

# The Challenges of Living off the Forest

## The Transformation of Forestry Sector in Northwest Russia

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### **Abstract**

Based on the rich, descriptive data of the existing ethnographic accounts this paper explores the aspects of resilience in three different forestry communities. According to the employed retrospective analyses the earlier success of those communities was formed since the time of early industrialisation by the symbiotic coexistence with a local harvesting enterprise. The period of turbulent transformations, however, significantly changes the livelihood patterns of the studied forestry settlements. The research focuses on the changes that the transformation of forestry sector has brought along. It also takes notice of the new trends related to the local employment, changing roles of forestry enterprises and forestry villages on the basis of extensive empirical research. The paper evaluates several topical issues of today's forestry complex and provides insights into the current developmental pathways of today's Russian forest industry from the perspective of forestry villages.

**Keywords:** Transformation of forestry sector, community resilience, forestry settlements, action research ethnography

## Introduction

The structural change in Russia, during the transition period into the new economy, has had a destructive impact on the livelihoods of forestry communities (Autio 2002, Kortelainen & Kotilainen 2006). During the Soviet era, the means of livelihood for forestry villagers were more diversified, with a variety of small production plants and workshops that used wood as a raw material. After the collapse of the Soviet regime and during the economic reorganisation many forms of small scale industrial plants and workshops disappeared. Today forest harvesting companies are still the biggest local employers in forestry villages, and wood procurement has a huge impact on the local livelihoods. Furthermore, forestry in Russia has been one of the main sources of wealth for the rural population. Indeed, in contrast to coal, oil, and gas, the raw materials of the forest are for the most part renewable, when managed and used properly. Therefore the development of the forest sector, in the territories rich in such resources, can be regarded as the means to maintain, or even improve the life of the local communities by providing employment opportunities, higher standards of service, and local infrastructure. (Södör, Järvelä & Tarasov 2005).

In all societies, the impact of procuring wood depends essentially on the society's structure, on its forest ownership, and on the way the procurement is organized. It should be emphasized that the concept of forestry in Russia differs from that of some other countries, specifically those in the West (Petrov & Lobovikov 2001, Wardle et al. 2003). In Russia the concept at work is that of *forestry complex* that refers to the system of forestry and to the forest industry. Forests are primarily state-owned, and forest management is the responsibility of state-owned territorial *forest management units (leshoz)*. The tasks of such forestry systems include forest planning, forest fire protection, and protection from diseases and from wreckers, forest restoration, various forest care tasks, protection of biodiversity,

preparation of forest stock for forest users (harvesting companies), control of forest use, and various other functions (Kortelainen & Kotilainen 2002, Piipponen 1999, Blam et al. 2005, Södör, Järvelä & Tarasov 2005). The privatised *forest industry* consists of various industrial fields that are connected to one another: timber harvesting, wood processing, pulp and paper mill industry, and forest-chemical industry. Timber harvesting, as part of the forest industry, concentrates mainly on the wood harvesting and processing tasks. Harvesting enterprises acquire forest concessions from the local forest management unit for industrial loggings for a maximum of 49 years. In the context of the present study, the *forestry villages* are understood as locally embedded industrial production units, which belong to the forest industry complex and are characterised as partly or entirely dependent on wood harvesting activities (Blam et al. 2005; Södör, Järvelä, & Tarasov 2005).

The paper aims to evaluate several topical issues of today's forestry livelihoods in Northwest Russia by applying community resilience framework. Based on the rich, descriptive data of the existing ethnographic accounts of life in three different forestry villages this article starts with a retrospective overview of the soviet forest industry, its formation and development since the time of early industrialisation. The paper then focuses on the changes that the newly introduced logging technology and harvesting techniques have brought along. It detects current strategies of logging practises in the field. It also takes notice of the new trends related to the local employment, changing roles of forestry sector and forestry villages on the basis of extensive empirical research. The main goal of the present article is to provide insights into the developmental pathways of today's Russian forest industry from the perspective of forestry villages.

## Community Resilience

The fundamental question of the present research project is how the forestry villages cope with economic transition in Northwest Russia. However the main subjects of the villages are not easily apparent. At a first sight, the subjects are the forestry companies and the habitats of forestry villages, but at a deeper level, the study is focused on tracing the ways their symbiotic coexistence forms, reproduces, and maintains the assets for local livelihoods and for community resilience.

Internationally, new impetus to promote sustainable development was triggered by the widespread adoption of the term "Sustainable Livelihoods". The 1992 United Nations Conference on Environment and Development claimed in its Agenda 21 to advance "sustainable livelihoods for all"; this was to motivate and activate local actors to move towards a more sustainable way of life. Sustainable livelihood was introduced in terms of resource ownership, and access to meet basic needs and to acquire livelihood security, especially in rural areas (Singh & Gilman 1999; Carney 1999). However, the sustainability of livelihoods depends intrinsically upon the community's resilience to cope with, and recover from shocks and stresses. Therefore, in this research sustainability of forestry livelihoods is studied by mapping the resilience of the forestry communities. Community resilience is defined within this study as the ability of communities to cope with stresses and disturbances as results of social, economic, political and environmental changes (Adger 2000; Folke 2001). The concept of community resilience is characterised in the scholarly literature by elastic qualities as hardiness and invulnerability. Rather than meaning resistance to development and changes, community resilience implies a buffer to recover from negative events, and it accounts for the capacity to successfully adapt to changing circumstances (Langridge et al. 2006; Lebel 2006; Redman 2003; Gunderson & Holling 2002).

In the present study the concept of community resilience aims to build a link between different factors of resilience. The diagram in Figure 1 provides a tool to more easily understand the complex interaction between the most important factors that have an impact on the outcomes of social resilience. The category Dynamics of Community Resilience embraces the economic, social, institutional, and ecological elements, all of which are components of sustainability. The term resilience in the present context is conceptualized as a dynamic interaction between the internal and external risks and the protective processes of a livelihood system, through which the aforesaid system reinforces its continuity without losing its original function, structure and identity.

In the case of a forestry community, community resilience depends on the surrounding natural resources, the community assets and the economic activities practiced in the analysed community. State ownership and governance of the forest resources are fundamentally linked to the total resilience outcome. While the nature of resilience, from an ecological perspective, can be perceived in terms of availability of timber, it intrinsically depends on the levels of forest restoration and governance. Decreased resilience in the forestry communities may be associated, for instance, with the lack of forest stock for harvesting. Enhanced resilience in human-natural systems again, will not only improve local livelihoods and local economy, it will also strengthen many other intangible assets considered important for the community's wellbeing.

Is resilience a relevant concept for evaluating forestry communities? The study aims to assert the hypothesis that the resilience of forestry communities is ultimately determined by combination of the assets, strategies, activities, external/internal risks and the effects of constant policy changes, both spatially and chronically. In general, all the above factors are constantly interacting to mould the domain of resilience, and therefore providing also the preconditions for the sustain-

able livelihoods of a forestry community (Södor, Järvelä, & Tarasov 2005).

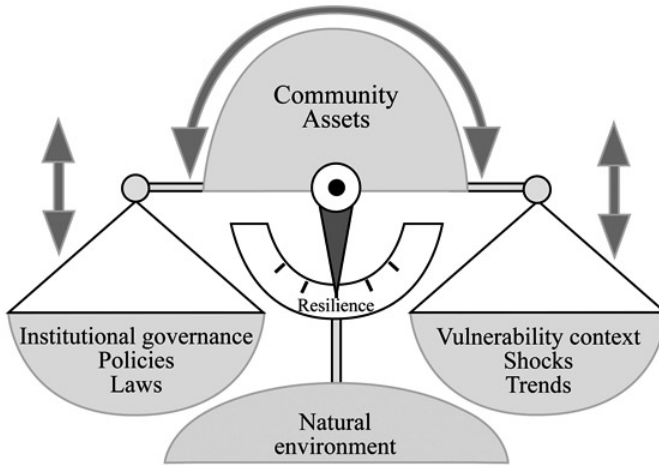


Figure 1. Dynamics of Community Resilience: A simplified view of the interaction between the most important factors of community resilience (Södor, Järvelä, & Tarasov 2005).

## Data and methods

A methodological strategy was developed by the research team (see also Södor, Järvelä, & Tarasov 2005), with the aim to combine the ethnographic field research with the simultaneous search and collection of relevant information on the local application of particular social development principles, in this case sustainable development principles. This research strategy, named Action Research Ethnography (ARETNO), tries to reconcile realism and social constructionism by closely observing the everyday life in action, that is, in the pursuit of livelihoods and in the framework of cultural tradition. This is essentially a qualitative strategy based on an ethnographic approach that concentrates on the local, bottom-up ideas and views of the

subject. Empirical research methodology, therefore, is applied to examine key informants and stakeholders in the villages, so as to determine and measure the local assets and resources for sustainable livelihoods. In addition, documentary materials, including history, are collected to connect and compare local case studies, thus producing a more general framework of the socio-economic and socio-cultural driving forces within the analysed region. The ARETNO methodology includes a careful consideration of the ethical concerns related to the local stakeholders through out the whole course of the study and during the dissemination phase of the results. The basic principle is to maintain the confidentiality of all respondents with regard to any information they may provide, by citing them anonymously, unless the information was given in an expressly non-confidential manner, such as, in a public forum or accompanied by stated agreement of the individual for direct citation using his or her name (Södör, Järvelä, & Tarasov 2005).

The fieldwork in the forest villages of North-West Russia was performed between 2003-2007. This comprised 18 intensive field trips lasting from one to two weeks at a time. The village of Mondoma was the main case study of the research project, therefore it received most visits. The complete list of the field research data presently consists of 71 recorded in-depth individual and group interviews; unrecorded discussions with various stakeholders, and observations that are both reported in a field diary. A part of the core interview material is from key informants like the company management, entrepreneurs, and public officials; another is from the employees of the local service, logging, and other industries. The overview of the village life and its historical background was further strengthened by interviews with older members of the community who are now retired. The in-depth interviews were conducted in Russian by the members of the project. The recorded interviews were later translated and transcribed into English by a Russian-native translator.

## Description of the research field: Three villages - different cases and combinations of livelihoods

Although industrial forestry villages generally share a common historical heritage, there are yet wide varieties of crucial factors that equip some of them with assets and leave other in a less favourable position amid the new market economy. The analysed villages Mondoma, Shugozero and Kurba (see Figure 2) were purposefully chosen for their difference, as it was considered to be an appropriate method to bring variety and enhance the comparative aspect of the study. In order to assess the authenticity of the observed trends in forestry livelihoods, also additional irregular single visits have been paid to various other forestry villages, forestry enterprises and their logging sites. Whereas examining the livelihood dynamics in the main village (Mondoma) of the present study provides a comprehensive picture of life in a sole forestry village, an investigation across multiple sites in the field remains a key factor in revealing the existing diversity. The comparative approach exposes the complexity of the wider context, and provides with stronger analytical tools to assess smaller localities in a wider Russian context, or even to trace the trends at a global level.



Figure 2. Map of research sites (Södör & Järvelä 2007).



Mondoma village is an example that effectively illustrates through its history how village development was influenced by the prevailing state ideology. The village started to grow as a result of the local company's logging activities in the 1960s. From the point of view of its creation and development, Mondoma represents an industrial settlement where the local forest harvesting enterprise and its work always played a crucial role. Due to its location, in comparison with other logging centres of the company Beloserski Lespromkhos, the village turned out to be strategically central. At present with a population of about 1,100, Mondoma is the main timber processing centre of the company with a lower landing, completely renovated modern sawmill, and a port. Access to the Volga-Baltic navigation channel enables the direct loading of large river and seagoing ships with logs or wood products. The major activity of this centre is the transportation of wood from the other branches of the company to the centre's shipping and processing facilities. As a result of a long-term symbiotic coexistence of the company and the village community, Mondoma can represent a plausible example of sustained development.

Kurba is a village that was purposefully founded for logging activities in the 1960s. Even though the village (with circa 300 inhabitants) is located at the heart of Leningrad region, it is remote and almost cut off from the rest of the world. Being highly dependent on logging activities, the development of the village was halted by the bankruptcy of the original local harvesting enterprise in the 1990s. Nowadays, although there are already some signs of economic recovery, the lack of a permanent local logging company is perceived as the biggest drawback for the village's development. The distant location seems to be partially responsible for the lack of other industrial activities besides the timber harvesting in the area. In addition, location on the territory of the natural park Vepsky Forest limits harvesting operations in the area.

Sugosero is a rural village with about 3000 inhabitants. It features a variety of livelihoods and it is situated in an area rich in forest resources. An agricultural enterprise, heir of the former Soviet kolkhoz, is the biggest single employer in the village having approximately 200 employees. Additionally, there are numerous employment opportunities in the public sector. The village has a local hospital, a polyclinic and a home for the elderly, which is financed from the regional budget and whose clients come from all over the region. The service sector is growing and numerous small shops are opened in the village. In the logging business, there are presently activating four or five different companies; however, they employ a relatively small percentage of the local work force. Additionally, because these companies are registered in the nearby town, they pay no taxes to the local budget, and therefore harvesting activities have relatively little impact on the local development.

### **The transformation of the forestry sector: The Formation of Soviet forestry**

The industrialization of Russia dates back to 1929 when the development of industrial production was considered most important task for the progress of the national economy. The targeted speed and scale of the national production envisaged by the development plans of the soviet state could not be reached and maintained without mechanisation. The importance of forestry among other industries, resided in the providing of timber for rebuilding the Soviet economy before and after the II World War. The industrialisation was started along the early Five Year Plans by opening up the natural resources to extensive exploitation. The funds obtained from the export of timber were used to import large quantities of foreign machinery to equip the growing industry with modern processing facilities. Foreign companies were employed for installing the new machinery and training the soviet workers (Pochinkov

2004, Autio 2002b, Moran 2001, Osminskii et al.1960). Following the state's development strategy, temporary logging enterprises were increasingly founded along the floatable rivers and railroads from late 1920s till late 1960s. These new logging companies were originally planned to be mobile by nature, so that when all of the forests were harvested in an area in 20-40 years, they could be easily transported to another location. (Osminskii et al. 1960, Nikulichev 1999).

At the beginning of the 1930s timber harvesting operations in the country took place mostly in winter. Seasonal workforce was often lent from the local collective farms (*kolkhozes*), because there was hardly any agricultural activity in winter. The typical logging technology of the lumberjacks of that time consisted of an axe, a hand saw and a peasant horse with a sled. While horse-drawn transportation on ice tracks was used in the winter, an abundant network of rivers served as "highways", and facilitating the floating of logs downstream in the spring and summer. Finally, the industrial consumer logs were shipped in the form of big lumber rafts, or by railroad (Pochinkov 2004, Osminskii et al. 1960, Nikulichev 1999, Södör, Järvelä, & Tarasov 2005).

In the earlier days of Soviet forestry there were the limitations like long physical distances, and the use of horsepower that demanded workers to live close to the logging sites. Physical distances were also determined the logging companies, possessing huge forest territories, to create multiple logging centres (as in Mondoma's case). Bearing in mind economic efficiency and final products delivery it was more feasible to organise and concentrate wood processing, cutting into assortments and storage of products in one exploitation centre. This resulted in the development of local wood processing, which satisfied the needs of the exploiting company and of the local community; the excess production was directed to other industry processing destinations. Throughout those times the timber industry faced serious problems with labour recruitment. Many people came to work from other regions, but they often left before the end of the

logging season. The seasonal nature of the logging operations and the high turnover of unskilled labour did not help increase the productivity; instead it resulted in additional problems and a continuous need for work reorganisation. In order to create permanent cadre of workers it was necessary to change the logging technology radically, and to improve the living conditions of the employees and their families. (Osminskii et al. 1960, Nikulichev 1999).



*Photo 1. Removing branches with axes was heavy manual work still in the 1960s (Golubiova 1967).*

Due to the forestry sector's low output and contribution to the national economy, the State began to concentrate more on technological modernisation. In 1937 appeared the first tractors to transport logs out of the forest, and ten years later emerged the first trucks. The first technological modernization in the 1940s had a significant impact on the development of the logging industry. At the same time, the timber harvesting operations became year-round activities. Most of the labour intensive tasks at the logging sites were mechanized. Lumberjacks got

armed with the electric chain saw and gasoline engine driven “Druzhba” chain saw in 1950s, which facilitated and speeded up the work. The timber was hauled to the upper storages by tractors and winches. The logging companies built networks of forest roads for trucks and narrow-gauge railways to arrange the transportation of timber to the lower storages, to the floatable rivers or to the national railroad system. In the lower storages the timber was sorted, and then single-type product batches were shipped further. (Redko 2002, Osminskii et al. 1960). Also women were substantially employed in the industrial production. They often performed heavy manual post-harvesting tasks (see Photo 1).

The forestry settlements developed along with industrial plants. During the 1950s and 1960s the harvesting enterprises gathered pace in constructing well-organized workers’ settlements with shops and canteens, schools and medical aid stations, clubs and libraries (see Figure 4) (Nikulichev 1999, Osminskii et al. 1960). Although, these settlements were planned to house workers for temporary logging operations only, they expanded and transformed into permanent villages with the entire infrastructure needed for the everyday life. The timber harvesting companies played the leading role, since they had the largest impact on a village's life. They were the main employer, provider of infrastructure, and local authority (aside from the local municipality). This explains why the village communities had such a high level of trust in their logging company (Redko 2002; Pochnikov 2004; Järvelä, Södör, and Tarasov 2004a).



*Photo 2. Completion of the village club house (From the archives of Mondoma school).*

## **The period of transformation**

The logging technology progressed with big leaps during the first decades of the Soviet state. Further, the rather slow technological development was largely caused by the prevailing economy that did not encourage the industry to improve the quality of the forestry technology, mostly because of cheap work force, dictated prices and lack of competition (Timoshina 2006). As a result the traditional domestic harvesting technology which was prevailing in 1970s and 1980s has remained in use until today. This means that hard manual labour is still employed in a high proportion in harvesting and in production operations (Blam et al. 2005). Therefore in the context of the new market economy, the Russian forestry appears evidently backward, described as labour intensive and with low profitability.

At the time of planned economy, the forest use was officially determined to acquire the maximum wood supplies for

the national economy with the minimum expenditures. The instructions were simple: close to the consumers, satisfying the needs, and as cheap as possible. Most popular, naturally, became concentrated clear-cutting. The first marks of over-harvesting appeared in 1970s. The growing volumes of clear-cutting, dictated by the planned economy and the needs of the industry, caused the depletion vast areas of forests in the European part of Russia. Between the 1970s and the 1990s, the logging volumes stabilized and the extent of forest restoration (statistically) nearly matched the areas of clear-cutting. (Blam et al. 2005, Pochinkov 2004).

The economic recession that followed the collapse of Soviet Union resulted in the vast destruction of rural livelihoods and in a dramatic decrease of the living standard. In the small rural towns most of the production plants and factories were closed, while in the countryside the agricultural kolkhozes went bankrupt. In the period of economic paralysis, the forest industry remained in many places the only provider for local employment, producer of income, and local tax revenues (Järvelä, Södör, and Tarasov 2004a). The fact that considerable proportions of the Soviet time forestry enterprises did not possess their own wood processing facilities, since the logging companies were originally specialized only in delivering wood for industrial processing in other regions, made their business very vulnerable to the domestic markets. The continuous use of outdated logging technology and inefficient harvesting practices were translated into the continuous reduction of harvesting volumes by the logging companies, and partially caused by the sharp fall of the domestic demand of raw material (Södör, Järvelä, & Tarasov 2005). In the processing industry outdated processing equipment and the lack of investments still hold back production volumes (Tilli et al 2004). Between 1991-2001 logging volumes were reduced almost by threefold. In 2000 the export of sawn timber reduced in 2 times and the export of round timber increased to 35%. Accordingly, the period of eco-

conomic transformation is highly characterised by the selling of round wood to the West, rather than processing it into products locally (Grigoryev 2002, Pochinkov 2004).

The current state of forest industry can be described in following facts: While Russia employs up to 8% of its industrial workforce in the logging industry its volume of GDP remains only at 2.5%. Having almost one fourth of the forests of the planet, its returns from wood product exports globally amount to only 4%. It is not surprising, because unprocessed circular timber is the basic article for export, and the product with the smallest added value (Tarasov 2006, see also Grigoryev 2002, Pochinkov 2004).

## **Exploitation of natural resources**

The general conceptions of how to use the natural resources have been changed since the bygone deep Soviet times. At that time, the planned economy was strictly imposed from the higher echelons. The Soviet system shaped its citizens to become professional workers and to rigidly fit in to the national economy. Within the structure of the forest industry complex, the forestry settlements were just the plain *industrial production plants* where economic efficiency was the sole criteria to be applied and followed (see the cases of Mondoma and Kurba).

One might think that the local people remained passive and did not vocally express their concerns related to the sustainable use of the local forests. In fact, despite that the forest and land were owned by the state, the Soviet model of forest industry resembles the model of *community forestry*. As for example in Mondoma and Kurba, it would have been impossible to make the distinction between the village community and the company's logging centre, in the earlier days. The inhabitants' voices have been heard and taken into consideration, especially in matters of living environment. Although the residents of these industrial villages first came to work as intruders, their



relationship with their natural living environment changed once becoming "natives". The fact that the "exploitation of natural resources" had to be replaced with the "responsible and sustainable use of natural resources" is clearly visible in the history of Mondoma village. The local company acknowledged already in 70s that if they would follow the orders received from above, they will run out of the forest stock in 10-15 years:

*"First it was planned to harvest a certain amount of timber around here in 20 years time [in Mondoma], and then leave this village and move to some other, untouched spot [...] 70% of such villages stopped functioning in several years, while we managed to reach some sustainability and stability here."*  
(Male, deputy director of the local harvesting company, Mondoma).

Today the use of the new technology means that most of the manually conducted work phases will be gradually mechanised. Growing volumes of timber will be cut by harvesting complexes, consequently the upper storages at logging sites will become out of date, and most of the small forestry villages seem to lose their importance in the wood procurement chain. The intensification of logging operations has risen concerns about the sufficiency of wood resources. Although the growing logging volumes do not necessarily indicate over logging, because increased volumes can be based on forest stock that previously was physically unreachable or could not be reached with older technology or techniques, the forests are often depleted around forestry villages. Still in 1970s the normal distance to a company's logging site was about 30km on average. Nowadays the logging sites of a company could be as far as 60-70km, and that is still in the limits of "normality" and transport profitability for a company (especially in Leningrad region). Concerns about the "drastic" changes perceived in the local environment are expressed especially by the older generation of forestry communities. The elderly women clearly remember

that in 1960s the forest was still growing behind their garden, in contrast nowadays wood is fetched from as far as 100km distance:

*If the logging company stops wood harvesting, there is nothing else to do here. It will happen some day, I know that. The trees will be cut, sooner or later, and life here will stop. They do re-forest, but the trees grow really slow, you know that – a hundred years... And they really cut a lot (Female, pensioner, Mondoma)*

The people of working age generally have a more neutral opinion about harvesting activities. They tend to be more informed about sufficiency of available forest stock; besides, they know that the growing volume of timber is nowadays acquired by using more effective and ecological selective logging techniques:

*They [the forest harvesting enterprise] plant new trees annually, I consider this kind of activity as preserving the nature. Well, I guess the old trees should be taken away in order to let the young ones grow in better conditions. Well, it's half and half, harm and use (Female, office worker, Mondoma)*

Surprisingly, none of the scrutinised villages suffered from the lack of forest stock. Furthermore, there are signs that under the conditions of market economy and partially under the pressure of western consumers the logging companies are moving towards more transparent business and that they are adapting to ecologically and socially sustainable operating strategies. The certification of companies' ecological and socio-logical policies is accepted as the best guarantee to perform transactions with a Western counterparty. Although, being small and remote, the analysed forestry villages are part of the global transnational wood business and their livelihoods at the moment highly depend on the western markets. For example the strikes at paper mills in Finland in

2005 had immediate negative impacts on the wood procurement in the form of diminished export demand in Mondoma. On the other hand, the rebuilding process after the 2004 Tsunami (in Asia) caused an increase in the demand for sawn timber products in Asia.

## **Harvesting and processing practices**

Traditionally the Russian harvesting system relies mainly on whole-tree harvesting with manual felling, in which the trees are limbed and skidded to an upper storage, and then the obtained logs are transported to the lower storage to be sorted and cut into the desired assortments. At present there are applied various combinations of manual or mechanized felling and assortment technologies (see Photo 3). The Scandinavian assortment-harvesting technology, consisting of a harvester and a forwarder, is emerging but because of some specificities of the Russian forests, the lack of skilled and motivated labour, and the high price of the new technology the old system remains often more appropriate. Proper harvesting methods are determined mostly by the technological potential of a company, and by availability of human resources (see also Karvinen, Väliky & Torniainen 2005, Södör, Järvelä, & Tarasov 2005).

The case of Mondoma shows that new logging methods introduced in the 1990s enabled to free some employees from the logging process, and use their potential when starting the local wood processing plant. Other benefits brought along led often to a more ecological, economically efficient, and more profitable harvesting. In selective logging, for example, the logs are cut by chainsaw into the desired assortments at the stump, and then moved to an upper storage for sorting. Although the method has lower manpower efficiency in volume terms than mechanical logging, it provides with a more even quality, which ensures a better price for wood batches. The new processing technologies also enable using low-grade deciduous

wood, which in Soviet times had practically no demand in the domestic market as there was no industrial technology available to process it, and it was considered to be a low quality species with no local value other than for heating. Nowadays aspen and birch pulpwood have their increasing share in the export. (Södör, Järvelä, & Tarasov 2005).

Currently, there are several factors that determined the enterprises to start modernising their harvesting practices. In reality this process is embodied most often by the usage of modern harvesting equipment. However, the economical importance of tools and technologies for the local deep processing of wood, and the potential of waist wood reprocessing is widely understood. According to technical estimations, only about 53 percent of the felled timber is actually available for further processing, therefore the utilisation of wood residues has remained a challenge for years. The example of Mondoma shows that when equipped with advanced technologies and handled properly, there could be practically no waste left during harvesting and processing activities. The local wood processing may favour the use of wood residues, as it significantly expands production and raises profitability, at the same time it may stimulate the development of a new type of wood processing-related small-scale entrepreneurship. Unfortunately most logging companies, at the moment, cannot even think about investing in such production technologies.



*Photo 3. Logging teams are often assigned the motor saw logging technology, and accompanied by the Russian skidding tractor.*

*Photo: Uuøe Södör.*

The low level of production technology, insufficient investments and the lack of deep timber processing facilities are seen as the main factors that hinder the development of today's Russian forest industry. Taking into account the characteristics of these harvesting enterprises to the list should be also added the insufficiency of forest roads, and the increasing costs of transportation and of energy. The responsibility to maintain the social services and infrastructure is considered an additional burden that may slow down the economic growth of a company (see also Blam et al. 2005, Leonov 2006). According to the empirical results of the study, there can be detected a tendency of the Russian forestry companies to extensively orient themselves towards the Western markets.

The Russian forest industry is caught in a dilemma of exporting unprofitable unprocessed timber and having limited capacity for domestic processing. The deep processing of wood is considered to be a substantially crucial point for the further development of the Russian forest industry complex. It is believed to be obtained more through orientating on the domestic market, which already is recovering from the economic recession (see also Pochinkov 2004, Leonov 2006). The protective effect of higher export duties on unprocessed timber ordered in 2006 by president Putin to promote domestic processing is currently highly disputed. Earlier the players in the forest industry were divided into winners and losers according to their geographical location, and their access to the western markets. The harvesting enterprises closer to borderlands tended to concentrate more on transactions with round timber, while those in distant locations tended to invest in the processing activities. Now there are indications that such a steep increase in custom duties on raw timber would turn western industries to other sources of supply. That means another shock therapy especially for borderland regions where the logging companies have very limited processing options or even none at all. The Russian state seems expecting that such an export tariff would raise the inter-

est of Western companies to invest in processing in Russia. After all, it is questionable whether Western companies are encouraged enough when seeing that Russian state itself considers the field too risky and unprofitable.

## **Employment**

The significance of the forest sector as the main source of wealth for the rural population, the biggest local employer and the biggest provider of tax money for the analysed regions, remains particularly high in 1990s. The restructuring of the labour market, the reorganisation of work, the impacts of technological development and globalisation have transformed the field of current Russian forestry sector, making it more diverse and complex. The emerging new trends had an implicit impact on the resilience of these forestry villages. On the one hand, the use of new technology results in decreasing options for local employment. A pair of forwarder and harvester tractor can easily replace logging teams of 20 workers, consequently involving less people in productive logging activities. On the other hand, the new equipment requires highly qualified and skilled workers. To complicate matters further, often there are not enough locally available, motivated and skilled employees for the business.

## **Reorganisation of work**

The impact of gaining economic efficiency can be seen in the changed ways of organising work. For example the need for tight networks of logging centres has substantially decreased, since there are not enough people left in villages to put logging teams together. Furthermore, it would be economically unviable to put together workers from different villages as it becomes time consuming, inconvenient and unprofitable. In the village of Mondoma, the logging teams of the harvesting company are

transported on a daily basis from the nearby town, Belosersk, and also as much as two-thirds of the saw mill employees commute from there. The men from Mondoma work as truck drivers, machinery repairers and perform other various maintenance tasks. Surprisingly, no locals work on conductive manual harvesting tasks (selective logging). The motivated male labour in Mondoma, to a large extent, has acquired professions that are better paid, valued, and that offer a permanent secure employment. In addition, there are clear indications that the younger generation refuses to work with poorly designed domestic tractors. When there is a need to update the technical equipment, it is necessary to keep in mind the fact that the older generation is rather afraid and reluctant to be trained to operating a modern harvesting tractor:

*"Working with them is so dirty and hard; caterpillar-tread tractors creak, scream and tremble. They are in constant need of repair; the operators are covered in motor oil and their hands are covered with scratches. Strong, healthy guys would rather work with a chainsaw. They might earn less than the tractor operators, but even for more money, they won't take the tractor. Nevertheless, people know that in order to survive, they do not have other options other than to work. We can instruct them and train them in work methods and how to use technology. But we don't give them axes any more." (Male, deputy director of the local harvesting company, Mondoma).*

The emergence of the new technology is accompanied by a sharp rise in the extent of income segregation. However, the salary level is not the only motivating factor. People in the villages appreciate stable and more or less convenient work. Manual selective logging with a chainsaw is considered rather a hard exhaustive physical work that nowadays tends to draw more the attention of those who live in small rural towns, who do not have other options for stable employment and income.

In Shugozero the number of local people employed by the forestry sector is relatively low, only 160 of circa 3000 inhabitants. The local respondents are convinced that young people would not work in manual logging tasks, but rather leave to work in the city:

*“Besides, the young leave the village, and the retired or middle-aged people do not have a burning desire to work in forestry. And the salaries of harvesters are not that large, approximately 15000 rubles a month, and the job is rather dangerous and the conditions are harsh, so the young tend to leave, and the people who remain here are those who have no choice but to stay.”* (Female, head of local forest management, Shugozero).

Often, the changing policies determine the appearance of diverse practises in concluding forest leasing contracts. Although nowadays it is customary for the leasing contracts contain paragraphs about the employment of local people, and the contribution to the local community, the contracts agreed before 2002 at district level lack such stipulations. Even though today the leasing contracts are undertaken at the level of local forestry management units, the situation still has not eased off:

*“When we leased felling sites to the enterprises, one of the major points in the contract was employing local labour force. Russian Forest Company tried to fulfil it, but now, as you know, only Lespromhoz hires local labour, the rest bring their workers from Tikhvin.../ But if the lespromhoz will be sold to foreigners, the foreigners will come to work here and bring their harvesting machines, and of course the local workers are not skilled enough to work with new machines.”* (Female, head of local forest management, Shugozero).

According to the local respondents in Kurba today only 6 people are employed by the harvesting company that arrived to conduct logging operations in the area in late 1990s. The branch of the local forestry management unit has altogether 14 lumber-



jacks. In comparison, 380 workers were on the employment list of the local harvesting company in 1960s:

*“Just walk around the village, you’ll see it with your own eyes – here are no people left, nobody who would work. Only old people who are getting older and will all die soon. And the young leave the village... And I can’t say that the whole village is filled with alcohol addicted people, no! 3 or 4 addicts we have, but not more. It’s just that we don’t have any people here at all. Very few people we have here. And I don’t think those who moved to the city would come back. It’s much easier to live in the city, you know.” (Female, head of local forest management, Kurba).*

There are strong indications in all studied villages that the younger generation, brought up at the end of the Soviet times, is much better adjusted to cope with the modern constant instability. They more easily have grasped new values in the society and live accordingly, including consumption and appreciation of availability of public and social services. Life in straitened circumstances offers no choice for self-fulfilment especially for the women. Beside, the effects of a shrinking public sector are translated into the immediate reduction of employment opportunities for them. Hence, the profession of a forester in the sphere of conductive harvesting operations is often experienced as incompatible or not well-balanced with regard to the family life. As uncertainty and unstable employment in small villages does not correspond with the needs of young families, it determines even the logging workers to move to the towns in the search for more secure working conditions, higher salary and more options of harvesting enterprises to choose from. The picture therefore becomes rather peculiar: while a harvesters move away from the villages, the logging companies bring their employees to work on a weekly shift basis from towns. Therefore, it can be argued that harvesting becomes a nomadic profession, an assignment kind of project, in which case the labour market

is easier to be organised in towns, and workers to be assigned to the needed location.

## **Coping with workforce shortages**

When concentrating the attention on the overall working attitudes of those employed in the forestry industry, it can be noted that, the lack of work motivation and increasing alcohol abuse, also among young people, is mentioned by our respondents several times. During the Soviet times the pressure exercised by the state to maintain work discipline was strong; and discipline was strictly enforced at the work place:

*"The rules were very strict. If you're absent one day for no valid reason, you won't get your monthly bonus. If you are absent two days in a year, you won't get your annual bonus. It was tough. And now one returns from work already drunk, cannot get out of the car, even." (Male, retired forester, Kurba).*

The prolonged periods of unemployment and insecure income are blamed to be the main causes for the heavy degradation of rural workforce. Probably a whole generation may be lost as a consequence of the period of economic transformation. Especially in the remote rural areas alcoholism is often mentioned to be a very serious problem. The discussions with the logging managers of other companies than our case villages confirmed, as well, that either there are no workers available locally, or the local workers lack motivation and they have to be looked after constantly, and that they disappear for days after getting their pay checks.

Another serious challenge for the employment policies can be summed up into the following question; where from to get the workers for the new technology? The director of one harvesting company affirmed that it is no easy task to get good employees for demanding tasks on harvesting and forwarder tractors. For instance, he mentioned that when he worked in

Komi, he hired officers from the army air forces, because they were already used to computers and to strict work rules. The other, most typical solution to overcome the lack of workforce is to use harvesting teams of Ukrainians. Most commonly, the Ukrainians have signed a contract for one year ahead. As they come only to earn money, they are motivated, and they work hard:

*“The Ukrainians’ daily yield is higher than that of local workers, besides, local people do not seem to be eager to work. When the Ukrainians come here, they have a goal – to earn money. So they work, and work hard.” (Female, head of local forest management, Shugozero).*

Often the company rents a house for their logging team. Some team members may have their wives with them. While men are at work the women clean, cook and do laundry at home. The teams of Ukrainians are often assigned the motor saw logging technology, and accompanied by the Russian skidding tractor.



*Photo 4. A pair of forwarder and harvester tractor can easily replace logging teams of 20 workers. Photo: Uuve Södör.*

The shortage of workforce seems to accelerate the modernisation of logging technology. Recently more and more harvesting complexes (a pair of harvester and forwarder tractor) have been introduced in the fields (see Figure 6). Nevertheless, the local companies cannot always afford to invest in their own harvesting technology; therefore there is a tendency to hire Finnish or Estonian harvesting complexes to carry out logging operations. Although the use of these complexes in most cases is more expensive than the local workforce, they are more efficient – they can work up to three shifts in a row, they can be trusted, and to have them contracted may be more convenient for the managers as well. The difference in productivity between the Scandinavian and the domestic technology is estimated to be more than fivefold. However, their services are costly; every cubic meter harvested has extra cost. The logging managers in the field use rather harsh words to protect their choice of Scandinavian technology over the local workforce. As they put it, in many cases outsourcing the harvesting operations or hiring contractors would be more convenient than to manage the poorly motivated workers who do not care about the new technology, who are inefficient and who need to be constantly controlled. It is not rare that the companies' own workers are replaced by contractors who carry out the harvesting activities, so that a logging company may have no workers at all. Presently, the process of fusions and outsourcing, like in Shugozero, seem to be the least beneficial for the local development, providing minimal taxes and minimal local employment.

## **Changing roles of forestry companies**

Traditionally, the forestry enterprises were founded on densely forested areas and they were defined as local companies, operating locally and employing local inhabitants. Therefore, the industrial forestry villages were bound to a certain forestry enterprise. These forestry communities used to be

highly dependent on the harvesting enterprises for employment, social and physical infrastructure and services. Dependency, however, was mutual. The companies, as well, had to practise their recruitment policies to domesticate the workers and to secure the workforce needs for the industry. Today those companies that still have a monopoly position in the local logging operations, that also inherited a heavy load of social responsibilities as founders of forestry villages and still carry on their social programs, can be called *first generation* harvesting companies. However, the nature of new - *second generation* logging enterprises appears to be rather different. Now, along the newest trends, leasing possessions can be small, sometimes for short periods of time, and they are no longer located close to the territories of a certain human habitation. Especially the newest technology (harvesting complexes) allows companies to be more mobile - nomadic.

In the case of Shugozero, four-five different companies work side by side and have different leasing plots that are not necessarily concentrated into one spot. As ownership of forest leasing concessions acquired through auctions may consist of several plots that are far from one another, the old patterns of employment are often replaced with new ones. The consequence of the fact that enterprises increasingly transport their harvesting teams from the nearby towns is that logging operations have a minimal impact on the local employment. The tendency of the logging companies to get more mobile and to concentrate their processing plants in bigger centres, alienates further the forestry enterprises from local communities. For example the closing of small sawmills in Shugozero and Kurba translates not only into the scarcity of options for local employment, but it also means the lack of wood residues, which the inhabitants used to buy cheaply in order to heat their own households.

In the light of the facts presented above, the question that comes forward is whether the forest harvesting enterprise

represents the leader of local development or it is simply an enterprise focusing on its business transactions, solely interested in maximising its profit. The involvement of the *first generation* logging companies in the local development was often contradictory. Since 1990s the responsibility for providing with social assets has been passed from the state enterprises to the local municipalities. However, the emergence of competitors like new private companies and entrepreneurs in the timber harvesting sector is presently leaving room for frictions over the use of the infrastructure that was originally built by the local first generation enterprises. There are also conflicts with regard to the shared responsibility for maintaining these infrastructures.

The building and maintaining forest roads is the best example illustrating the importance of locally built and maintained assets. Since the construction and maintenance of forest roads is necessary for harvesting activities, these roads, without doubt, still belong to and are maintained mainly by the companies of the first generation. However, the new timber harvesting companies that use the same roads, as well as other infrastructure, but who are not required to, and do not, contribute to the maintenance of the aforementioned roads, are considered to be, in most cases, "free riders" (Södör, Järvelä, & Tarasov 2005). Unfortunately, the current forest ownership and forest codes do not encourage the locally sustainable forest management. It is clear that these companies, with forest leasing contracts shorter than 5 years, which amount to some 72% of the existing forestry companies (Tarasov 2006), would neither invest in the local timber processing, the building of forest roads, nor perform reforestation and contribute to community development (Södör, Järvelä, & Tarasov 2005, Holopainen 2004).

The dissolution of the symbiosis between the logging companies and the forestry villages is the most unfavourable development. The disintegration of the forestry sector is at present sharply separating the business from the social domain.

Consequently, there is a risk that under the conditions of the new market economy, the power and interest of local enterprises in the local community matters may decrease. This is an alarming situation for the municipalities that are still too weak to take full responsibility for their social and physical infrastructure, since they lack both the financial means and the necessary experience for an efficient management. It has been shown through empirical observation that, at present, the social infrastructure in the forestry villages was preserved best only in those cases where it was maintained by the forestry enterprise (e.g. in Mondoma) (Södör & Järvelä 2007). The socioeconomic status of the inhabitants in a large number of populated areas and forestry villages is directly influenced by the economic reforms taking place in the forestry sector. Certainly, the preserving of industrial plants with enormous infrastructures and an inherited heavy load of social services cannot be accommodated competitively to the world economy. The current reforms, which imply reducing work places and selling unprofitable units in forestry enterprises, may not necessarily serve the local social policies. Even so, there is a consensus among the industry and the local authorities that it is not possible to save all the forestry settlements. (see also Leonov 2006, Blam et al. 2005).

## **Conclusions**

The analyses of the risk management and the level of community resilience in the history of the forestry settlements reveals the wide spectrum of mechanisms through which the chosen settlements and the corresponding local forestry enterprises cumulate their capacity to cope with and adapt to stress factors. In the case of forestry communities, the resilience is formed through the dependency of surrounding natural resources, of economic activities practiced in the community, and of community assets (see Figure 1). The state ownership and the

governance of the forest resources are fundamentally linked to the total resilience outcome.

In the forestry settlements that live off the forest, in which the livelihoods are entirely dependent on the timber harvesting activities, all inhabitants appear to know that without logging and wood processing there are no positive prospects for the village. The biggest risk in these forestry communities is often associated with the lack of sufficient forest stock for harvesting. Resilience of a community in this case is highly dependent on the level of forest restoration, maintenance and governance. Besides, according to the empirical results the sustainability of harvesting operations can be enhanced by using more ecological harvesting technologies and techniques. Surprisingly, none of the scrutinised villages suffered from the lack of forest stock. The major risks for local resilience were instead associated with the ever-changing policies, the growing pains of municipal reforms and with the transformation of the harvesting industry.

The empirical results of the study clearly indicate that in terms of sustainable forestry livelihoods, it cannot be underestimated the importance of *first generation* companies in generating local assets. Over the years, they have invested in timber processing, forest road building, in new technology, reforestation and ecologically sustained logging operations. The social assets built for community wellbeing had always played a remarkable role in the forestry villages. The localities where one dominating company conducts logging operations may still enjoy a considerable input in the community's development. As such, the well integrated cooperation between stakeholders may have fruitful results in local assets-building and therefore enhances the community's resilience. The findings of the study strongly indicate that the logging companies of *second generation* are no longer clearly identified as local companies. These enterprises display strong tendencies towards out-sourcing, and dilution of local centeredness in their business transactions, and their fusion policies concentrate more on economic efficiency.



The current forest ownership and forest code do not encourage the locally sustainable forest management. It is clear that these companies, with short forest leasing contracts would not invest in the local timber processing, the building of forest roads, the perform reforestation, or in the community development. The second generation companies, especially when activating in the areas with a higher business concentration and a more diversified economy, tend to focus on basic business activities. Obviously, it does not mean that they cannot be active local stakeholders, but as they do not have deep inherited responsibilities towards the local community, their contribution may remain only at the level of voluntary donations.

The most unfavourable development is the dissolution of the symbiosis between the logging companies and the forestry villages. The disintegration of the forestry sector is at present sharply separating the business from the social domain. Whether or not in today's market economy settings a company should carry on with tasks that normally are part of the state's responsibilities remains a question on its own. Nevertheless, such arguments support the conclusion that if the social responsibility factor is fading away in the business sector, it needs to be compensated through other means. Despite that, the present policies concerning the tax regulation and the distribution of wealth have been perceived by the local stakeholders and inhabitants as absolutely unfavourable to the resilience of the forestry settlements. The current state of the forestry sector strongly indicates the need to find a consensus in defining the future course of the development strategies, which is suitable both for the industry and for the forestry settlements, such a course that instead of ravaging their long-lasting symbiosis, would integrate them as self-standing parts of the functional regional economies.

Finally, it needs to be acknowledged that the original Soviet time single-economy model, in terms of timber extraction for industrial use, appears entirely inappropriate for providing

sustainable local livelihoods in the new framework of market economy. While complete economic dependency on the harvesting activities makes the economy of forestry villages highly vulnerable, investing in the public and private service sector would be an option for providing local employment, and for fighting with the increasing degradation of the rural workforce. Diversifying the options for local livelihood would enable the village communities with more economic strength and assets to cope with the challenges. By preventing the depopulation of rural areas the scarcity of forestry workers can be as well avoided. It is sure that without permanent inhabitants these villages cannot survive, more importantly, one cannot expect the entire Russian forestry sector to be planned and organised with in-brought labour or hired technology from the West.

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