

occurred. A new hydrolytic factory for producing nutrient yeast was constructed in Sokol in 1991, but it operated for only a few months before being closed. The reason for the closure was its environmental effects, and it was considered to be very dangerous to the environment and health of the inhabitants. From the very beginning the residents had been convinced of its harmfulness and protested against it.

Today, there are no open environmental protest movements in the town. There are, nevertheless, two environmental NGOs (Department of All-Russian Society of Nature Protection and "Sowing the Small Rivers and Springs"), and a few grass-roots ecological groups in schools. These NGOs and groups have been engaged in environmental education and thus their activities have not been directed against any enterprises. These groups and organisations have organised actions concerning garbage collection and planting trees and have been working mostly with school children and young people. In addition, just recently, a new environmental grass-roots group has evolved among inhabitants of villages located along the River Sukhona downstream from the mills. They have been trying to solve the problem of drinking water in their villages, because the river water they use is very polluted. They have been trying to organise a dialogue with authorities in Sokol and Vologda and the mill's management.

Large numbers of inhabitants in Sokol have worked at the Sokol'skiy and Sukhonskiy mills. This means that they often have very close ties with these enterprises. Workers of the Sokol'skiy mill, on the one hand, are pleased about the improvements in the economic situation at the mill, but, on the other, feel they no longer govern the mill, because Muscovites from the Fox Group control the majority of the firm's shares. The potential for criticism of the company management is greater than it used to be, when the mill was in the hands of its employees.

At the moment it seems that there are some possibilities for improving environmental protection at the mill. Thus, the main actor for ecological modernisation could be the management, which is interested in updating the mill's technology for economic reasons. The Fox Group aims at improving its competitiveness in the Russian and foreign markets. However, as there have been big investments in the development of production capacities in recent years, attempts to make environmental protection more efficient have still been rather weak. Foreign markets might have some effect on environmental protection, but to analyse the potential influence of foreign markets on the ecological modernisation process in the future, further and deeper research is needed.

On the other hand, the relationship between the Sokol'skiy mill and the municipal administration as well as the administration of the Vologda Region have had a big influence on the production of the mill. Thus, the

potential and pressure for further investments in environmental technology are also connected with the activities of local and regional environmental agencies. The main potential actor promoting ecological modernisation in this sphere would be the Department of Natural Resources of the Vologda Region. It now handles all nature protection services as a result of the restructuring of state environmental governance (see chapter 4.2 in this volume). However, the Department of Natural Resources has been oriented more towards utilising resources than protecting them. This position is clearly visible, for instance, in its forest policies, in how it reacts towards forest use, cutting, transportation, manufacturing and trade practices. In this situation, the prospects for ecological modernisation are connected to the improvement of production technologies and the increase in the number of enterprises with international FSC (Forest Stewardship Council) certification. We would also like to assume that in the conditions described in this chapter, a major role in ecological modernisation could also be played by the increasing activities of environmental NGOs.

5.2 Local Case Study II: Svetogorsk Pulp and Paper Mill¹

Alla Bolotova and Dmitry Vorobiev

Introduction

The pulp and paper industry produces a significant part of the emissions which pollute the environment in Russia. This is a result of several factors. First, all enterprises of this field were constructed a long time ago and today most of their equipment is outdated. Second, paper production consumes a great deal of natural resources (energy and roundwood). Third, because of complex technologies and the chemical compounds used, emissions from such enterprises contain high volumes of various pollutants.

During the 1990s, when the majority of Russian pulp and paper mills were in deep crisis, the volume of pollution decreased to a certain degree in cities and settlements surrounding industrial complexes. At present, the Russian pulp and paper industry is gradually recovering from the crisis and

¹The chapter is based on material of local and regional newspapers in Svetogorsk and the Leningrad Region, internet sources, previous scientific research, archives and statistics. The main part of the material was collected during field work in Svetogorsk in April 2001.

the production of industrial complexes has increased. Thus, the question of improving environmental protection at these enterprises has become urgent.

It is obvious that the restructuring of the enterprises, the updating of machinery and the introduction of effective and "environmentally friendly" technologies require substantial investments in the industry. Some big transnational corporations are willing to invest in this business. In this chapter we analyse the successful investment activity of Western corporations in Russia, using the case of the Svetogorsk pulp and paper mill in the Leningrad Region. During a rather short period (1995-2001), when the Svetogorsk pulp and paper mill has been owned by foreign concerns, the production processes have been profoundly modernised. Today products of the mill meet world quality standards and the production volume has gradually increased. The prosperity of the mill has been influenced by both successful investment strategy and a favourable territorial location. Its location at the Finnish border facilitates interaction with Western partners, export and delivery of equipment.

The main task of this chapter is to use the case of the Svetogorsk pulp and paper mill to trace the changes in the Russian forest industry in the sphere of environmental issues. In addition, our aim is to present factors that determine these changes at the local scale. The study focuses on the period 1991-2001, when major changes in the economic as well as environmental sphere occurred at the mill. In the first part of the chapter we will consider, very briefly, the history of the Svetogorsk pulp and paper mill. We will then focus on the main improvements in environmental protection, and in our conclusions we will select some general tendencies which, in our opinion, are characteristic of ecological modernisation in Russia.

The History of the Svetogorsk Pulp and Paper Mill

The history of the Svetogorsk (Enso) pulp and paper mill began when a cardboard and paper mill was established there in 1887. After the construction of the railway and power station, industrial production started to expand in the town. A pulp mill and a sawmill were constructed in the vicinity of the original mill. Until the Russian revolution the mills were part of both the Finnish and Russian forest sectors. After Finland became independent in 1917 the mill was located in the Finnish territory. During this period, the locality was an important part of the Finnish forest industry sector, and especially pulp production increased there. During the Second World War the industrial complex was badly damaged. After the war, the town became part of the Soviet Union and Enso was renamed Svetogorsk.

In the 1970s and 1980s several large reconstruction projects were undertaken with the help of Finnish experts (for a more detailed history of Svetogorsk see Kotilainen & Kotilainen 2001; Kotilainen 2001).

In 1990 the staff of the Svetogorsk mill amounted to 5,728 persons, who annually produced 160 thousand tons of printing paper, 70 thousand tons of cable paper, 40 thousand tons of sanitary tissue, 14 thousand tons of fibreboard and other grades of paper (Kommersant-Spb 2000). In the late 1980s and early 1990s, the industrial complex sharply reduced production because its machinery was badly in need of repair and modernisation. The Svetogorsk pulp and paper mill experienced considerable difficulties after 1991, as did all companies after the collapse of the Soviet Union (cf. chapters 3 and 5.1 in this volume). The Soviet industrial system stopped operating, commodity markets collapsed, and paper machines regularly shut down because of a lack of chemicals and wood (SR 21.3.1992). Under those rather complex economic conditions, the ownership of the mill was first changed in 1992. The employees of the enterprise became owners of 51 percent of the shares, and the rest of the shares were owned by the State Committee for Property (Kommersant-Spb 2000).

At the same time, however, the business environment of the forest industry became even more difficult. Prices continued to rise in Russia, which also meant higher prices for timber, chemicals and, accordingly, for the output of the pulp and paper industry. Therefore publishing houses were not able to buy paper. The Svetogorsk mill could no longer sell its products and the output, worth 700 million rubles, was stored at the mill by April 1992. The economic problems of the company were severe. It could neither pay for delivered timber nor produce its products. The company's warehouses overflowed, the products were even stocked in open areas (SR 5.9.1992). There were serious attempts to export a part of the production, i.e. paper and viscose cellulose. However, it was impossible to deliver paper to the international market because of its low quality. For example, around 70 percent of the produced pulp did not meet the official standards of GOST (the State Committee for Standards) (SR 13.6.1992).

Conditions stabilised to some extent in 1993. The company managers were able to arrange delivery of chemicals and roundwood. The problem with sales was partially solved when orders for printing and cable paper as well as acetate cellulose were received. The modernisation of machinery started when an automatic line for cutting and packing paper was launched.

During this difficult period the Svetogorsk pulp and paper mill received some support from the state government. It was granted the status of special exporter, which gave the company an opportunity to trade directly with its Western partners. In addition, the state customs duties, to

be paid by the enterprise, were reduced by 50 percent. As a result, around 50 percent of production was exported. Therefore, the question of increasing the quality of products to an adequate level became especially acute.

During these years the bases for the future well-being of the enterprise were laid. Since 1993, the enterprise has been actively developing contacts with a number of Western companies and corporations. In particular, the management of the enterprise made an cooperative agreement with the Swedish company Tetra Pak. This concern offered to launch the production of cardboard for liquid dairy products. After a series of trials, the offer was accepted and Tetra Pak agreed to buy 40–50 thousand tons of cardboard produced by the Svetogorsk pulp and paper mill (SR No. 5/1993).

In addition, in 1993 the Svetogorsk mill started to cooperate with the Heritz International Trading Company (HIT). The managers of the mill and representatives of HIT and Tetra Laval signed an agreement on cooperation stating that HIT would buy five thousand tons of paper from Svetogorsk each month. In addition, the company would buy around 1.5 thousand tons of non-standard rolls of paper per month. HIT also promised to help finance purchases of raw material and chemicals necessary for paper production. Tetra Laval, in turn, took responsibility for supervising quality control in the paper production process (SR 25.6.1993).

Despite this promising start, the profitability of the mill did not improve much in 1993. An overuse of energy resulted in increased production costs. Only part of the planned output could be produced. The mill produced, for example, only 70 percent of the planned amount of paper, and only 45 percent of the anticipated market pulp. The quality of production remained low, and only 55 percent of the output of paper was regarded as high quality (SR 21.8.1993).

The development of industry did not show any signs of recovery in 1994 and production volumes continued to decline. The Svetogorsk mill was no exception and it had to frequently suspend its operations. Problems were caused by a shortage of oil during the first quarter of the year and by the lack of timber in the second quarter. Deliveries of wood could hardly meet one-third of the total demand of the enterprise (SR 1.4.1995). Difficulties in roundwood deliveries were made even more severe by increasing railway tariffs, which made the cost of timber transportation fivefold more expensive during 1994 (SR 27.8.1994).

As a result, the problems of the enterprise increased in 1994. The mill was unprofitable and only part of its production capacity was used. The enterprise worked at 50–60 percent of its expected productivity. Hence, the costs of production remained high, resulting in permanent difficulties in realising the planned output (SR 1.4.1995). The quality of production was

also rather low. In 1994, the Svetogorsk pulp and paper mill had to deal with a reclamation on its export production.

The first half of the 1990s was the most complicated period for Russian industry as a whole. An industrial downturn was observed all over the country. Prices of power sources, timber, and tariffs for rail transportation continued to rise. In order to "survive" in these circumstances, the managers of the Svetogorsk pulp and paper mill put a great deal of energy into the development of better trade and tried to re-profile the enterprise. Another strategy of the enterprise was to seek contacts with western companies and attempt to attract investments for the modernisation of production.

Transition to Western Ownership

Despite the decline in production, cooperation with foreign companies intensified. Foreign investments enabled the reconstruction of the machinery of the mill. Tetra Pak financed the reconstruction of one paper machine, which started to produce cardboard for packing liquid foodstuffs. Expenses totalled 60 million Finnish marks. As a result of the modernisation, the capacity of the paper machine reached 60 thousand tons.

Significant changes took place in the management of the enterprise at the end of 1994. As a result of investment, 20 percent of the shares of the Svetogorsk mill passed to Tetra Laval (the parent company of Tetra Pak), or more precisely, to its subsidiary, Svetogorsk Cerveiljungs GmbH (SR 1.4.1995). Tetra Laval increased its control over the mill and owned the majority of shares by August 1995. At that time, the workers owned less than ten percent of the shares, two-three percent were in the hands of various organisations and a small part of the shares was under the control of the Fund for Property. In the first month after the implementation of the investment programme, Tetra Laval invested \$25 million in the Svetogorsk mill. This was more than 20 percent of the total sum of the planned investments, which was \$118 million for three years (SR 7.1.1995). The bulk of this money was spent on payments to creditors. The expenditures for the modernisation of production totalled \$57 million in 1995 (SR 16.11.1996).

The Swedish managers started to reorganise the production system in 1995. The new owners published guidelines for investment activity. The plan to reorganise the system of timber purchase was one of the most important tasks of the programme. The aim was to create an infrastructure for the continuous supply of roundwood. The plan included purchasing more efficient and ecologically less harmful harvesters and training forestry workers to work with Scandinavian felling technologies. One of the aims was to introduce forest planting, which would allow the company to

shorten the distance of roundwood transportation to less than 100 km, and to lower expenses for its purchase (SR 7.1.1995). As a result of this reorganisation, in August 1995, the Tetra Laval Svetogorsk joint-stock company itself felled about 30 percent of the roundwood required in production.

The restructuring also had negative effects. The Swedish owners intended to make the production more efficient, which caused layoffs. As a result of the reorganisation about 2,000 workers were discharged (Vuolaja 1998).

The year 1995 was still unprofitable for the Svetogorsk pulp and paper mill (SR 27.1.1996). The share of exported production increased to 60 percent in 1996. This was partly a result of problems in domestic markets, because many Russian clients could not pay for delivered products. It was also a result of the recurrent fall of prices on the internal Russian market.

The peak of investments was reached in late 1995 and early 1996. Considerable efforts were made to modernise recovery boilers and convert the district heating system from oil to natural gas. The use of gas reduced expenditures for energy and also improved environmental conditions. Other important improvements in the sphere of environmental protection concerned the reorientation of acetate cellulose production, modernisation of the chlorine workshop and the cessation of elemental chlorine use (SR 11.11.1996). The Ministry of the Environment of Finland allocated \$2 million to implement the project on elemental chlorine-free bleaching. The investments were successful: production volumes increased, expenses declined, the quality of products and the state of the environment improved. Considerable changes took place in regulations governing the territory of the enterprise. In October 1997, the territory of the enterprise was completely fenced, check points were modernised and preparation for introducing an electronic control system began (SR 18.10.1997). However, despite the obvious successes and improvement of the situation at the enterprise, 1996 and 1997 were still unprofitable for the company because of the fall in prices in the paper market.

Paradoxically, the Russian economic crisis in 1998 helped the forest industry to get out of the crisis. The price for paper produced in the West became too expensive due to the strengthening of the U.S. dollar. Clients began to take notice of Russian producers. The Svetogorsk mill was in a favourable position. The reconstruction of the enterprise enabled it to produce paper which was comparable with the products of Western companies. The quality of Svetogorsk products was high but the price was lower than the price of products provided by Western competitors.

The planned investment programme of \$ 127 million was completed in March 1998, but the investments and reconstruction of the mill

continued. One of the most important stages was the installation of a line for the production of A4 office paper. This was an important investment concerning the further development of the Svetogorsk mill. The planned annual volume of production was 140–185 thousand tons (SR 13.5.1998). After these investments Tetra Laval announced in November 1998 that it had sold all its shares of Svetogorsk to the American paper giant International Paper Ltd. International Paper Ltd. was founded in 1898 in the USA and operates in 31 countries, exports its products to 130 countries, and its staff includes over 117,000 persons. The corporation produces printing and writing paper, cardboard, packaging material, and also woodens articles. In 1997 its output amounted to \$20 billion and its annual production capacity was 18 million tons. In 2000, International Paper was the world's biggest pulp and paper producer in terms of total turnover (Finnish Forest Industries Federation 2002).

American Owners

According to available information International Paper paid \$200 million for the shares of the Svetogorsk mill. As the new owner of the enterprise, it undertook obligations for delivering cardboard for Tetra Laval (Finnmarket 1999). At that time, the production of sanitary tissue was arranged through a separate enterprise, Svetogorsk Tissue Ltd., which was bought by a Swedish company, SCA Hygiene Products.

In 1999, International Paper began its own investment programme. One of the paper machines was reconstructed and a new line for paper production was started during the same year (Delovoy Peterburg 2000). In June 1999, International Paper Svetogorsk presented a new line for A4 paper production. This line produced 70 percent of all printing paper in Svetogorsk (Vyborgskoye Vedomosty 1999). The capacity of the line tanks second in production of A4 paper in the world. "Ballet" and "Svetocopy new" copy papers were awarded diplomas in the competition "100 best goods of Russia". The volume of production increased rapidly and the output of the mill increased by 77 percent in 1999. In 1999, the enterprise negotiated with the government of the Leningrad Region about granting the company rights to cut part of the required roundwood itself. The mill applied to the Committee of the Timber Industry for the right for fell up to 100,000 cubic metres of timber annually. The actual requirements of the mill were about 1.2 million cubic metres at that time (Finnmarket 1999).

The volumes of production and sales continued to increase in 2000. Annual production reached 319 thousand tons of pulp, 203 thousand tons of paper and 65 thousand tons of cardboard (Rosbalt News Agency 2001). More than 800 million roubles were paid in taxes and duties and over 3

An active modernisation of the equipment and the introduction of new, more environment-friendly technologies began in the early 1990s. This has gradually resulted in reduced pollution in the vicinity of the Svetogorsk mill. One should also note that in the Soviet era the quality of equipment at the Svetogorsk mill was rather high compared with many other timber industry enterprises. The borderland location of the Svetogorsk mill helped to develop contacts with Finland. Therefore Finnish experts worked at the mill as early as the 1970s and 1980s. Finnish technologies were introduced and Finnish equipment established at that time (see Kortelainen & Kotilainen 2001). In the 1990s, the equipment no longer met international standards, since technological, and also ecological, requirements had changed.

In the early 1990s, questions of ecological conditions were not so vital for either the Svetogorsk pulp and paper mill or the Russian forest industry as a whole, because enterprises were trying to survive the crisis. Things changed when Tetra Laval became the owner of the mill. The Swedish managers of the enterprise made large investments in modernising both production as a whole and its environmental protection systems.

The reconstruction of chlorine production and the bleaching system was carried out in 1996. The purpose was to increase the capacity of chlorine dioxide production and to stop using molecular chlorine. The mill was the first enterprise in Russia which did not use elemental chlorine. The old chlorine workshop was closed and employee access to the building was forbidden. Over the following years, an inspection of the workshop was carried out in order to define the level of pollution by dangerous substances. The employees of the mill, who had previously worked at the chlorine department, were required to pass a physical examination to examine the content of residual mercury in their bodies (SR 2.9.2000).

Another improvement in environmental protection occurred when the old oil heating system was changed to a new one burning natural gas in 1997. As a result, the consumption of oil was considerably reduced and, accordingly, the emissions of sulphur dioxide dropped by 70 percent. The mill's share of producing its own electric power grew from 24 percent to 50 percent of the consumption. Over the same period, research was conducted at the mill which resulted in a project seeking to reduce water consumption in production by developing a water supply circulation system (SR 13.5.1998).

A further step in environmental protection was taken when the harmful acetate pulp and yeast departments were closed in 1997. This caused a small conflict between managers of the mill and workers of these departments,

billion roubles were spent to purchase of goods and services (Leningradskaya oblast' 2001).

Investments continued in 2001. In January the managers announced their plans to invest \$60 million in hardwood pulp production; capacity will be 130 thousand tons annually (Drevesina 2001). It will use aspen as raw material, which is poorly used in the region and cannot be used in any other production process (RosBiznesKonsalting 2001). In addition, the new investment programme included the construction of a power station and an increase of the forest rented by the company in the area (Rosbalt News Agency 2001).

The regional authorities have greatly affected the willingness of International Paper to invest in Svetogorsk. According to the regional law "on investment activity", the Svetogorsk pulp and paper mill was exempted from taxes to the Leningrad Region in order to compensate for their investments. Therefore, the management of the enterprise has the opportunity to invest all the profits into the development of the mill (Peterburgskiy Chastnyk 2001).

Personnel policy has changed during the American ownership as well. An increasing number of American experts were attracted to the mill while the contacts with Finnish and Swedish experts have diminished. Most of the foreign personnel prefer to live not in Svetogorsk, but in Imatra, a Finnish town situated only a few kilometres from Svetogorsk. Some of the Russian personnel took training courses at other International Paper enterprises in Central and Eastern Europe, to get acquainted with foreign equipment.

The company has put more emphasis on occupational safety and at the mill. The mill was equipped with alcoholometers which indicated alcohol content in the blood. Wearing protective glasses and helmets became obligatory at all mill locations for all workers and visitors (SR 20.5.2000). A bonus system was introduced for workers, including premiums for good and reliable work (SR 18.3.2000).

Based on the analysis of the history of the Svetogorsk pulp and paper mill presented in this chapter, one can conclude that the fall in the level of production in 1991-1994 was connected with the general economic crisis in Russia, and the growth in output since 1996 reflects not only the changes in the general economic situation in the country, but also the efficiency of reorganising production - primarily by the Swedish, and later American, companies.

who began to protest against the closure. The chairman of the local trade-union committee published an open letter to the management in a local newspaper. The answer of the general manager of the Svetogorsk mill, Lemart Westberg, shows the new managerial strategy:

The authors of the letter complain about closing the acetate workshop. We must remember, however, what damage this workshop could do to nature, how many complaints and how much criticism its emissions have caused. We were obliged to close this workshop, otherwise the whole mill would have been closed. Today Greens, including the well-known Greenpeace, exert strict control over pulp and paper enterprises. Their propaganda can make customers and clients turn away from an enterprise. We have a lot of examples from the Western experience. (SR 15.10.1997).

The citation clearly indicates how much attention the managers of the mill paid to the reduction of harmful emissions. For Western managers, the ecological movement, the "Greens" and Greenpeace, are significant critical actors promoting the "ecologisation" of production. The main argument was that the "Greens" were able to influence consumers and customers through criticism or propaganda, creating either an "environment-friendly" or "harmful" image of enterprises.

Finland is represented as another significant actor, both "criticising" and "assisting", in the ecological modernisation of the Svetogorsk pulp and paper mill. Finnish state and regional authorities have been very interested in reducing the quantity of harmful emissions of the Svetogorsk mill. The reason for this interest is the borderland location of Svetogorsk, since "pollution ignores borders". That is why the Ministry of the Environment of Finland allocated 4.7 million Finnish marks for reconstructing one recovery boiler in 1997, which reduced harmful emissions in the air (SR 20.4.1996).

As a result of investments and modernisation of technology, the ecological situation in the vicinity of the Svetogorsk mill has improved. The decrease in oil consumption has caused a reduction of 2,425 tons in sulphur dioxide emissions. The reconstruction of the recovery boiler and the introduction of electrofilters resulted in a reduction of suspensions by 3,208 tons and hydrogen sulphide by 31 tons. The reconstruction of evaporation stations and heating boilers lowered emissions into the atmosphere by 0.368 tons (*Ekonomickologiya* 1998).

There was also a significant change in the forest protection policy of the mill in 1998. The management declared the mill would cease timber from old-growth forests defined by transnational and Russian environment-

tal organisations. In December 1998, the Svetogorsk pulp and paper mill stopped cutting trees in forests which have ecological importance. The mill management made this decision after acquainting themselves with a map of the current location of the last old-growth forests in northern Russia. The map was provided by Greenpeace in cooperation with the Biodiversity Conservation Centre. One of the mill managers said in an interview that "our commitment to ancient forest free production would have been impossible without the information provided by Greenpeace" (*Common Dreams News Wire* 1998). This comment shows the readiness of the company management to take environmental organisations seriously and use the information provided by them.

Another step towards a mutual understanding with ecological organisations was made by the management in March 2001. A meeting was held with representatives from Greenpeace Russia, the Socio-Ecological Union, International Paper and Ilm Pulp Enterprise, a Russian forest industry company. Among other issues, the development of various systems of certification and prospects for old-growth forests were discussed.

Concluding Remarks

The case of the Svetogorsk pulp and paper mill shows one of the trajectories that a large Russian manufacturing enterprise has developed during the transformation period. In the mid-1990s, the control of this enterprise passed into the hands of foreign corporations. As a result of the fundamental reorganisation of the production process, the technological level of production now meets world quality standards. Through large investments harmful technologies have also been replaced by less harmful ones. The ecological modernisation of the production process was carried out parallel with the general reconstruction of the mill. It is important to note that until 1995 the need for ecological performance was not brought to the public discussion concerning the reorganisation and reconstruction of production facilities at the mill, and the focus was only on the expansion of production capacities. After 1995, when the industrial complex was linked to Western companies, new environmentally less harmful systems started to be introduced. All the harmful workshops and departments which used mercury or elemental chlorine were closed down.

The domestic and international environmental movement is the most important actor criticising industry in contemporary Russia. In spite of the local peoples' concern about the local ecological circumstances (Toy Opinion 2000), there has been no protest activity in Svetogorsk. The mill plays an important role in the infrastructure and the total development of

the town. All the local inhabitants are strongly dependent on the activities and success of the mill.

The borderland location of the town has affected the development of environmental protection. It has helped the development of international contacts, permitted the use of Western services and facilitated export. The Ministry of the Environment of Finland took part in the investments which improved environmental conditions in the town. Finnish environmental authorities are interested in improving ecological conditions around the Svetogorsk mill because of its location close to the Finnish-Russian border.

Thus, one can conclude that the ecologisation of industry in Russia, at least in this particular case, has been a result of international standards of quality, demands by international consumers, and activists of environmental movements. Local social actors, in contrast, seek to prevent unemployment and improve economic conditions. In other words, when a Russian enterprise enters Western markets, it is obliged to follow a course of ecological modernisation.

6 Prospects for Ecological Modernisation in the Russian Forest Sector

Jarmo Karttunen and Juba Kotilainen



This volume has examined the possibilities of improving environmental protection in the Russian forest industry. We have emphasised an analysing of the role of key actors operating at different spatial scales from the transnational to the local. In this concluding chapter we will summarise some of the results and draw further conclusions about the applicability of the ecological modernisation concepts to the study of Russia and its forest industry. We will start from the forest industry enterprises themselves, which are of course one of the key actors.

Mikael Skott Andersen (2002) has divided the interpretations of ecological modernisation into two regimes. The first is based on the work of Joseph Hober and puts more emphasis on internal factors within the economic sphere. Ecological modernisation is interpreted as a process where the industrial modes of production and consumption are transformed into more efficient and less polluting ones. The process is thought to proceed by itself when producers and consumers undertake the changes of their own volition and it benefits all parties and the society in general.

The other version, however, is more inspired by the writings of Martin Jämske and highlights the importance of broader societal, political and organisational capacities of countries. In other words, attention is paid to forces and actions which put pressure on economic activities. The concept of ecological modernisation capacity is widely used to denote the ability of each society to transform its structures and practices (Andersen 2002).

We will start our conclusions by looking at the Russian forest industry from the former perspective. First, we will sum up the main features of restructuring in the forest sector and explore the roles of producers and consumers in the Russian forest industry. Secondly, we will take another point of view and draw attention to the ecological modernisation capacity of Russian society. It is our intent to draw more general conclusions from

Environmental Transformations in the Russian Forest Industry

The forest industry is a major transformer and polluter of the environment in Russia. This report discusses the possibility of ecological modernisation in the forest sector, economic and social context, it analyses factors that hinder environmental improvement and examines the role and behaviour of key actors such as forest companies, environmental movement and governmental authorities.

The focus is, on the one hand, on business development within the industry and, on the other hand, on societal and political capacities for environmental reform. The authors of the volume investigate those issues at different spatial scales from the federal to local, including two case studies about mill towns.

The cover pictures are from the Soviet frontier of the Volga region, which is the location of one of the book's case studies.

Environmental Transformations in the Russian Forest Industry

Key Actors and Local Developments



Jarmo Kortelainen and Juha Kortelainen (eds.)

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