

## BRIEF REPORT

# Development Program for Improving Wood Procurement in Northwest Russia Based on SWOT Analysis

YURI GERASIMOV\* AND TIMO KARJALAINEN

Finnish Forest Research Institute, Joensuu Research Unit, Yliopistokatu 6, 80101 Joensuu, Finland; Tel. +358 10 211 3253, Fax. +358 10 211 3251, E-mail: yuri.gerasimov@metla.fi

Gerasimov, Y and Karjalainen, T. 2008. Development Program for Improving Wood Procurement in Northwest Russia Based on SWOT Analysis. *Baltic Forestry*, 14 (1): 87–92.

## Abstract

Strengths, weaknesses, opportunities, and threats (SWOT) of wood procurement in Northwest Russia have been analysed from Finnish forest industry perspective and development program for further improvement has been provided. The SWOT analysis of a wood procurement system, where round-wood is conveyed from a stump to a customer mill gate by means of technical and commercial operations that include wood purchasing, logging, storing and logistics, is conducted in this study. The focus for this analysis is in the Northwest regions of the Russian Federation where the Finnish forest industry's purchasing operations and investments in wood processes are concentrated. This paper describes potential technological, economical, social and environmental impacts on future developments of wood procurement. Issues have been classified and those key issues related to wood supply planning, wood sources, wood markets, logistics, harvesting, environmental responsibility, human resources and social responsibility have been highlighted. Results of the analysis may be used in decision-making.

**Key words:** Russia, forest industry investments, trade of industrial round-wood, wood harvesting, environmental responsibility, social responsibility

## Introduction

Northwest Russia, including regions of Karelia, Komi, Archangel, Vologda, Leningrad, Novgorod and Pskov, plays a key role in the Russian forest sector and has been well developed in comparison with the rest of Russia. Annually, the region produces 37% of the total industrial round wood of Russia, 63% of its pulp, paper and cardboard, 38% of its plywood, and 27% of its sawn timber (Gelvanovsky *et al.* 2007). For comparison Northwest Russia has only 10% of the forest land and 12% of growing stock of the whole of Russia. Nevertheless, the forest resource of the region not only supplies the domestic forest industry, but also the export market of industrial round-wood. In fact, Northwest Russia has been the most important industrial round-wood supplier to Europe, particularly the Nordic countries. Finland has been traditionally one of the key importers of Russian industrial round-wood mostly from Northwest Russia. Round-wood export to Finland has been increasing steadily during the past 10-15 years and was approximately 17 million m<sup>3</sup> with bark per year in 2005. This was 31% of the round-wood export (Kareliastat 2006) and equalled 24% of the consumption of industrial round-wood in Finland (Finnish Forest Research Institute 2006).

Well-known global Finnish corporations, such as Stora Enso, UPM-Kymmene and Metsäliitto, are not only the biggest importers of round-wood from Northwest Russia to Finland (Stora Enso, UPM-Kymmene, and Metsäliitto), they are also growing investors in wood processing in Russia (Karvinen *et al.* 2006). Currently, 5 sawmills are owned by Stora Enso (Nebolchi, Impilahti), Metsäliitto (Padporozhye) and UPM-Kymmene (Chudovo-RWS, Pestovo), which collectively use approximately 1.8 million m<sup>3</sup> of saw logs annually. Companies are also investigating possibilities for green-field pulp and paper mill investments. Also Swedish owned Swedwood-Kostamuksha and Swedwood-Tikhvin and Austrian owned Mayer-Melnhof-Holz-Efimovsky have invested into sawmilling in Northwest Russia.

Stagnation trends in Russian wood harvesting, the recovering forest industry of Russia, and increasing round-wood export (Gelvanovsky *et al.* 2007) demonstrate importance for wood flow security. Taking also into account low utilisation of allowable annual cut (currently 40%), low utilization of thinnings (15% of the harvested volume), and illegal wood harvesting activities (estimated to 20-25%), wood procurement operations could and should be further developed (Gerasimov and Karjalainen 2006).

Recent development in Russia suggests, however, that export of industrial round-wood is not going to increase any more, on the contrary to decrease. This is due to increasing export duties for round-wood. The aim of Russian authorities is to decrease export of industrial round-wood and increase wood processing in Russia. Russia has also renewed forest legislation aiming at clarification of responsibilities and rights between state (forest owner) and private business (forest user), and also between the federation and regions (Forest Code 2006).

Wood procurement development in Russia, particularly for a foreign company, is characterized by a chain of ideas, plans, decisions and operations subject to constant uncertainty and lack of clear and reliable information. In such planning environment, analysis of strengths, weaknesses, opportunities and threats (SWOT) could be used to identify critical issues for wood procurement management in any situation and to organize them in a way that enables one to use sound strategic approach for decision making.

In this article we analyze strengths, weaknesses, opportunities, and threats of wood procurement in Northwest Russia from the foreign, in particular large Finnish companies' points of view, which are working in Russia and planning to expand business there. Based on the results of the analysis, development program and some suggestions are proposed and outcomes are presented which may be utilized in decision-making.

## Materials and methods

SWOT analysis was developed 40 years ago to help companies define their strategies in the context of fluctuating and competitive environments (Lerner *et al.* 1965). This decision-making tool owes its name to the fact that it examines the strengths and weaknesses within the company, as well as the opportunities and threats of the market. It is one of the classical tools of strategic analysis (Wilson 2001) which has been applied also in some forestry-related analysis for forest strategy (Rauch 2007, Suh and Emtage 2005), forest economics (Oswald *et al.* 2004), and forest management (Kurttila *et al.* 2000, Kangas *et al.* 2003, Pesonen *et al.* 2001). The SWOT analysis may also serve as a tool for management assessing the relevance of a strategy during the implementation stage. Taking into account the latest available data and ensuring the actions remain relevant (Anon 2003). Implementation of the SWOT analysis includes following steps:

1. Investigation of business environment enables detection of major trends and problems that could affect the future of the wood procurement area. Analysis should be made about wood resources, techno-

logical, economic, environmental, political, and socio-demographic indicators. Indicators of regional disparities and benchmarks are particularly useful for revealing opportunities and threats. This step should not be exhaustive since the aim is to obtain an overall picture and to illustrate the key issues.

2. External analysis of opportunities and threats consists of listing parameters of the environment which are not under the direct control but which are assumed to strongly influence the development.

3. Internal analysis of strengths and weaknesses involves an inventory of the factors which are at least partly under the direct control and which may either promote or hinder the development.

4. Mapping of internal factors and external parameters are usually illustrated in a quadrangle (Figure 1): internal feasibility regarding strengths and weaknesses, and external environment regarding opportunities and threats.

5. Preparation of an inventory of possible actions involves identification of possible actions, formulated in general terms in relation to the main problems identified.

6. Classification of possible actions is aimed at highlighting those actions which most probably reduce problems by focusing on strengths and reducing or even eliminating weaknesses, maximizing opportunities and minimizing threats.

7. Evaluation of development program contains a set of interventions some of which build on strengths and opportunities while others try to compensate weaknesses or to warn of threats (Figure 1).

We have analyzed qualitative and quantitative data from multiple sources, including the State Statistical Committee of Russia, the Ministry of Natural Resources of Russia, forest industry companies, NGOs, mass-media and own experience. Data have been categorized according to key themes.

Results of the SWOT analysis and development program building

Returning now to the problem of development of wood procurement in NW Russia the SWOT analysis covers the following areas, each of which are sources of strengths, weaknesses, opportunities or threats:

- *general institutional factors*: forestry policy and legislation; educational conditions and programs; health and safety; export operations; operational organization; infrastructure

- *wood harvesting factors*: allowable and actual forest resources; technology and machinery; productivity and utilization; compliance with legislation and norms; logistics

- *industrial factors*: demand and supply of round wood; international investments; sustainable manage-

ment including economical, environmental and social issues.

Results of the SWOT analysis of the wood procurement conditions in Northwest Russia from the foreign companies' point of view are presented in Table 1.

**Table 1.** Mapping of internal feasibility and external environment of wood procurement conditions in Northwest Russia from a foreign or Finnish organization point of view

| STRENGTHS  | WEAKNESSES  |
|--|---|
| Historical background in wood purchasing   | Weak synergy of wood supply planning with the allowable cut, logistics and logging operations, infrastructure conditions and market issue |
| Financial capability   | Poor knowledge about distant wood resources   |
| All assortments buyer – also birch and aspen pulpwood which not common in Russia | Economically and environmentally sound wood resources limited   |
| Reputation as a reliable partner   | Poor knowledge about wood market in distant regions   |
| Russian speaking management  | Seasonal fluctuation in wood delivery   |
| Experience in domestic wood terminal operations                                  | Small share of controlled wood resources  |
| Experience in domestic logistics operations                                      | Weak wood terminal network  |
| Experience in domestic harvesting operations                                     | Poor partnership system   |
| Good knowledge about domestic wood market in border regions                      | Competition between and within other Finnish companies  |
| Investments into mechanical woodworking and harvesting in Russia                 | Wood exchange not common  |
|  | Size of assortment - hard to change, problem in the cross-cutting optimization  |
|  | Dependence of wood trade companies  |
|  | Stiff wood price system   |
|  | Extensive forest management based on traditional logging technology dominated.  |
|  | High wood procurement cost  |
|  | Incomplete system for tracing origin of wood  |
|  | Forest certification (FSC, PEFC) are not common   |
|  | Probability of illegal wood in the procurement chain  |
|  | Low productivity of labor. High risk of accidents   |
|  | Lack of qualified human resources in the countryside  |
|  | Lack of skilled harvester/forwarder operators   |
|  | Social obligations including unemployment   |
| OPPORTUNITIES  | THREATS   |
| Potential wood resources existing  | Poor infrastructure, roads network and high costs of developing it. Lack of all year forest roads   |
| Few species, coniferous dominant   | Strong competition, constantly growing wood prices  |
| Low utilisation level of allowable cut   | Integration process in wood business inside of Russia: competition on regional and national levels  |
| Low stumpage price and labour cost   | Russian regional authorities influence on distribution of forest leases – lobby for the local companies                                   |
| Possibility to acquire Russian logging companies                                 | Necessity to Invest into local wood processing  |
| New forest legislation aiming to long term leasing agreements                    | Corruption  |
| GSM/GPS development  | Unsound business practices (cash payment, bribery, terminals along the border)  |
| Transfer of technology from Scandinavia  | Price speculation. Local and regional protectionism   |
| Improvement of logistic operations in Russia                                     | Shortage of wagons and vessels  |
| Developing forest industry   | Customs and export regulations/duties   |
| Growing Russian economy and consumption of wood products                         | Illegal and unreported logging. Poor reputation as a business. Lack of security of investments.   |

The preceding framework is provided as a starting point to assist in developing wood procurement in Northwest Russia from viewpoint of a Finnish wood procurement organization operating in Russia. As explained in the method chapter, weaknesses and threats should be minimized or avoided, while strengths and opportunities should be matched to develop wood procurement.

Because of the complexity of the task, the problems have been classified for building a development program (Figure 1). Key issues in the development program include wood supply planning, wood sources, wood markets, logistics, harvesting, environmental responsibility, human resources and social responsibility, which are presented and processed in following worksheets. Some weaknesses are not presented, however, the whole list of weaknesses should be proc-

essed in order to convert them into strengths; also threats should be converted into opportunities.

|                                  |                               |   |
|----------------------------------|-------------------------------|---|
| Potential internal strengths     | Potential internal weaknesses | <b>Key issue: the set of highlighted problems</b>   |
| Potential external opportunities | Potential external threats    |   |
|                                  |                               | Possible actions: set of interventions some of which build on strengths and opportunities while others try to compensate for weaknesses or to warn of threats |
|                                  |                               | <b>Result:</b> Description of the change  |

**Figure 1.** The SWOT (left) and a development program (right) worksheet

**Key wood source issues**

**Wood resources potential exists but economically and environmentally sound wood sources are limited in Northwest Russia. Poor knowledge about distant wood resources. Allowable cut located along the existing road network has degraded.**

The annual allowable cut in Northwest Russia is 90 million m<sup>3</sup> including 53 million m<sup>3</sup> of coniferous (Roslesinforg 2005). Most of the resources cannot be utilized from economical and environmental points of view as the largest allowable cut located in remote areas in Komi and Arkhangelsk, where the demand for protection of intact forest landscapes is increasing (Aksenov *et al.* 2002). Logging often unprofitable because of poor infrastructure: economic profitability of logging strictly dependent on road density and quality. The allowable cut located along the existing degrading road network, thus huge investments into maintenance and new roads needed. As the contribution of the federal and regional authorities is not adequate to develop the road system in forest regions, logging companies should take care of new road building. Business should have guarantee about continuity. As a result, actual cut is 23% of the annual allowable cut in whole Russia: 41% in Northwest Russia and 16% in Siberia and the Far East (Roslesinforg 2005).

**Possible actions:**

- Collection and analysis of forest inventory data (stock, species, ages *etc*) related to growing stock and annual allowable and actual cut for regions and forestry units.
- Collection and analysis of data related to wood harvesting restrictions (intact landscapes, official and planned conservation areas) by regions and forestry units.
- Collection and analysis of data about commercially unsound forest areas.
- Investigation of economically and environmentally attractive areas for purchasing, harvesting and logistic developing.
- Creation of an IT system for collecting and analysing data related to
  - o Road infrastructure
  - o Tenants of forest areas
  - o Environmental restrictions in forest areas
 for an operation area up to stand level.
- Plan and develop logistics and logging operations based on knowledge of economically and environmentally sound areas and existing infrastructure.
- Plan and develop intensive forest management.

**Result:** Economically and environmentally sound wood sources are identified and taken into account. Clear picture about current and future allowable cut. Good basis for wood procurement planning

**Key round wood market issues**

**The background for purchasing strong but the focus is on exports from border regions. The competition in the round-wood market is strong, prices are rising. Low wood flow security.**

During the USSR era, few state organizations were in charge of wood export. Nowadays, Finnish wood procurement organisations should make wood procurement contracts with very many suppliers. Big and medium size businesses are successfully involved in wood supply. Inexperienced wood suppliers (especially SMEs) in the distant Northwest regions meet export problems with Russian authorities and prefer to supply domestically. Government decisions to increase customs duties are influencing export of round wood. Additional requirements compared to domestic wood, i.e. phytosanitary check, sorting of wood and reduced number of customs declaration points cause additional work and expenses. Round-wood export has been growing until now. Domestic consumption of wood products is increasing. This means that the competition for wood resources is increasing - the market prices of pulpwood and saw logs are rising. For wood flow security, the integration processes are observed - Russian pulp and paper mills try to manage with acquisition of logging companies. Bigger companies have a better possibility to invest in the development of harvesting infrastructure and technology. Russian regional authorities are influencing distribution of forest leases - lobby for local companies exists.

**Possible actions:**

- Map and monitor the round-wood balance based on export, interregional and domestic levels.
- Map and monitor location, capacity, prices and business behaviour of major mills.
- Create flexible wood price system based on local wood market situation.
- Optimise logistic operations - minimise transport costs instead of wood price.
- Investigate distant regions and find promising areas from the purchasing point of view.
- Create and support wood terminals for buying wood locally. Organise wood transport delivery from road side to wood terminal.
- Acquisition of Russian logging companies with forest resources. Long term leasing is possible as well. Use the knowledge about economically and environmentally sound forest areas and forest area tenants for planning procedure.
- Wood procurement contracts directly with logging companies instead of intermediate trade firms.
- Developing partnerships with local logging businesses.
- Involve SMEs.

**Result:** Better explanation and prediction of wood prices. Also more distant regions are involved in the business. SMEs are taken into account. Wood flow is better controlled.

## Key wood supply planning issues

### Weak synergy of wood procurement planning with other wood procurement activities.

The experience of wood procurement in Russia show weak synergy of wood procurement planning with allowable cut, logistics and harvesting operations, infrastructure conditions, market situation and the behaviour of authorities. The problem is that decisions and actions are made under constant uncertainty and lack of clear information from the field.

#### Possible actions:

- Investigate the influence of different wood procurement factors on wood flow: mills demand, possibilities in wood supply and logistics, prices, allowable cut, competitors, environmental and social restrictions, infrastructural conditions etc.
- Development of decision support system – an interrelated set of knowledge about significant wood procurement factors.
- Synchronise wood procurement planning with customer/supplier scopes, allowable cut, logistic operations, wood prices, infrastructure conditions and logging operations.
- Optimization of the wood flow

**Result:** Wood procurement is more predictable, better controlled

## Key logistic issues

### Substantial seasonal fluctuation in wood supply.

The logging depends on the season because of poor/lack of road infrastructure (Gelvanovsky *et al.* 2007, Tatarinov 1989). Main wood resources are accessible when soil is frozen. There is shortage of wagons and vessels during the peak season. Wood prices depend on the season.

#### Possible actions:

- Investments into short and long distance transport infrastructure including rolling-stock.
- Establishment of wood terminal network in the Russian side.
- Use wood terminals in order to involve SMEs in the direct wood trade.
- Use flexible price policy according to season.

**Result:** Even and stable wood supply whole year round.

## Key environmental issues

### An incomplete system for tracing origin of wood. Fear for illegal and unreported wood.

In accordance with the companies environment policy, the origin of procured wood has to be traced carefully using certified tracing systems. Companies do not wish to procure wood from protected areas, or from any other restricted areas identified by the forest and environmental authorities. Unfortunately, the chance to obtain illegal or unreported wood exists due to lack of possibility to check the origin of wood on stand level in each region.

#### Possible actions:

- Create and support a mapping system for collecting and archiving data related to cutting licences.
- Improve the mapping system (stand, kvartal, lesnichestvo network) for checking cutting licences (Gerasimov *et al.* 2006, Gerasimov *et al.* 2007)
  - o Official and planned conservation areas
  - o Intact forest landscapes
- Providing support to the Russian partner on forest certification.

**Result:** Complete and constantly up-dated system for tracing origin of wood

## Key harvesting issues

### Extensive forest management. Traditional tree-length logging technology dominating.

Thinning seldom applied in Northwest Russia. Large-scale concentrated clear cuttings during the last decades have weakened the structure and quality of forests (Roslesinfor 2005). This development threatens the availability of wood for forest industries, increases costs and raises pressure to overcut remaining commercially sound wood resources, which also have ecological values. Logging companies changing from tree length to cut-to-length (CTL) system (Gerasimov *et al.* 2005). Wood procurement system with CTL system performs better silviculturally, fits for thinning and has less environmental impact without additional costs.

#### Possible actions:

- Improve understanding on the principles and practices of Russian forest management by producing research-based information of the ecological and socio-economic impacts of forest management norms and silvicultural practices on sustainable forestry in Northwest Russia.
- Assist the development of forest growing practices and forest management planning systems by producing further analysis of the results of different forest regeneration and thinning regimes and growth trends of forests in NWR.
- Plan harvesting operations based on knowledge of intensive forest management in unmanaged forests applying CTL system.
- Create a map system for harvesting operations displaying: forest inventory data on stand level, protected areas, infrastructure (wood terminals, roads, railway roads, railway stations, electricity lines, open-cast mines etc), terrain and hydrographical conditions.
- Synchronise logging operations with the wood procurement plan, allowable cut, logistic operations and infrastructure conditions.

**Result:** Move to intensive forest management where more attention on all phases during the rotation period. Increase in annual increment and allowable cut. Better utilization of cut-to-length system.

## Key labor issues

### Lack of qualified labor in the countryside. Social obligations. High accident risks. Industrial and public safety. Security.

Strong urbanization process in Russia because of low standard of living and poor infrastructure in the countryside. Usually local population has no motivation for high labour productivity. Often logging companies have to search workers from abroad, e.g. Ukraine, Byelorussia, Moldova. Usually logging companies should take care or contribute to maintenance of the social infrastructure of villages including heating, housing, cultural services, public transport, medical care, schools etc. Due to old machinery, poor training and low productivity culture, accident risk is high: 1 death per 2000 workers (Ministry of Labour 2003) or 1.4 deaths per 1 mill. m<sup>3</sup> cut. Criminal and illegal activities common.

#### Possible actions:

- Collect and map data related to human resources of Northwest Russia.
- Take into account in wood procurement planning lack of qualified labor in the countryside. Try to organise the business in towns when possible.
- Organize training for wood procurement operations for highly motivated local people.
- Use inter-changeable teams for remote forest work.
- Use more productive systems and machinery – less personnel will be needed (Gerasimov *et al.* 2005).
- Provide attractive salary and social support.
- Collect and map data related to social infrastructure in Northwest Russia.
- Prioritize social obligations.
- Take social obligations into account as overhead costs.
- Improve work safety and training.
- Use security service.
- Co-operate with local and regional authorities.
- Improvement promotion campaign for work in forests; emphasise salary, conditions, and additional benefits.

**Result:** More qualified staff is available. Social obligations are considered, costs are optimised, less accidents, safer and more secure business.

The relationship between selected weaknesses and key issues is shown in Table 2.

**Table 2.** The relationship between selected key issues and weaknesses

| KEY ISSUES                                | WEAKNESSES   |
|---|--|
| Wood sources                              | Poor knowledge about distant wood resources<br>Economically and environmentally sound wood resources limited   |
| Wood markets                              | Poor knowledge about wood market in distant regions<br>Dependence of wood trade companies<br>Small share of controlled wood resources<br>Competition between and within other Finnish companies<br>Poor partnership system |
| Wood supply planning                      | Weak synergy of wood supply planning with the allowable cut, logistics and logging operations, infrastructure conditions and market issue<br>Wood exchange not common  |
| Logistic                                  | Seasonal fluctuation in wood delivery<br>Weak wood terminal network<br>Stiff wood price system   |
| Environmental responsibility              | Forest certification (FSC, PEFC) are not common<br>Incomplete system for tracing origin of wood<br>Probability of illegal wood in the procurement chain  |
| Harvesting                                | Extensive forest management<br>High wood procurement cost<br>Traditional logging technology dominated<br>Low productivity of labour<br>Size of assortment - hard to change, problem in the cross-cutting optimization      |
| Human resources and social responsibility | Lack of qualified human resources in the countryside<br>Lack of skilled harvester/forwarder operators<br>High risk of accidents<br>Social obligations including unemployment   |

## Conclusion

This paper concerns strategic planning process based on SWOT analysis for improving wood procurement in Northwest Russia. Results of the SWOT analysis, the development program and obtained recommendations can be useful to those who systematically and objectively analyze their business. Wood procurement managers should have a rough idea of the situation, i.e. how to utilize strengths and opportunities and how to convert weaknesses to strengths and threats to opportunities. However, at this stage, there are likely to be many potential directions for the management to pursue. Due to limited resources most companies have, it is impossible to accomplish everything at once. The management has to prioritize all procurement activities and to set specific goals and objectives in order to improve strategic and tactical planning of wood procurement in Russia.

The development program based on the SWOT analysis should be flexible and updated. This is true especially in Russia where decisions and actions are made under constant uncertainty and lack of profound information from the field. Therefore a system for processing information could help in strategic planning. Situations may change rapidly and updated analysis should be made accordingly. The SWOT is relatively easy to make and fast and is effective because of its simplicity. Creative use of the SWOT can pro-

vide basis for useful development plans in wood procurement organizations.

This SWOT analysis and development program provides a broad overview of the wood procurement situation in Northwest Russia, in particular from Finnish forest industry prospective. Results of the analysis may be used in wood procurement organizations acting in Russia as the first step for identification of factors in their development process. Further studies and analysis are necessary. Russia is transforming and reorganizing herself from the old centrally planned system to a state with more market driven patterns. Thus, opportunities exist in the orientation towards western models and foreign investments, which bring wood business know-how into Northwest Russia and can help in the transformation process.

### Acknowledgements

*This work has been part of the project "Intensification of forest management and improvement of wood harvesting in Northwest Russia", funded by the Academy of Finland research program "Russia in Flux".*

### References

- Aksenov, D., Dobrynin, D., Dubinin, M., Egorov, A. Isaev, A., and other. 2002. Atlas of Russia's Intact Forest Landscapes. Moscow, 185 p.
- Anon. 2003. The Evaluation of Socio-economic Development - The Guide. Tavistock Institute in association with GHKandIRS. 146 p.
- Dudarev, G., Boltramovich, S., Filippov, P. and HERNESNIEEMI, H. 2004. Advantage Northwest Russia. Helsinki, 257 p.
- Finnish Forest Research Institute. 2006. Finnish Statistical Yearbook of Forestry. Helsinki, 435 p.
- Forest Code. 2006. Lesnoy kodeks Rossijskoy Federatsii [Forest Code of the Russian Federation]. *Collection of the Legislations of the Russian Federation* 50: 5278-5279, (in Russian).
- Gelvanovsky, M., Goryacheva, I., Gokhberg, L., Elfimova, T., Zhitkov, V., Zhuravlev, A. and other. 2007. Regiony Rossii [Regions of Russia]. State Committee of Statistics Press, Moscow, 966 p. (in Russian).
- Gerasimov, Y. and Karjalainen T. 2006. Development of Wood Procurement in Northwest Russia: Round Wood Balance and Unreported Flows. *European Journal of Forest Research* 125: 189-199.
- Gerasimov, Y., Markovsky, A., Ilna, O. and Dobrynin, D. 2007. The analysis of wood harvesting restrictions in conservation areas and old-growth forests of the Arkhangelsk oblast. Working Papers of the Finnish Forest Research Institute 56, 118p.
- Gerasimov, Y., Markovsky, A., Markovskaya, N. and Lapschin, P. 2006. The analysis of wood harvesting restrictions in conservation areas and old-growth forests of the Republic of Karelia. Working Papers of the Finnish Forest Research Institute 22, 148p.
- Gerasimov, Y., Siounev, V., Chikulaev, P., Pechorin, V., Dyakonov, V., Komkov, V., Sikanen, L. and Karjalainen, T. 2005. An analysis of logging companies in the Republic of Karelia. Working Papers of the Finnish Forest Research Institute 16, 39 p.
- Kangas, J., Kurttila, M., Kajanus, M. and Kangas, A. 2003. Evaluating the management strategies of a forestland estate - the S-O-S approach. *Journal of Environmental Management* 69 (4): 349-358.
- Kareliastat. 2006. Lesopromyshlenny kompleks regionov Severo-Zapadnogo Federalnogo okruga Rossii [Forest industry in Northwest federal district of Russia]. Petrozavodsk, 166 p. (in Russian).
- Karvinen, S., Väliky, E., Torniaainen, T. and Gerasimov, Y. 2006. Northwest Russian Forestry in a Nutshell. Working Papers of the Finnish Forest Research Institute 30, 98 p.
- Kurttila, M., Pesonen, M., Kangas, J. and Kajanus, M. 2000. Utilizing the analytic hierarchy process (AHP) in SWOT analysis - A hybrid method and its application to a forest-certification case. *Forest Policy and Economics* 1(1): 41-52.
- Leraned, E., Christensen, C., Andrews, K. and Guth, W. 1965. Business Policy. Homewood, Irwin.
- Metsaliitto. Wood procurement in Russia. [Internet site]. Available from: <http://www.metsaliitto.com>. [Cited 20 July 2004].
- Ministry of Labor and Social Development of Russia. 2003. Okhrana truda v Rossii v 2002. [Protection of labor in Russia in 2002. National report]. Moscow, 118 p. (in Russian).
- Ministry of Natural Resources of Russia. 2003. Lesnoy fond Rossii [Forest Fund of Russia]. ARISMF, Moscow, 637 p. (in Russian).
- Oswald, K., Riechsteiner, D., Thees, O., and Lemm, R. 2004. Reorganization of wood production for improved performance: a Swiss forest district case study. *Small-scale Forest Economics, Management and Policy* 3(2): 143-160.
- Pesonen, M., Kurttila, M., Kangas, J., Kajanus, M. and Heinonen, P. 2001. Assessing priorities using A'WOT among resource management strategies at Finnish Forest and Park Service. *Forest Science* 47: 534-541.
- Rauch, P. 2007. SWOT analyses and SWOT strategy formulation for forest owner cooperations in Austria. *European Journal of Forest Research* 126: 413-420.
- Roslesinform. 2005. Osnovnye pokazateli lesokhoziaystvennoy deyatelnosti za 1988, 1992-2004 gody [Main results in forestry in 1988, 1992-2004]. Roslesinform, Moscow, (in Russian).
- Stora Enso. Forest Products: Building Sustainable Competitive Advantage. Capital Markets Day 2003. [Internet site]. Available from: <http://www.storaenso.com>. [Cited 20 July 2004].
- Suh, J. and Emtage, N. 2005. Identification of Strengths, Weaknesses, Opportunities and Threats of the Community-based Forest Management Program. *Annals of Tropical Research* 27(1): 55-66.
- Tatarinov, V. 1989. Lesnoy complex [Forest Complex]. Moscow, 352 p. (in Russian).
- UPM-Kymmene. Imports from Russia. [Internet site]. Available from: <http://w3.tracingimports.upm-kymmene.com>. [Cited 20 July 2004].
- Wilson, R. and Gilligan, C. 2001. Strategic Marketing Management. Planning, implementation and control. Second edition. Butterworth-Heinemann, Oxford, 817 p.

Received 13 November 2007

Accepted 13 May 2008

**ПРОГРАММА РАЗВИТИЯ И СОВЕРШЕНСТВОВАНИЯ ЛЕСОСНАБЖЕНИЯ НА СЕВЕРО-ЗАПАДЕ РОССИИ НА ОСНОВЕ SWOT АНАЛИЗА****Ю. Герасимов, Т. Карьялайнен***Резюме*

В статье анализируются сильные и слабые стороны, возможности и угрозы в области лесоснабжения в России с точки зрения финского лесопромышленного комплекса. На основе SWOT анализа разработана программа дальнейшего развития системы лесоснабжения. В качестве системы лесоснабжения понимается весь комплекс технологических и коммерческих операций по заготовке и доставке круглых лесоматериалов от пня до двора потребителя, а именно, приобретение древесины, лесозаготовки, хранение и логистика. Исследование было сфокусировано на Северо-Западных регионах России, таких как Республики Карелия и Коми, Архангельская, Вологодская, Ленинградская и Псковская области, где финские лесопромышленные компании сконцентрированно осуществляют лесозакупочную деятельность и инвестируют в деревообрабатывающую промышленность. В статье характеризуются возможные технологические, экономические, социальные и экологические влияния на будущее развитие лесоснабжения. Проблемы классифицируются, и наиболее важным из них - планированию поставок, лесным ресурсам, рынку круглых лесоматериалов, логистике, лесозаготовкам, кадрам, социальной ответственности, экологической ответственности – уделяется особое внимание. Результаты анализа предназначены для поддержки принятия решений.

**Ключевые слова:** Россия, инвестиции в лесопромышленный комплекс, торговля круглыми лесоматериалами, лесозаготовки, экологическая ответственность, социальная ответственность