Institutional Frameworks for Sustainability? A Comparative Analysis of the Forest Sectors of Russia and the Baltic States

After the break-up of the Soviet system, the divergence in forest management among Soviet republics became obvious. While the forest sectors of the Baltic States have been fundamentally changed, Russia has not been able to develop an institutional framework that would fit the prerequisites for social-ecological resilience. It is argued that sustainable development requires institutional frameworks that have the capacity to adapt and learn, and thus to treat policies as experiments that are constantly assessed and readjusted. This, however, requires a participatory approach and in this respect the Baltic States are believed to be on a more promising track. Finally, it is concluded that only to the extent that suitable institutional frameworks will be developed will social-ecological resilience be a significant feature of the natural resources management in the former communist countries.

INTRODUCTION

Together with the other states of the former Soviet Union, Russia possesses an enormous forested area. The Russian federation alone has 23% of all forests and more than half of all the coniferous forests in the world (1). During the communist era, the forest sector was an important branch of the Soviet economy (2–4). However, after the break-up of the Soviet Union, Russia went through a decade of decreasing productivity, a trend that has only recently been broken (5). In contrast, the Baltic States—also the former Soviet Union republics—showed a more promising economic output from the forest sector and better prospects for sustainability (6, 7). How can these differences be explained?

As a result of the dismantling of the Soviet Union, the management of forests and other natural resources was reorganized along with the overall restructuring of society. From the “ruins” of the old system a new society was to be created, something that was expected to be accomplished instantly. In retrospect, it can be concluded that Russia was faced with a challenge that contained three huge sub-tasks to be handled simultaneously: *i*) the restructuring of the economy; *ii*) state-building; and *iii*) nation-building, i.e. to establish Russia as a nation (8). The details of this transition have been analyzed in many studies and need not be repeated here. However, the third task did not apply to the Baltic States, which had been independent nations before annexed to the Soviet Union after World War II.

Although it might be true that the Russian and Baltic forests constitute a significant resource, this is only part of a large picture. A resource is something that can be considered useful and valuable under the conditions in which it is found (9). However, for a natural resource to be a valuable asset, two other factors are necessary. The first is technology and the second is the institutional structure embedding the resource (10). Technology

within forestry, as well as within all other sectors, is defined by the state and the quality of physical capital, and by the human capital that is involved in the activities related to the resource. The structure, usefulness, and appropriateness of technology are closely related to the other general features of a resource, namely, the institutional arrangements. Without adequate institutional arrangements any technology might be completely insignificant (10).

There is no one-to-one relationship between the size of a natural resource and its economic and utility values. The over-utilization of natural resources in many developing countries illustrates this fact. Developing countries often possess significant resources, but due to political, organizational and technological factors their resources are not contributing to the well-being of their people, while, at the same time, the significant resource bases might be devastated (11). Only within a framework of institutional arrangements can a forest resource be regarded as an asset in an economic sense and only within a suitable institutional framework can degradation and depletion be prevented.

Institutions are “the rules of the game” (12), and without them no economic or social activity can take place. Institutions are made up of formal as well as informal rules, norms and value systems (13, 14). Institutions facilitate the interaction between people and organizations. Hence, systems of rules—well developed and configured—are a basic prerequisite for markets to run smoothly, but they also provide the basic structure that facilitates sustainable resource management (15–17). While the situation in the Russian forest sector still is very problematic, both in terms of economy and ecology, the Baltic States seem to have found ways to establish a better foundation for sustainability in the management of their forests (18).

In this context, two questions can be raised. Firstly, how can the relative success in the forest sector of the Baltic States be explained in comparison with the Russian situation? Secondly, what lessons would this comparison provide us with in relation to the prerequisites for social-ecological resilience, i.e. how social and ecological systems might work in concert?

For purposes of comparison, we have chosen to concentrate on the forest sector. This approach has some obvious methodological advantages. Russia and the Baltic states are rich in forests (19). A significant part of both Russia and the Baltic countries is covered with the boreal forests. More important, however, is the circumstance that, before *perestroika*, these countries were for more than 40 years part of the same political and economic system (20–22). As a consequence the forest sector was organized in the same, centralized way (23–27). Thus, the forest sectors of Russia and the Baltic states provide an excellent case of “similar-systems design”, i.e. the comparison is based on similar cases (28–30). Both areas share the Soviet heritage, among other things they also were integrated in and thus practiced the same type of forest management; and were endowed with the same type of forest resources. This methodology implies that if we find differences in institutional performance (31) these cannot,

logically, be attributed to the features held by the two cases in common. Hence, it is important to ask what the administrators of forest resources of the Baltic States did that the Russians did not and how these differences could be associated with economic progress and the implications for sustainability.

This article is based on the assumption that the major divergences in functionality of forest sectors can be attributed to the differences in the institutional framework. We will also demonstrate that the prospects for *social-ecological resilience*, as discussed by Berkes, Folke and others (32) are closely related to the configuration of the institutional framework.

In the following section we provide the evidence that there have been significant differences in performance of the forest sectors among the countries of interest. In our case studies, we discuss to what extent the policy-making process that produced these differences has had different institutional frameworks and decision-making environments. We then present an analysis of how different features of the development can be understood in relation to the notion of sustainable management of natural resources. The article concludes with a discussion of the implications that can be derived from the cases.

RUSSIAN PROBLEMS AND BALTIC RESTRUCTURING

At the time of the demise of the Socialist era some 90% of the Eastern European countries' economies relied on the public sector. Together with fundamental changes in the economy, such as the introduction of free competition, and price liberation, changes also encompassed extensive privatization schemes (33). Production can be used as a proxy measure to assess the effects of these policies on the forest sector. From the information provided in Figure 1, it can be concluded that, while Russia has experienced a severe drop in wood production, Estonia has demonstrated a steady increase. The same occurred in Latvia and Lithuania (18). How can these differences be explained?

Figure 1. Harvesting of wood in Estonia and Russia 1990–1999. (Source: Kallas (34), and the IIASA Forest Database).

One possible answer to this question is that the rich endowments of forest lands, in combination with a favorable geographic location, has given Estonia and the other Baltic states a competitive advantage. Russia has, however, been forced to struggle with the survival of the forest sector in densely forested areas such as, Tomsk and Krasnoyarsk, which are distant from both western and eastern markets. This explanation is not suf-

ficient, however. In fact, also comparable Russian regions such as Arkhangelsk and Karelia, with much better geographic locations, show the same negative trend as the rest of Russia (35, 36). For an institutional analysis of the current situation in the Russian forest sector see Carlsson et al. (37).

RUSSIAN PROBLEMS

Institutional performance in the forest sector is not only a matter of wood production. Natural resource management also includes means and methods to prevent devastation or depletion of the resource base. To prevent this, rules and regulations must be developed and, more importantly, stakeholders must be convinced that these apply equally to all and that they, in fact, can be implemented. This is a matter of trust and legitimacy. Obviously, it is not enough to adopt environmental laws without successful implementation. Well-designed institutional arrangements, understood as rules in use, also enable legal measures to be taken against infringements. Considering this context, the situation in Russia is very problematic (38). In fact, it is only because of the relatively low levels of production that the environmental situation is not worse. The current state in the Russian forest sector can be summarized as follows:

- Despite abundant forest resources there is a shortage of timber for the large industries, while at the same time the internal and external demand for wood is weak;
- There is a lack of congruence between central and regional levels of decision-making related to the forest sector;
- The forest management system is poorly funded, e.g. forest fire protection and regeneration programs are severely under-financed;
- Even though new rules of forest management and protection were enacted, there is a general lack of mechanisms for their implementation;
- The timber price is artificially low, transportation fees and taxes are immense, internal and foreign trade is undeveloped;
- Corruption and criminalization of the sector is significant;
- Degradation and devastation of forest resources continue;
- A significant number of firms run at a loss;
- An increase in the practice of barter, rent seeking and a widespread custom of negotiating for privileges prevent the firms from acting as commercial actors and thus promoting the market system (39, 41).

Additionally, in Russia no forest land has been privatised, and to a great extent different officials from the Soviet era have succeeded in keeping or gaining leading positions within the forest industry, management, and trade (42). The basic features of the Soviet forest management system were retained—those in a position to change policy are reluctant to do so due to hidden personal objectives. The Russian forest sector remains based on old Soviet features, which are expressed in a strong tradition of decision-making based on personal relations, in the negotiations for subsidies and tax relief and other means to avoid real restructuring of the sector (37, 43).

Baltic Restructuring through Stakeholder Participation

In what respect does the restructuring of the Baltic forest sector differ from that of Russia. Although Russia became a cornerstone of the Soviet Union immediately after the Russian revolution, Estonia, Latvia and Lithuania were annexed to the Soviet Union as a result of military action during World War II after several decades of independence. Thus, the disintegration of the Soviet Union meant that the Baltic States regained their inde-

pendence. This historical circumstance from the very beginning of the transition period, made the legitimacy of the new Baltic regimes grater than in Russia. This difference also made it possible to re-establish private ownership through the implementation of extensive privatization schemes. These reforms have been generally accepted and have affected agricultural as well as forest sectors. The process is almost completed (45). Similar development has not yet taken place in Russia.

In the Baltic States, the restructuring of the forest sector was to a large extent based on a participatory approach. The main feature of this approach was broad representation of a variety of stakeholders such as bureaucrats, politicians, the private sector, and environmental NGOs in the policy process, thus, giving the restructuring a degree of legitimacy (17, 34). Although the development in the forest sectors of the Baltic States is uneven,

and, there remain differences in the extent to which full participation has been achieved, the fundamental nature of the process is quite different from the top-down hierarchical approach that has been practiced in Russia.

Table 1 summarizes the main differences in the restructuring of the forest sectors in Russia and those of the Baltic States. The political and economic changes in the two countries have affected the forest sectors in different ways.

In the attempt to generalize the logic behind the observed differences, the Baltic changes appear to have been governed by the substantial efforts to reorganize and renew institutions, while the Russian situation reflects a desire to preserve old structures. Why is the situation so different and how can it the fact that the Baltic decision-makers have been able to restructure the forest sector while the Russians have failed so far be explained?

Table 1. Comparison between changes in the forest sector of the Baltic States and Russia since 1991.

Baltic States	Russia
The integrated forest-to-industry system has been dismantled	The integrated forest-to-industry system has been dismantled
Massive privatization of logging companies and industries	Massive privatization of logging companies and industries
Substantial privatization of forestland (in Estonia 52% privately owned, 48% public, Latvia - 45%/51.1% and in Lithuania - 50%/50%)	No privatization of forestland has been done (≈100% publicly owned)
New national forest codes have been enacted	New national forest code was enacted in 1993 (and in 1997)
Change of leadership in forestry departments	No substantial change of leadership of the central forestry authorities
Forest management and control functions were separated and presently are under responsibility of different institutions	No similar change has taken place in Russia
In Latvia and Lithuania forestry advisory boards to the ministers in charge of forest sector were established in order to make top-level forest management decision-making democratic and more transparent	No such activity has taken place in Russia. Forest management is organized virtually the same way and is as centralized as before
Open tendering privatization of timber processing industry with an orientation toward strategic investors independently if the enterprises were acquired by local or foreign capital	Privatization has been a business for insiders, typically former managing directors who took over shares that had been distributed among employees
Due to out-dated technological and management capacity, many firms were forced into bankruptcy. Approximately half of the companies, mostly the ones that were bought up by entrepreneurs from abroad, have been reconstructed and are still in business	Due to the lack of efficient bankruptcy and arbitrage systems, inviable firms continue to operate. The restructuring of the forest firms is insignificant
The split between the State and the enterprises tore apart the Soviet era network relations that had been established between the different Government offices. Subsidies disappeared and private industries were left without any major public support	The very existence of most enterprises in the Russian forest sector is dependent on old relations, widespread systems of tax relief, and other privileges. Barter trade is a common practice and public authorities are heavily involved
The introduction of barrier-free trade, the abolishment of State subsidies, the frequent privatization of industries to foreign strategic investment, has been achieved with the support from the electorate	The majority of the Russian electorate support political parties which in their agendas oppose such policies
Generally, the forest sector is characterized by law and order. Authorities possess means for implementation and enforcement of rules and although violations exist, measures are taken against infringements	Criminalization and corruption continues. Property rights are ill defined, the forest law collides with the constitution, environmental law collides with other regulations

¹ The list is based on our own research (publications are listed in the reference list) and a number of secondary sources, in particular Kallas, (35).

INSTITUTIONAL PERFORMANCE AND SUSTAINABILITY

It is likely that the policy decisions made, for example in the Estonian forest sector, to a large extent were successful because they supported informal but important features of the institutional framework. These features can be understood in terms of trust, aptitude for public participation, legitimacy, acknowledgement of property rights, and the existence of norms and conventions that foster law and order (46). The implicit argument is that the lack of similar qualities explains the problems that still seem to dominate the Russian forest sector.

There is overwhelming evidence for such conclusions. The relatively high level of distrust and corruption in Russia (and many other previously communist countries) is well documented. In these studies, the Baltic States show more positive, picture (47–52). The roots of such differences, e.g. historical development and the assumed high level of legitimacy of political authority in the Baltic states in association with the re-gaining of independence, have already been mentioned.

However, the differences might teach us yet another lesson that relates to the prospects for sustainability. Typically forest ecosystems are complex and dynamic. They have therefore proven difficult to manage using modern systems based on licensing, allocation of catchment quotas, calculation of annual yields, and the management of single species. This type of management was an integrated feature of the planning system in the Soviet Union and is still believed to be fundamental within the Russian forest sector. The same management problems are also found for many types of natural resources that societies try to manage (53, 54).

The political structure of the Baltic States can be characterized by efforts to decentralize management of forest resources. This is clearly expressed by *i*) introducing private forest ownership; *ii*) allowing the private sector on a commercial basis to participate in management of state forest; *iii*) separating control and management functions in state forestry, which in the Soviet system were under the same institutions; *iv*) forcing timber processing industries to purchase wood on a competitive basis. These features of a new system make administration of forest resources complex and dynamic, which in the shift from a previously hierarchical centralized planning economy constitute a great contrast.

While ecosystems obviously are dynamic, our management systems are strikingly linear, meaning that we tend to apply procedures for calculating and “harvesting” maximum amounts of resource units (fish, animals, trees, etc.) with the primary aim to uphold maximum yield rather than to sustain the ecosystems themselves (55). The basic challenge is to develop institutional

systems able to adapt to the dynamics of the ecosystem under focus.

One of the most important concepts for resolving this challenge is that of *resilience*. Resilience is the ability of a resource system to survive disturbances and its capacity to undergo stress and yet to recover, or more exactly, "the ability of [the] system to maintain its structure and patterns of behavior in the face of disturbance" (56). Conventional resource management policies, such as forest management in the former Soviet Union, emphasize stability through equilibrium, low variability, resistance to and absorption of change. In an analysis of the Russian forest sector, the World Bank concluded that the forest management practices of the former Soviet Union left the new Russian Federation with "a legacy of overuse" (2).

Contrary to the conventional resource management approach, management policies based on the ideas of resilience emphasize "events far from the balanced position, high variability, and adaptation to change" (56). These thoughts are grounded in complex systems theory, which provides an alternative to the "perspective of a world in steady state or near-equilibrium that has dominated resource and environmental science and policy" (58). Intuitively, it can be understood that this approach conflicts with a forest management practice that is exercised within political administrative hierarchies and with a major concern to supply industry with wood.

A rather recent but very vital line of research has explicitly focused on the relationship between social and ecological systems. Thus, the concept of resilience has been refined so that it captures the interplay between those types of systems. These ideas have been brought to the public in two influential volumes (32, 58). Social-ecological resilience has three distinguishing features: *i*) the amount of change the system can undergo and still retain the same controls on function and structure; *ii*) the degree to which the system is capable of self-organization; and *iii*) the ability to build and increase the capacity for learning and adaptation (<http://www.resalliance.org/ev.php>). By adopting this attitude, for example, the forests of Russia cannot be separated from the social structures that affect them; they should be understood and analyzed as a unity.

From this it follows that sustainability presumes that social systems, institutions as well as management systems, must have the capacity to respond to changes in the ecosystems, to be adaptive. Following The World Conservation Union we understand adaptive management as "an approach based on the recognition that the management of natural resources is always experimental, that we can learn from implemented activities, and that [Natural Resources Management] can be improved on the basis of what has been learned" (59).

What has been indicated in this article is that, while the forest sectors of the Baltic states have been fundamentally changed, Russia has not been able to develop an institutional framework that would fit the prerequisites for social-ecological resilience. In fact, it can be concluded that in Russia, the old institutions have shown a significant resilience, they have succeeded in adapting to new circumstances and have retained their basic features. Thus, it can be assumed that the Baltic restructuring, with its incorporation of different interest groups and an explicit move towards transparency in management of natural resources, provides a better foundation for social-ecological resilience.

CONCLUSION

As discussed by many scholars, every management system is incorporated into a wider institutional framework (16, 17, 60). Consequently, all forest management systems are composed of

a hierarchy of units and of a rich web of rules and regulations (formal as well as informal) that ultimately determine what can be done or not at the national, regional and local levels. Thus, management decisions on an operational level depend on collective decisions taken on municipality or county levels, which in turn are subordinated by central political-administrative decisions as well as constitutional considerations. This has a number of implications for public administration and management. How should a Russian (or Estonian, Latvian or Lithuanian) forest management system be tailored as to make it possible to span the multiple levels of institutions and facilitate sustainable management of forest resources? One way of achieving adaptive capacity is to develop systems that are based on the ideas of co-management, i.e. systems that consist of a set of mutual agreements between different stakeholders that may represent a variety of actors such as local users, scientific experts, and public authorities (61, 62).

Co-management systems have proven positive in many respects, especially for enhancing adaptive capacity (60, 63, 64). One major advantage is that, due to the incorporation of various stakeholders and thus qualifications, as was the case in the Baltic states, well functioning co-management systems establish cross-scale linkages across different levels of administration as well as between geographically separated areas, smaller and bigger management units, and so forth (62, 65). A successful establishment of these linkages has proven important when managing complex and dynamic systems such as forests.

Only to the extent that suitable institutional frameworks are developed will social-ecological resilience be a significant feature of the natural resources management in the former communist countries. A sustainable development requires institutional frameworks that have the capacity to adapt and learn, and thus to treat policies as experiments that are constantly assessed and readjusted. This, however, requires a participatory approach and in this respect the Baltic States seem to be on a more promising track.

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