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Juha Kotilainen<sup>a</sup>; Maria Tysiachniouk<sup>b</sup>; Antonina Kuliasova<sup>b</sup>; Ivan Kuliasov<sup>b</sup>;  
Svetlana Pchelkina<sup>b</sup>

<sup>a</sup> Karelian Institute, University of Joensuu, Finland

<sup>b</sup> Centre for Independent Social Research, St. Petersburg, Russia

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## **The potential for ecological modernisation in Russia: scenarios from the forest industry**

Juha Kotilainen<sup>a\*</sup>, Maria Tysiachniouk<sup>b</sup>, Antonina Kuliasova<sup>b</sup>,  
Ivan Kuliasov<sup>b</sup> and Svetlana Pchelkina<sup>b</sup>

<sup>a</sup>*Karelian Institute, University of Joensuu, Finland;* <sup>b</sup>*Centre for Independent Social Research, St. Petersburg, Russia*

The varying ways in which environmental politics takes place in Russia are analysed by discussing the potentiality of the processes of ecological modernisation. The focus is on the forest industry sector of the Russian economy, which has, like Russia in general, undergone considerable transformations. First, the premises of ecological modernisation theory are discussed, and four potential scenarios for ecological modernisation in Russia are discussed. The recent transformation of environmental politics and the forest industry sector of the economy are then explored. Six empirical case studies from the European part of the Russian Federation are introduced and their analysis pays attention to factors that have proven to be significant in bringing about environmental improvements: state regulation, implementation of technological solutions, pressure from the environmental movement, and enterprise ownership. Based on this framework, the different directions generating incentives, motivations and driving forces for environmental improvements in Russia are analysed, as well as the contradictions arising from these processes.

### **Introduction**

Environmental issues and politics in Russia and in other countries of the former Soviet Union have long caused concern. In this paper, our aim is to analyse the varying ways in which environmental politics takes place in Russia. In doing so, we draw from debates concerning the processes of ecological modernisation and, hence, the theoretical aim of the paper is also to discuss the applicability of the theory of ecological modernisation in the Russian context. Accused of Euro-centrism, the relevance of this theoretical approach for contexts outside northwestern Europe has been argued to be limited. On the

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\*Corresponding author. Email: [juha.kotilainen@joensuu.fi](mailto:juha.kotilainen@joensuu.fi)

other hand, studies on comparative regional, cultural, economic, social and political contexts have been viewed as necessary to reflect on this problem (Buttel 2000). While there have been studies on post-socialist countries (Gille 2000, Rinkevius 2000, Mol and van Buuren 2003), studies on Russia have been scarce. Representing a post-socialist context, Eastern European countries do have some similarities with the situation in Russia. Since these countries have now been integrated into the European Union policy framework, we nevertheless see today's Russia as an essentially different arena for environmental policies and politics (cf. also Oldfield 2005).

In order to explore the concrete situations in which ecological modernisation could potentially be observed in the Russian context, we have chosen to examine one sector of the economy more closely and, therefore, we confine our empirical investigation to the forest industry sector of the Russian economy. This field of the economy has, like Russia in general, undergone considerable transformations during more than the last decade. Changes in the ownership of business enterprises have been one of the decisive forms of transformation in the sector (Kortelainen and Kotilainen 2003). Moreover, the Russian bureaucratic apparatus, including environmental administration, has in recent years been undergoing a constant process of restructuring, and the developments have often been described as leading to less effective environmental control (Peterson and Bielke 2001, Andersen 2002, Kortelainen and Kotilainen 2006). Thus, the social and political context for emerging ecological modernisation in Russia is definitely a challenge.

In the following we first discuss the theory of ecological modernisation and differentiate four potential scenarios according to which it might nevertheless materialise in Russia. Second, we explore the general transformations of environmental politics and policies as well as those within the forest industry sector in Russia. We then introduce six empirical case studies that were conducted in the European part of the Russian Federation in 2001–2005. During field-work, interviews were carried out with key respondents from enterprises, local and regional administrations and environmental non-governmental organisations (NGOs). Based on the analysis of these selected cases, we explore the factors which seemingly foster environmental improvements in forest industry enterprises and, on the other hand, may hinder them. We analyse the cases according to four perspectives that we see as relevant in the Russian context: changes in technologies resulting in the enhancement of environmental conditions; the development of environmental policies at enterprises; the introduction of environmental certification procedures in enterprises; and the emerging dialogue between enterprises and the environmental movement. Based on this framework, we explore the different directions generating incentives, motivations and driving forces for environmental improvements in present-day Russia and the contradictions arising from these processes. Specifically, we examine the ways in which influences from outside the country have impacted on the potential for ecological modernisation within the forest industry sector in Russia.

### **Potential scenarios for ecological modernisation**

Ecological modernisation theory has generally focussed on social, institutional and political transformations occurring in industrialised countries as a response to the societally created environmental crisis (see e.g. Murphy 2000, Mol and Spaargaren 2000). Briefly, ecological modernisation is a process that incorporates real and planned transformations in social practice, institutional design and discourses concerning ecology and the environment. A central aspect in ecological modernisation is that an ecological logic has become or is becoming divorced from other societal logics, mainly economic: there are independent ecological rationalities that are different from the external costs of economic activities. In this respect, the theory differs substantially from those which are strongly Marxist influenced, such as the theory of the treadmill of production (Schnaiberg and Gould 2000), where the economy is seen as a driving force in environmental transformations and, for example, theoretical perspectives concerning the regulation of natural resources (e.g. Bridge and Jonas 2002). Moreover, ecological modernisation theory also includes the idea that radical environmentalism – or counter-modernity – would be transformed into less radical environmentally sensitive mainstream practices, as the environmental movement shifts away from criticism toward collaboration in promoting environmental policy (Mol 2000). There are a series of empirical observations behind the ecological modernisation theory, which state that ecological argumentation is now an integral part, for example, in international treaties and in the development of the European Union's environmental policy (e.g. Mol 2001, Hertin and Berkhout 2003).

The ecological modernisation approach has been built on certain prerequisites that have been discussed in relation to, for example, sustainable development (Langhelle 2000). From a critical perspective, ecological modernisation has been seen as a rather shallow and narrow way of reacting to environmental problems (see Barry 2005). However, there are a number of variations within the rather broad ecological modernisation perspective on environmental change. We see ecological modernisation as a societal process leading to improvements in environmental performance with the involvement of various actors, including state, business enterprises and non-governmental organisations. The approach helps to focus on the cooperation between these actors, the ways in which this cooperation is formed, the results which occur, and the reasons for the emerging collaboration. We believe another aspect of this cooperative stance indicates that the ecological modernisation perspective may also help to identify potential problems in the field of environmental politics as well as obstacles to cooperation on issues that can be labelled environmental. Therefore, we see a value in discussing the potential of different ecological modernisation scenarios in countries outside the Western world.

It is possible to recognise four dichotomies within ecological modernisation research (see also Kortelainen and Kotilainen 2006). First, technological and institutional (or reflexive) trends can be differentiated. For example, Gibbs

(2000, pp. 12–13) argues that there are weak and strong versions of ecological modernisation. In the weak version purely technological solutions are seen to be the core of change, which means that economic growth must first occur and further industrialisation will be the solution to environmental problems. In the strong version of the ecological modernisation theory, however, the central thread is that changes in social institutions are essential to the ecological modernisation process. Our perspective is based more on the strong version, and we thus argue that although ecological modernisation could not take place without technological transformations, a key aspect in the ecological modernisation process is social and institutional change. Second, versions based on realism and those leaning towards constructionism can be distinguished (see Lundqvist 2000, Murphy 2000). The former incorporates the idea that social reactions directly reflect environmental changes and policy changes have concrete effects on the environment; the constructionist perspective sees ecological modernisation more as a discourse created by social actors reflecting their social world. This division is, of course, highly idealistic. For example, Hajer (1995) claims to represent the constructionist approach in his discourse analysis, but while denying any underlying deeper values or interests held by social actors he ties environmental discourses to social institutions. Elsewhere, Mol and Spaargaren (2000) explicitly distance the ecological modernisation theory from social constructionism, but nevertheless focus on the role of social actors in bringing about ecological modernisation, which is a view familiar to the social constructionist perspective. While we do not exclude deeper values and interests from our own analysis, investigating how actors construct the issue under investigation is central to the perspective we adopt. For example, while environmental organisations have actively been constructing the idea of preserving old-growth forests containing ecological values, Russian governments have traditionally perceived these forests as too old, susceptible to diseases and ready to be cut for economic purposes. As a result, there has been a continuous battle that is built on different constructs and interests.

Third, ecological modernisation can be perceived both as a theory of social change and a political programme. As a political programme, it may be seen as a strategy adopted by organisations and institutions in the same way as the notion of sustainable development. As a theory of social change, ecological modernisation should carry with it an analytical value for understanding contemporary societies since the late twentieth century and the changes they are undergoing. For example, Hajer (1995) treats ecological modernisation as a policy discourse to be analysed, whereas Mol and Spaargaren (2000) use it more as a theoretical concept which helps to analyse and understand contemporary societal transformations. Taking a critical stance towards the ecological modernisation theory, Leroy and van Tatenhove (2000, pp. 196–201) state that there is little empirical evidence supporting ecological modernisation as a social change, and that which does exist chiefly concerns praxis and political programmes. Finally, related to the above dichotomy, we can ask whether the concept of ecological modernisation should be seen as

analytical or normative (cf. Mol and Sonnenfeld 2000). Yet, treating ecological modernisation as an analytical concept does not rule out its normative orientations to environmental and political improvements. Owing to the often prevailing normative dimension of the ecological modernisation theory, it is not always easy in practice to recognise the difference between the theory and the ecological modernisation process. It appears that ecological modernisation inherently believes that society and technology need progress towards better relations with nature and the environment. The changes involved in this process are another, and obviously controversial, subject for debate.

While the ecological modernisation perspective has been widely criticised for offering too narrow a view on environmental reform (e.g. Langhelle 2000, Leroy and van Tatenhove 2000, Barry 2005), we nonetheless see it as providing a suitable framework for analysing the potentially positive environmental transformations occurring within Russian society. This is because it provides a framework that helps integrate institutional change, actors' interests, and political and social practices into a coherent picture across the structure of contemporary societal change. Moreover, the theoretical perspective carries with it an undercurrent concerning the possibility of positive transformations within a society's relations with its physical environment. In our analysis, we therefore use ecological modernisation as an analytical framework for exploring the changes taking place within the Russian forest industry sector. While we recognise the normative value of the transformation processes themselves as potentially leading towards an enhanced co-existence of societal institutions and their physical environment, we do not, however, believe that Russian society will inevitably modernise ecologically in the future; we take this view to present the changing position of actors and their institutional situations in terms of their environmental relations within the specific societal context. Clearly, the transformations that might lead to ecological modernisation in a society that has experienced such turbulence as Russia do not occur without conflicting circumstances. Furthermore, as some have argued (see e.g. Yanitsky 2000, cf. Kortelainen and Kotilainen 2006), Russia might better be perceived as an 'all-encompassing risk society'. Nevertheless, as we wish to show through the analysis, there is evidence that 'islets' of ecological modernisation as a societal process are taking place in contemporary Russia, and that these changes are not occurring in isolation from the rest of the world.

Based on extensive literature concerning ecological modernisation theory (see e.g. Murphy 2000, Spaargaren *et al.* 2000, Mol 2001, Mol and Spaargaren 2000), we suggest that on an abstract level four principal scenarios can be distinguished by means of which ecological modernisation might take place in Russia. We call them here the economic, cultural-discursive, institutional-political and external factors scenarios. First, according to the economic scenario, ecological modernisation would be a rather direct consequence of technological development, and the process would occur under the influence of economic factors. Industrial producers would adopt new technologies that are also environmentally less harmful in order to maintain development. A second

possibility is the institutional-political scenario, which states that environmental issues would be integrated into state institutions, legislation, and politics. After institutionalisation in state policy, industries would be forced to comply with environmental requirements. Third, the cultural-discursive scenario consists of changes in cultural and discursive practices. With increased environmental awareness among the population, discourses related to the environment would change and foster environmentally friendly values that in turn would more generally influence the sphere of culture, including the behaviour of industries. A fourth option is the scenario of external influence, which would involve transnational networks mediating between Russian, Western and transnational spaces and, in effect, foster ecological modernisation in Russia. This scenario involves the increasing role of non-state actors in global environmental governance, since ecological modernisation would be driven by environmentally sensitive foreign markets and pressure from transboundary non-governmental organisations.

These scenarios are of course interconnected and it is not always easy to determine which is the most vital. However, we set out to examine the lines through which transformations that can be categorised as ecological modernisation would take place in Russia. In this respect, we also examine the value of ecological modernisation theory in providing a theoretical framework for the analysis of socio-economic transformations promoting improvements in the quality of the environment or restraining its deterioration. We assume that ecological modernisation as a process could be empirically observed in the practices of enterprises and local communities, as well as social and economic institutions. Therefore, we operationalise the scenarios presented above by exploring local case studies. Prior to looking at the cases, however, we need to explore the recent transformations in environmental politics as well as those within the forest industry sector in Russia, since understanding these changes is essential to comprehending the ecological modernisation potential in the country.

### **Environmental politics in Russia**

The Russian environmental movement has had strong links with science for more than a century. Weiner (1999) has explored in depth and breadth the existence of nature protection activities during the Soviet era, and makes the point that Russian nature protectionists were able to carry out their activities in a certain isolation from the Soviet power structures (see also Oldfield 2005, pp. 37–40). For a section of the scientific community, the establishment of nature reserves (*zapovedniki*), for example, played a significant role in their ecological vision and practice. More recently, the Russian environmental movement has undergone significant transformations since the late Soviet period (see e.g. Yanitsky 2000, Tysiachniouk *et al.* 2004). During the late 1980s, the notions of *perestroika* and *glasnost* enabled societal protest to be channelled towards environmental issues as part of larger societal changes. In the late 1980s, a large

environmental organisation, the Socio-Ecological Union, was formed, and after the dissolution of the Soviet Union it found itself as an international network. An important trend during the 1990s, in turn, was that new sources of financing for Russian environmental organisations were provided from the West. This phenomenon had a strong effect on parts of the environmental movement and enabled the movement to build cross-border networks and use Western funding to implement conservation programmes and projects on the ground (Tysiachniouk *et al.* 2004). Moreover, organisations such as the World Wildlife Fund (WWF), the World Conservation Union (IUCN) and Greenpeace established offices in Russia. At the same time, more radical organisations exist, as do educational environmental organisations. Recently, environmental education NGOs have especially been mushrooming, and even if the NGOs are new, they have been developing on the basis of old institutions, such as schools, houses of culture, and houses of youth creativity.

Along with issues such as nuclear safety, forest campaigns have been an important aspect in the activities of many of the new NGOs. As in other parts of the world, the WWF took the lead in fostering forest certification in Russia and building the social infrastructure and democratic institutions required by the Forest Stewardship Council (FSC) that were missing in Russia. Greenpeace Russia, the Socio-Ecological Union and the Biodiversity Conservation Centre together formed the Forest Club in the early 1990s that was more radical in nature. Together with the Taiga Rescue Network, which is an international network with headquarters in Sweden, they have been organising consumer boycotts to promote the preservation of old-growth forests in Northwest Russia (Tysiachniouk and Reisman 2004).

Environmental administration in Russia has also undergone considerable changes since the late 1980s. While the capacity and independence of this administration initially increased, the late 1990s through the early twenty-first century witnessed an opposite trend (see e.g. Oldfield 2005, pp. 65–91). There have been larger processes within the Russian administrative system to which these changes have been linked, as the Russian bureaucratic apparatus in general, including environmental administration, has been undergoing a constant process of restructuring in recent years (Peterson and Bielke 2001, Kortelainen and Kotilainen 2006). As a part of these reorganisations, in 2000, the president of the Russian Federation, Vladimir Putin, closed down the Federal Forest Service and the State Ecological Committee, and transferred their duties to the Ministry for Natural Resources. After Putin's re-election in 2004, the restructuring of ministries and state administration continued, and the interaction between different divisions of administration have been complicated by constantly shifting jurisdictions. All the forests in Russia are owned by the state and forest management is currently directed by the Forest Code of 1997, which is likely to be radically changed in the immediate future, presumably introducing aspects of market liberalisation. Overall, the continuous restructuring of state institutions specialising in environmental and forest issues has caused institutional turbulence. The overall situation has



even been interpreted as general de-modernisation of the Russian society (Yanitsky 2000), and the reduction in environmental administrative capacity has been observed to the extent that the situation has even been interpreted as 'ecological subversion', in contrast to ecological modernisation (Andersen 2002).

### **Transformation of the forest industry**

Since the early 1990s, the Russian forest industry sector has been undergoing profound restructuring. Although the role of the state remains strong in this field, significant new actors have emerged (Kortelainen and Kotilainen 2003). Russian forest corporations, investment funds and transnational companies have been replacing the state as the main agent controlling the sector by purchasing enterprises, i.e. paper mills and other production units. These changes originated in 1992, when the privatisation of the Russian forest industry along with other sectors began. At first, representatives of the former socialist governments became the key personnel for the newly formed Ministry for Industry, which facilitated privatisation, and they were also in the forefront of the newly formed business associations related to forestry and forest trade. Actors not related to the former socialist government structures also emerged rapidly, many in opposition to the former apparatus. In the early stages the privatisation process led to a period of fragmentation, with small separate production units (see e.g. Kulasova and Kulasov 2002). As the centrally maintained ties between raw material supply, mills and consumers disappeared, these production units had problems both with their raw material supply and with finding markets for their products.

Soon after this fragmentation phase forest industry enterprise types started to diverge (Kortelainen and Kotilainen 2003). First, some of the enterprises, mostly small and the technologically most old fashioned, remained in local ownership. Second, there were governmental interventions in certain regions, where the regional authorities took active roles in recreating the connections between firms and markets. Third, new large Russian firms were established by combining mills at different locations. Several industrial and quasi-state industrial groups have sought to rebuild a new oligopolistic industrial empire by forming holding companies. The most significant example is Ilim Pulp Enterprise, which has succeeded in gaining control over some of the largest production units in both the European part of Russia and Siberia. Partly as a legacy of the Soviet period, the management system of Russian holding companies is relatively rigid and hierarchical. Production, human resources, social and ecological standards are generally formulated at the head offices and imposed on the local enterprises (Deputy Director 2004).

Fourth, there have been some foreign direct investments in the Russian forest industry. For example, in 1998, the world's largest forest industry corporation, the North American International Paper, purchased the Svetogorsk pulp and paper mill in the Leningrad Region, near the border

with Finland, and sought to combine Russian raw material and a low-cost labour force with Western technology and management style. Another example is Mondi Business Paper (headquarters in Austria), which invested in a pulp and paper mill in Syktyvkar in the Republic of Komi. Some foreign companies, such as the Swedish–Finnish Stora Enso, have sawmills in Russia, with subsidiaries leasing forest territories. Despite these examples, it is essential to emphasise that foreign direct investment activities have been scarce in this field, whereas round-wood as raw material has been increasingly utilised by foreign companies, especially those from the Nordic Countries and China (Kotilainen 2004, Kortelainen and Kotilainen 2006).

In general, by the end of the 1990s, large and middle-sized holding companies had united the bulk of the enterprises operating in the pulp and paper, wood processing and logging industries. The Russian forest industry currently consists of four main types of enterprises: logging companies (organised on the basis of the former Soviet *lespromkhozi*), sawmills, wood processing enterprises, and pulp and paper mills. Most of them are private Russian companies (about 95%); state-owned and Russian – foreign joint ventures form a small minority (Goskomstat Rossii 2005). In addition, the forest industry is dependent on the system of *leskhozi*, state-owned forest management units that exist throughout the country as a legacy of the Soviet economy.

A major problem the Russian forest industry faces is old and largely outdated machinery. Most of the pulp and paper mills in the country were built in the 1960s–1970s or earlier (see Lehtinen 2004), and often only minor renovation and improvements have since been carried out. Due to this outdated equipment, companies have high production costs, low production quality, and very limited growth potential. On the other hand, it has become evident during the post-Soviet period that pulp and paper mills are hard to close down. Even if enterprises have been declared bankrupt, the mills have usually continued to operate under new owners even without new investments (see Kortelainen and Kotilainen 2003). Thus the environmental effects of production are also easily ruled out by local socio-economic necessities. The obsolescence of machinery causes problems in product quality, which is generally low, as is the demand for such products in foreign markets. In the long run, the aim of Russian companies is to develop high quality production and gradually supplant foreign producers in the Russian markets. However, this is only possible if production technologies are modernised, which could potentially include aspects of ecological modernisation. There has been increasing investment in some enterprises since the late 1990s, particularly in those owned by foreign corporations or large Russian holding companies. Consequently, the 1990s nevertheless witnessed a growth in foreign sales to countries of the European Union and China's importance as an export market has recently increased as well, with about half of the pulp exported from Russia ending up there.

Although foreign direct investments have remained sparse, the discourses and practices of the forest industry have been increasingly influenced externally in other ways. A clear example is forest certification, which takes the form of

various competing systems all over the world, all aiming at institutionalising sustainable forest management. In the early 1990s, a full-blown forest certification system was developed under the auspices of the Forest Stewardship Council (FSC). The FSC is a non-governmental organisation located in Germany responsible for developing the certification system and its implementation in industrialised and developing countries regardless of variation in local and national forest ownership structures. The FSC system includes a number of forest management principles ranging from the legality of forestry practices to the sustainable social and environmental effects of production (see Forest Stewardship Council 2006). The FSC's target is business enterprises which can certify their production following independent audits on forestry plots they own or lease. The assumption is that the producers, in their marketing, would then benefit from an FSC label on their products. There are other certification systems as well, some of them favoured more by national governments and the industry than the FSC, but thus far the FSC has remained the only system implemented in practice in Russia. The certification system has four key elements (Meidinger *et al.* 2003). First, it is built on the tripartite environmental, economic and social understanding of sustainable practices. Second, the organisational structures for implementing the system incorporate both the integration of sustainable management practices into the forest management organisation as well as an external accountability system based on independent accredited certifiers. Third, there are participatory decision-making mechanisms for defining and amending appropriate forest management policies. These mechanisms operate at the local, regional, national and global levels, and include business – government – NGO partnerships as well as processes for public participation. Fourth, mechanisms for boosting demand for certified forest products are seen as necessary to spur the adoption of certification in the world's forests. They rely on such diverse strategies as traditional advertising, creating 'buyers groups' of retailers and wholesalers, and direct action.

We will now examine six cases from the Russian forest industry in order to investigate the potential for ecologically modern transformations in the turbulent context presented above. The cases represent three enterprise categories: pulp and paper production, Nordic-style model forests and logging companies formed on the basis of Soviet *lespromkhozi*. Two examples per category are included, and the analysis includes economically and environmentally successful cases as well as cases with outdated infrastructure. Exploring this selection of cases will also facilitate an understanding of the perspectives of ecological modernisation in Russia in general.

## **Environmental improvements in the forest industry**

### ***Paper mills in new ownership***

Two pulp and paper mills, Svetogorsk and Sokol, provide a comparative view of developments in the environmental sphere of production (see also

Kortelainen and Kotilainen 2006). Both mills were established in the late twentieth century. Initiated by the Soviet state, there were investments at both mills during the 1970s and 1980s on waste water purification systems. The main aim was to reuse part of the waste in separate production lines and, in effect, increase the volumes of production. Thus the incentive for improvements with positive environmental effects was to increase production efficiency, recycle waste products and, in effect, decrease the need for raw material. Especially in Sokol, the capacity of the purification system has been too low in environmental terms and ineffective in its cleaning measures.

At both mills, ownership was externalised from the local context during the 1990s. One of the few situations in which there is evidence of foreign direct investments in Russia leading to relative stability in production is the Svetogorsk mill at Russia's northwestern border, which was first purchased by the Swedish Tetra Laval in 1994 and then by the North American International Paper in 1998 (Bolotova and Vorobiov 2002, Kotilainen 2004, Kortelainen and Kotilainen 2006). The owner of the Sokol mill has since 1998 been the investment group Gruppa Foks from Moscow. A major difference in the environmental policies of the mills is their links to the environmental movement. In 1998, the Svetogorsk mill along with Greenpeace Russia and the Biodiversity Conservation Centre in Moscow agreed on a logging moratorium on nearby old-growth forests. The moratorium was based on detailed maps of old-growth forests in northwestern Russia prepared by the environmental organisations. The moratorium was rather extraordinary, as forest companies in northern Europe had previously been rather systematically opposed to the demands of the environmental movement. Furthermore, the Svetogorsk mill launched a programme for reducing emissions into the air by introducing technological improvements. This was carried out partly as aid from the government of Finland to its immediate neighbouring regions (see also Eskelinen and Kotilainen 2005). Moreover, the Svetogorsk mill was the first company in Russia to receive the international environmental certificate ISO-14001. While the certificate itself may not really be important proof of effective environmental policy, it is an indicator of the recent links to new markets outside Russia. At its Svetogorsk mill, International Paper also applies the principles of the SFI forestry certification system (Sustainable Forestry Initiative 2006) that competes with the FSC and is promoted by the forest industry in North America. Overall, the recent modernisation of production in environmental terms at the Svetogorsk mill has been linked to three factors: the demands of the environmental movement, cross-border cooperation and aid from European Union partners, as well as foreign ownership of the mill. Behind these factors are the assumed expectations of customers for the sustainability of products. Cooperation with the environmental movement is an especially new phenomenon within this field of industry.

Struggling with economic hardship and problems related to local politics in the post-Soviet period, there have nevertheless been some environmental investments at the Sokol mill. In the late 1990s, the thermal power station

began using gas instead of coal, which considerably decreased emissions into the air, and in 2002 a production line for the environmentally less harmful non-chlorine bleaching of pulp was launched. However, some of the most pressing issues, such as waste water purification, have remained unresolved. Furthermore, there has been no debate on the extensive forest utilisation methods. Overall, there have been almost no clashes with the environmental movement linking the enterprise to larger-scale environmental issues. The only instance of environmental conflict has been claims by nearby summer residents for cleaner water, but these claims have in practice been ineffective, as they have not led to environmental improvements at the paper mill (Kuliasova and Kuliasov 2002, Kortelainen and Kotilainen 2006).

### *Model forest projects*

It is clear from the comparison of the above cases that while influences from outside the country have led to changes typical of an ecological modernisation process in both the technological and institutional senses of the concept, this transformation has been regionally limited. Similar developments can be observed at the Pskov Model Forest Project which was initiated by the WWF and launched in 2000 (Tysiachniouk and Reisman 2004). The project is being implemented in cooperation between the WWF, the Swedish – Finnish forest-industrial company Stora Enso, the St. Petersburg Research and Development Institute of Forestry, and the Northwest Forestry Inventory Enterprise. The background of the project can be traced to the same forestry conflicts of the 1990s that caused the Svetogorsk mill to cooperate with the environmental movement. In order to protect its markets in Western Europe, Stora Enso decided to certify its production in Russia according to the Forest Stewardship Council (FSC) system. The company received the FSC certificate after a landscape plan for sustainable forest use for its local subsidiary was elaborated, discussed at public hearings and ratified by local forestry and city administrations. Clearly, this case illustrates signs of ecological modernisation in forestry management since the international non-governmental organisation WWF and the Northern European company Stora Enso, which competes in the West European markets that are perceived to be environmentally sensitive, jointly strive towards the ecological modernisation of production and involve local administration and civil society in the process.

Another model forest case differs from the above according to the plurality of tenants. In 1997, the WWF Russia branch in the Republic of Komi (which was reorganised as the independent Silver Taiga Fund in 2002) launched the Priluz'e Model Forest Project in the territory of the Priluz'e *leskhoz* (see Tysiachniouk and Reisman 2004). Supported by the Swiss Agency for Development and Cooperation, the project has involved social, economic and environmental goals, and seeks to introduce sustainable forestry management in the territory leased by many small forestry companies. In 2003, the Priluz'e *leskhoz* received an FSC certificate. The process of certification was more

complicated than in the Pskov case, as there was a wide variety of forestry firms of different sizes and economic capacities, and some of the companies were close to bankruptcy. However, the *leskhoz*'s forest management certification as a whole facilitated certification of the chain of custody of the four most prominent forestry enterprises, which became wood suppliers for a subsidiary of the multinational corporation Mondi Business Paper, which had recently purchased the nearby Syktyvkar paper mill.

Within the project, a model for sustainable forest use under conditions of extensive forest exploitation and a plurality of tenants was created. Silver Taiga mediated between stakeholders and partnered mainly with the Priluz'e *leskhoz* and governmental agencies on the regional level. A model of public participation in decision-making concerning forests was developed, and public hearings were held in cases of land leasing or allocation of especially valuable forest plots. Environmental practices have included the preservation of high conservation value forests and the creation of corridors for animal migration. Moreover, efforts have been made to reproduce the lessons learned throughout the entire Republic of Komi: a regional programme for sustainable forest management was adopted on the basis of an inventory of old-growth forests, and the biodiversity conservation plan received regional status. Furthermore, the public hearings procedure in cases of forest leasing was introduced into the regional legislation of the republic.

In sum, the initial driving forces for environmental improvements in this case were twofold. First, the WWF (Silver Taiga) – *leskhoz* partnership was the project's major mediator and implementer with guidance and funding deriving from the Swiss Agency for Development and Cooperation. Second, Mondi Business Paper, with a global policy of using certified wood, fostered ecological modernisation through the chain of custody certification of small enterprises and sawmills in the *leskhoz* territory. Although the initiative came from these external sources, the discourses and practices were also adopted in local and regional institutions, and the ideas were regionalised to the extent that they were established in regional legal regulation.

### *Certification processes at former Soviet logging companies*

The situation in firms with similar histories as Soviet logging companies (*lespromkhozi*) can differ when forest certification is introduced in them. The Dvinskoy forest-industrial enterprise (*lespromkhoz*) was purchased in 1994 by the German company Holz Dammers Moers, which had opened a woodworking enterprise in Arkhangel'sk. In 1999, Dammers decided to certify the Dvinskoy enterprise according to the FSC system, because most of its production is exported to the German markets, which it considers to be sensitive in environmental terms. In 2000, Dvinskoy received an FSC certificate, and a certificate was also granted to Dammers on the chain of custody. The same year it reached an agreement with Greenpeace Russia on a

moratorium on felling old-growth forests rented by the Dvinskoy enterprise. Although Dvinskoy undertook economic, social and environmental measures in order to meet the requirements of FSC certification, within two years the certificate was suspended because of violations of labour and forest legislation. In summer 2003, however, the certificate was renewed as the enterprise partially met its salary liabilities, began to carry out selective felling, and extended the moratorium on logging in old-growth forests. Overall, competition in environmentally sensitive international markets as well as potential pressure from the transnational environmental movement can be seen as a driving force for environmental improvements. The scale of environmental improvements in this case was, nonetheless, much more modest than in the Pskov or Priluz'e Model Forests.

Another logging company, Maloshuykales, established in 1997 on the basis of a *lespromkhoz* of Soviet origin, is part of the regional Onega woodworking factory, which in turn is incorporated into the Russian Orimi concern. Onega, which processes the raw material from Maloshuykales, sells its products to domestic markets and Western Europe. In 1999, the director of Onega decided to prepare Maloshuykales for FSC certification. The enterprise acquired new equipment and financed the work of a group of scientists from the Northern Scientific Research Institute of Forestry who helped work out a programme for a 49-year development of the enterprise, introduce new forest regulations, and change economic, social and environmental practices. In June 2003, Maloshuykales received an FSC certificate, and in this context the enterprise has declared a moratorium on felling old-growth forests located within the leased forest area. While competition in environmentally sensitive international markets was a driving force behind the environmental improvements in this case, it was backed by only potential pressure from the environmental movement. Reasons for its more stable performance within the FSC process in comparison to Dvinskoy's can mainly be found in the company's deeper embeddedness in local socio-economic conditions.

### ***Different dimensions of ecological modernisation***

By drawing together the results from the case studies we can generalise the different socio-economic trajectories leading to ecological modernisation in Russia. We can draw a distinction between the Soviet era, the early transformation period in the early 1990s, and recent developments at the turn of the twenty-first century. First, technological changes have generally been driven by a need to increase production efficiency in order to gain economic benefits. In the Soviet era, the need to save raw material was a major incentive for introducing technological innovations, and environmental benefits played a secondary role in investments. In addition to economic profit, the changes in technologies have also resulted from pressure from non-economic actors, i.e. the state and, recently, environmental organisations. Since

the late 1990s, however, technological investments as a cause of environmental improvements have largely split the forest industry sector into companies with the necessary investment potential and those without.

Environmental regulation by the state has been a factor promoting environmental improvements in production. In the Soviet period, the incentive for environmental improvements when perceived from a local perspective, that of the enterprise, came from the state. State regulation induced the enterprises to construct purification plants and renew technologies, a process which limited the amount of water pollution. However, due to problems in implementing environmental regulation decisions, the measures taken were not sufficient to bring about ecological modernisation, even in the purely technological sense.

During the post-Soviet transformations state regulation has only occasionally proven to be a decisive element in a process that might lead to ecological modernisation. It has had an impact on finding new technological solutions for replacing the chlorine bleaching of pulp with less environmentally detrimental methods, and emissions into the air have sometimes diminished as a consequence of state regulation. However, Russian nature legislation norms have occasionally also hindered the introduction of new ecologically modern practices. Although the Russian legislation has formed a basis for the introduction of forest certification, it has also handicapped certification activities, since the international principles incorporated within the certification system have sometimes conflicted with Russian legislation. Therefore, when preparing new methods for forest management the norms established by the Russian state have often been either exceeded or violated.

We can identify a partial shift in emphasis during the post-Soviet period from the regulation of environmental issues by the state towards governance by enterprises, on the one hand, and non-governmental organisations, on the other. In other words, this indicates a partial shift from state governance to governance by a multitude of actors, a phenomenon that has been intensively observed in Western countries in recent years (e.g. Mol 2000, van Kersbergen and van Waarden 2004). The power of NGOs in this respect derives from potential pressure from the markets, if they are able to convince enterprises that the purchasing decisions made by their customers and consumers are affected by the companies' ability to document their environmental protection measures. The FSC certification system is a significant tool in these activities, and also an empirical indicator of the regionally selective ecological modernisation process. Overall, the role of transnational environmental organisations has been more significant in bringing about transformations in the environmental sphere than that of local movements; this is due to the fact that they have been able to utilise transnational networks and participate as stakeholders in the construction of the wood product markets (cf. Kortelainen and Kotilainen 2006). In recent years, the effects of potential market pressure have also been visible in the technological improvements adopted by enterprises. In this respect, the actions of the owners and management of the



enterprises has clearly been an important factor in differentiating the companies in terms of environmental improvements, and imported environmental standards do play a role.

### Conclusions

One can argue that there are very different socio-economic trajectories taking place in Russia, which also causes considerable differences in the potential for ecological modernisation. There are traditions inherited from Soviet times that affect the ways in which the prospects for ecological modernisation are being shaped; there are novel introductions of new discourses and practices from outside Russia. These two main trajectories form very different preconditions for the ecological modernisation processes.

We wish to shift one step up from the causes of environmental improvements presented above and explore those ecological modernisation scenarios we could distinguish in Russia. The scenarios we introduced at the outset must of course be seen as ideal types, and the cases we have presented demonstrate that the scenarios are mixed and interact and influence one another. In particular, the scenario of external influence has an impact on the sphere of cultural-discursive practices by bringing new discourses to Russia. Furthermore, this scenario also affects the sphere of economy by creating new pressure on economic actors. The political sphere is also affected by external pressure through the government's willingness to participate in world markets and, moreover, legal developments are monitored by non-governmental organisations and other networks stretching from Russia abroad. There is also a weak link from the cultural-discursive sphere to policy-making. We illustrate this setting in the lessons we learned from the cases presented.

First, the economic scenario as a path towards ecological modernisation for Russia is significant, but hardly dominant. The economic scenario generally seems to work together with the scenario of external influences (Figure 1). The

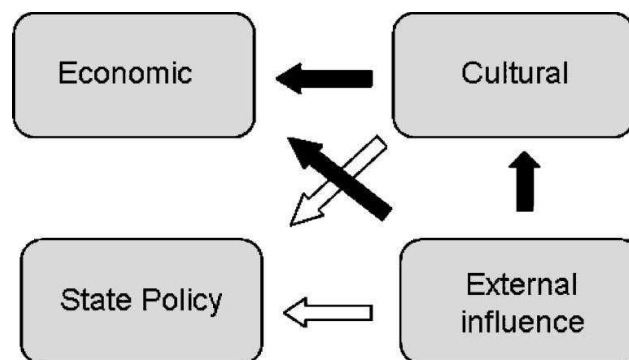


Figure 1. The scenarios of ecological modernisation in Russia and their mutual influence.

institutional-political scenario is not the main nor most essential for Russia, and the reasons for its weakness lie in the problems with Russia's environmental institutions, the underdeveloped mechanisms of the federal nature protection legislation and the weakness of state environmental policy. There are, however, exceptions to the rule, as our case study in the Republic of Komi demonstrates, since the government of the region has decided to adopt new environmental ideas introduced by transnational non-governmental organisations; partnerships with NGOs has helped the regional authorities to include new principles such as public hearings on environmental issues in the republic's legislation.

In many countries of Western Europe, the presence of the cultural-discursive scenario is generally connected to a highly developed environmental culture and the structures of civil society, and, consequently, this mode of ecological modernisation has gained recognition in many developed capitalist countries. Despite weaknesses in environmental culture and structures of civil society in Russia, this scenario sometimes takes place under the influence of external transnational processes. For example, the formation of practices and discourses in Russian enterprises is sometimes influenced by ecological standards, environmental and civil culture and ethics as well as consumer and industrial culture from Western countries, as in the example provided by the Svetogorsk mill.

The scenario of external influence is of great importance if ecological modernisation is to emerge in Russia, and it also influences the development of all other scenarios, especially the cultural-discursive. The direct impact of the scenario of external influence has been seen in relation to multinational enterprises which design their social and environmental policies transnationally, as well as to certain transnational NGO networks. However, following the scenario of external influence, the policies of Russian enterprises may also change if they, for example, wish to operate as sub-contractors for transnational companies, as was illustrated in the Komi case by *Mondi Business Paper*. In most of our cases, significant consequences can be identified that fit the idea incorporated in the scenario of external influence; in some cases, however, the consequences were not so momentous. The scenario of external influence was the principal mover for *Maloshuykales*, *Priluz'e* and *Pskov Model Forests*, and it also essentially affected the *Svetogorsk mill*. At *Dvinskoy* and *Maloshuykales*, external influence resulted in a change in technology that reduced the negative impact on the environment. Both enterprises began to develop an environmental policy and ecological and technological staff training was carried out at *Dvinskoy*, and resulted in a changing discourse among both workers and managers.

It must be, however, noted that the ecologically modernising effects may remain regionally and socially limited through external influence. For example, in order to avoid the consumer boycotts, the *Dammers* company made the least necessary changes in their practices in Russia. As an environmental organisation, however, *Greenpeace* emphasised the environmental aspects of

certification and ignored the social aspects aside. Lacking embeddedness and tradition in the local community, the foreign company was not interested in focusing on social issues. This is in contrast to Maloshuykales, where the traditions deriving from the Soviet era caused the firm to put more emphasis on the social aspects of certification. Thus, from a normative perspective, it is clear that in addition to external influence development should also occur within at least some of the other scenarios.

The Priluz'e and Pskov Model Forest Projects were initially implemented and mediated by international non-governmental organisations and resulted in an optimum combination of environmental, economic and social outcomes on the ground. Another aim of these projects was to promote active public participation. Thus, they show improvements in the local community and the environment. A modification of the consciousness of workers and the local population was among the project tasks and, consequently, these projects show changes in both industrial and forestry practices, as well as in approaches to the forest management system. Furthermore, changes of discourses have taken place both in the enterprises and the local community. It is, however, important to point out that these cases were created as models for development involving significant foreign money flows and, therefore, the situation created in these cases is rather artificial and not comparable with many 'ordinary' Russian localities. Nevertheless, we wish to argue that the analysis has shown that 'islets' involved in the processes of ecological modernisation in its different dimensions do exist in today's Russia, albeit in regionally and socially limited forms.

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