sub- branches in the forest industry. Along with timber processing, sawmilling, pulp and paper production, harvesting can be identified as one of the most important divisions (Oikari, 2010, 481-490).

2.3.1 Harvesting types

In Russia, wood harvesting as the dominant form of forest utilization is executed in accordance with two main felling (harvesting) types: final felling (major harvesting) and intermediate felling. The type of felling in particular area is allowed according to the management group the forest belongs to.

The main aim of final felling (major harvesting) is to get wood for further utilization in industry. For this type of felling the maximum volume of annual allowable cut is determined every year. Trees in final felling must be harvested only being mature or over mature. Age of forest is determined for each forest zone in accordance with scientifically based methodology established by the authorized federal executive body (Forest Code of the Russian Federation № 200- FZ of December 4, 2006). Final felling is divided into clear felling, gradual and selective. Nowadays, final felling comprises 90% of all harvesting in Russia (Gerasimov 2005, 24).

The peculiarity of this type of felling is that regeneration activities, which are namely reforestation and aftercare, after cutting are obligatory in order to ensure consistency of forest use (Mironov 2015, 1).

Intermediate felling is the type of harvesting, when getting wood for further utilization is not the main goal. The wood in this case is left after activities to improve overall forest condition. It can be improving silvicultural thinning or sanitary felling. The main aim of such felling is creation of favorable environment for growing trees of main species. Before 1993, intermediate felling was not considered as a source of wood (unlike in most European countries) and were solely executed for the purpose of caregiving.

In 2000s, in Russia the volume of intermediate harvesting and other sanitary harvesting was around 30 mill m³. However, a source of great concern was and still is the fact, that most of such environment-related harvesting operations turned out to be clear cuts for commercial purpose. As it was said, intermediate felling is not determined by Annual Allowable Cut, and the real control on legality and on quality of actual harvesting procedure was missing. In 2011, the volume of illegal logging comprised 1,5% of all production volume

(1,8 mill m³). Each year, the budget of Russia loses billions of rubles (Gurova, 2014).

The main reasons for such illegal logging are: stable demand on round wood, low income of population in forest- rich areas, inadequacy of laws and regulations in forest sector and lack of staff in controlling organizations (Gurova 2014).

In 2007, The Commission for combating illegal logging and timber trade was established in Russia (Kopylova 2008, 1). Moreover, “Keep it Legal” manual was created for all parties as a guidance to identify and evaluate the risks of illegally harvested wood entering supply chain. The guidance is issued regarding harvesting in Russia, China, Indonesia and Malaysia (Kopylova 2008, 4). Russia develops its legislative framework as well, allowing to follow the whole way of wood harvested, starting from enterprise’s lease agreement till the wood harvested is sold and/or processed. Since 2014 every vehicle transporting wood is obliged to have accompanying documents, proving the origin of wood (Pinyagina 2016)

In accordance with The Forest Code, in 2007 additional documents regarding harvesting activities were issued. Among them “Rules of felling (harvesting)” and “Rules of reforestation”, defining regulations regarding aforementioned operations throughout the country.

2.3.2 Annual Allowable Cut

The volume of allowed harvesting is determined by the annual allowable cut (AAC), which is the core element in the planning of forest management. The AAC is calculated separately for each central forest management unit (*centralnoe lesnichestvo*) and includes information on allowable harvesting for each type of forests within certain management group (for example, coniferous trees within III Management Group) by the representatives of the federal forest planning bodies. Annual Allowable Cut is only determined for final felling and not for intermediary. The main objective behind determining AAC is sustainable use of all forest resources (Karvinen 2006, 41). It is not allowed to exceed the AAC (Forest Code of the Russian Federation № 200-FZ of December 4, 2006).

General Annual Allowable Cut comprises 550 mill m³. As it can be seen from the table below, the actual harvesting volumes and the allowable cut differ dramatically.

The annual average roundwood production in Russia in 2010-2014 is as follows:

Table 2. The annual average roundwood production in Russia (adapted from Annual Statistical Bulletin of Russia, 2015)

Year	Mill, m ³
2010	117
2011	123
2012	122
2013	119,8
2014	119,3
2015	205,14

Such tremendous difference can be due to number of reasons: first of all, the methodology, used to calculate the AAC is considered to be outdated by many professional in forest industry. The estimation of AAC is partly done based on forests inventory. Thus, when calculating AAC, the volume of unharvested wood in previous years is included. Moreover, according to the information on All About Russian Forests website, the quality of wood, seasonal availability of forest areas, regeneration activities, financial opportunities of management units regarding road building, forests burnt by wildfires are not taken into consideration. For comparison, according to the statistics provided by

Roslekhov, only in 2010 the volume of burnt in wildfire forest comprised 93,1 mill m³.

2.3.3 Harvesting methods

Despite large- scale enterprises, wood harvesting activities are executed by enormous amount of small-sized firms, like LLC “SpecTransLes”, where the practical training of the thesis’s author took place. Due to low profitability, such small firms tend to work in tight collaboration with large-scale companies (Karvinen 2006, 47-48).

Such large-scale enterprises include harvesting sites, one or several processing yards, called lower landings, storage areas, called upper landing and other administration departments. At the lower landing, the processing line contains of cranes, conveyors, cross- cutting equipment, at some lower landings multi- functional machinery is used. After processing, wood is collected in stacks needed for transporting or stacks needed for storing (Karvinen 2006, 49).

There are 3 methods of wood harvesting in Russia: full-tree, tree- length and cut-to-length (Syunev 2009, 7). Within these 3 methods, there are several different subgroups can be distinguished depending on the type of equipment used and the degree of human force involved (Syunev 2009, 7):

1. Fully mechanized cut-to-length harvesting
2. Partially mechanized cut-to-length harvesting
3. Partially mechanized tree-length harvesting
4. Fully mechanized tree-length harvesting
5. Partially mechanized full- tree harvesting

The greater number of machinery used for tree- length method is made in Russia. However, Scandinavian cut-to-length method is becoming favored and widely used in Russia due to low environmental impact and better productivity. Russian machinery is not appropriate for such harvesting method, which means large- scale companies tend to buy new foreign machineries for their sites (Karvinen 2006, 51).

2.3.4 Transportation

Transportation mode depends on the harvesting method applied (Karvinen 2006, 54). Wood harvested by cut-to-length method is not processed at lower landings, but transported in assortments straight from cutting site to the customer or to the upper landing when needed. Tree-length method involves processing at lower lands before transportation (Karvinen 2006, 49- 54).

Wood transported by rail has lots of benefits, as the rail network is rather developed in Russia, volume of wood and the distance of transportation can be much bigger, comparing to roads. Large - scale enterprises due to lack of wagons available for lease, buy their own wagons or even establish their own logistics companies.

Trucks are the main mode of transporting wood on roads for short and medium distances (less than 140 km) (Karvinen 2006, 55). Well- organized loading and unloading is one of the most important specifications in truck transportation (Staaf 1984, 283) There are several combinations of truck and trailer possible.

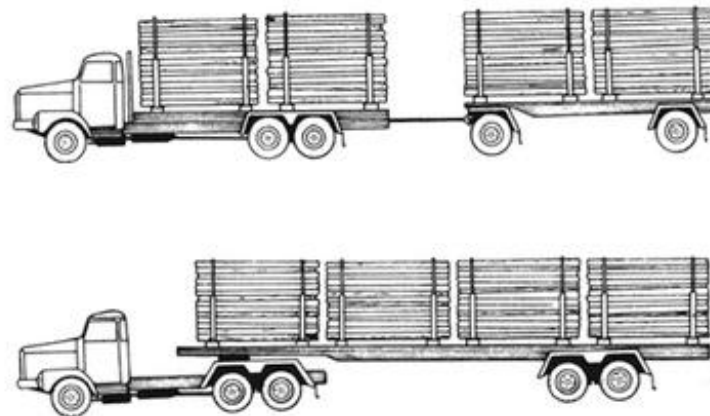


Figure 5. Example of wood transported by truck with trailer and semi- trailer (adapted from Staaf 1984, 283).

Trucks, used for wood transportation produced both locally and abroad (Karvinen 2006, 55).

Due to bad condition of federal roads in Russia, limitation of volume, which can be transported, distance, as well as costs of transportation and high taxes

make transportation of wood by trucks inefficient for long distances. More than that, shortage of forest roads, which can be utilized during the whole year is a serious obstacle in exploitation of forest resources. The length of forest roads is incredibly small, comparing to other countries. Currently, the length is 1,46 km per 1000 ha of forest lands. The figure below shows the transport infrastructure of forest sector in the Russian Federation:

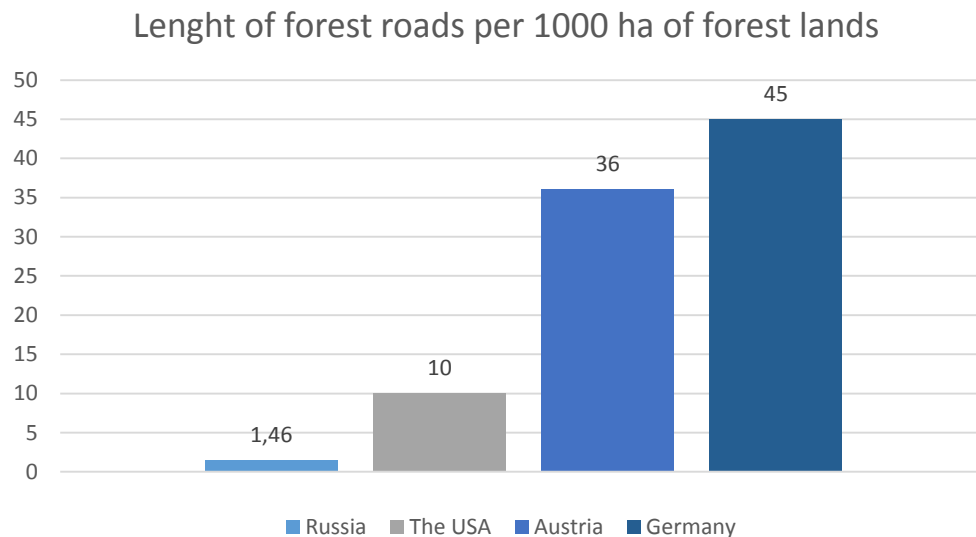


Figure 6. Transport infrastructure of forest sector in Russia in comparison with some other countries (adapted from Karvinen 2006, 15)

Such poor infrastructure makes it difficult to put out wildfires, which increases the losses, and to get to remote forest areas (Zaprudnov 2014, 11).

The annual need of forest road construction for planned exploitation of forest resources comprises 2100 km for all-year roads and more than 9300 km for seasonal roads. The factual amount of roads built is dozens of times less than planned, which makes the full exploitation of forest resources complicated. Such substantial difference between planned and factual road construction is due to lack of federal and local road construction funding (Zaprudnov 2014, 91).

Road use for harvesting and wood transportation during the year will be discussed more deeply when describing harvesting business development in Karelia.

Transporting wood by water is one of the methods, currently being decreased in use. By this method, wood is transported by shipping or floating in piles (Goltsev 2011, 10).

One of the key directions in forest legislation is responsibility of forest management and responsible utilization of resources. In this context, companies are expected to adopt Nordic techniques of forest management as well as understanding the need of responsible and sustainable operations. The implementation as well as outcomes of such adopted measures are strictly controlled by the government. For many enterprises in Russia such new obligations became challenges. To satisfy the requirements, enable safe and responsible operations in wood harvesting, when adopting Nordic techniques, new modern machinery is needed, which means additional high expenses. Strictly controlled obligations, financial questions and other challenges require the wood production, wood transportation and concomitant logistics operations to be efficiently planned and implemented (Goltsev 2011, 10).

3 Development of wood harvesting business in Karelia

The Republic of Karelia is a part of Northern Economic region of Russia. Even though the main share of Russian forest resources is located in Asian part of the country, The Republic of Karelia plays an important role for the whole Russian forest sector (Piipponen 1999, 8).

The table below sums up the amount of land covered with forests:

Table 3. Lands, covered with forests in Russia, Northern part of Russia and the Republic of Karelia (adapted from Karvinen 2006, 14)

Forest resources	Russia	Northern region	Karelia
Total forest land, ha	1183,4 mill	118 mill	14,9 mill

The main species in Karelian forest are pine, spruce and birch.

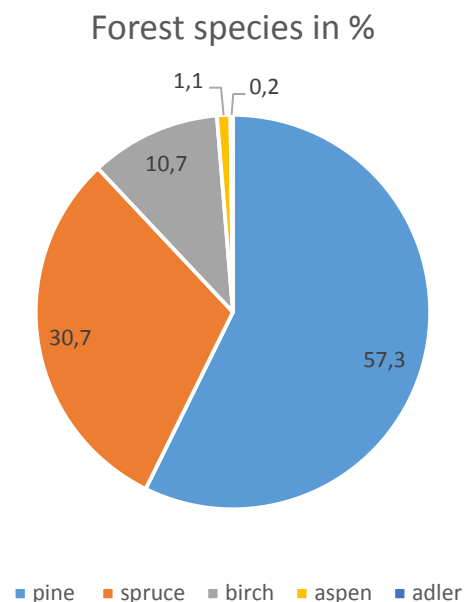


Figure 7. Forest species in Karelia (adapted from the page on Official Web portal of Republic of Karelia)

Forest management, control of forest utilization, forest protection is executed by regional and local authorities (The Ministry of Nature Management and

Environment of the Republic of Karelia), which, in turn, are subordinates to federal executive bodies (Ministry of Natural Resources, Federal Forestry Agency).

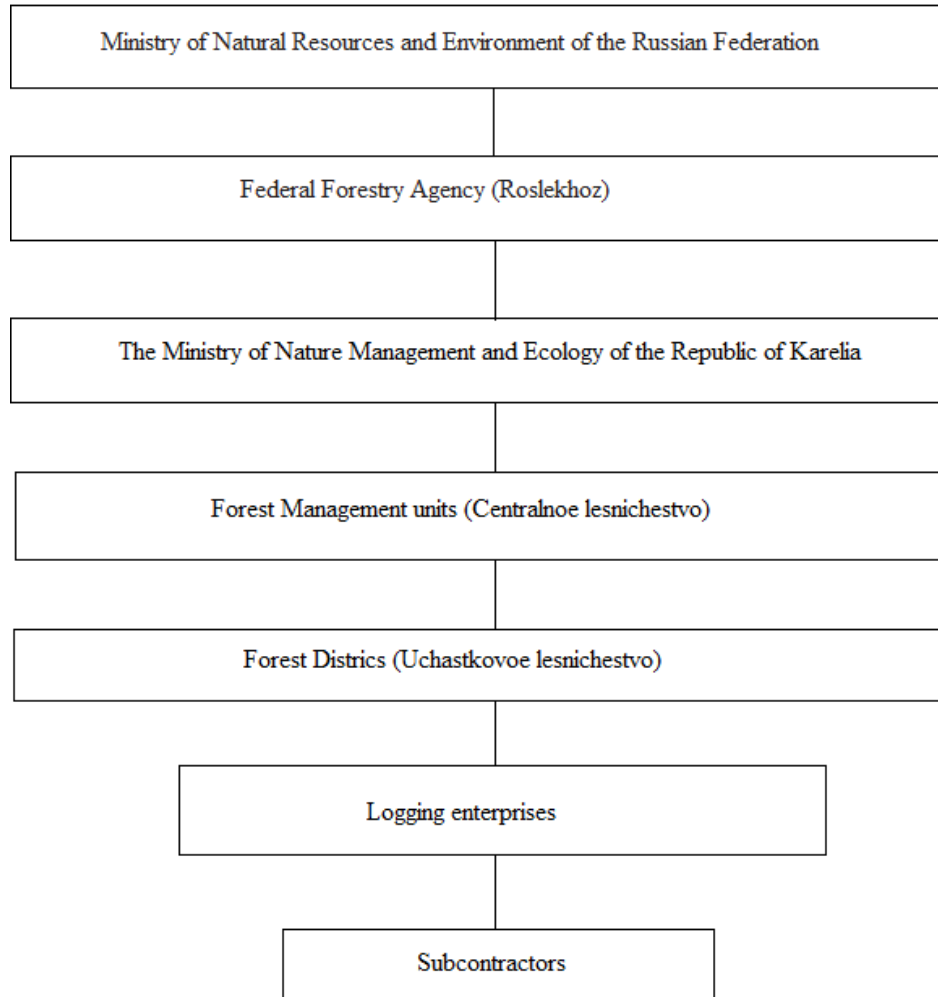


Figure 8. Structure of forest management in the Republic of Karelia (adapted from Hytönen 2001, 14)

3.2 Competitive advantage and competitive position of the Republic

During crisis in early 90s, when the whole country was suffering from economic downturn, the total volume of wood harvested in Russia decreased almost by 50% due to lack of demand (Hytönen 2001, 114). However, in Karelia forest sector didn't experience such reduction, but the harvesting output was rather steady or changed slightly (Pirhonen 2008, 12). The key

factor why forest industry in Karelia suffered from crisis on a smaller scale was the advantageous position of the region. (Hytönen 2001, 114)

The information provided by the official web portal of the Republic of Karelia states that the geographical, geopolitical location of republic as well as high potential of resources make the region export- oriented. Development of customs and transport infrastructure, building new roads and railways create opportunities for increasing volumes of exported goods as well as increases the overall transit role of the republic. Karelia is also rich in rivers, which has recently been one of the main modes of wood transportation.

The position of Karelia as advantageous is also seen by the managerial bodies of logging enterprises. Gerasimov et al, taking as a basis the personal views, expressed in interviews with representatives of such companies, states that among the main strengths of the Republic are the following (Gerasimov 2005, 35):

- Proximity to the Russian- Finnish border, high volumes of export
- Long-term lease as the main form of forest usage
- High quality of forest resources
- Efficient Scandinavian cut-to-length method, thus modern machinery used
- Stable position in the market
- Educated managerial personnel, trainings for the cutters available
- Resources belong to III-group forests (for commercial use), thus clear cut is permissible

3.3 Harvesting and transportation

Wood harvesting in Karelia is executed by large scale as well as small- and medium size enterprises. Nowadays, most of large and medium scale corporations, which make 85% of total logging volume, are privatized (Karjalainen 2005, 71). There are also plenty of small- sized firms operating in the Republic and providing harvesting and transportation services on subcontracting basis. Transition of forest ownership to private enterprises brought new challenges to forest exploitation as such enterprises experienced lack of technical and financial resources and had to figure out the solutions

themselves. Such enterprises were not supported by the government in terms of investments. The loan rates from banks remained so high, and such enterprises could not afford to renew or buy more machinery.

These large- scale enterprises lease forest lands on a long- term basis from the government, and they are responsible not only for harvesting activities, but also for forest protection, sivilcultural activities and aftercare. As such large- scale enterprises do not have enough resources to exploit forest resources themselves, they make agreements with various small-sized enterprises like LLC “SpecTransLes”.

Due to current challenges in logging industry, owners of privatized large-scale enterprises mainly aim at export operations. For a businessman, whose main goal is to increase profit and get as advantageous contract as possible, patriotism is a secondary matter. Forest leasers and loggers are more interested in export projects and in 2013 the amount of exported roundwood was 1,4 mill m³. The main importer of Karelian wood is Finland. Finnish pulp and paper mills purchase mainly pulpwood, and such substantial volume of exported wood is resulted in lack of raw material for Karelia pulp and paper mills. The absence of a quota for the export of coniferous wood and raised the euro and the dollar are definite advantages for logging businessmen and disadvantage Karelian pulp and paper mills, which cannot work without the softwood (Kuznetcov 2014).

The main harvesting companies can be seen in the figure below:

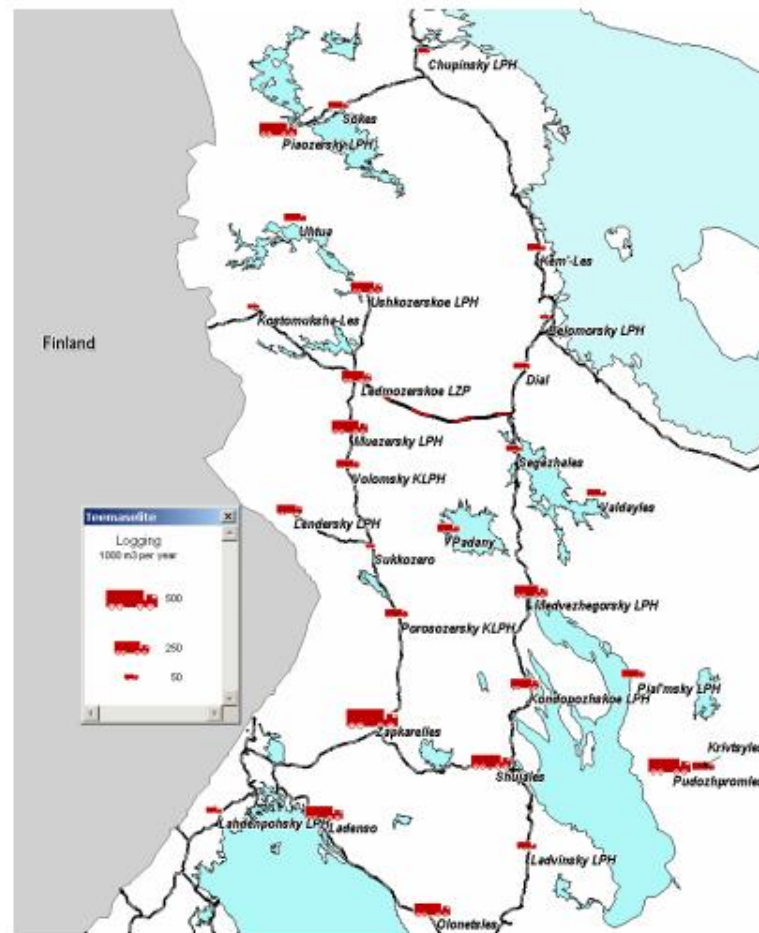


Figure 9. Main harvesting enterprises in Karelia (adapted from Gerasimov 2005, 12)

Most of the companies operate on long-term leased areas. According to the local body of the Federal State Statistics Service for the Republic of Karelia, the amount of round wood harvested by logging companies in January-September 2016 comprises 5 692 000 m³. Annual Allowable Cut in 2014 comprised 11,3 mill m³, from which coniferous forests of III-management group make 9,5 mill m³. Actual harvesting volume is 5,8 mill m³ (Karjalainen 2005, 42, Kuznetsov 2014).

As the final type of felling is allowed according to the management group the forest belong to and due to the fact, that most of forest in Karelia belong to the third management group, final felling of mature forests is the dominant harvesting activity in the Republic (Gerasimov 2005, 24).

Scandinavian cut-to-length is a dominant method of harvesting in Karelia nowadays. When cutting-to-length, delimiting, cross-cutting into assortments

is done straight at the cutting site with the help of harvester. Then, the assortments are transported to the roadsides by forwarder for further secondary transportation to domestic or export market, or to upper landing. (Syunev 2009, 7). As it can be seen from the picture below, this method implicates minimal involvement of manual labor, requires less machinery, comparing to other methods and is supposed to be more environmentally-friendly. Moreover, such method of harvesting needs less area for storage of clean wood (upper landing), while traditional logging methods assume storage of wood unprocessed, occupying more space.



Figure 10. Harvester (upper) and forwarder (lower) (adapted from the page on [directindustry](#); [promplace](#) websites)

In recent years, transport infrastructure of the Republic considered to be relatively poor. But nowadays, the government take actions to improve road condition of the Republic. The Republic has an extensive transport system, including rail, road, inland waterways, and airways. Being a transit region, Karelia is connected with main Russian cities as well with Europe by highways. The railway network is important system in the Republic too.

Railroads to Saint-Petersburg, Murmansk and Helsinki go across Karelia, which play crucial role in transporting of round wood. There are 2 main water routes through Onega lake available - to the White Sea in the north and to the Baltic sea in the south (Piipponen 1999, 38).

Due to adopting cut-to-length method, the large- scale enterprises invested into road building to increase utilization and transportation efficiency (Gerasimov 2005, 29). Achievability of forest resources is highly important for logging enterprises.

It needs to be mentioned, that the transportation of wood is executed on a seasonal basis due to road condition in spring time. Moreover, due to the order, issued by Federal Highway Agency of Ministry of Transport of the Russian Federation, starting from 2008, use of federal roads in spring time for a period of one month is limited for heavyweight trucks. This is done to minimize the destruction of roads and save the budget allocated for roads repair work. Currently, in Karelia the federal roads are closed for a month in spring of each year. In addition, logging sites are not possible to reach, as the roads, leading to the sites, are not possible to use during spring. The quality of soil, which intensively sinks and keeps water, makes use of secondary roads in spring time impossible. Use of gravel as the way to keep roads available is not a solution, as it is very costly (Gerasimov 2005, 123). The figure below demonstrates the secondary road condition, leading to harvesting site, during spring time:



Figure 11. The secondary road condition during spring time (adapted from the page on drive2 website)

3.4 Employment

The amount of employed personnel in harvesting varies on a size of a company. Large scale enterprises may comprise up to 2500 workers or even more. Currently, the logging enterprises in Karelia experience difficulties in this area due to lack of qualified labor force. White collars, employed at harvesting companies, as a rule, have university degree, workers involved directly at felling sites have general secondary education (Gerasimov 2005, 32). Usually, the wood- cutters, working at felling sites, are locals from nearest villages or small cities. Change in cutting method to Nordic cut-to-length, sets requirements on cutters in machinery use, thus, education and trainings are required. Lack of educated personnel, sometimes highly irresponsible, can be a source of serious problems and reason of disfunction of harvesting activities. Gerasimov states, that the most common causes of accidents and fatal accidents were carelessness, neglecting work safety instructions, neglecting technologies (Gerasimov 2005, 33). The issues concerning employment will be discussed in this work later more detailed, when describing problems in a small- size company “SpecTransLes”.

4 Challenges of wood harvesting at LLC “SpecTransLes”

In this chapter, the factors influencing the efficiency of harvesting activities and transportation at LLC “SpecTransLes” will be discussed. The findings are based on personal observations during practical training at the company, as well as interview with the representative of company’s managerial body. The idea behind the implementation of the interview was that the supervisor, working in the forestry field for more than 30 years, would reflect on the round wood production processes and well as transportation and points out the problems and challenges existing in the business not only at given time, but also through time. The framework for interview included technological, social and financial issues. According to the analysis, the challenges, which small-sized enterprise LLC “SpecTransLes” face are directly connected to the operational volumes and/or financial resources available. It is supposed, that large-scale enterprises are on their best position comparing to a small-sized enterprise and the problems, occurring in these different in size companies affect the operational efficiency dissimilarly.

4.1 Labor

One of the main problems, most acutely felt in LLC “SpecTransLes” is the labor factor. As it was already described, as a rule, the level of education of personnel working directly at cutting sites low and the average age is relatively high. Staff, working at cutting sites for LLC “SpecTransLes” is not an exception. The profession of wood- cutter does not seem to be appealing for young people due to low salaries. Although there is vocational secondary education available in the region, as well as Faculty of Forest Engineers in Petrozavodsk State University, the graduates rarely choose logging enterprises as place to work for.

New harvesting technology requires investments into labor education. The necessity to work with up-to-date, imported machinery is considered to be a problem for workers without skills. Taking into consideration, that the labor traffic is relatively high in a company, this causes expenses.

One more problem related to personnel, is the low level of work discipline. The size of a company is small, the manager does not have an opportunity to be

present at harvesting unit all the time, as he has duties in the main office too, which is located 280 km from the cutting site or even more, depending on the unit the team works at the moment. The absence of regular control, low level of discipline and sometimes alcohol, have negative impact on operational efficiency or might even lead to accidents. Due to the size of a company, the incoming financial resources are not evenly distributed during the year, thus, the company has sometimes difficulties with paying the salaries. The prospect of the company in terms of hiring qualified personnel does not seem promising due to low salaries and tough working conditions. More than that, the manager sometimes has to break salary payment obligations for office personnel too.

4.2 Production and transportation

One more problem, existing in a company is availability of machinery. The company has 1 harvester, 1 forwarder and 1 truck, used for round wood transportation. As for harvester and forwarder, they're bought from Finland, second-hand. Truck is produced in Russia, but also second-hand. Buying such machinery is already high expense for a LLC "SpecTransLes", another trouble-causing factor is their service, high variable costs as the machinery old and pretty worn-out. It is obvious, that in case of any of machinery breakdown, the whole production process stops. Unlike large-scale enterprises, having their own repairing facilities with spare part warehouses, the manager of LLC "SpecTransLes" have to hire repairing team and pay on a basis of an hourly or output rate. Depending on the failure, the waiting time for a new spare part can be up to one week. Doubtless, the impact of machinery breakdown on company's profitability is enormous.

One more existing problem is related to supply of oil and lubricants, which is constant source of expenses. The manager of the company, regularly delivers barrel of oil to the harvesting site. Normally, large-scale companies buy tanks, which are set at the harvesting sites, make agreements with a fuel company on supplying oil and lubricants. In this case, such system has lots of benefits, as it enables smooth functioning of harvesting operations. In addition, the wholesale price of oil and lubricants sold by supply agreement, much lower, than retail price. LLC "SpecTransLes" cannot afford to adopt such practice

due to low production volumes. Moreover, such supply agreement puts an obligation in terms of basis of payments, which is a challenge for a company with unevenly incoming capital.

Such small fleet of machinery is caused by limited financial resources. The manager of LLC “SpecTransLes” would love to increase company’s harvesting volume by purchasing one more forwarder, harvester and truck, but in current circumstances it seems to be difficult as loan rates are extremely high in Russia.

Length of a secondary road, leading to the cutting site from the main road, can be sometimes up to 50 km. Such intermediary roads play an important role in organizing of transportation. They are normally made by bulldozers, in other words, the road is nothing but the soil. During winter time, when the ground is frozen, ordinary truck, which is used for delivery wood to the customer, can reach the logging site or upper landing (storage area). In spring time, during snow melt- off, such intermediary roads are not possible to use, as it was already described earlier in this work. But in wet time, after several days of rains, only special trucks can use such intermediary roads. In this case, intermediary transportation is organized. The wood is carried by off-road truck, which are extremely good able to operate in such conditions.



Figure 12. Timber truck URAL (adapted from the page on Uralst website)

It is obvious, that unlike large-scale enterprises, having such trucks owned, small- sized enterprises like LLL “SpecTransLes” have to rent them, and the cost is sometimes as high as renting an ordinary highway truck for further transportation, even the distance is so small, being only a part of the rout. The reason of such price allocation is small payload (approximately 15-20 tons) and low speed.

Moreover, to ensure wood delivery on time, the manager forced to rent one more truck, operating on a highway, which is an additional expense for the company.

Due to financial conditions, there is no possibility to invest into new machinery despite urgent needs. LLC “SpecTransLes” is in need of investments for technical re-equipment and introducing new technologies needed for wood production. Foreign companies do not tend to invest into Russian forestry due to amount of reasons, such as high corruption and economic crime level, high export tariffs. Local investors do not see forest sector as a whole and harvesting companies in particular worth dealing with.

4.3 Export operations

One more problem, outlined by the manager of LLC “SpecTransLes” was concerning export of roundwood. Due to proximity to Finnish border and having Finland, being the biggest European importer of Russian round wood, as a neighbor, most of large-scale harvesting enterprises use this opportunity and search for foreign companies to collaborate with. In 2012 LLC “SpecTransLes” made an agreement with Stora Esno Oyj for wood supply. But already in 2013, the company was forced to shut down export operations due to obstacles on the way, such as high export tariffs, growth of railway tariffs, impossibility to supply needed volume of wood and high competition. The share of volume supplied by a small- sized company insignificant, while large-scale enterprises can sufficiently fulfill the demand.

4.4 Barter as a payment arrangement

Barter as a form commerce is rather widespread among harvesting companies. Being a subcontractor of a large- scale enterprise, LLC “SpecTransLes”, after executed harvesting activities at allocated harvesting

site, receives specific volume of wood instead of monetary payment. Thus, the company needs to search for the buyer and it receives money only after the wood is sold. It goes without saying, that the labor and variable costs during harvesting activities extremely high, and often managers of small- sized enterprises have to take loans from banks or from other enterprises or partners.

Among the main purchasers of pulp wood in this case are pulp and paper mills, located in the Republic. Another problem related to such system is that pulp and paper mills set the prices, and small-sized companies have no other ways, but to conform this conditions. The negotiation position of small- sized enterprise in this case is secondary due to high amount of suppliers in the Republic. Being a small- sized company, LLC "SpecTransLes" is dependable on such large-scale enterprises as pulp and paper mills, as there are always other companies in the harvesting industry, offering wood for an established price. Moreover, for LLC "SpecTransLes", it is more difficult to protect itself from possible agreement violation as the terms of agreement is proposed mainly by the larger company.

4.5 Other obstacles

As a rule, when large- scale enterprise enters into contract with its subcontractor in terms of execution of harvesting activities, availability to forest resources should be provided. The design of forest road depends on the condition of soil and on the season during which the road is meant to be used. Generally, the costs, involved into road construction consist of rent of excavator or bulldozer, strengthening the road by logs, cost of gravel, when applicable, and its transportation to the construction site. Goltsev et al, estimated road construction cost to be 3000 euro per km (Goltsev 2011, 135).

The distance from the main road to harvesting site might be up to 50 km. As it can be seen, road construction is enormously expensive even for large- scale enterprises, to say nothing of small-sized companies. Some large- scale enterprises in Karelia, experiencing financial difficulties cannot afford to build such roads. They execute wood harvesting at sites, closely located to the main roads. Comparing to overall area, which can be utilized for forest exploitation, such areas are relatively small. Thus, limitation of activities due to

inability to provide access to resources as well as tough competition in the field makes it more difficult to find appropriate contractor.

Moreover, although the overall quality of forests is considered to be good, some areas can be full of low- quality trees. As the LCC “SpecTransLes” manager remarked, “*Getting a logging unit for exploitation is like buying a lottery ticket – you never know what you get*”. It is understood, that in case of receiving low- quality forest unit, the variable and labor costs anyway remain high, but the amount of high quality wood, appropriate for selling in this case is much smaller.

5 Improvement proposals

As it can be seen from the previous chapter, wood harvesting enterprises are currently facing various kinds of challenges, which are very different in nature. All these challenges create serious obstacles for forest exploitation and further organization of its transportation. In some cases, the basement of these challenges lies outside policy regarded forest resources. Current socio-economic circumstances, legislation, way of regulating activities in harvesting business remain the same for years and do not take into account rapidly changing environment, as an example, implementation of new modern technology, which improved the production process.

It needs to be mentioned, that most of future development proposals for LLC “SpecTransLes” involves socio- economical changes at all the levels – federal, regional and local. To overcome stated problems new advanced technologies, innovations, new policies and reformations in education system are needed.

Addressing described in the previous chapter obstacles will allow LLC “SpecTransLes” achieve positive results in increasing harvesting volumes and revenue, enabling competitiveness of business both at local and foreign markets.

5.1 At federal and regional level

The development of forest sector is not possible without reformations and support at federal and regional level. Based on the theory and practical information analysis, the following steps to enable operational efficiency of small- sized harvesting enterprises on the whole and of LLC “SpecTransLes” in particular are suggested.

1. Creating favorable conditions for harvesting enterprises by development of actions which increase the demand of round wood in domestic market. This can be achieved, for example, by supporting and development of wooden building construction factories, paper mills and other enterprises using wood as main source of production.

2. Development of forest education and increasing training quality, increasing the prestige of the “blue collar” profession in the forest field, creating educational standards and certification framework.
3. Creation of better opportunities for harvesting enterprises in terms of machinery renewal. Most of the enterprises have no possibility to take beneficial-rate loans. Simplify the procedure of purchasing machinery by leasing is one possible solution. In addition, due to lack of liquid assets, uneven money distribution circulating in an enterprise, create a possibility for company’s individual plan of payments, decrease penalty rates.
4. To improve financial condition of harvesting enterprises in Karelia, increase exploitation of forest resources and achieve higher utilisation percentage of Annual Allowable Cut, creation of favorable circumstances for getting financing is needed. Nowadays, serious obstacles due to low profitability of harvesting business prevent investors to participate in development projects. Ensuring the development and implementation of investment projects for harvesting enterprises on a federal level, providing guarantees from government and privileges to use forest resources, will significantly improve current situation.
5. More efficient forest road network is necessary. Better planning of forest road network in Russia in general and in Karelia particularly, enabling to reach forest resources with minimum expenses. The key factor here is planning of construction, taking into account future possibilities of roads usage on a long- term basis.
6. More accurate inventory methods of forest resources for obtaining more accurate information of condition of forest resources.

5.2 At local level

Based on personal observations during practical training as well as interview’s analysis, the following development opportunities are proposed:

1. Payments before actual delivery or some other kind of payment arrangements needs to be implemented in order to support harvesting activities financially and secure small- sized enterprise from agreement

violations, if parties enter business collaboration with each other for the first time.

2. Consider leasing as a form of new machinery acquisition. Leasing payments are viewed as operational expenses, thus it allows to decrease taxes.
3. Collaboration with the main contractor in terms of road network planning along with optimization of wood harvesting plans could significantly increase operational efficiency of both forest leaser and its subcontractor.
4. Negotiations during implementation of a deal. It is supposed, that negotiation skills are seen underestimated by the supervisor of LLC "SpecTransLes". Negotiations may have positive effect on business activities with company's wood purchasers as during the meeting parties can come to a mutual agreement and find commercially sound requirements, resolve conflicts, increase unreasonably low prices. Current challenges between business partners are not reasons for contradictions, but incentives for searching of new ways of overcoming the obstacles and increasing operational efficiency.
5. Increasing motivation of personnel, creating system of incentives for efficient employees and penalties for inefficient employees. Enterprises, which look for and find possibilities to invest into culture of their companies, which look for ways of creating willingness of employees to work utilize human resources at full extent and achieve better production volumes.
6. Consider changes in personnel policy. Unlike in Finland, in Russia the main form of employment is full-time permanent employment. It is suggested, that fix-term contracting might have positive effect on personnel responsibility and well as savings for the company. During high season, the amount of personnel can be increased, and during low season, the only amount of workers needed for smaller workload can be remained. More than that, hiring an employee is a serious investment, if the employee irresponsible, do not obey company's policy, makes the company suffer from the lack of employee's productivity, the contract can give more motivation for an employee, as he will know that there's risk of not receiving a new contract. Such

change might also increase flexibility for a supervisor, and give “try before hiring” possibility.

7. Placing emphasis on local market and not into foreign, at least until LLC “SpecTransLes” has enough big production volumes to ensure required export quantity.
8. One more possible way for development is a change in the process and related to the change new investments. The following plan is suggested:

The average harvesting output at LLC “SpecTransLes” comprises 2000 cubic meter of wood per month. The harvesting site the LLC “SpecTransLes” most usually consists of

- 55% coniferous species (1100 cubic meters), in which 450 cubic meters is saw logs which are sold for 3100 rubles per cubic meter, 250 cubic meters is small-sized saw logs, which are sold for 2200 rubles per cubic meter and 300 cubic meters is pulpwood which is sold for 1800 rubles per cubic meter. And approximately 100 cubic meters are so- called third- rate wood, which is normally not paid when supplied.
- 35% non-coniferous species (700 cubic meters), which is sold for 1100 rubles per cubic meter
- 10 % so-called waste, which is sold as unprocessed logs. (200 cubic meters) These logs are sold for 900 rubles per cubic meter. They are normally used as biofuel.

So, the output is a follows: $(450 \times 3100) + (250 \times 2200) + (300 \times 1800) + (700 \times 1100) + (200 \times 900)$

To sum up, the total income from sales comprises 3 435 000 rubles per month. To increase the income, we suggest the following:

1. Purchase band saw machine (200 000 rubles). This machine is used for processing third-rate wood into industrial boards, which are then

sold for 3500 rubles per cubic meter



Figure 13. Band saw machine “Taiga” (adapted from the page on Imediagroup website)

2. Purchase chipper- canter, the machine for processing small-sized saw logs (800 000 rubles). Such boards are later processed and used for wall paneling. They are sold for 7000 rubles per cubic meter.

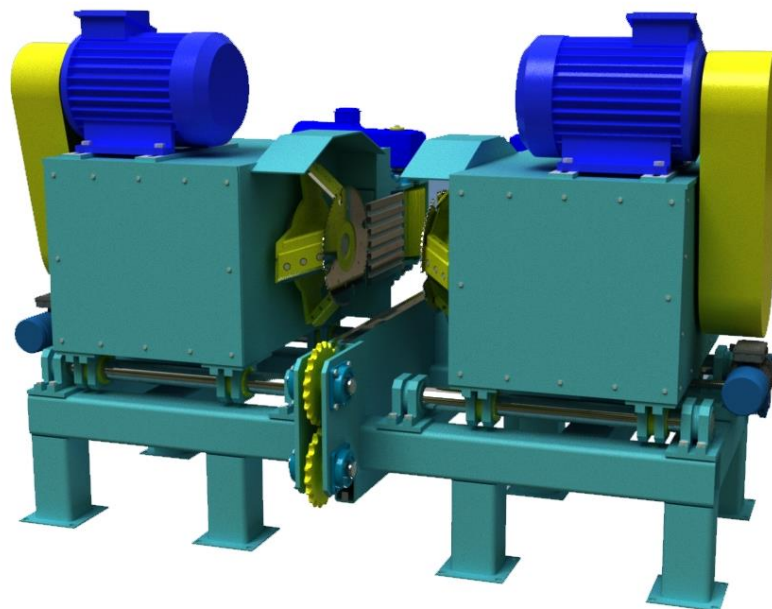


Figure 14. Chipper- canter (adapted from the page on ecodrev website)

3. Purchase hydraulic wood cleaver (150000 rubles) which will allow to sell processed firewood for 1500 rubles per cubic meter.



Figure 15. Hydraulic cleaver (adapted from page on Podmasterij website)

The profitability calculation is as follows:

Investment: 1 150 000 rubles

Holding time: 20 years

Net profit every year: 825 000 rubles x 12 months – labor costs (30 000 per month x 3 machineries x 12 months) – variable costs (100 000 rubles per year) = 8 720 000 rubles

Rate of interest: 20%

Residual value: 0

$$k_n = \frac{(1+i)^n - 1}{i(1+i)^n}$$

Figure 16. Calculation formula (adapted from the transportation economy' lectures)

Where n is period of time.

According to the formula, k factor is 4,8696

The calculation is: $(8\,720\,000 \times 4,8696) - 1150000 = 41312912$ rubles, thus the investment is profitable.

With all the new investments, the total income for LCC "SpecTransLes" per one month can be increased up to 5 105000 rubles per month, which is 48,61% more comparing to working without any investments. The total spending on machinery is 1 150 000 rubles, while already in the first month the increase in income comprises 1 670 000 rubles. It goes without saying, that such investments are highly profitable and gives an opportunity for further development.

However, provided calculation can be risky to be the only support in the decision making. Among the risks are the factors like unexpected expenses, decrease in demand. More than that, the annual profit is given very approximate, as it is very difficult to evaluate future earnings, moreover, the months and the earnings are not identical.

6 Conclusion

In the past years, the wood harvesting industry used to be of the leading sectors of the Russian economy. The aim of this thesis was to investigate and evaluate the current state of harvesting industry on the whole and small-sized logging companies in Karelia in particular based on the example.

During practical training at LLC “SpecTransLes”, while revising theory material on the issue as well as working at the company, the challenges, which the company faces at the moment, were outlined. Serious consideration was paid to lack of qualified labor, decrease of professional prestige, production, transportation obstacles, such as poor road infrastructure, worn-out machinery, lack of investments, export operations and other obstacles. The enterprise is in huge need of new investments and changing the processes regarding harvesting and wood transportation. All these challenges make the LLC “SpecTransLes” uncompetitive at local market, and it can be said, that the company is currently in the position of stagnation, struggling for every signed contract.

Taking into consideration current state of business at LLC “SpecTransLes” as well as analysis of federal policies related to Forest Sector in Russia, we suggested the possible areas of development.

In the current circumstances concerted efforts should be made at federal, regional and local levels. Strategically important for the whole forest sector harvesting industry is in need of revision of current technological, technical, organizational approaches of timber production.

It is important to outline, that the positive scenario is only possible if the suggested development proposals will be applied comprehensively. With the help of better technologies and innovations, changes in processes, investments, new educational policy in forestry field, federal support and development projects for wood harvesting enterprises, the timber production will be up-to-date and efficient, thus, allowing harvesting enterprises to utilize competitive advantage of the Republic at full extent and achieve stable increase of operational efficiency of the harvesting enterprises.

We believe, that the research findings are reliable, as the interviewee, personal observations as well as literature review provided with similar assessment and reflections regarding the current state of small- sized logging enterprises in the Republic of Karelia not only for the time of the research, but also in a time horizon.

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Appendices

Appendix 1 Interview questions

What in your opinion are the most essential challenges in operation of LLC “SpecTransLes”?

What was your key directions 10, 5 and 1 year ago?

Do you invest into LLC “SpecTransLes”? Are you planning to?

Would you change something related to Russian Forest legislation?