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## Russia and International Environmental Co-operation

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### Changes in Policy and Institutional Framework of Co-operation

Following the disintegration of the USSR in late 1991 Russia has become its legal successor in various international environmental agreements. Currently it is a member of nearly one hundred international accords on nature and resource protection and conservation. Approximately seventy of these are multilateral and the rest bilateral. Russia participates in the environmental activities of international intergovernmental and non-governmental organizations, in their co-operative research programmes.

Significant changes are under way in the policy and institutional framework of Russia's international environmental co-operation. However, the system of co-operation is still far from its final form, and is of a transitional character. In large measure it reflects the serious political and economic changes initiated in Russia during 'transformation'—a transition from a totalitarian to a democratic state, from a command-based to a market economy. Environmental co-operation today represents a conglomeration of new and old approaches, of changing tenets, perceptions, and concepts. It involves both the inertia of older days and an impulse towards the new; disillusionment with the past and a desire to escape from it. A set of different factors defines the general framework of co-operation and shapes its structure, as well as new potentials for the development of co-operation and its limitations.

*Perestroika* followed by 'transformation' in Russia marked a turning-point in the environmental co-operation system. In particular, national and international environmental policies abandoned the ideological and institutional framework of a totalitarian regime. A new basis for international co-operation with the West was under formation. Progressive environmental policy started taking shape, with restructuring of environmental management, adoption of new legal and economic mechanisms, and an upsurge of the environmental movement and environmental *glasnost*. Environmental policy became decentralized, with wider rights granted to the regional and local levels. New independent environmental institutions have now been created in Russia, destined to represent Russian interests in international environmental co-operation.

However, there are also serious limits to the effectiveness of international environmental co-operation. The development of international environmental co-operation between Russia and the West has been defined largely by an inertia acquired back in Soviet totalitarian times, when the major reasons for active participation in co-operation lay rather far from a true environmental involvement. These goals were mainly of a declarative character, highly politicized in their essence, and tightly integrated into the foreign policy priorities of a communist state. Numerous international environmental commitments were undertaken by the Soviets without any in-depth evaluation of their effects on the national scale, of the possibilities for compliance, and the opportunities they might present—in balance, of real environmental interests. Some former institutional characteristics and perceptions continue to have an impact on the system of international environmental co-operation, which is still, as mentioned, in a transitional phase.

It is not only the legacy of communism that shapes Russia's major problems in the field of international environmental co-operation today, and the implementation of international environmental obligations. The 'transformation' process has, in addition to its positive effects on environmental policy formation, had certain negative implications for ecological stability in the national scale, as well as for international environmental security. It has imposed certain limits on environmental problem-solving in Russia, and on the effectiveness of Russia's participation in international environmental co-operation.<sup>1</sup> Due to the general weakening of state authority during 'transformation', the state has seen a sharp decrease in its potential for effective action in the field of environmental protection, and this in turn negatively affects the prospects of international environmental co-operation. Industrial production has plummeted (by as much as 50 per cent in 1994 compared to the 1990 level), thereby limiting the financial opportunities of the state for implementation of its national and international environmental policies. Investment has come to a standstill, largely as a result of extreme inflation. Subsequently, the processes of structural changes in the economy, the introduction of clean technologies, and the installation of purification facilities have been frozen. Domestically there seems to be a widening gap between Russia's recent progressive intentions in international environmental co-operation in

general and in dealing with global environmental changes in particular, and their implementation under the current situation.

During the 1990s Russia has also become involved in the UNCED (United Nations Conference on Environment and Development) process. This has had a considerable influence not only on its national environmental policy, including adoption of the concept of sustainable development among its priority goals, but also on strategies towards participation in international environmental co-operation towards solving the major issues on the global environmental change agenda.

How can we evaluate the recent modifications in the political, ideological, institutional, and economic framework of Russia's international environmental co-operation? It seems that in general environmental issues are beginning to rank higher on the national scale of priorities (despite some short-term fluctuations). Environmental issues have been depoliticized, and are becoming more independent of other goals. We cannot yet say that they are playing the major role in the political and public life of contemporary Russia, that they do in Western societies. However, the clear increase in the significance of environmental issues and of the international environmental agenda indicates that important systemic alterations are under way in this country.

Recently there have been institutional changes in the framework of international co-operation. Under the previous total supremacy of the state under communism, no social function (no matter how important) not performed by a special governmental institution had any chance for realization. Throughout practically the whole Soviet era Russia's natural endowment was not represented institutionally within the structure of power. It was considered that the industrial ministries that exploited natural resources and the environment were to protect them as well. In fact, within this system ministries were over-exploiting natural resources, polluting the environment—and regulating themselves in their own activities. There was no specialized state institution to protect nature, nor any specialized institution dealing with issues of international environmental co-operation.

As a result of *perestroika*, major institutional changes were undertaken in this field. The State Committee on Environmental Protection was formed in 1988, and that meant that control functions over polluters and resource-users were withdrawn from the latter. The Committee became responsible for co-ordinating international environmental co-operation, as other ministries had transferred their functions of regulating the implementation of international environmental agreements. Thus, the environmental management function acquired its independence. Later on, during 'transformation', sectorial industrial ministries were dismantled in Russia, while the State Committee on Environmental Protection

saw its status raised, and was turned into the present Ministry of the Environment and Natural Resources. A 1994 statute underlines its special institutional role in the regulation of international environmental co-operation. The ministry is to be in charge of the implementation of the country's environmental obligations as result of Russia's participation in environmental conventions and accords, and in activities of international organizations; moreover, international activities of other governmental bodies in the sphere of the environment and resource use are to be co-ordinated with the ministry. Currently a special inter-agency body is being established within the ministry with participation of other governmental organs. It is to be responsible for the implementation of international environmental projects with participation of the World Bank and other international financial organizations. Following the decentralization of environmental management in Russia, a considerable amount of environmental ministry competence was transferred to regional and local organs. This meant greater opportunities for foreign partners to establish closer environmental co-operation at the local level.

The introduction of a new system of economic mechanisms of environmental management in Russia has also spread to the sphere of international co-operation. Charges and fines for pollution and resource use are being applied to solving not only domestic environmental problems, but global ones as well. Carbon-dioxide emission charges are now being adopted in Russia, together with a system of fees for the production and consumption of ozone-depleting substances. These are meant to induce enterprises to finance industrial restructuring and to switch over to alternatives to ozone-depleting substances.

New actors—-independent producers, non-governmental organizations, the mass media—that were previously totally controlled by the state, have appeared on the national arena. It is inevitable that the structure of interests that they represent and implement in the environmental sphere will change. This issue is of high importance, especially for the West trying to create new patterns of co-operation with Russia. Previously environmental interests were suppressed. With democratization, they are being gradually realized and revealed. We may expect them to take shape in the sphere of international environmental policy in the near future, associated with a return to the normal international practice of identifying and protecting national interests.

Such a return to conventional practice would help to enhance the predictability of Russia's international environmental policies, making it dependent on ecological imperatives, not on exogenous pressures. That would have a positive effect on international environmental co-operation with Russian participation. On the other hand, one should

take care not to view the future prospects associated with these changes through rose-coloured spectacles. Many obstacles still exist. One of them lies in the deep-rooted habits of Russian bureaucracy, and in its aspirations to control completely the processes within its competence. Without constant assessment and pressures from the democratic public on the bureaucratic apparatus, serious failures are possible.

### Goals and Strategies of International Environmental Co-operation

The early 1990s have been marked in Russia by the formation of new strategies of environmental co-operation, developed within the framework of significant modifications in environmental policies. These strategies have been normatively fixed at the governmental level in a number of official documents. Basic among them is the Law on Environmental Protection (19 December 1991), the first in the history of the country. It envisages that in its environmental policies Russia will proceed from the necessity to provide international environmental security and the development of international environmental co-operation. The following major principles are to guide national approaches in this field:

- every state has the right to use its environment and its natural resources for purposes of economic development and providing for the needs of its people;
- the environmental welfare of one state cannot be provided at the expense of others;
- the economic activities of a state should not damage the environment within and beyond its jurisdiction;
- any activity with unpredictable environmental consequences is inadmissible;
- global, regional, and local control should be provided over the state of the environment and changes in it;
- free international exchange of ecological information and environmentally safe technologies should be maintained;
- states should provide mutual assistance in case of environmental emergencies;
- all environmental disputes are to be settled by peaceful means.<sup>2</sup>

Article 92 of the Law, in which these principles are set out, has a declarative character, announcing the state's obligations towards its public and to the international community to work towards environmental security. The major principles of environmental co-operation stated there were already established at the international

level (the 1972 Stockholm Conference, the 1982 World Charter on Nature). Russia's environmental law was adopted in the midst of the most romantic period of reforms; as a result, some of its provisions, including those dealing with the issues of international co-operation, are characterized by a certain detachment from hard reality. For instance, if principles of environmental damage or of exclusion of environmental risk are to be executed in practice, then Russia will have to halt a greater part of its economic activities.

As yet, no final concept for Russia's participation in international environmental co-operation has been shaped. The Ministry of the Environment has indicated in the major federal programme, 'Environmental Security of Russia', that it is necessary 'to work out a concept and prior directions' for Russian participation in international environmental co-operation during a period of transition to a market economy, as well as 'major measures to provide compliance with international obligations in support of international environmental security'. Though these goals were set by the ministry early in 1993,<sup>3</sup> as yet no results of its efforts on the issue have been announced.

Today the UNCED process provides the framework for the elaboration of conceptual designs and strategies of Russia's international environmental co-operation. Participation in UNCED preparations was initiated by the Soviet Union, and Russia as its successor took part in the Rio Conference (in which seven states of the former USSR participated) and in the implementation of its provisions. The UNCED process has had a rather strong impact on Russia's environmental policies and strategies. During UNCED, Russia signed the Convention on Biological Diversity and the Framework Convention on Climate Change, and supported *Agenda 21* as well as principles of rational use, conservation, and utilization of forests. Russia is also a member of the Commission on Sustainable Development. After the Conference, Russia held parliamentary hearings on the implementation of the Rio provisions in 1993. Institutional structures—an inter-agency commission on the realization of UNCED provisions—were established, and mechanisms for control over their adherence are being instituted.

Russia is one of few countries to adopt a national action plan on the issue—the National Plan of Action for Realization of the UNCED Decisions'. This serves as a basis for Russia's domestic efforts to provide sustainable development, and it incorporates major items of strategies and concrete measures in environmental protection along the lines fixed in *Agenda 21*, with sections on environmental management, international co-operation, environmental education, priority measures to improve the state of the environment, and mechanisms for realization of the plan.

The major impact of the Rio process would seem to be that

the concept of sustainable development is becoming a foundation for Russia's environmental policy. According to a recent presidential decree (No. 236 of 4 February 1994), a national programme is to be elaborated on implementation of a strategy of sustainable development. This strategy is to envisage concrete actions and principles of national policy realization both at the domestic and international levels.

A wide range of provisions on international co-operation are conceived in Russia's national plan of action on UNCED implementation. First, it indicates the major directions for realizing the 1992 intergovernmental environmental agreement of the Commonwealth of Independent States (CIS) and for developing international co-operation between the former Soviet republics. Secondly, it notes that the international obligations of Russia within a framework of environmental accords need close integration with other countries, especially European ones; the special role of European ministerial conferences on the environment is stressed. Thirdly, implementation of the UNCED national action plan requires an expansion of foreign financial and technical assistance at the bilateral level and within the framework of international financial organizations, especially the World Bank and the European Bank for Reconstruction and Development.

In evaluating the impact of the Rio process on Russia, V. Danilov-Danilian, Russia's minister of the environment, indicated that the major priorities of *Agenda 21* aimed at providing environmental policy formation in the developing countries, and expanding their environmental activities. Various actions had already been undertaken in Russia in this field, especially regarding its scientific potential, development of environmental protection mechanisms, and environmental monitoring. The minister stressed that the real problem today lay in defining the mechanisms of international co-operation to provide financing for global environmental problem-solving, as well as the formation of national control mechanisms over the distribution and use of financial resources earmarked for this purpose.<sup>4</sup> At the Rio Conference, Russia, together with other countries of Eastern Europe, was accorded the special status of a state in transition to a market economy, with certain privileges granted in financing of environmental measures, in technology transfers, and in financial allocations to international environmental funds. Provisions for the transitional period were reflected in the Russian national plan of action which envisaged modifications in management mechanisms to adapt to a market economy, including a gradual shift from a centralized and strictly controlled system of management to a decentralized one.

In the course of the post-Rio process Russia took part in the 1993 Lucerne Conference on the environment in Central and Eastern Europe, where a programme of action to solve the most urgent

problems in these countries with transitional economies was adopted. Russia has proposed a list of specific sites and territories which need foreign aid in order to improve their environmental situation.

The Rio process has affected and diversified the framework of Russia's environmental activities, especially within the agenda for global environmental change. The process of formulating goals and strategies and undertaking actions is developing—some of these initiated earlier on certain aspects of global change management, and some of them to be shaped in the near future. Together with more traditional issues (ozone-layer protection, climate change, transboundary air pollution), new fields of international co-operation for Russia have emerged. These include protection of biodiversity, conservation of forests, development of nature-protection areas and reserves, environmentally benign destruction of chemical and nuclear weapons, and solving transboundary environmental problems between the states of the former Soviet Union. The domestic implementation of international provisions on these issues requires serious restructuring and behaviour adaptation on the part of various actors. For instance, the domestic realization of the Rio principles on conservation of forests requires certain amendments to Russia's national forestry strategies. It is necessary to increase control over timber-cutting and export, to develop legislative norms for forest conservation, and to adopt a national programme for the conservation and reproduction of Russian's forests. Indeed, these forests account for a quarter of the world's total forest resources and are important in providing ecological stability on a planetary scale. Domestic implementation of the provisions of the biodiversity convention necessitates the elaboration of a national strategy for conservation and sustainable use of elements of biodiversity, including preservation of *in situ* and *ex situ* species, as well as scientific research and specialist training. Particular attention should be paid to establishing mechanisms of access to information on genetic resources and technologies, and national measures to finance the implementation process.

Assessing the first steps which Russia has taken in formulating its national goals and strategies for international environmental co-operation, one might conclude that, despite the abundance of official government documents regulating the country's international environmental co-operation, there is as yet no clear and comprehensive concept on this issue. However, participation in international environmental co-operation is not engaged in for its own sake: it is motivated by the necessity of solving environmental problems at the national and international levels. What major environmental concerns is Russia now facing whose solutions will require such mechanisms as international co-operation? Unfortunately it is still rather difficult to get clear answers to

this question. Several official documents published recently in the press and covering goals and strategies on international environmental co-operation share a common serious shortcoming. Basically, they seem to be mere summary lists of ministerial guide-lines, composed with such remarkable bureaucratic skilfulness as to be reminiscent of the old adage 'a tongue is given to conceal one's thoughts'. In Russia, government documents on environmental issues ought to be expressed in the most democratic way, so that the public can catch their essence. Instead, they often follow the old bureaucratic traditions—in the form of a charade created for the purposes of internal bureaucratic games.

### **Environmental Interactions of Russia within the Commonwealth of Independent States (CIS)**

The disintegration of the Soviet Union had a considerable effect on Russia's environmental co-operation. Fourteen new neighbours emerged, with their specific environmental interests and priorities. Serious problems arose in connection with adherence to the international environmental obligations of the former USSR, accompanied by problems in environmental interaction between former Soviet republics and the settlement of previously latent controversies between them. During the Soviet period these disputes had been mitigated by the central government, which had defined for all Soviet republics their common strategy of participation in international environmental regimes. The approaches of Ukraine and Belarus as UN charter members were co-ordinated with the position of the USSR, so that all of them functioned as a single actor. The central government controlled compliance with international environmental obligations, and determined major directions and implementation patterns for the Soviet republics.

Now new states have acquired sovereign rights over their natural resources and jurisdiction over environmental protection, and are shaping their own independent environmental policy, also in international environmental co-operation. This has resulted in considerable variations in national approaches towards participation in international environmental regimes and adherence to the treaty obligations of the former USSR. Today the implementation of certain environmental commitments is in jeopardy, and the extent of compliance with them is decreasing.

A new set of questions has emerged recently. Russia has declared itself the successor to all international obligations of the former USSR, but what is the actual division of responsibilities between the other new states on this issue? How will the new actors interact, with Russia representing them in international regimes? What is to be the role of the new states in connection with the global environmental change agenda? Will CIS become a member of international

regimes, as is the case of the European Community?

Considerable deviations have become apparent in the approaches taken by the new states towards global environmental changes, especially as regards the issues of global climate change, ozone-layer depletion, and acid rain. Attitudes towards the assessment of global-warming risk are addressed from national perspectives, with consequent variations in response. The distribution of temperature and precipitation patterns as a result of climate change might have differing effects on nature and the economy of the various states. Considerable differences exist in the 'input' of certain states as regards global warming—much greater in the case of the industrially developed regions of Russia, Ukraine, Belarus, and the Baltic states. This means that they would have to bear higher costs to restructure their industries to meet environmental requirements. All these factors affect their attitudes to the emerging international climate-change regime.

The regional prospects of implementing the ozone-layer protection regime within the CIS are rather uncertain as well. After the disintegration of the Soviet Union, the problem of co-ordinating ozone-layer protection activities among the former republics emerged. On the initiative of Russia's Ministry of the Environment, an inter-state co-ordination meeting was convened in late 1992 on ozone layer protection, with the participation of the CIS, the three Baltic states, and Georgia. Issues of compliance with the Montreal Protocol were discussed, as well as those of scientific technological co-operation. Also on the agenda were the problems of other states participating in the international ozone layer regime, and the possibility of joint obligations as a group of states, with mutual obligations, as well as the question of creating a multilateral fund to finance co-operative research. The possibility of establishing a joint co-ordination mechanism within the CIS was indicated. Among the important questions dealt with was adherence to the international obligations of Russia in terms of control over trade in restricted chemicals, including with non-parties. Though the major production and consumption of ozone-depleting substances is concentrated in Russia, various ties exist between the former republics (technologies, raw materials, export and import operations). The amendment to the Montreal Protocol regarding trade restrictions would affect the interests of many of them. However, as yet no solution has been found to the problem of how to modify trade patterns to adhere to international provisions.

A range of interstate environmental problems within the CIS has come into existence. In particular these concern air and water pollution regulations and protection of living resources of the inland seas of the former Soviet Union. New joint approaches are urgently needed to protect the biological resources of the Caspian Sea—including the

elaboration of an interstate agreement between Kazakhstan, Turkmenistan, Russia, and Azerbaijan on fisheries conservation and reproduction, especially sturgeon stocks. Another item on the interstate environmental agenda concerns solving the problem of the Aral Sea by mutual efforts, not only of the regional states, but on a broader basis. As yet there is no environmental protection programme for the rivers and seas of the Arctic basin. Russia needs to regulate with Kazakhstan the issues of pollution prevention in the rivers Irtysh and Ishim, which bring their highly polluted waters from Kazakhstan, and deliver them to the Arctic Ocean. Co-ordination between Russia and Ukraine is necessary to regulate transboundary water pollution in the rivers of the North Donets, and the Desna, and between Russia and Belarus, on the River Dneper.<sup>5</sup>

Various factors define the potential for environmental interstate disputes. In 1993 the local council of Krasnoyarsk in Russia imposed a ban on deliveries from Ukraine of wastes from nuclear power stations for recycling at the chemical plant Krasnoyarsk-2. However, this ban was not called because of environmental considerations: Ukraine had not been meeting its obligations for foodstuff deliveries to Siberia, and in response to proposals for negotiations just kept silent but continued its nuclear wastes deliveries.<sup>6</sup>

Serious disagreements may arise between Russia, Ukraine, Belarus, Moldavia, and Kazakhstan on transboundary air pollution. Russia, for instance, receives ten times more air pollutants from Ukraine and Belarus than it sends in the opposite direction. The major source within the former Soviet republics is Ukraine, with air pollutants export totalling that of Germany and Poland combined (in 1990 its SO<sub>2</sub> and NO<sub>x</sub> exports to Russia accounted for 405,000 and 118,000 tons respectively). Russia is sending to Kazakhstan about twice as much air pollutants as it receives (in 1990, 70,000 and 40,000 tons).<sup>7</sup> The question of regulating this problem within the common Soviet territory had not been raised before. Inter-republican fluxes were not controlled within the Long Range Transboundary Air Pollution (LRTAP) regime, since they were considered internal. Recently they have gained international status, but they are still not regulated. New CIS members not previously members of the LRTAP regime might decide to join. The Baltic states have already declared their intention. As to Moldova, however—a considerable source of transboundary air pollution in Europe—the prospects are still uncertain.

At present, priority is being given to the institutionalization of environmental interactions of new independent states with each other, as well as with the West. Various efforts have been undertaken to co-ordinate their environmental activities. A multilateral interstate environmental agreement was signed within the CIS at the beginning of 1992 (by Azerbaijan, Armenia, Belarus,

Kazakhstan, Kirghizia, Moldova, Russia, Tajikistan, Turkmenistan, and Uzbekistan), which envisages co-ordination of environmental policies and joint financing of environmental programmes. It has laid a basis not only for international co-operation between CIS members, but also for co-ordination and elaboration of joint approaches towards their participation in international environmental regimes. The major goals of this agreement are harmonization of environmental legislation, norms, and standards; co-ordination in introducing economic mechanisms of environmental management; and implementation of joint projects aimed especially at solving transboundary problems. Also foreseen are promotion of environmental monitoring systems, data exchange, a system of national parks, and mutual assistance in case of environmental emergencies. An interstate environmental council and environmental fund have been established for implementation of this agreement.

Several bilateral environmental agreements have recently been adopted between Russia and other CIS members, with the emphasis on co-operation on specific environmental problem areas. In 1992 Russia signed intergovernmental agreements with Kazakhstan and Ukraine on the joint use and protection of transboundary watercourses. However, a long way lies between their signing and actual implementation within the CIS.

### Russia and the Global Environmental Change Agenda

During the final years of its existence the Soviet Union, and thereafter Russia, became involved in the process of international regime formation dealing with global environmental problems—acid rain, ozone layer depletion, and global climate change. In connection with the management of these three environmental risks we may trace different histories and patterns of domestic implementation, and varying results when it comes to fulfilling international obligations.

#### *Acid Rain and Transboundary Air Pollution*

The elaboration of the 1979 Convention on Long Range Transboundary Air Pollution (LRTAP) coincided with the period of East–West detente in the late 1970s. The national approaches taken by the USSR and its readiness for domestic implementation had their national specificities. The major issue was that, due to westerly air currents, the import of air pollutants to the European part of the country was considerably higher than their export across the Soviet Union's western border. The USSR, and Russia within it, were victims of transboundary air pollution. By the beginning of the 1990s about 1,730,000 tonnes of sulphur dioxide (SO<sub>2</sub>) was carried annually across the western border of the

USSR from Europe, whereas five times less was going in the opposite direction. Nitrous oxide (NO<sub>x</sub>) imports accounted for about 930,000 tons, with their export being fifteen times less. The major fluxes originated in Poland, Germany, Czechoslovakia, Hungary, and Finland. The exception was Scandinavia: SO<sub>2</sub> export from the USSR was higher than import, but the situation for NO<sub>x</sub> flows was quite the opposite. Norway and Sweden were net-importers of SO<sub>2</sub>.

A provision envisaging regulation either of air pollutant emissions or their transborder flows was introduced into the convention at the request of the Soviet Union. For the USSR this meant that in order to comply with the Sulphur Protocol, major efforts to reduce air pollutant emissions would have to be concentrated mainly at enterprises situated along its western borders. Only the European part of the country was included in the area covered by the convention. Thus, measures to restructure polluting industries were not to be applied to the industrialized regions of non-European Siberia.

Domestic implementation of this international regime coincided with considerable structural changes in Soviet energy policy. At the end of the 1970s and the beginning of the 1980s the energy sector of the European part of the USSR was in the process of shifting from coal to natural gas and to nuclear energy development. These radical changes in the national energy balance that needed considerable governmental capital investments were not attributable to the Soviet entry into the international regime. Rather, these changes were the result of the impact of indigenous factors—the exhaustion of energy resources in the European USSR, the necessity of their transportation from the north and Siberia, and the shift to cheaper fuel—natural gas, and so on. All these factors served to facilitate for the USSR compliance with the Sulphur Protocol. From the beginning of the 1980s an active national policy for air protection was launched—with adoption of the law on air protection, elaboration of norms and standards, installation of air purification facilities at industrial enterprises, and the compiling of a register of air pollution sources.

Various efforts were undertaken to reduce emissions from industrial enterprises engaged in the production of energy, ferrous and non-ferrous metals, chemicals, and fertilizers that contributed to transboundary air pollution. As a result, SO<sub>2</sub> transborder flows were reduced, and national obligations were met. Sulphur dioxide emissions from the European USSR dropped by 29 per cent during the years 1980–90. In Russia today we can note a 41 per-cent reduction from the base level of 1980.<sup>8</sup> However, these reductions are also attributable in part to the severe decline in industrial production in Russia as a result of economic crisis. In June 1994 Russia became a party to the Protocol to the LRTAP Convention on Further Reduction of Sulphur Emissions.

Nevertheless, despite numerous attempts to solve the problem of reconstructing the non-ferrous enterprises on the Kola Peninsula—major contributors to transborder pollution of Scandinavia—a satisfactory answer has not been found. In 1992 SO<sub>2</sub> emissions from the Severonikel and Pechenganikel smelters on Kola accounted for 300,000 tons according to official figures.<sup>9</sup> In addition to transborder damage, these emissions have an extremely negative impact on the Kola Peninsula and nearby Karelia. Emissions affect about 126 hectares of forests, one-third of the territory of the Lapland biosphere reserve, and residential areas of the natives of the north. At present, consideration is being given to options for solving this problem by the joint efforts of regional states. As a result of a tender invited by the Russian Ministry of the Environment, it seems likely that a Scandinavian consortium of Norwegian and Swedish companies will be involved in this work.

The issue of NO<sub>x</sub> air pollution has not been solved in Russia. Discharges from transport have increased considerably during recent years. This problem is receiving considerable attention in Russia, since these emissions constitute about 41 per cent of the total NO<sub>x</sub> emissions, and there is a stable upward trend. Envisaged for the near future in Russia are measures to control emissions from cars and to introduce new emission standards similar to those in the West, as well as to shift transport to natural gas and to use catalytic converters. It appears that it is much more difficult to control NO<sub>x</sub> emissions than SO<sub>2</sub> discharges. But in the absence of innovations and of control and monitoring over car emissions, the situation might deteriorate further in the future.

### *Ozone Layer Protection*

Over the two past decades the Soviet Union and then Russia have taken an active part in international research activities aimed at ozone layer protection. As a result of monitoring the dynamics of the stratospheric ozone layer, extensive data have been accumulated and analysed. At present a system of twenty-nine monitoring stations is functioning in Russia (forty-three in the USSR), created at the end of the 1950s as a result of the International Geophysical Year. The national system is incorporated into an international one, and there is daily monitoring of the state of the ozone layer over Russian territory. In line with international co-operative arrangements, data from German and Bulgarian stations are used in these evaluations. Operational data exchange on the state of the ozone layer over the Arctic was staged recently between Russia, Finland, and Canada, with Russia responsible for the publication of maps on its dynamics. Regular ozone layer monitoring has been organized on the four stations in Antarctica, and in 1987 this programme was expanded into a co-operative effort with German scientists.

Russia has also participated in several projects within the framework of the World Meteorological Organization and UNEP (the United Nations Environment Programme).

Russia is responsible for about 9–10 per cent of the world's production of ozone-depleting substances. According to official figures in 1990 total production and consumption of ozone-depleting substances including halons accounted for 124,652 tons (with halons alone at 4,242 tons).<sup>10</sup> Russia's Ministry of the Environment has indicated that in 1991 CFC (chlorofluorocarbons) production decreased from the previous year by 16 per cent, and halons by 40 per cent. The main production of ozone-depleting substances in the former Soviet Union is concentrated in Russia (80 per cent), and about 15 per cent in Tajikistan; other producers are located in Ukraine, Belarus, Lithuania, and Latvia.

From the mid-1980s the Soviet Union became involved in work on the formation of an international regime for the ozone layer. After signing the international agreement, a process of domestic implementation was initiated, including institutional formation,<sup>11</sup> organizational measures, and elaboration of responses to the risk of ozone layer depletion. Two national programmes were adopted on this issue: on research into the ozone layer (1990), and on elaboration of technologies of ozone-benign halon production (1992). Attempts to shape national goals and strategies were undertaken at the end of the 1980s. It was decided to approach the task of reducing and preventing the risk of ozone depletion by means of control over production and consumption of ozone-depleting substances, with the goal being first to reduce, and finally to phase them out completely by the year 2000; provision was also made for research and monitoring of the state of the ozone layer.<sup>12</sup> The provision to reduce and then to cease production and consumption of ozone-depleting substances was introduced in Russia's 1991 Law on Environmental Protection.<sup>13</sup>

Nevertheless, practical measures to implement the provisions of environmental law and environmental programmes have been realized rather slowly and ineffectively. Adequate government financing has not been provided, and specific reduction goals have not yet been imposed on target groups. This has resulted in partial adherence to international treaty obligations. According to an official statement issued by the Ministry of the Environment, Russia is currently not complying totally with the Vienna Convention and its Montreal Protocol. In 1992 obligations to reduce production and consumption of ozone-depleting substances were met, as well as the Protocol's provisions on information exchange and scientific research. However, due to the critical economic situation in Russia, the remaining obligations were not fulfilled, it was reported in 1992 at the fourth meeting of the parties to the Montreal Protocol.<sup>14</sup> An

additional set of serious obligations has been imposed on Russia after it signed the 1992 amendments to the Montreal Protocol. Starting from 1996 Russia is to halt completely the production and consumption of refrigerants containing CFCs, as well as exclude all trade in them (at present about 50 per cent of the refrigerators produced in Russia are exported). Experts have warned that it may be difficult to restructure the industrial production completely during the remaining period and to meet international obligations.<sup>15</sup>

Russia is currently in the process of elaborating a national programme: 'Production of ozone-benign refrigerants and compliance with international obligations of Russia to protect the ozone layer.'<sup>16</sup> This programme envisages continuing ozone layer research, including the construction of a model of interactions between the ozone layer, man, and the biosphere, to provide regular monitoring of ozone layer dynamics. It presupposes elaboration of concrete actions to convert Russian enterprises to ozone-benign technologies,<sup>17</sup> collecting and recycling existing ozone-layer depleting substances. However, given the prevailing economic crisis in the country, the prospects of programme implementation would seem uncertain, and a gap might emerge between the programme as it has been elaborated and its actual implementation.

### *Protection of the Global Climate*

Russian scientists have been involved in international scientific co-operation on the global climate (Global Atmosphere Research Programme, World Climate Programme, as well as in world climate conferences, and activities of the International Panel on Climate Change, etc). Since the 1950s M. Buidyko and his school have been engaged in research on global climate change; and their work, especially the scientific results of analogue palaeoclimatic reconstructions, has become famous in the world scientific community. Forecasts of global warming were presented internationally in the early 1970s. The results of analysis of data compiled in Russia for over a century, combined with the results of palaeoclimatic reconstructions, served as a basis for evaluations of global climate change and its impact on a national scale, as well as for the formulation of national responses.<sup>18</sup>

Until recently, the management of global climate-change risk was not a priority item on Russia's national environmental agenda. The specifics of national perceptions of the effects of climate change have defined Russia's approaches towards the problem, as well as towards the formulation of goals and strategies, and participation in the international regime under formation. Russia's attitudes to this issue have been quite similar to those of the USA. According to Russian scientists, there still exists considerable uncertainty in perceptions on the comparative role of

anthropogenic and natural factors in global warming. There are as yet no well-defined answers concerning the consequences of global warming for man and nature on a national scale. For instance, according to the work of M. Buidyko and other scientific assessments, most of the former Soviet territory, and especially areas north of 50°N latitude might benefit from global warming. On a national scale, a 5 per cent increase in grain production is possible due to a predicted increase in the duration of the growing season by ten to fifteen days by the year 2005, and due to the positive agricultural effect of increased carbon dioxide content on crop production. The boundary of agricultural zones might expand northwards because of permafrost zone reductions.<sup>19</sup> On the other hand, there might also be negative impacts of global warming. Due to changes in precipitation patterns droughts might increase, especially in the southern areas, as well as the probability of crop failure. Changes in the permafrost areas might negatively affect engineering constructions.

National approaches to climate-change risk management were formulated by the end of the 1980s, based on the necessity to reduce the negative impacts. The goal was formulated: to stabilize greenhouse gas concentrations in the atmosphere at a level that excludes the negative anthropogenic impact on the global climate, in combination with an adaptation to the risk.<sup>20</sup> After signing the UN Framework Convention on Climate Change in 1992 Russia began to undertake national institutional responses. In 1994 the Interagency commission to co-ordinate national activities on the climate-change issue was established, and Russia has outlined an action plan for domestic implementation of the UN Framework Convention. The plan contains a set of measures, including preparation of national registers of emissions by sources and removals by sinks of greenhouse gases, and making these data available at the international level. Efforts in this direction for nitrous and carbon oxides were undertaken by the former State Committee on Hydrometeorology; similar activities are currently being organized for a broader range of greenhouse gases, including carbon dioxide. Another group of national obligations includes national efforts to limit greenhouse gas emissions and to enhance sinks so that by the year 2000 carbon-dioxide emissions will have been stabilized at the 1990 level of about 650–700 million tons.<sup>21</sup> The national programme foresees elaboration of measures to mitigate the impacts of global warming, as well as measures of industrial and social adaptation. It envisages the development of integrated plans for coastal zone management, agriculture, and water resources, and for protection of regions that might be affected by desertification, droughts, and floods.

A major potential for lowering greenhouse gas emissions appears to lie in the restructuring of national energy production and

consumption patterns. The current energy intensity of Russia's GNP (gross national product) is two times higher than in the countries of Western Europe, and about one-third of the energy resources are wasted.<sup>22</sup> Compliance with Russia's international obligations to reduce greenhouse gas emissions requires considerable investments in restructuring the energy balance. Despite the availability of various modern technologies in the energy, transport, and industrial sectors which might enable a downward trend in greenhouse gas emissions, during the past five years no policy of structural changes in Russia has been implemented, nor have new technologies been installed, due to the lack of financial resources for industrial investment. However, Russia has been granted a certain flexibility in terms of time-scales and emission-level reductions, by classifying it as one in a group of states with economies under transition. In recent years, a 7–10 per cent drop in carbon-dioxide emissions in comparison with the 1990 level has been noted in Russia as a result of lower industrial production. Russia would seem to have considerable prospects in international co-operation on the global warming issue connected with enhancing its greenhouse gas sinks, and especially through conservation and reproduction of its vast forest resources. According to figures from the Russian federal forestry service about one third of the national anthropogenic carbon-dioxide emissions are absorbed by the Russian forests.

### Concluding Observations: New Prospects, New Potentials

Although Russia has undertaken a progressive reshaping of its environmental policies, serious difficulties still remain. It will not be easy to solve the problems not only of compliance with international obligations, but also of the national implementation of international environmental agreements. The situation is defined by a wide range of political, socio-economic factors deeply rooted in the specifics of the transitional period in Russia.

The recent weakening of state authority has had extremely negative consequences for Russia's adherence to its international obligations. Due to the lack of adequate administrative control, environmental standards and norms adopted in compliance with international provisions are being violated. Weaker border controls, and higher levels of poaching in the country result, for instance, in increased non-compliance with the obligations undertaken under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

A certain shift can be noted towards giving priority to solving urgent environmental problems on the national and local scales, rather than problems of a global character. According to data from the early 1990s, practically none of

the 750 non-governmental environmental groups registered in the former Soviet Union indicated global environmental protection among their established goals. Their activities were focused instead on regional and local environmental issues.<sup>23</sup>

A crucial limiting factor is the lack of financial resources for domestic implementation of international obligations. Russia's 1994 federal budget allocates for environmental purposes about 0.6 per cent of its spendings, or about 0.15 per cent of GNP. Moreover, it seems that this downward trend in state financing of environmental activities will continue. Currently about one-tenth of the environmental programmes of the Ministry of the Environment receive funding. Only 37 per cent of the envisaged financial resources were actually allotted in 1993 to the major federal environmental programme 'Ecological Security of Russia'.<sup>24</sup> This deficit of federal resources for environmental purposes is accompanied by a crisis situation concerning capital investments in the environmental sphere. As a result, the installation of purification facilities and modern resource-saving technologies has been reduced considerably during recent years. Financial shortages are a major factor in Russia's non-compliance with some provisions of international environmental commitments. This was illustrated in connection with the violation of the international ozone layer regime, and with restructuring the non-ferrous industries of the Kola Peninsula to reduce SO<sub>2</sub> emissions as agreed under the international Long-Range Transboundary Air Pollution regime.

The current domestic financial deficit means that the outlook is serious for environmental problem-solving associated with international environmental co-operation in various forms. Here we could mention the special environmental loans from the international financial institutions, especially from the World Bank and the European Bank for Reconstruction and Development. Recently the World Bank agreed to an environmental loan to Russia for US\$65 million. Within the World Bank, much attention is paid to projects at the regional and local levels—about 80 per cent of the financial resources allotted by the World Bank for elaboration of Russia's national environmental strategy is to be provided at the local level. The major aims of this credit are to assist in building environmental policy, to support restructuring of institutional mechanisms, to develop sectorial efforts in environmentally vulnerable areas, and to provide for implementation of the global change agenda—protection of biodiversity, reductions of greenhouse gas emissions, development of alternative technologies for CFC production and consumption, as well as rational use of natural resources, mainly of oil and gas.

The motives for financial aid are broader than mere assistance to solve environmental problems in Russia that endanger environmental stability in the West. They are supplemented by the

new economic opportunities for private investments and the development of new markets, opened in the course of the transformation in Russia. New prospects have opened up as a result of decentralization and emergence of new independent producers on the national arena. The possibilities of impact from the West indirectly improving the environmental situation in Russia are increasing. For instance, the West could exert its influence at the local level, especially in the regions of resource production where export interests are concentrated. Environmental arrangements with local authorities in exchange for financial, technical, and economic assistance could play an important role in getting them to shift to more progressive environmental policies. On the other hand, non-tariff instruments of influence to preserve environmental standards are becoming increasingly important—providing access to foreign markets for Russian resource producers might be an important item in exchange for compliance with environmental security provisions.

Democratization and the transition to a market economy in Russia have revealed new chances for developing environmental co-operation on a bilateral basis, especially with the countries of Western Europe. Whereas previously bilateral contacts were limited mainly to joint research projects and exchange of information, today the range of this type of co-operation has expanded to involve environmental management and joint implementation of international commitments. Within the framework of the highly centralized Soviet state, bilateral co-operation was provided via Moscow, which totally controlled the process. Today, however, with the decentralization of environmental management, the various regions of Russia are playing an important role in the co-operation, and this is also more in line with the interests of the West. For example, for the comparatively small Scandinavian countries it is more logical to concentrate their interests and to establish contacts not with distant areas of vast Russia, but with the neighbouring regions of Karelia, Murmansk, and St Petersburg. This provides for more specifically targeted co-operation, for greater flexibility of joint projects, and for solving of common transboundary environmental problems.

Some new trends in co-operation with international financial institutions can be indicated here. Mention should be made of the possibilities of providing certain privileges (lower interest rates on loans, longer credit-return periods) in the terms of loans and technical assistance from the West within the framework of environmental projects aimed at the reconstruction of obsolete plants and rationalization of resource use. New opportunities seem to be emerging in connection with the restructuring of Russia's external debt in some of its environmental activities. For instance,

reductions in external debt could be provided in line with the costs of measures aimed at shifting to new technologies to reduce greenhouse gas emissions.

Even though financial assistance from the West is of great significance, Russian experts doubt that it can solve entirely the environmental problems of Russia, as well as the problems concerning adherence to its international obligations. It might definitely help in reducing the time-limits of environmental restructuring and *perestroika*, and contribute to success in this field.

The transitional period in Russia necessarily involves greater instability in the major prerequisites for international environmental co-operation. Effective implementation of international environmental obligations would seem to be closely linked with the success of this transitional period, and whether a solution can be found to Russia's internal political, economic, and social problems. Success in the domestic implementation of international agreements depends on progress in systemic transformation—on the rapid creation of market-based and democratic institutions and culture. Realization of an environmental strategy in Russia is dependent on overcoming the economic recession. Thus, for a relatively long period of time, solving the most urgent environmental problems in Russia, as well as domestic implementation of international environmental commitments and compliance with international obligations, will remain intertwined with the prospects of general economic normalization, and with the stabilization of the state.

Solving the environmental problems of Russia and increasing the effectiveness of international environmental co-operation are closely associated with democratization, a necessary prerequisite for exposing and defending environmental interests. This is especially important in the case of Russia, because the environmental consciousness and political will of political leaders on this issue still tend to be rather weak. Political pressures from the green movement and the public are of crucial importance. Indeed, this field might be regarded as one of the important directions for international co-operation. Co-ordination of actions between NGOs in Russia and in the West is inevitable. Pressures from foreign NGOs exerted in Russia can be even more effective than the desperate efforts of local NGOs and the local public to solve environmental problems.

## Notes and References

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9. *Gosuidarstvennyi Doklad* (n. 5 above), 60.
10. Data presented to the UN Environmental Programme.
11. After signing the Vienna Convention in 1985 according to a resolution of the Council of Ministers of the USSR, an Interdepartmental Commission was set up to implement the provisions of the regime. The State Committee on Hydrometeorology was nominated at the head of it to co-ordinate activities of other ministries. In 1987 the Ministry of Chemical Industry became responsible for the elaboration of measures aimed at reducing the production and consumption of ozone-depleting substances.
12. *Ekonomicheskaya Gazeta* (1988), (July), 1.
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14. *Gosuidarstvennyi Doklad* (n. 5 above), 92.
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