

Environmental degradation in Russia – reasons, prospects, examples

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If we compare the planet with a communal apartment, we occupy the dirtiest room.

- Aleksei Yablokov,
environmental adviser to President Boris Yeltsin

ABSTRACT

The activities of the Soviet period left big environmental damages behind. Former managers and ministries did not deal seriously with environmental deterioration caused by industries. Thus vulnerable environments emerged and population of many regions still have to cope with dangerous properties.

Contemporary environmental problems reach from soil erosion to dangerous effects of untreated high-level radioactive waste disposal.

There are several strong reasons for environmental deterioration that are related to seven decades of Soviet central planning and development. This paper examines some of that main reasons, gives examples of naturally irreparable regions in Western Siberia, looks at environmental education as a medium that ‘brings’ people to see and understand their environmental surroundings, and gives prospects for environmental management in Russia.

1 INTRODUCTION

In Russia the components of the ecosphere are seriously degraded. Renewable resources such as forests and rivers have been poorly managed. Air, water and land resources are all highly polluted (Pryde, 1997, p. 131). In addition over-hunting and poaching have taken a toll on wildlife.

The primary cause of those effects lies in the maximising production levels of the former Soviet Union. Economic growth was obtained by constantly boosting inputs such as natural resources. The Soviet government sought unfettered, rapid economic growth and military might – a quest that befouled both air and water, impoverished the country’s farms, and poisoned the land with toxic waste and radioactive fallout (Peterson, 1993, p. 1).

The following letter from an inhabitant of Ventspils, an Baltic town in Latvia, describes life with a local petrochemical plant.

Do you know that in the kindergartens of Ventspils the teachers instruct the children how to don gas masks.... Every resident of Ventspils has a gas mask; in case of an accident the following recommendations have been worked out: sensing a chemical smell, people must run in the direction opposite of the wind to a predetermined meeting place. But the wind usually blows from the West – we most likely will have to run into the sea (Peterson, 1993, p. 3).

Environmental problems are also created by continuing environmental degradation and coupled with the weakness of current institutions responsible for environmental protection.

2 PROBLEM REGIONS IN WESTERN SIBERIA

To help analysts and policymakers evaluate the seriousness of environmental conditions around the country a classification that defines three states of degradation was developed: conflict, crisis and catastrophe. The first category, conflict, refers to areas principally affected by a form of environmental degradation that is usually reversible such as agricultural lands characterized by widespread overgrazing and intensive cultivation. The second category, crisis, refers to regions in which the destructive activities of the economy have so affected the local ecosystem that, even under strict protection, its recovery would take decades or even centuries. Those crisis regions include lakes and rivers that have been choked with wastes and contaminated runoff such as Lake Baykal or Lake Ladoga.

The worst category – catastrophe – refers to regions where conditions are so severe that specialists have written them off as irreparable. In Siberia the Kuznetsk Basin is classified as such a region. (Peterson, 1993, p. 6/7).

Map 1 shows the distribution of sixteen critical environmental areas within the area of the former Soviet Union.



Map 1 Environmental problem areas in the former Soviet Union (Source: Pryde, 1997)

In Siberia two regions are particularly affected. Those are the industrial region in Kemerovo Oblast, indicated with number 12 and second the Lake Baykal, indicated with number 13.

Two big industries of the former Soviet Union are located in the Kemerovo Oblast, coal production in the Kuznetsk basin and the iron and steel centre in Novokuznetsk. The properties that are left behind the coal-production are acid drainage that has polluted local surface water resources and a lowered water table caused by mine water pumping. The environmental effects from the metallurgy are more severe than those mentioned before. The air pollution produced in Novokuznetsk was one of the worst in the former Soviet Union. Additionally the smelters have been responsible for widespread degradation of forests and tundra, contamination of soil and surface water with metals, and accumulation of slag and tailings. And the most threatening fact is that hazardous waste disposal areas present a long-term environmental challenge for the region (Peterson, 1995, p. 302).

The ecological conditions of Lake Baykal were changed by excessive timber harvesting along the hills. Polluting timber processing pulp mills led to the deterioration of water quality. At present the pulp mills are still operating.

Other environmental impacts in West Siberia are caused by the electroplating industry that, together with the concentration in the Ural, accounts for 75 percent of the plating waste (sludge that contains highly toxic chromium and mercury, among other compounds) produced by the entire country.

Russia's most important oil and gas region is in Tyumen Oblast concentrated. It accounts for two-thirds of Russian oil production. The environmental impacts that are still remaining are caused by accidents along oil and gas pipelines and the expanding network of pipelines. Oil spills have been estimated at 10 million tons annually. Consequently many rivers are contaminated (Tobol, Ob, Tom), a huge area of taiga forest died and reindeer population declined. All in all one can say that seven decades of energy extraction in Western Siberia led to a degradation in environmental quality. The most obvious effects can be summarized by:

- direct contamination of water bodies from spilled oil and brine along pipelines
- heavily stressed native forests
- deterioration of local air quality
- altered hydrology conditions.

3 THE WAY TO DETERIORATION OF RUSSIA'S ENVIRONMENT

The state of the Soviet Union was the ultimate property owner in the system. Thus it assumed liability for environmental mishaps and thereby encouraged high-risk and hazardous development. Managers routinely ignored quotas and guidelines for resource conservation and environmental protection. The leadership encouraged growth at any expense. Environmental controlling issues were completely ranked as minor concerns. Responsibility for carrying out the government's modest environmental initiatives was divided among several ministries and state committees that often had priorities other than protecting the environment (Peterson, 1993, p. 14). It seemed easier to continue paying fines for exceeding the emission standards than to interrupt production to install and maintain control technologies.

The philosophical belief of Marxist ideologists that there could be no unwise use of natural resources under socialism only added to the problem (Pryde, 1997, p. 131). It was argued with poor assumptions. For example natural resources *in situ* were assigned no value and a centrally planned economy was viewed as more environmentally responsible than an economy based on private enterprise.

The emphasis on industrial output resulted in misuse and unproductive use of resources. Soviet planners gave low priority to environmental protection measures. Rivers, lakes, oceans, lands and the atmosphere were managed for short term gain, with focus on convenience and low expenses. Substantial waste had a severe impact on the once-bountiful natural resources base. Consequently fundamental problems of economic and environmental management resulted in an unhealthy natural environment and widespread environmental degradation. On the other hand bad environmental conditions caused or contributed to illnesses such as allergies, nervous disorders, gastroenteritis, hepatitis A or bacterial dysentery.

In the 70s the Soviet Union was acknowledging serious environmental abuses, but these problems were understated, poorly documented and little publicised. A change in the focus on environmental problems was introduced by two events. The first was the explosion at the Chernobyl nuclear power plant in 1986 as the world's worst nuclear power accident, resulting in radioactive fallout, soil and vegetation contamination and uninhabitable and unfarmable areas that were left behind. The second was the initiation of Gorbachev's policy of glasnost. From that point greater attention was put on governmental mismanagement and neglect by public and media. It followed publications of a number of official reports.

The net result was that environmental protection existed in name only.

The causes of environmental difficulties in the former Soviet Union can be summarized by:

- extensive industrial base: legacy of heavy industries, mining, oil and gas production, nuclear power stations
- short-term economy structures (first: emphasis on rapid heavy industrialization and militarization, second: reliance on measures of physical output rather than value)
- no incentive to reinvest and upgrade capital stock, no modernization process
- concentration of industrial enterprises within specific regions → localized pollution.

4 POST-SOVIET ENVIRONMENT

The restructuring process since the initiation of glasnost in the 1980s has been driven by a decline in state orders for industrial production, most importantly for defence needs. Structural changes have tended towards market liberalization and political decentralization due to economic, social, political and environmental regionalization and sector orientation instead of spatial orientation. The necessity of de-industrialization in order to improve the environmental quality was recognized.

The domestic visibility of environmental problems was raised by NGO advocacy of environmental improvements, media coverage and official recognition of environmental problems (Wernstedt, 2002, p. 494). Nevertheless environmental protection efforts were complicated to carry out. The nosedive of the Russian economy of the 1990s resulted in revenue problems. Thus the budget of environmental management agencies diminished. In 1999 federal budget allocations to the principal environmental protection agency in Russia were less than one-quarter of the amount requested. The same funding shortfall is transferable to environmental monitoring programs.

The changes in the 90's described above confirm a trend toward increased natural resource exploitation at the national level. Thus the following characteristics summarize the environmental situation after one decade of changes:

- continuing deterioration of environmental quality
- resources fall short of demand
- declining resource productivity
- fragmented environmental policy
- unstable institutions.

Transformation of environmental institutions

The responsibilities of environmental protection changed from the Soviet Union to the late 90's. To get a better understanding of today's environmental management in Russia and its problems it is essential to know about administrative regulations were enacted during this period of time.

Prior to the mid-1980s ministries and agencies were responsible for environmental protection. Glasnost and perestroika in the mid-1980's increased the pressure to address environmental degradation. In 1987 the Law on State Enterprises was established with the goal of decentralization of some of the responsibilities for environmental performance, the institution of more rational use of and payment for natural resources as well as more responsibilities in individual enterprises. In 1988 the Union Committee for Environmental Protection was founded. Its aim was the regulation and enforcement of environmental standards, management of 'nature protection' and co-ordination of the environmental activities of the ministries and agencies.

In 1991 the Union Committee for Environmental Protection was transformed to the Russian Federation's State Committee for Environmental Protection (Goskomekologiya).

Goskomekologiya had responsibilities for the following tasks:

- development and coordination of federal environmental policy
- management of environmental impact assessment processes
- management of nature reserves and parks
- environmental quality monitoring and reporting
- international environmental cooperation.

In the same year the Law on Environmental Protection provided a legal basis for pollution charges and 'environmental funds'.

In 1993 Goskomekologiya was elevated to the Ministry of Environmental Protection and Natural Resources. The Ministry of Natural Resources (Minresursov) has been promoting resource development and by law is responsible for issuing licenses to firms seeking to develop natural resources. (Peterson, Bielke, 2001, p. 65-66).

In 2000 Goskomekologiya was eliminated and its responsibilities were placed in the Federation's Ministry of Natural Resources.

5 PRESENT SITUATION

The economic implications of the ongoing dissolution of the environment can be summarized by the following points.

Resource rich regions which take part in the international market continue to exploit raw materials and thus continue pre-existing problems. The former republics of the Soviet Union are now responsible for funding its own environmental problems. Unfortunately many of them give priority to economic development. Thus environmental indices fail to improve and environmental deterioration retains. This shows that external help may help but foreign corporations might be even less concerned about the local environment than would domestic enterprises (Pryde, 1997, p. 139).

Another problem which occurs with the new nations refers to the management of natural resources that are scarce within a certain republic. Instead of importing such resources some republics explore more marginal stocks of similar resources within their own borders. Due to this fact they save importing costs but at the same time threaten the environment (Peterson, 1995, p. 307).

In present-day Russia a civil society and the rule of law and its effective enforcement are weak. Table 2 shows the focus of environmental management after one decade of political change. From that the main problems in current environmental decision making can be recognized. One of them is the limited capacity for the effective enforcement of laws.

There has also been a big gap between theory and practice as far as the public's right to environmental information is lowered. Laws provide citizens the right to request information regarding pollution as well as legal standing to assist state agencies in providing environmental protection. But still there are application restrictions due to classification of data based on security concerns and bureaucratic turf battles (Wernstedt, 2002, p. 507).

Table 1 Interview results from NGO members at the Second All-Russia Congress on Nature Protection in Saratov, June 1999 (after Wernstedt, 2002)

Most important factors for resource protection or pollution control	
Legal requirements	89 % ¹⁾
Scientific justification	68 %
Views of local public	43 %
Reduction of risk	38 %
Implement ability	24 %
Priorities for improving environmental policies	
Improved legislation	66 %
Increased education	52 %
Increased public involvement	41 %
Improved enforcement	34 %
Increased use of market incentives	34 %
Most effective NGO activities	
Media coverage of environment	52 %
Public education	44 %
Improved scientific decision base	44 %
Protection of natural areas	40 %
Environmental research	40 %
Frequency of work between NGO and the following groups	
Scientists	70 %
Other Russian NGOs	42 %
Educators	40 %

International NGOs	38 %
Local public	30 %

1) Each data totals 100.

Furthermore environmental decision making still depends on cultural traditions. One of them is the reliance on technical solutions and exclusion of non-experts that NGOs are fighting against. At the regional level hierarchical regimes dominate. That leads to limited action through education of local officials, lobbying and environmental rehabilitation. But problems also derive from the composition of environmental NGOs. Many of them are made up of predominantly scientific and technical experts. Consequently interest and expertise in policy analysis among NGO activists and the connection between NGOs and the communities have been limited and weak.

6 PROSPECTS OF ENVIRONMENTAL IMPROVEMENT

The opportunities for environmental improvements refer predominantly to environmental management requirements. One of the fundamental improvements will be reached by reshaping of Russian institutions. This includes:

- establishing more competitive real-market relations
- establishing a rule of law
- decreasing corruption
- implementing a tax code that is transparent
- instilling as sense of environmentally responsible behaviour in businesses and individuals (Wernstedt, 2002. p. 512).

Furthermore it should be taken advantage of market incentives for environmental protection and construction of a civil society and community involvement. Particular attention should be given to the role of non-governmental organizations (NGOs). Placing NGOs on a solid legal and tax footing within the Federation of law and codes is a long-sought goal. At present a clear legal foundation for NGOs is lacking. Thus their legitimacy needs to be strengthened to stabilize their prospectively work.

Another prospect for environmental improvements is international environmental assistance. Over the last decade the state and non-governmental sector of Russia has been furnished with more than 1 billion US Dollar for equipment, training and funds for several supports. Much of this assistance has drawn on the next-generation model for environmental management. The concept of this model refers to a web of self-organized, pluralistic, independent institutions that can serve as a counterpoint to the traditional hegemony of the state. It includes a respect for and protection of individual rights and freedom, adherence to democratic values, participation in civic affairs, respect for diversity and pluralism and opportunities for empowerment. But in contrast over decades Russia has been determined by traditional command-and-control efforts and a society based on a rule of law with limited government and sovereign citizens enjoying a comprehensive set of civil rights. Thus it seems obvious that the next-generation model is applicable in Russia but only with limited goals. (Wernstedt, 2002, p. 500).

The work of environmental NGOs

One of the largest NGO in Russia is the Socio-Ecological Union (SEU), headquartered in Moscow. There are many more similar organizations that act at the local and regional level, mostly with a focus on one particular problem. Local or regional groups may be more relevant to the daily environmental life of many Russian citizens than distant actors. In that way grass-roots support can be given to environmental efforts, through campaigns for local referenda, organized protests or promotion of healthier local environments. Another important part of their work is environmental education. The citizenry needs to be informed about the necessity of environmental action to foster citizen activism and consequent governmental improvements. There are many examples at environmental education activities. It includes information-resource, educational methods, nature protection, ethnic ecology and ecological tourism. In the Baykal region there are several educators who do environmental education. The tourist environmental education school in Severobaikalsk does monitoring, seminars, expeditions, walking, environmental investigations or urban ecology tasks.

There are highly motivated people who realize the need for public involvement. But all in all only 5% of Russians participate in public organizations and nearly 75% say they have no interest in doing so (Wernstedt, 2002, p. 513). On the other hand environmental education activists suffer from diverse problems. Dr. Nina Dagbaeva from the Baykal Institute mentions the following:

- lack of elaborate standards
- insufficient development of biodiversity preservation in the functioning/ existing curriculum
- lack of manuals and information, methodical literature of high quality
- insufficient orientation towards local ecological problems and their solutions
- poor financing (teachers do not get paid for months!)
(<http://www.globalnature.org/biodiv/envedu/baikal.htm>).

7 CONCLUSION

Table 2 Concepts and experiences in Russian environmental management (Source: Wernstedt, 2002)

Element	Concept	Experience
Market mechanisms		
Institutions	State institutions sufficiently established to administer incentives to economic actors	Not enough expertise in environmental agencies to do economic analysis, costs of actions seen by many as low concern, environmental agencies less influential than finance and economic agencies
Incentives	Incentive systems sufficient to alter behaviour of economic actors	Fines and fees set too low to alter behaviour, environmental agencies depend on fines/ fees as revenue source
Civil Society		
Deterrence	Legal penalties sufficiently harsh to deter negative behaviour by environmental actors	Implementation of laws and regulations not a high priority, poor record of enforcement and collection of fees and fines
Credibility	Threats posed to environmental actors by penalties are credible	Widespread corruption in enforcement of regulation, laws are 'aspirational' and not expected to be met
Monitoring	Capability to monitor actions of environmental actors is well established	Vast area to monitor with limited funds, focus on ambient conditions rather than discharges

Information and community involvement		
Collection	Relevant information for community actors is collected in a timely fashion	Access restricted for many users, costs of information are prohibitive
Public involvement	Opportunities for community actors to use information to participate in decision making	Tradition of top-down, hierarchical decision making, reliance on scientific and technical experts
Coalitions	Ability to build coalitions of community, economic and environmental actors to advance mutual agendas	History of weak coalition building, limited experiences among NGOs in working with broad coalitions that include local governments and industry

The changing characteristics of Russia's economic activity have undoubtedly altered the pressures being placed on the wider environment. Additionally the process of restructuring has been positive effects on short-term environmental problems, such as air pollution. Nevertheless, quick improvements in environmental management are not likely to be realized and long-term problems, such as accumulated hazardous waste dumps and groundwater contamination, will not be mitigated by restructuring (Peterson, 1995, p. 306).

A health economy depends on an intact environment. Consequently it is necessary first to deal conscientiously with the consequences of seven decades of Soviet activities and second to build up reliable agencies for sustainable development. That requires concurrent political reforms, public activism and an economic upturn. The alternative continuing to place economic considerations ahead of environmental ones, is an unwise choice in long-term thinking.

All in all prospective environmental management strategies are a difficult tightrope act when enterprises face market pressures and citizens search for meaningful ways to be civically engaged in the face of day-to-day economic pressures.

The lack of funding is an obstacle especially for NGOs. Thus partnering with local enterprises and joining with local citizens, religious groups, elected officials and government bureaucrats are essential in an environment where capital is a key driver of decisions and where courts of law lack independence (Wernstedt, 2002, p. 513). Consequently the keys for successful NGO work are long-term assistance, public relations and coalition-building skills. Additionally Russian NGOs might gain from the knowledge, experience and creative energy of western NGOs.

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