RUSSIAN FEDERATION*

* In co-operation with UN/ECE.

EXECUTIVE SUMMARY AND RECOMMENDATIONS*

In the 1990s, the Russian Federation has undertaken wide-ranging reforms including privatisation and market and trade liberalisation. This period has been characterised by deep contraction of output (decline of over 40 per cent in GDP and over 50 per cent in industrial output), decreasing investment, intervals of high inflation, growing unemployment and social hardship. By 1996 and 1997, Russia had achieved a certain degree of economic stability. However, the Asian financial crisis and worsening terms of trade for major Russian export commodities (e.g. oil) contributed to the financial and economic shocks of 1998 and a further decline in output.

Russia has carried out major environmental policy reforms to accompany the transition to a market economy and the devolution of powers to regional governments. It has continued to use its very large natural resource assets (e.g. oil, gas and other mineral resources, timber) as a basis for economic development. Given the previous emphasis on heavy industry and the underpricing of energy and raw materials, and despite the decline in output during the 1990s, Russia still has a very pollution and resource intensive economy. What has been achieved over the past several years is now being made fragile, if not jeopardised, by lack of investment in the economy, particularly the industrial sector, and, more broadly, by difficulties in implementing institutional and structural changes.

It will be a major challenge for Russia in the coming years i) to better prioritise and focus efforts in implementing environmental policies and developing environmental infrastructure, ii) to capture opportunities for simultaneously increasing environmental and economic efficiencies, and iii) to meet its international environmental responsibilities as a major international partner.

This report establishes a baseline for assessing future environmental progress and examines Russia's environmental performance; environmental performance being defined as the extent to which environmental domestic objectives and international commitments are being met effectively and efficiently. A number of recommendations are put forward that could contribute to strengthening the country's environmental performance.

1. Implementation of Environmental Policy

Policy reforms and policy instruments

During the 1990s, Russia initiated a number of environmental policy reforms through a series of new federal laws and policy initiatives, including extending the use of economic instruments, decentralising and devolving policy implementation, and expanding public information and participation. Environmental offices of regional governments have taken up more extensive duties in implementing federal policies, as well as in establishing and implementing regional policies. These new policies (e.g. on waste management, water and air pollution abatement) have begun to be implemented. Federal projects in priority areas have been launched, and new regional initiatives have been implemented. Nature conservation has been enhanced. Environmental funds at federal and regional levels have provided financing for environmental protection. With improved management and a clearer legal status, environmental funds could play a more meaningful role in the years ahead and provide a significant and stable mechanism for financing priority environmental investments. Activities and expenditure to protect the environment at the level of enterprises have continued, in part through the use of financial offsets associated with the system of environmental charges. Implementation of environmental education programmes, wider mass media coverage and greater availability of environmental information have increased public awareness of environmental issues. Public participation in environmental matters has been institutionalised in new legislation and is slowly expanding. The 1995 Federal Law on Ecological Examination has established a basis for environmental impact assessment. Environmental non-governmental organisations have grown in number and are progressively playing a more meaningful role in the environmental decision-making process.

However, the implementation of these environmental policy reforms is meeting a number of severe problems, largely due to the general socio-economic decline, inflation, budgetary shortages and cuts in civil service staff. The low priority given to environment by the federal government, particularly after 1996, has also been a serious impediment. Federal administrations dealing with natural resources and the environment have undergone a series of reorganisational moves but are still very fragmented. Since 1996, Russia no longer has a Minister of the

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Environment in its government. The environmental regulatory framework, which is often very complex and difficult to implement, leaves considerable room for discretionary decisions by regional and local environmental administrations. Economic instruments have lost much of their effectiveness because of inflation. Social considerations have prevented some natural resource prices from keeping pace with inflation. Implementation of the polluter pays principle and the user pays principle is weak. Polluters and consumers still believe public authorities should subsidise environmental goods and pollution control, although budgetary constraints are very severe and tax evasion is widespread. Public investment to protect the environment has fallen. Federal budget funding of environmental activities has declined to a point (0.5 per cent of total environmental expenditure) that arouses legitimate concerns.

As a result, Russia is facing a number of serious environmental problems which ought to be solved urgently. In major urban centres, air pollution levels exceed internationally recognised health-based standards. Infrastructure for drinking water is deteriorating, leading to increased water-borne diseases and mortality. The effectiveness of arrangements to safeguard the growing stock of hazardous waste, including radioactive waste, is compromised, presenting an imminent health risk in some localities. The Russian economy is several times more pollution and resource intensive than those of OECD countries. The costs associated with these current conditions are likely to be substantial.

It is therefore recommended to:

- strengthen enforcement of environmental laws and regulations, including making them more transparent, allowing less administrative discretion and expanding the network of environmental inspectors and prosecutors;
- streamline the environmental regulatory framework (standards, permitting, charges) by concentrating on a limited group of substances, in particular those harmful to human health or the environment, revising standards in line with internationally established standards, and reviewing legislation to eliminate inconsistencies and fill gaps;
- develop and gain inter-agency consensus on a methodology for economic valuation of environmental damage and remedies;
- continue efforts already underway to introduce human health and ecologically-based risk assessment methodology as a priority-setting instrument in the environmental and public health sectors;
- as economic conditions permit, gradually raise pollution and resource charges to a level where they have a meaningful effect on the economic decisions of enterprises and utilities;
- strengthen environmental funds, clarify their legal status and institute improved financial management training for environmental fund managers;
- strengthen and unify the environmental monitoring system, in order to establish an objective information base for policy development and implementation; develop a core set of environmental indicators and promote their use at federal and regional levels;
- continue efforts to improve public access to environmental information and participation in decision-making; strengthen efforts to increase public environmental awareness;
- review present institutional arrangements in order to greatly strengthen the capacity for nationally co-ordinated environmental policy development and implementation, notably by increasing the status and responsibilities of the federal environmental authorities;
- continue to develop effective systems of interaction in environmental protection and related topics between federal executive bodies and administrations of the Subjects of the Federation.

Air management

Air management in Russia makes use of ambitious air quality standards, detailed emission permits, air pollution charges (including cash payments, in-kind payments and offsets) and special air protection zones. Leaded petrol is progressively being phased out, as in Moscow, Nizhniy Novgorod and Rostov-on-Don. In regard to energy efficiency, the 1994 Federal Energy Strategy, the 1996 Federal Law on Energy Conservation and the 1998 Federal Programme on Energy Conservation define a set of objectives and actions whose purpose is to set the Russian economy on an energy-efficient development path using market mechanisms and regulations, reduced subsidies and appropriate energy pricing. Progress in implementation varies considerably among the regions, some of which have their own energy efficiency laws and funds. Many projects have been initiated (e.g. audits, consumer information, metering, reduction of heating system losses, energy efficiency investment). Some major energy price reforms have been carried out. A new federal law on air protection of May 1999 specifies emission standards for stationary and

mobile emission sources, technological processes and equipment; it introduces certification of compliance, fuel standards and, for the first time, the requirement that account be taken of the critical load on ecosystems and of transboundary pollution. Emissions of conventional air pollutants have decreased significantly in the 1990s: 37 per cent for SO_x , 34 per cent for particulate matter, 29 per cent for NO_x, 25 per cent for VOCs, 24 per cent for CO and 37 per cent for CO_2. Russia has met or is in line to meet its international commitments concerning SO_x , NO_x and CO_2 emissions.

However, decoupling these emissions from GDP has not been achieved. On the contrary, the decrease in emissions has been smaller than decline in GDP over the same period: the effects of GDP decline, fuel switching to natural gas (reaching 54 per cent of consumption) and air management efforts (investment in air pollution abatement and control equivalent to 0.1 per cent of GDP) have been more than compensated by countervailing factors. These include the increased relative importance of heavy and energy intensive industries in the Russian economy, lack of investment in and ageing of capital stock, and systemic inefficiencies in energy provision (e.g. low energy prices for households, lack of metering and controls, lack of markets and of market discipline, a continuing orientation by industry to meeting production goals). The Russian economy's energy intensity grew in the 1990s and is three times the OECD Europe average. Emissions per unit of GDP of SO_x, particulates, NO_x, VOCs, CO and CO_2 have all increased in the 1990s and are much higher than the OECD average. Overall, air quality is still very poor in many Russian cities. Air pollution has significant health impacts on the general population (e.g. respiratory diseases, exposure of children to lead) and contributes to highly reduced life expectancy in black spot areas. Much remains to be done to make air management more effective, including concentrating on the main pollutants and large polluters, increasing the incentive effect of pollution charges, adopting foreseen tax credits for air pollution abatement efforts and adopting the revised air law in preparation. A major effort is needed to overcome the lack of investment in energy efficiency and thereby obtain related economic and environmental benefits; this implies reducing barriers to investment through mechanisms such as regional energy efficiency funds, separate budget line items to guarantee financing of energy servicing companies, and extending the use of mechanisms such as production sharing agreements to provide the stable and predictable legal and fiscal basis necessary to attract investment. Further energy price reforms to more fully reflect costs, combined with steps to resolve non-payment problems, should support more efficient energy use.

It is therefore recommended to:

- improve air management systems by i) aligning air quality standards with international ones and ii) simplifying permitting and focusing on large pollution sources;
- continue using air pollution charges to finance environmental investments; foster their incentive effect through gradual increases;
- exchange experience among regions on innovative air pollution abatement and energy efficiency measures;
- implement federal and regional energy efficiency programmes; in particular, create conditions that promote investment in energy efficiency;
- continue economic and energy reforms leading to market-based energy price signals in support of more efficient energy use, in combination with steps to resolve non-payment problems;
- promote sustainable transport strategies, including the phase-out of leaded petrol, the introduction of alternative fuel, energy savings and CO_2 emission reductions, the promotion of public transport, and the use of physical planning instruments and clean air plans at the municipal level;
- improve air quality monitoring (e.g. urban ozone), warning and reporting to the public, and introduce concrete measures to reduce the severity of episodes of low air quality.

Water management

In the 1990s, important progress has been made in water management at the federal, regional and local levels. Legislation such as the 1995 Water Code and 1998 Law on Fees for Water Bodies' Use have supported and extended the use of economic instruments (charges for water use and wastewater discharges, fines and compensation for damage to water bodies) to complement regulatory instruments (quality standards and permits for water abstraction and discharges). Implementation of the polluter pays principle and increasing use of metering have contributed to the development of water pricing. Partly as a result of pricing, and partly due to economic decline, total water use has decreased since 1991. The amount used for irrigation has fallen considerably. Consumption of water by industry has diminished, although less rapidly than production; in some regions there has been a considerable decrease in water consumption by households. Industrial and municipal wastewater discharges have

fallen significantly. Important federal water management programmes have been prepared, for instance on drinking water and flood prevention. Integrated programmes have been adopted for river basins (e.g. the Volga, Tom, Ob). Devolution of powers to regional and local levels has led to initiatives at these levels, especially concerning water supply and wastewater treatment.

Despite the progress made, the general quality of water resources remains worrying. Drinking water supply is a priority concern: the quality is low, with significant health impacts. There are water shortages in many areas. Lack of funds has hampered implementation of the new water policy. Much needs to be done to upgrade and extend infrastructure for water supply and wastewater collection and treatment. Most cities have a joint industrial-municipal water supply, which results in some drinking water being wasted. Industrial pre-treatment installations are too rare and are deteriorating, so that the effectiveness and efficiency of municipal wastewater treatment has been reduced. Reduction in the effectiveness of the sanitary infrastructure leads to irregular supply and important water losses. Relatively low tariffs for water services, and widespread non-payment of water bills, result in revenues which cannot cover operational and maintenance costs. Institutional arrangements do not assign clear responsibilities and powers. Overall, water management is still too orientated towards management of supply rather than of demand.

It is therefore recommended to:

- implement the 1995 Water Code, adopt the Concept of the State Policy on Integrated Water Management and Protection of Water Resources, and implement integrated water basin management;
- gradually increase water pricing to cover real costs, taking account of affordability constraints; continue to strengthen mechanisms to improve the collection of charges and fines; expand the use of metering;
- review standards concerning the quality of water bodies, drinking water and wastewater discharges, in light of international health and water bioresources conservation-based standards relating to health and ecosystem protection;
- adopt and implement relevant bills and programmes relating to drinking water;
- continue to give high priority to providing drinking water of good quality and in sufficient quantities, with special attention to rural areas; increase the use of groundwater resources for drinking water supply; strengthen the protection of water abstraction areas;
- improve the effectiveness of existing wastewater treatment facilities; put new ones into operation in areas experiencing water scarcity and serious health effects; ensure that industrial enterprises progress in regard to pre-treatment of wastewater;
- improve data used in water management through, for instance, harmonisation and co-ordination of monitoring, improvement of data quality and analysis, and extension of regular reporting.

Waste management

Russia recently adopted a modern waste management policy approach. This includes the Federal Law on Production and Consumption of Waste and the development of basic regulations, among which are those necessary to meet international obligations under the Basel Convention. The implementation of a national industrial waste management data system is progressing well. Detailed regulatory measures to control waste generation and management are being developed on regional and inter-regional levels. Local and regional initiatives directed at waste reduction and resource recovery are being carried out on a modest scale.

Nevertheless, large accumulations of waste exist and continue to grow; the rate of industrial hazardous waste generation has not fallen in proportion to the decrease in industrial production; municipal waste generation is increasing; waste management in general is largely dependent on land disposal facilities; rates of reuse, recycling and resource recovery are low; the capacity to collect and safely store radioactive waste is deteriorating, accompanied by increasing public health risks; and there has been no response to the need to manage contaminated sites. Overall, the main policy objectives set out for waste management are not being met. The prospects of realising a comprehensive and consistent regulatory framework, as called for in the Federal Waste Programme, are uncertain and implementation of legislative and regulatory instruments is lagging. Reduced financial capacity threatens co-operative institutional development, erodes the existing basic management capacity and massively reduces the amount of investment available to upgrade waste disposal facilities, let alone to create new ones or promote cleaner production. The Federal Waste Programme appears unrealistic in this respect. Existing waste management facilities and practices can only provide declining environmental performance. One constraining factor is the low level of charges borne by waste generators.

It is therefore recommended to:

- ensure co-operative development of regulatory initiatives by federal and regional administrations, recognising the need for detailed regulatory controls which are decentralised and tailored to local conditions;
- further implement the waste management information system as a support tool for decision-making;
- review the present Federal Waste Programme and establish priorities in accordance with available financial means;
- develop and implement realistic strategies for incremental progress in regional industrial waste management, based on secure landfill and storage facilities, recycling and resource recovery initiatives, and waste prevention through cleaner production;
- rehabilitate municipal waste collection and disposal facilities through ensuring adequate funding of service providers and upgrading and/or development of new landfills;
- build upon positive attitudes concerning waste reduction, recycling and resource recovery through expanded provision of information to the public and NGO involvement;
- progressively increase charges for waste management services to waste generators, in line with the polluter pays principle;
- establish uniform land disposal facility standards for municipal solid waste and various types of industrial waste (including hazardous waste, as appropriate), in order to provide a basic level of environmental protection in the near term;
- speed up the approval and implementation of the unified targeted federal programme "Nuclear and Radiation Safety of Russia", including public sector funding commitments, in order to prioritise needs, and to maintain, upgrade and expand existing storage and disposal infrastructure as necessary.

Nature conservation

Russia has the responsibility for managing and conserving a large share of the world's wilderness and biodiversity. It has made significant strides in addressing some of its nature conservation challenges. The legislative and regulatory base of nature conservation has evolved quickly and comprehensively and is being refined to facilitate implementation. The process has benefited from the knowledge and expertise of internationally recognised Russian scientists and managers. A number of natural resource inventories have been compiled, and the Russian Red Book of Endangered Species has been published. There has been a continuing expansion of the system of protected areas, which now cover 5.5 per cent of the country (or close to 1 million square kilometres). At the same time, there has been increasing success in controlling trade in endangered species and protecting selected threatened species. Russia ratified the Convention on Biological Diversity in 1995, and has been active in pursuing the fulfilment of its obligations under this convention and several other international agreements relating to nature conservation. It has been able to mobilise significant international assistance for nature protection. Growing environmental awareness and concern in the country has been catalysed by environmental education and the dedication of numerous non-governmental organisations.

However, without an infusion of additional financial support, either through budgetary re-allocation or other means, protected areas will not be able to fulfil their main functions. Such a setback would be of both national and global significance. Outside protected areas, Russia's immense forests and related wilderness have a major role in regard to biodiversity and the global carbon cycle. The 70 per cent decline in timber harvesting in the 1990s has partly relieved forest resources from pressures associated with often unsustainable forestry practices. Nevertheless, in some instances unsustainable and sometimes illegal forestry practices continue to affect highly valuable old growth forest and protected areas. The degradation of aquatic ecosystems (rivers, lakes, coastal waters) threatens aquatic life (e.g. sturgeon). Poaching has increased with poverty. The complexity and uncertainty surrounding land ownership and property rights undermine natural resource management.

It is therefore recommended to:

- allocate appropriate resources to support the system of protected areas, which is of regional, national and global importance;
- improve the legislative and regulatory base relating to biodiversity protection and strengthen implementation in this area;
- ensure that nature conservation and natural resource management are supported by predictable property rights for land and natural resources;

- support and develop programmes addressing the degradation, contamination and loss of habitat in sensitive and remnant terrestrial ecosystems, such as the tundra and steppes;
- reverse the deteriorating ecological conditions of, and trends in, sensitive aquatic ecosystems including rivers, lakes, estuaries and coastal waters;
- ensure the prevention of soil degradation by implementing anti-erosion measures, desertification prevention, environmentally safe use of chemicals and other measures directly and indirectly affecting biological diversity;
- integrate concerns about biodiversity protection and sustainable use of natural resources in forestry policies and operations.

2. Integration of Environmental and Economic Decisions

Economic transition and environmental progress

During the first phase of transition, significant economic reforms were carried out, notably privatising and liberalising economic activities. However, this progress was not matched by institutional reform. The growth in poverty and inequality has led to disillusion with reform.

Despite difficult economic circumstances, there have been important environmental achievements. The Constitution of the Russian Federation states that "every citizen has the right to enjoy a safe environment and to be compensated for damage to health or property caused by environmental violations." In 1991, the Federal Law on Environmental Protection entered into force. A Concept of the Transition to Sustainable Development was approved in 1996, and a related State Strategy has been developed but not yet approved. A National Environmental Action Plan and several Regional Environmental Action Plans have been developed. Environmental authorities have played a leading role in supporting the development of civil society through a more open, participatory approach to policy development. They have implemented planning mechanisms, set priorities, co-ordinated actions at regional level, and contributed to decentralisation and devolution of environmental policy implementation.

During the 1990s, pollutant emissions to air and discharges to water have declined (by 25 to 35 per cent), though not as much as output. Little decoupling has been achieved. On the contrary, the pollution intensity of the overall economy has increased, partly due to a growth in pollution intensive activities relative to other activities. Environmental expenditure (including both monetary expenditure and that through offset payments) represents 2.2 per cent of GDP and includes pollution abatement and control expenditure of about 1.7 per cent of GDP. Despite a sharp fall in industrial investment, the level of overall environmental investment has not declined much in recent years.

Russia benefits from very large natural resource assets (e.g. oil, gas and other mineral resources as well as forest, fishery, water and biodiversity resources). Until 1997, some of them (e.g. oil and gas) contributed a great deal to maintaining a positive current account balance. The pricing of resources has undergone major changes (e.g. liberalisation of some energy prices), but the price of water and other natural resources remains below cost recovery levels and deserves further attention. Overall, in the 1990s use of natural resources (e.g. energy, water, fishery resources) has decreased by 30 per cent, less than the decline in GDP. The Russian economy's intensities of energy and resource use (with the exception of forest resources) have therefore increased during the transition period. Clarification of property rights, including land rights, is needed to ensure that the country's vast natural resource base is managed in a way that supports sustainable development.

The priority attached to environment within public policy has declined in recent years, and public funding has thus decreased as well. Since 1996, the role and influence of environmental institutions at the federal level have been substantially reduced. This shift has made it all the harder to integrate environmental concerns in other policy sectors and to implement environmental policy. Much public expenditure on environmental protection is being postponed because of budget cuts. In general, federal targeted programmes in the environmental sector are ambitious but severely under-funded, and thus fall short of their stated objectives.

Economic, political and institutional reforms are essential to address current and emerging problems of sustainable development. There is a need to promote more efficient use of resources, to encourage a shift to a less environmentally damaging economic structure and to generate the means needed to support environmental improvement. However, the uncertain progress in the broader process of reform has acted as a constraint on environmental improvement mainly through the lack of incentives to use natural resources efficiently and distortions in fiscal policies. Price distortions and the very low level of investment are major obstacles to achieving a less

pollution and resource intensive economy. The financial and economic shocks of 1998 have created new uncertainties about the pace and direction of policy reform. There appears to be less integration of environmental and economic decision-making now than several years ago.

It is therefore recommended to:

- develop more effective arrangements at the federal level to integrate environmental, economic and social objectives with a view to promoting sustainable development, for instance by creating or strengthening environmental policy units in relevant federal bodies and promoting integration of environmental concerns in effective industrial, energy, transport, economic and fiscal policies;
- support economic and institutional reforms which increase the overall efficiency of the economy and promote "win-win" strategies;
- support policies which remove impediments to investment and promote modernisation of the capital stock;
- focus public environmental programmes, particularly the National Environmental Action Plan, on a smaller number of priorities (e.g. on-going pollution causing serious health risks, urgent problems of accumulated pollution), in accordance with available financial means;
- gradually reduce public subsidies of pollution control activities by enterprises and allow water and energy prices to rise to cost-recovery levels; restructure the responsibilities of utilities that deliver water and domestic heating; promote better resource conservation through public awareness activities;
- clarify land ownership and property rights to natural resources to ensure that they are managed in a way that does not compromise economic, environmental and social policy goals;
- ensure that provisions of the tax code do not provide perverse incentives to damage the environment or undermine economic instruments used for environmental protection; identify opportunities to integrate environmental concerns in fiscal policies.

Sectoral integration: industry

Russia inherited from the USSR a large industrial sector with low energy and resource efficiencies. Industrial areas in several parts of the country now suffer from severe air, water and soil pollution as well as serious health effects. In the 1990s, Russian industry underwent major transformation. Industrial production fell sharply (by over 50 per cent) although it continued to represent a significant share of GDP. The share of energy-producing and other raw materials sectors has grown, while that of manufacturing has diminished. Output of small and medium-sized enterprises has increased in relative terms. A considerable part of industry has been privatised. The average age of industrial plants and equipment is now over 16 years; the share of loss-making enterprises has grown to approximately 45 per cent, and the share of barter in sales has reached about 60 per cent.

The drop in industrial production has been translated partially into reduced industrial pressures on the environment. A well-developed permitting system for regulating industrial pollution is based on more stringent standards than those in effect in most OECD countries. Economic instruments, such as fines and charges for pollution and natural resource use, were introduced in 1992 to finance environmental measures and to provide incentives for companies to reduce their environmental impacts. Some large companies producing for export markets have adopted environmental management systems; some industrial associations are promoting environmental awareness in industry. A legislative framework has been developed for prevention of and response to industrial accidents. Environmental programmes are being drawn up for some key industrial sectors. In general, while Russia is being integrated in the world economy, enterprises ought to become more interested in complying with environmental requirements, as non-compliance may result in reduced competitiveness or may lead to fines and the obligatory expense of eliminating the consequences of ecological accidents and disasters.

A variety of market, institutional and financial failures have brought industrial investment to a low point, including investment in pollution abatement and natural resource saving. The complexity of fiscal and budgetary transfers between the federal and regional governments further hinders competition and investment. As a result, most industrial capital stock is comparatively old and obsolete. The health of many people is still affected by industrial pollution; serious industrial accidents are frequent. The fact that the decrease in environmental pressures has been less rapid than the contraction of production indicates that the benefits of environmental policies and energy switching have not been commensurate with the factors leading to worse environmental performance in industry. Uncertainties concerning liability for past environmental damage, and lack of information on enterprises' environmental performance, are additional obstacles to investment. It is of utmost importance that a climate

favouring efficiency and investment be fostered, together with effective industrial and energy policies, to provide a basis for environmental and industrial authorities to pursue "win-win" policies. In addition, institutional, economic and legal stability is a precondition for attracting investment from both domestic and foreign sources.

It is therefore recommended to:

- elaborate an environmental strategy within an effective industrial policy, including objectives and priorities for short-, medium- and long-term actions; give priority to industrial pollution hot spots, low-cost solutions and "win-win" opportunities;
- continue to promote the use by enterprises of environmental management systems in line with ISO 14000 or EMAS;
- promote co-operation among authorities responsible for industrial and environmental policies, at all administrative levels, at the time environmental and industrial policies are formulated;
- foster improvements in regard to energy efficiency, raw material use and local and general pollution in Russian industry;
- develop a long-term contaminated sites management programme, including an inventory, risk prioritisation, clarification of liability, and related regulatory and economic instruments;
- consider improvements in and strengthening of industrial accident prevention, preparedness and control;
- collect and publish emission data on polluting enterprises; encourage environmental performance reporting by companies.

3. International Co-operation

As a very large country and a major international partner, Russia has considerable responsibilities for international environmental co-operation. It has strengthened its relations with OECD countries, and benefits from many joint activities with these and other countries.

Achievements

At the end of the 1990s, international co-operation on environmental issues has progressed considerably following the new openness of Russian society. Information exchange between Russian and foreign experts has increased rapidly. For example, international experts participated in an assessment of radioactive pollution resulting from Soviet military activities.

In recent years, Russia has adopted a large number of multilateral environmental agreements and negotiated many bilateral agreements, with its 14 neighbouring countries and with other important trading partners. International co-operation is particularly advanced in north-western Russia. Russia has met all its commitments concerning SO_2 and NO_x emissions; while this is mostly a result of economic decline, it also reflects a shift in fuel supply. Efforts have been made to reduce emissions of VOCs. Russia has greatly reduced its production, consumption and export of ODS, and in doing so has been able to benefit fully from the financial support of the GEF and of OECD countries.

In the area of technical assistance, Russia has established institutional arrangements for obtaining financial and technical support from bilateral and multilateral donors to help protect its environment and meet its international obligations. The State Committee on Environmental Protection (SCEP) should strengthen its co-ordination of foreign support relating to environmental issues. As its domestic financial resources have become increasingly scarce, Russia's contributions to international co-operative activities have often been in kind (e.g. carrying out studies and organising meetings).

Climate change

Despite sharp reductions in CO_2 emissions, Russia remains the world's third largest emitter of CO_2 from energy. There is considerable potential for GHG reduction, as energy efficiency is fairly low and cost savings could be achieved through its improvement. Large energy savings would also save fuel for export and help provide an opportunity to trade emission quotas.

In line with the UN Framework Convention on Climate Change and the Kyoto Protocol, it is likely that emissions in 2000 and 2010 will be below those in 1990. Thus, a GHG emission quota could be available for trading. In the meantime, there are significant opportunities for joint implementation activities to reduce CO_2 emissions further. As the Russian economy's carbon intensity is particularly high, there is great potential for energy efficiency improvements, but they will require eliminating economic barriers which currently discourage investors.

Strengthening international co-operation

Despite its objective of promoting international co-operation, Russia has had difficulties in meeting some of its international commitments. It has not always been able to pay its annual contributions to international environmental organisations and initiatives and has accumulated various arrears. Its reporting on dumping activities has been incomplete, and a number of cases of dumping of radioactive waste have been considered not to be in conformity with the London Convention. Concerning marine pollution from land-based sources, results achieved in the Baltic Sea fall short of commitments. Some of these problems are the consequence of the difficult transition period and recent economic crisis, but some are also due to lack of rapid institutional change.

To strengthen co-operation with industrialised countries, it would be desirable for Russia to become a party to all those international conventions and related protocols concerning the environment with which it is in agreement. Such a move would require that environmental issues be given higher priority in the ratification processes by the Government and the State Duma. It would also require greater availability of governmental resources for international environmental co-operation, greater willingness to sign international agreements to which many OECD countries are also a party, and a decision to play an international role corresponding to Russia's global environmental responsibilities and potential. In particular, it would be desirable for domestic funds to be available to finance an adequate level of Russian participation in international meetings.

International technical and financial assistance to Russia, although not very large so far, has played a useful role. Efforts should be made on the Russian side to create more favourable conditions for attracting assistance in priority areas, and on OECD countries' side to improve the quality of this assistance. In particular, there should be an emphasis on promoting investment, on capacity building, on more effective institutional reforms and on increasing mutual technology transfer. Providing equipment at no cost is not a substitute for helping to create conditions under which Russia could produce that equipment itself. At a time of economic crisis, there is scope for increased technical and financial assistance from OECD countries to address urgent environmental problems. Russia would need to maintain a positive climate for provision of such assistance.

It is therefore recommended to:

- ratify and implement international environmental conventions already signed, and examine the advantages of joining other international agreements, notably concerning liability (Annex III);
- provide adequate budgetary allocations to pay the Russian contribution in the framework of international conventions concerning protection of the environment;
- strengthen the capacity for international environmental protection within the Russian administrations by reinforcing the co-ordinating role and associated capacity of the State Committee on Environmental Protection, by promoting participation of Russian experts in international meetings and co-operative activities, and by strengthening environmental expertise in the Ministry of Foreign Affairs;
- combat transfrontier pollution, reduce marine pollution from land-based sources and ban release of radioactive material to the sea;
- provide reliable mechanisms to secure investment in energy efficiency projects and progress in greenhouse gas emission trading;
- remove obstacles to expeditious transfer of official technical assistance relating to environmental protection and, in particular, clarify applicable customs and fiscal regimes;
- facilitate international co-operation on innovative and high priority environmental management issues at the regional level;
- encourage donors to enhance and focus their assistance so as to resolve priority problems;
- incorporate the recommendations of this review, as feasible and appropriate, in future international programmes of environmental technical assistance to Russia.