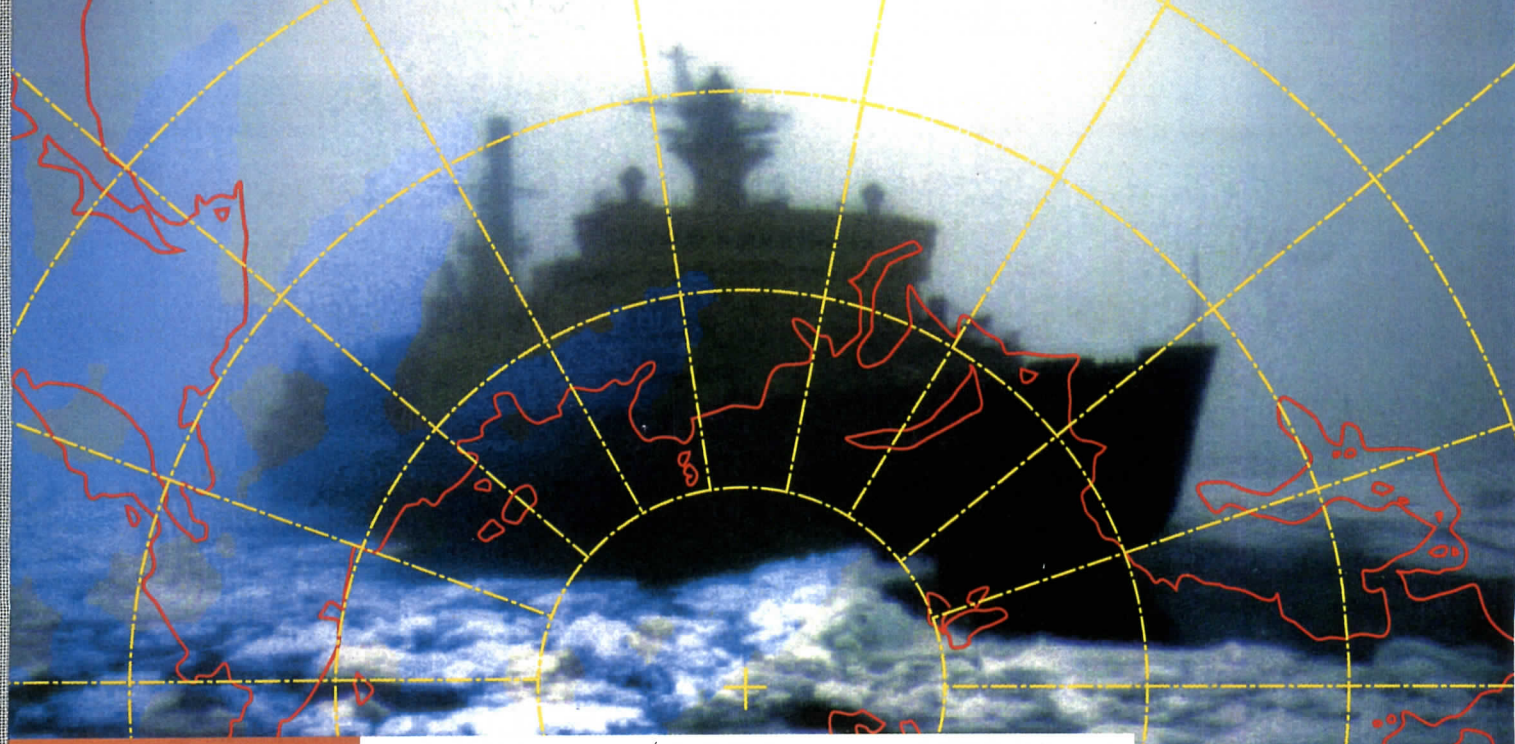

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Environmental Protection in the Russian Arctic: Reorganisation of Environmental Institutions in the 1990s

By Vladimir Kotov and Elena Nikitina

INSROP International Northern Sea Route Programme

Central Marine Research & Design Institute, Russia

The Fridtjof Nansen Institute, Norway

Ship and Ocean Foundation, Japan

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Title:	**Environmental Protection in the Russian Arctic: Reorganisation of Environmental Institutions in the 1990s**
Authors:	**Vladimir Kotov (1) and Elena Nikitina (2)**
Addresses:	(1): School of Business Management, Academy of Transport, RUSSIA (2): Institute of World Economy & International Relations (IMEMO), Profsoyushaya Street 23, Moscow GSP-7, RUSSIA
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Reviewed by:	Professor Oran R. Young, Institute of Arctic Studies, Dartmouth College, Hanover, New Hampshire, USA.

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FOREWORD - INSROP WORKING PAPER

INSROP is a five-year multidisciplinary and multilateral research programme, the main phase of which commenced in June 1993. The three principal cooperating partners are **Central Marine Research & Design Institute (CNIIMF)**, St. Petersburg, Russia; **Ship and Ocean Foundation (SOF)**, Tokyo, Japan; and **Fridtjof Nansen Institute (FNI)**, Lysaker, Norway. The INSROP Secretariat is shared between CNIIMF and FNI and is located at FNI.

INSROP is split into four main projects: 1) Natural Conditions and Ice Navigation; 2) Environmental Factors; 3) Trade and Commercial Shipping Aspects of the NSR; and 4) Political, Legal and Strategic Factors. The aim of INSROP is to build up a knowledge base adequate to provide a foundation for long-term planning and decision-making by state agencies as well as private companies etc., for purposes of promoting rational decisionmaking concerning the use of the Northern Sea Route for transit and regional development.

INSROP is a direct result of the normalization of the international situation and the Murmansk initiatives of the former Soviet Union in 1987, when the readiness of the USSR to open the NSR for international shipping was officially declared. The Murmansk Initiatives enabled the continuation, expansion and intensification of traditional collaboration between the states in the Arctic, including safety and efficiency of shipping. Russia, being the successor state to the USSR, supports the Murmansk Initiatives. The initiatives stimulated contact and cooperation between CNIIMF and FNI in 1988 and resulted in a pilot study of the NSR in 1991. In 1992 SOF entered INSROP as a third partner on an equal basis with CNIIMF and FNI.

The complete series of publications may be obtained from the Fridtjof Nansen Institute.

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PROGRAMME COORDINATORS

- **Yuri Ivanov, CNIIMF**
Kavalergardskaya Str.6
St. Petersburg 193015, Russia
Tel: 7 812 271 5633
Fax: 7 812 274 3864
E-mail: cniimf@neva.spb.ru

- **Willy Østreng, FNI**
P.O. Box 326
N-1326 Lysaker, Norway
Tel: 47 67 11 19 00
Fax: 47 67 11 19 10
E-mail: sentralbord@fni.no

- **Hiroyasu Kawai, SOF**
Nippon Zaidan Building
15-16 Toranomon 1-chome
Minato-ku, Tokyo 105-0001, Japan
Tel: 81 3 3502 2371
Fax: 81 3 3502 2033
E-mail: sofkawa@blue.ocn.ne.jp

ENVIRONMENTAL PROTECTION IN THE RUSSIAN ARCTIC:
Reorganisation of Environmental Institutions in the 1990s

Vladimir Kotov
Elena Nikitina

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INTRODUCTION

The environmental situation in the Russian Arctic with its unique and fragile nature remains unfavourable, and some areas are on the verge of being an ecological catastrophe. A narrow focus on natural resources extraction, priorities of industrial development over environmental concerns, exclusion of public participation and control over environmental decision-making, which took place during the Soviet period, left a grim legacy to this northern macro-region.

Beginning with the early 1990's with the start of political and economic reforms in Russia institutional reorganisation in environmental protection was initiated in the Arctic. A goal was to make the major environmental polluters in the area, mainly energy producers and mining companies, to initiate environmentally responsible behaviour. A new environmental policy was under formation during this decade consisting of the following: introduction of new laws and rules governing environmental protection, reorganisation in the administrative framework dealing with environmental management, formation of specialised governmental institutions for protection of nature, significant modifications in vertical institutional interactions, transfer of major functions in environmental management from the centre to the regions, and adoption of market instruments of environmental regulation.

Considerable expectations for environmental problem solving in the Arctic have been associated with these innovations. However, they did not bring the expected results, and a substantial gap between the expectations and the actual outcomes in environmental policy implementation in the Arctic can be observed.

Meanwhile, an effective environmental protection policy is of particular importance for this region, since there is little indication of shifts to sustainable development. An ineffective environmental policy can be observed beginning with the current decade when a new stage of active natural resources development was initiated in the northern regions. Russia is surviving today especially due to the exports of raw materials extracted from these areas. Hard currency revenues from trade in natural resources finance the imports of food-stuff, medicine, and other major necessities. Only from mining and the export of other natural resources of the north, would Russia be able to pay its foreign debts to the West. The production of raw materials in these regions is becoming an important strategic issue and is expected to expand further and cause additional pressures on the environment. The following questions are thus of vital significance today. What might be particular forms of human responses to the problems of increasing deterioration of the Arctic environment under industrial press? In what ways may new environmental policies be made more effective? How can obstacles to their implementation be avoided or reduced, taking into account the current deficit of financial resources, weakness of the state authority, contradictions in the interests of various actors involved in Arctic development, and contradictions in the interests of different levels of government authorities?

Initially this study was to focus on the analysis of implementation of environmental protection legislation in the Russian Arctic. Later its structure was significantly expanded. This included an analyse of the issues of reorganisation of the institutional framework of environmental protection in the Russian Arctic, and implementation of the rapidly changing "rules of the game" and codes of behaviour, as well as the new types of interactions emerging in the 1990's. The study focuses on the analysis of major institutions and institutional clusters comprising the new structure of the environmental protection in the Arctic. It consists of the following main sections:

- environmental situation in the Russian Arctic;
- major innovations in the Arctic environmental policy;
- formation of environmental legislation;
- reorganisation of administrative framework;
- transfer of major environmental protection functions from the centre to the northern regions;
- main governmental environmental programmes;
- implementation mechanisms including application of new economic mechanisms:
  - payments for pollution;
  - licenses and quotas for pollutants emission;
  - environmental funds;
  - finance mobilisation;
- effectiveness of the implementation of the new environmental policies.

Such structure which is based on traditional schemes might be assessed by some advocates of research innovations, including the present reviewer, as an antiquated approach, see Appendix. However, it is hardly possible to consider such approach as outdated. On the contrary, it is based on solid traditions evidenced in academic literature,<1> and reflects the genuine institutional framework of environmental protection in-existence today in Russia.

Recent institutional reorganisation and institutional innovations, which are associated results based on their dynamics in such an important region seen environmentally as the North of Russia, indicate very interesting trends. Certainly the interest was more vivid when institutional reorganisation of environmental protection was initiated in the early 1990's, when its concept was formulated and the first practical steps in institutional reforms made. Currently we are approaching the end of the decade, and some of the results of these reforms have to be evaluated. These are quite contradictory, and they do not always indicate a success. Many important and widely-used instruments of environmental management at the moment do not function effectively in Russia. Action for some is blocked by a specific configuration of economic institutions shaped in Russia. As a result the entire institutional framework of environmental protection appears not to be effective enough. Of course, such results are not pleasant, and to certain extent they might reduce expectations from and interest in new institutional structures. However, not only success, but failures and their lessons as well are of utmost importance for the scientific analysis of institutional reforms. They pose a significant question, *why standard environmental institutions which function successfully in the West do not produce standard results after being transferred and applied in Russia*? Other important questions arise regarding, *adaptation of these instruments, if any, to a new institutional environment and the current specifics of the transformation in Russia*, and *how this adaptation was carried out*?

Of course, in this study these questions can be only raised, their scrupulous analysis is far beyond the framework of this project. But posing and formulating these questions, emphasising their seriousness, and attracting the attention of the international scientific community to them, might be of importance. The events of 17 August, 1998 once more draw attention to the fortune of economic and political reforms in Russia. Kirienko's government declared a moratorium on the payment of debts. However, not only the West appeared to be the victim of the financial crisis, but also the Russian public, which lost once again its savings. One-quarter of the population moved below the poverty line. Today, the supporters of liberal reforms are split; some emphasise that reforms have collapsed, others suggest that there have been no liberal reforms at all. Both provoke a great deal of questions, and

reorganisation of environmental institutions is only a component of these domestic economic and political reforms. We do not support the notion regarding the complete failure of environmental reforms in Russia in general, and in the Arctic in particular, as some liberal analysts do. However, it is obvious that environmental reforms do not have the expected outcomes, and effectiveness in application of certain new instruments is quite low. The case-study on the Russian Arctic selected within this project illustrates and indicates not only the character of institutional innovations, but also major results achieved during this decade, and the shortcomings in the functioning of the new institutions.

In the course of selection of major research questions for the analysis within the case-study on the Russian Arctic we examined a number of possibilities. One seemed to be quite appealing at first glance, in which our analysis of environmental issues within the several different types of legal units existing in the Russian Arctic would be organised. These are represented by republics, oblasts, and autonomous okrugs. It seems doubtful that such approach would be able to bring forth the desired results and benefits. As those of us who analyse the issues of the new federalism in Russia in the sphere of environmental protection have discovered, the differences of status between the particular federation subjects do not have serious impact on the specifics of the formation of environmental protection institutional structures. The 1991 Federal Law on Environmental Protection does not distinguish between republics, oblasts and autonomous okrugs while allocating to them competencies regarding environmental protection. Substantial variations between them are expressed however in the context of natural resources utilisation, but usually they are linked not to the differences of status between various types of legal units, but are manifested at the implementation stage. Larger or smaller advantages of various legal units in comparison with others are attributed not to the differences in their status, but to the differences in their political influence. It may be seen, for example, in that the competencies of certain federation subjects having similar status, republic for instance, might be completely different. In addition, the competencies of the regions with the lower status, oblast, sometimes might be broader than the scope of competencies of the federation subjects with higher status, for example republic. Sverdlovsk oblast is famous for its significant political authority; it is defined by its close position to the present RF President who was born there and worked there for a long time. Its political authority is higher than that of some of the republics.

The study of the institutional framework of natural resources utilisation in Russia is definitely of a special interest today. Intriguing specifics and dynamics are characteristic for this issue. As mentioned in the review, see Appendix, case-studies for a number of the northern regions may present a great deal of evidence concerning the major trends in developing control over natural resources utilisation exercised by certain federation subjects. However, this is beyond the scope and is not a topic of this particular study. Reference may be made to the authors' research efforts into the analysis of reforms in the institutional framework of natural resources utilisation within another large research project containing a set of interesting and original conclusions<2><3>.

What is included in the term "Russian Arctic" in this study? Until now there is no officially approved notion of "*Russian Arctic.*" The position of its southern boundary is still uncertain. In official documents and scientific literature the terms "*North*" or "*Extreme North and similar areas*" are usually used today, and in almost every specific case a particular definition of the macro-region is provided. It is expected that in the nearest future the government will legally define the notions of "Extreme North" and "Russian Arctic." The RF Federal Law on "Regional Division in the North of Russia Taking into Account Geographical, Natural and Climatic Factors Affecting Life-support Systems for Population and Production"

is being drafted. It is indicated "until a legally binding definition of the regions of Extreme North of Russia is adopted the Federal executive authorities in course of their planning and realisation of governmental measures of support for the northern areas have to be guided by the existing regional division of the North into the regions of Extreme North and similar areas" <4>. A possible desire to avoid using the term "Extreme North," and using the term "Arctic," or "Russian Arctic," based on incorporation therein of the territories to the north of the Arctic Circle, might seriously impede the analysis. In this case it would not be possible to use the data of the northern territorial environmental organs, as well as the official statistical data of Goskomstat of Russia. Indeed, such data is grouped and processed according to the existing administrative division of the RF territory into the subjects of federation. Such division does not coincide with the line of the Arctic Circle, i.e. with the physical and geographical boundaries. From the geographical point of view the areas included in Russia in the Arctic are situated within the boundary of the average long-term isotherm of +10 degrees C. These are characterised by the existence of surface glaciers or unforested tundra, and marine areas with one year old ice, not melting during the spring-summer period, and then turning into permanent ice cover.

Thus, in our study we are using the definition of the Arctic zone of Russia which takes into account the current division of Russia into subjects of federation, and which is being used by the government organs involved in the regulation of the development of the northern territories, Goskomsever, Minregion, etc. <5>. This study includes the following areas in the Russian Arctic (*Extreme North*): Murmansk oblast, Archangel oblast, Nenetsk autonomous okrug, Yamalo-Nenetsk autonomous okrug, Taimyr (Dolgano-Nenetsk) autonomous okrug, Chukotsk autonomous okrug, Koryak autonomous okrug, Sakha (Yakutia) republic, as well as islands and territories situated in the Arctic ocean, internal waters and territorial sea, adjacent to the northern coast.

This study is based on primary and secondary sources of information. They include materials and data of the northern territorial environmental committees, materials of the RF Goskomekologia and the RF Goskomsever (now Minregion), official statistics of the RF Goskomstat and its regional affiliations, as well as national and regional annual environmental reports. National and regional statistical data was used. Analysis was made of national legislation adopted during the 1990's in Russia in the environmental area in general, and related to the Arctic in particular. Also included was the legislation of the northern regions which have started active development, and of treaties on the division of responsibilities between the federation and the northern regions in the environmental spheres. Federal and regional government environmental programmes and strategies related to the Arctic have been studied. A series of interviews were taken in Goskomekologia, in Goskomsever, in the Moscow offices of the northern regions, as well as with the representatives of certain territorial environmental committees and territorial environmental funds. Secondary sources on environmental policy in the Arctic are not yet numerous, mainly as the result of the veil of secrecy imposed by the Soviet regime on any kind of data regarding activities in this area.

SYNOPSIS

Lop-sided orientation towards natural resources development still prevails in the Russian Arctic, and it is expected to be preserved in the future: the major part of domestic natural resources (oil, gas, metals, and precious stones) is situated here. On a national scale Russia is becoming increasingly dependent on the Arctic regions for various reasons, and, especially, because the survival of this country depends to a great extent on hard currency revenues from natural resources exports originating from the sources located in the North. Today, the Arctic accounts, even according to modest estimates, for 11% of the domestic GNP, and for 22% of export revenues. Activities of energy production and resource mining industries which are the leading sources of environmental pollution remain to be the major contribution to destruction of extremely fragile Arctic ecosystems, of air and water contamination, wastes disposal, and land degradation. Many large industrial companies functioning in the north, such as non-ferrous facilities of Norilsk Nickel, are among top polluters on the national scale. Despite reorganisation of institutional framework of environmental protection during 1990s, and introduction of new patterns of interactions between the government at all levels and economic actors, there are still no encouraging indications that behavior of industrial companies in the north is changing to sustainable development patterns. Effective owner who can take care of the environment in the long-run has not emerged yet. Prospects for environmental problem solving so essential for these areas are jeopardised. Unsustainable management patterns in the Arctic inherited from the Soviet regime, combined with the problems of implementation of new environmental protection policies result in extremely *adverse environmental situation* in many Arctic areas: ecosystems on about 60% of its territory are subjected to anthropogenic transformation, critical ecological situation is registered on 15% of the territory, and on 2% of the territory are completely destroyed.

New system of human responses to environmental pollution in the Arctic was under formation during 1990s. Environmental protection policy in the north has been modified considerably during this period following the main trends in institutional innovations in national environmental protection in Russia in course of political and economic reforms; it can be recognised as a success of new Russia. Recent changes in national environmental policy is the key driving force for environmental reorganisation in the Arctic. Most important items of *institutiotional reorganisation* in the Arctic environmental protection in comparison with the Soviet period include: adoption of new federal and regional environmental laws and rules regulating behavior of polluters; granting of wider rights to regional authorities in environmental protection and taking a lot of competencies and functions in this field away from the center; creating a specialised system of environmental protection organs with innovations in its vertical and horisontal linkages; introduction of economic mechanisms of environmental regulation in the form of payments for pollution; establishing a system of regional and local non-budget environmental funds; modifications in the system of environmental protection financing including introduction of mechanisms for mobilisation of non-state sources for environmental protection. This system is still under formation, and many of its elements are not functioning properly yet. Sometimes the progress in its implementation is very slow, and it is necessary to introduce many adjustments to concrete regional requirements.

Application of the new Arctic environmental protection policies currently faces serious *obstacles to implementation,* and this process is accompanied by a number of grave problems and distortions. As a result there is a widening gap between the intentions of the new Arctic environmental policy, and their implementation and translating policy goals for the northern regions into actions. The standard instruments of environmental management that have quite effective results when used in the West, and that were borrowed recently by Russia and applied within different regions, often demonstrate non-standard results and outcomes there. Today, results of institutional reform and of decentralisation of power look impressive, but their actual effect on environmental problem solving in the Arctic and on changes in behavior of polluters located in the north seems to be more modest than expected.

Part of the reason is that Arctic environmental policy implementation during 1990s is under a strong impact of different *sets of multifaceted factors*; they are exogenous to the sphere of environmental protection, but their influence on its results is substantial. *First,* significant opportunities for environmental policy innovation are opened by the reforms of political and economic systems in Russia. *Second,* together with positive effects, specifics of systemic transformation in the country have negative implications, limiting and distorting implementation and effectiveness of new schemes of environmental protection in the Arctic. It has become increasingly dependent on 'situational factors', on specifics in economic and political systems' development, on the over-all instability of transformation period. Weakening of the state authority and control, corruption and shadow economy, formation of oligarchic groups and regional elites, specifics in the changes of property-rights and, especially, not sufficiently reformed property rights, economic and financial crisis, deficit of the state budget, curtailing in industrial investments, deficit of public control over realisation of environmental protection measures, all these and many others are powerful negative factors limiting the effectiveness of environmental protection in the Arctic. *Third,* many domestic social and economic problems find a grotesque expression in the Russian North (decline in industrial production, increase in the number of unprofitable enterprises, impoverishment of population, unemployment, disbalances in demographic structure, increase in the rates of mortality and deceases, etc.); their gravity and structural crisis pushes environmental protection priorities to the bottom of the Arctic development agenda (both at the level of government and public).

Currently, specific goals of national environmental policies in the Arctic, as well as mechanisms for their achievement are being formulated; priorities of government strategies are being crystallised. Some goals and perceptions are being introduced by the national policies, and are being codified by the federal and regional legislation. New approaches of the Arctic environmental policies are aimed at taking into account the *specifics* of the northern ecosystems that are more sensitive to negative human impact, and at incorporating specific response instruments (for example, introduction of higher rates of payments for pollution in the north). But, only initial steps are taken in this direction, not all of them have positive results, and many are associated with failures in application. There is no comprehensive national environmental programme for the Arctic environmental protection; separate elements of government strategy are dispersed among several federal (mainly social and economic) and regional programmes. However, serious discrepancy can be noted between the stated goals of the existing Arctic programmes and their implementation, and it is expected to increase in the nearest future, especially, due to financial and economic difficulties; delays and cuts in government financial transfers were the major reason. Over the recent years, in many cases

government finical support accounted for less than one-tenth of the allotted resources to implementation of the northern environmental programmes. Thus, many of the governmental Arctic environmental programmes are turning into a dead letters.

Today an active discussion regarding a special role of the state in the Arctic environmental protection is underway in Russia. *Wider participation* of the state in regulations, control and in creating specific and stronger regulatory regimes, rules and norms for behavior of economic actors in these areas is proposed. It is to be combined with the *state protectionism (support)* of environmental protection efforts and sustainable development projects, with offering benefits (tax benefits, preferential credits, quotas and licenses, subventions, etc.) for their implementators. Although, the essence of such approaches seems to be attractive and corresponding to the tasks of environmental problem-solving, their implementation might be limited under current conditions in Russia. Indeed, a serious contradiction and disbalance exist today between significant obligations of the state in all sectors, on the one hand, and the weakness of the state authority to perform these responsibilities effectively, on the other hand.

Development of *legislation* for environmental protection is among top priorities of the government policy in the Arctic. Today, environmental protection in the Russian north is based on the system of 1) federal environmental laws of general and special competencies (there is no framework legislation focusing on the Arctic area), 2) regional environmental legislation of the northern federation subjects, 3) agreements on the division of competence in environmental sphere between the federation and northern federation subjects. Many experts assess this legislative system as underdeveloped and containing serious gaps, that has to be improved urgently. In course of recent constitutional reform in Russia, new linkages have been established between the federal and regional legislation: it is presupposed that federal environmental laws are obligatory for all federation subjects, but the latter are able to adopt their own environmental legislation providing that it does not contradict the federal laws (in case of contradictions the federal rules are applied); starting from 1990s Arctic regions enjoy the right to define independently from the center a broad variety of legal rules and norms regarding application of environmental protection instruments. According to the national constitutional reform, the environmental protection in the Arctic is referred to the joint competence of the federation and its subjects (republics, autonomous oblasts and okrugs, krays and okrugs, and municipalities). But vertical division of functions and responsibilities between different levels of authority as it is codified by the legislation is still quite vague (particular items are contained in the 1991 RF Law on Environmental Protection), and not much clarity has been added to the issue after signing of the agreements on the division of environmental competencies between the federal and regional authorities as supplements to the framework bilateral treaties between the RF and a number of federation subjects. In the Arctic such bilateral agreements have been adopted between the RF and the Sakha (Yakuitia) Republic, Komi Republic, Murmansk oblast; other northern regions (for example, Yamalo-Nenetsk and Koryak autonomous okrugs) intend to introduce similar legal acts. Active development of regional environmental legislation can be observed during the recent decade: about one hundred environmental rules and acts have been introduced by the Arctic regions in the mid-nineties.

During the current decade, the reorganisation of the administrative structure of environmental management in the Arctic has been very dynamic and profound. It involved

reforms both in horisontal and vertical dimensions of government authority. *First,* dissemination of power away from the center, emerging new role of the Arctic regions in formulation and implementation of environmental policies, changes in vertical linkages of interactions are at the core of these innovations. Increased role of the regions in this field as the result of real federalism development is a new phenomenon of the post-Soviet regime. Today their participation in environmental policy performance has been widened immensely (from a previous zero-participation), and they became the major players at the bottom level, interacting directly with Arctic polluters. *Second,* institutional reforms resulted in institutionalisation of environmental management function within the Russian government system with the creation in 1991 of a specialised federal agency on environmental protection (it was absent during the Soviet regime and environmental protection function was dispersed among more than a dozen of economic ministries); it has its territorial organs in each federation subject in the Arctic. *Third,* horisontal interactions between government bodies involved in the environmental protection in the north are being modified, and several institutions are taking part in realisation of certain elements of environmental function; this system is supplemented by a special governmental coordination mechanism. However, the major problem is that there is no specialised body dealing with the Arctic environmental protection, and administrative capacity can still be assessed as quite low. In addition, despite institutional improvements there is still a significant overlap in the competencies of various government bodies, thus making it possible for them to avoid their direct responsibilities. Moreover, institutional competition, especially for control over financial flows to and within the northern regions is strong; lobbying of interests and corruption are significant.

Together with successes in vertical reorganisation of authority, there are a number of negative features of this process: territorial environmental organs in the Arctic appeared to be under a *dual subordination* both to the federal environmental agency, and to the regional authorities simultaneously (it results in overlaps in responsibilities, and complicates decision-making). In fact, regional administrations are gradually expanding their control over environmental organs activities (often economic priorities dominate over environmental ones). They attempt to control financial resources of the northern regional and local environmental funds, and they often use these finance not for ecological purposes, which is against the national environmental law. Finally, in a course of recent institutional reforms in the country the status of the federal environmental agency has decreased within the structure of governmental hierarchy, its former positions within governmental decision-making have weakened (it reflects the downgrading of environmental priorities within the government). It affected negatively the positions of the regional environmental committees of the north within the regional structure of power, as well as their actions to implement environmental programmes and their tasks.

In course of institutional reforms the government environmental organs, including those in the Arctic, have acquired broader competencies in *control and enforcement* of environmental protection measures, which envision both inspections and sanctions against violators, including bans on their activities. However, implementation of governmental control is associated with a great deal of problems; number of environmental violations (environmental pollution and illegal use of natural resources) in the Arctic is high because of the poor capacity of the government to enforce regulations. During recent years the upsurge of poaching is indicated in the Arctic. In Russia in general, according to recent data, about 90% of cases of environmental crimes are not punished today.

Among important innovations of national environmental management reform of nineties has been the introduction of *new economic instruments,* which are widely used now by all Arctic regions in an attempt to create incentives for producers to reduce their emissions and to shift to investments into purification facilities. The major elements of their reform include: (1) licenses and agreements for pollutants discharges; (2) payments for pollution; (3) system of environmental funds (federal, regional, and local). Northern environmental organs are the major actors who are responsible for putting this system into operation, for setting the limits of allowable emissions and payments for their discharges for each enterprise within their region (on the basis of national differentiated rates). They are the ones who supervise the process of collection of payments and control over their transfers, who design sanctions against polluters not meeting the procedural requirements. Possibility of the introduction of coefficients to calculate rates of fees which depend on specific regional, or local ecological conditions is extremely important for the Arctic with its highly sensitive ecosystems; this option is widely used today in the north. Since 1990s financial resources derived from payments for pollution, and environmental fines are accumulated in special government non-budget environmental funds which are expected to play a greater role in mobilisation of finance for environmental protection in the north. Each Arctic region now has its regional and local funds which are subordinate to the federal environmental fund. The bulk of finance collected from environmental payments remains within the territories at their disposal. It may be assessed as significant institutional innovation: in comparison with the Soviet regime the center is not interfering in spending of these funds.

Today a shift from such traditional sources of finance as the state budget to the mobilisation of new diversified *non-budget sources*, including environmental funds and finances of private sector, occurred. It is extremely important under the current crisis of the state budget and constant reduction of budget spending for environmental purposes (in the federal 1997 budget the share of allocations for environmental protection accounted for less than 0.1% of the GNP, and this budget was assessed as 'anti ecological'). In Arctic the share of financing of environmental protection activities from the state budget of all levels is lower than its average figure for Russia (22%). Relative share of the northern enterprises in financing environmental protection activities in the Arctic has increased over the recent years, and in some of them is higher than Russia's average (69%). Still, environmental investments of enterprises are negligible as a result of economic crisis and curtailing of industrial investments in general in Russia and in Arctic regions, in particular. The role of environmental funds in financing environmental protection activities is much lower than expected (5%).

What are the *effects of institutional reorganisation* and new environmental protection policy of the nineties on solving the environmental problems in the Russian Arctic? Was it able to affect the behavior of major polluting industries there and to make them shift to environmentally responsible patterns? In fact, the official data shows that during 1990s, industries in the Arctic have reduced significantly their air emission, water discharges, and wastes disposal. This trend is characteristic for most of the northern regions. These developments seem to be encouraging from the perspective of the amelioration of environmental situation in the north. They coincide over time with environmental policy reforms. However, the analysis indicates that the main reason for the improvement of environmental indicators mainly is not associated with the effects of implementation of new

policies, or enforcement of new laws and rules. The major reason of decrease in industrial emissions in the Arctic is in *decline of industrial production* in most of the northern regions under national economic recession. The latter appeared to be a more powerful tool than application of regulatory measures in environmental problem-solving. Changes attributed to the effects of new policies implementation are more modest; *compliance* with environmental requirements occurs even *without implementation* measures. However, the major problem is that the decline in pollutants emissions in the Arctic is not proportional to the curtailing in industrial production: the rates of the former are much lower (ageing of purification equipment, its switch-off, etc. aggravate the problem). The most tricky question is how would emissions controlled be when the economy of the northern regions recovers. New environment management systems in the form they function today, would not be able to deal with this problem in the future. Urgent efforts are necessary to increase the effectiveness of their implementation, and to eliminate current distortions in new instruments application.

What are the major *obstacles to effective implementation* of new environmental policies in the Arctic? Why progressive goals and standard market-based instruments do not have standard results when applied in the Arctic? Our analysis within this study shows that the main group of reasons is rooted in the specifics of the period of political and economic transformation in Russia; many of its negative implications have acquired grotesque features in the northern regions. They have a distorting influence on environmental policy performance, they are bringing serious limitations to its implementation. Concrete obstacles to implementation are as follows: weakening of the state authority at all levels and its inability to provide strong control and enforcement of environmental rules and to make polluters follow the established discipline, constantly changing institutional structures in environmental management, constant bureaucratic competition, corruption which is very high in the regions, shadow economy, formation of strong regional elites, not sufficiently reformed property-rights, crisis of the state budget, decline in environmental investments, and current priority of economic goals over environmental concerns in government decision-making.

Relatively *low effectiveness of economic instruments* introduced in a course of market reforms is especially alarming: high expectations for environmental improvements and changes in polluters behavior have been associated with their application. Although the design of new economic instruments for environmental regulations was borrowed from the West, their practical application without well-considered adaptation to a transformation period in Russia appeared to be less effective than envisaged, its outcomes have been distorted, and they differ from those initially planned. Expectations for amelioration of environmental situation in the north as a result of its implementation have been met only partially. Both specifics of the internal design of this system, and a set of exogenous factors define limits to its effectiveness. For example, the rate of fees assessed is lower than the cost of investing in more environmental responsible technologies, and many northern polluter prefers to pay for pollution rather than to make environmental investments. On the other hand, governmental organs are limited in raising the rates of payments, since they are guided by economic considerations to protect from bankruptcy and closure producers that are of economic and social importance for the region under economic crisis. In these cases, regional administration often makes a decision against the recommendations of environmental protection organs.

Economic priorities in government policy dominate over environmental requirements and logic. When only economic concerns govern the adaptation of new environmental

instruments, it brings negative results for environmental problem-solving. Due to economic considerations a number of *modifications* and *corrections* has been installed in mid-1990s into polluter-pay system to reduce financial pressures of producers, and it negatively affected the results of its performance. To protect producers from bankruptcy government introduces certain concessions and benefits into the system: *provisionally coordinated levels of emissions,* and *offsets* to a firm against its financing of investments into environmental protection, while there is no established mechanism of verification and monitoring in this respect, and this practice may be considered as a concealed mechanism of exemption from payments for pollution. In some northern regions, as a result of petitions from enterprises, the practice is expanding when the *levels of payments for pollution are reduced,* or even, there is a number of cases when enterprises are *exempted from payments for pollution.* Usually, decisions regarding offsets or exemption from payments are taken by territorial administrations; sometimes the benefits are granted not only to producers that are on the verge of bankruptcy, but to profitable and big enterprises as well, for example, such as Alrossa company, one of the world's leading producers of diamonds operating in Sakha republic. It's worthwhile noting that government-business relations in many regions of the north are rife with corruption and abuses.

The system of payments for pollution faces enormous obstacles to implementation in the Arctic regions because of the *weakness of the governmental authority* to perform its control functions. How can one consider stable flows of finance from payments for pollution when the state is not able to collect all other taxes and fines. The practice of not meeting one's financial obligations is quite common today: firms have evaded taxes, defaulted on bank loans, and have failed to pay their suppliers and employees and black market transactions are rampant. As a result, the level of collection of payments in the northern regions is much lower than normative: transfers into environmental funds account for not more than a half of planned. During recent years, the precedents are becoming more numerous when finances from the environmental funds (the law envisages their use only for ecological purposes) are not spent on environmental needs. Moreover, the recent government decision to incorporate funds in the regions into consolidated regional budgets had negative implications for functioning of the system of environmental funds. The Arctic territorial environmental organs in many cases are alienated from funds management, and decisions are taken unilaterally by regional and local administartions that attempt to expand their control over all types of financial flows.

All these trends in combination distort the whole economic mechanism of environmental regulations in the Arctic and lower effectiveness of new environmental protection policies. Effectiveness of implementation of initiated institutional reorganisation in environmental protection in the Russian North depend to a great extent on the *progress of democratic and market reforms*, as well as on liquidation of distortions caused by transformation in Russia in general, and its Arctic regions, in particular.

1. ENVIRONMENTAL SITUATION

Development Patterns. The beginning of industrial development in the Russian Arctic dates back to the early 20th century, and was connected mainly with exploration and extraction of mineral resources, with marine transport development along the northern coast of Russia, and with fisheries. It resulted in the development of non-ferrous industries on the Kola peninsula and in the south of Taimyr (Norilsk), coal mining in Pechora basin, precious and non-ferrous metals processing in the east of Arctic (Pevek), gold and diamonds mining in Yakutia. Many enterprises have been using the labor of political prisoners of *Gulag* during Stalin regime. During recent decades large deposits of diamonds have been discovered in Archangel oblast, as well as oil and gas fields on the continental shelf of the Arctic seas and in Krasnoyarsk kray. Simultaneously, energy production (including nuclear) was developing, and construction of large cities around mining sites (Norilsk, Vorkyta, Nadym, New Yrengoy) was underway. For many years Russian Arctic was the focal point for the military: the northern seas harbored the domestic navy, including the bases of nuclear submarines on the Kola peninsula, nuclear wastes were dumped there, and nuclear tests were held on Novaya Zemlya. New industrial activities are initiated, or planned for the nearest future, like drilling for oil and gas on the continental shelf (currently Prirazlomnoe deposit in Pecherskaya guba is being prepared for exploitation), gold and precious stones mining on the islands (for example, on Severnaya Zemlya), transportation of technical supplies for these operations, construction of pipelines under ice. In the future, Russian oil industry will be developing mainly in the north of Tyumen and Archangel oblasts, in Komi republic.

Currently the lop-sided orientation towards resource extraction prevail in the Russian Arctic. Fuel and energy sector dominate in the structure of economic development of the major northern regions, accounting for about 90% in the structure of industry (average indicator in Russia is 50%). According to the recent statistical data in mid-1990s the share of fuel, energy and minerals extraction and processing sector in the structure of industry was as follows: In Chukotsk autonomous okrug - 97%, in Sakha republic - 94%, in Tyumen oblast - 92%, in Komi republic - 88%, in Murmansk oblast - 60% <1>. Resource orientation is to be preserved in the future, since the major part of Russia's natural resources are located here. According to Goskomsever, in 1996 the Arctic regions contributed to 11% of Russia's GNP (with a share of population of 1%), and to 22% of export revenues. Moreover, with the depletion of natural resources in traditionally developed areas in Russia the focus shifts to the Arctic zone. The deposits of resources ensuring the survival of Russia are concentrated there: gas reserves account for about 67% of Russia's total reserves; about 90% of hydrocarbons of the continental shelf are located in the Arctic, including 70% on the continental shelf of the Barents and Kara seas, while the forecast reserves of hydrocarbons of the deep-sea areas of the Arctic ocean comprise about 15-20 billion tons of carbon equivalent. Strategically important non-ferrous and precious metals of Russia are also concentrated in the Arctic. Norilsk Nickel facilities located in the Arctic account for about 80% of the total domestic production of nickel, 72% of copper, 75% of cobalt, 98% of platinum. 100% of apatite concentrate is being produced in this area as well. The specifics of sustainable development of the Arctic will define the character of Russia's development, and more precisely, its survival. Meanwhile, the realisation of economic interests in the Arctic has irreversible environmental impacts, and patterns of its development are far from being sustainable. It seems that practical application of sustainable development concepts remains to be a wishful thinking of a long-term future.

Environmental Situation. Environmental situation in major regions of Russian Arctic is unfavorable, and in a number of them it can be considered critical. According to some experts, the area with *high level* of environmental pollution accounts for about 1,5-2% of the Arctic territory (without marine areas), and the area with *critical* ecological situation - for about 15%. Ecosystems on more than 60% of the Arctic territory have underwent anthropogenic transformation, and on 2% have been completely destroyed <2>. Concentration of air and water pollutants in the areas of intensive industrial development regularly surpass by 2-5 times the norms of allowable concentrations, and during certain periods exceed the norms by 10-13 times, and sometimes by up to 300 times. Such press endangers the ecosystems and human health. The level of chronicle deceases and infant mortality is high in the Arctic regions with critical environmental situation. Life expectancy in the Arctic is 3-4 years lower than in Russia in general, and among indigenous people is 10-11 years lower. Unfavorable environment, and especially in the areas of industrial development, negatively affects the demography of indigenous people: they are on the verge of extinction, and are losing their cultural and ethnic specifics, as well as their traditions which are closely linked to nature.

Arctic ecosystems are characterised by high vulnerability and low rehabilitation potential. However, the current economic practice in the region practically does not take into account the specifics of nature, and destructive system of resources utilisation and high human pressures have undermined the reproductive mechanisms of ecosystems. Together with failures in the implementation of sustainable development approaches, these factors result in high environmental insecurity of the Arctic. Absence of a unified concept and strategy of industrial development in the north, weak environmental control over oil, gas, and mineral resources development, which is associated with high negative environmental impacts, traditionally low public participation and control over environmental policy implementation, constant shortages in financial support of environmental measures, and many other factors do not allow to build high expectations for environmental problem-solving in the nearest future. The forecast for this area is quite pessimistic. Some scientists predict that under current rates of environmental degradation "in 30-50 years Russia would not be able to save even a portion of Arctic nature"<3>.

Environmental pollution in the Arctic is not uniform, and has a number of hot spots. It is explained by the specifics of regional industrial development around several nuclei of mining industry. There are several areas with certain variations in a maximum human pressure. Crisis ecological situation is observed on the Kola peninsula, in Severodvinsk, Norilsk, Sredneobsk regions, critical situation - in Timano-Pechersk, Novaya Zemlya, Vorkuta, Pur Nadym regions <4>. The main sources of environmental pollution in the Arctic are briefly described below.

Sources of Pollution.

Oil and Gas Development. They are characterised by multiple sources of environmental pollution, including air, water, soils contamination, and by pollution as a result of numerous accidents <5>. In addition the levels of gas flaring are high: one-fifth of the total amount of extracted oil gas is flared in Russia, with about 10 billion cubic meters of gas flared annually in West Siberia (many northern settlements, however, are still using coal, timber, and crude oil for heating the household). Level of purification is low: one well is responsible for annual emissions of 2 tons of hydrocarbons and soot, 30 tons of nitrous oxides, 8 tons of carbon oxides, 5 tons of sulfur dioxide. In Nenetsk and in Dolgano-Nenetsk autonomous

okrugs, for example, almost none of facilities have gas purification equipment <6>. In Yamalo-Nenetsk autonomous okrug compressor stations contribute to one-third of total air pollutants emission from stationary sources<7>. Thermal pollution as a result of transportation of heated gas through the pipelines is fraught with danger of permafrost melting, of thermocarst formation and thermoerosion, which spreads over the tundra areas of about 32 thousand sq. km.; as a result the probability of accidents at the pipelines is high. Oil and gas developments in the north contribute to significant deterioration in the land-use. For, example, only in Nenetsk autonomous okrug, of 900 wells drilled after 1994 about 200 are idle (20 of them are characterised by extremely high internal pressure)<8>.

Accidental oil leakages are especially dangerous for the Arctic ecosystems. Physical life of about half of pipelines of Komineft company, for example, has expired (corrosion of pipelines is indicated as a major cause of accidents). Annual number of leakages at the oil fields of West Siberia amounts to about 35 thousand, including 300 officially registered accidents (with oil spills exceeding 10 thousand tons), while minor accidents are even not registered. Cumulative oil spills into water reservoirs and on the surface according to different estimates range between 3 and 10 million tons. As a result of Usinsk catastrophe about 100 thousand tons of oil was spilled, and the area of about 60 sq. km. was polluted.

Environmentalists are seriously concerned about the development of Yamal oil and gas (including construction of a pipeline across Baidartskaya Guba), Priobsky oil field, and Timano-Pechora basin. Construction of an oil terminal near Varandey might endanger unique ecosystems and flora included in the Red Book of Russia. Continental shelf oil and gas development is expected to aggravate environmental situation in the southern part of the Barents sea, western part of the Kara sea, and in the Chukotsk sea.

Non-ferrous and Precious Metals Mining. Extraction and processing of non-ferrous and precious metals (nickel, cobalt, copper, tin, gold and platinum) and precious stones (especially diamonds) in the Arctic contributes significantly to environmental deterioration. The major hot spots are connected with the mining of gold and diamonds in Sakha, non-ferrous ores mining and metal processing in Taimyr autonomous okrug and in Murmansk oblast, and tin in Sakha and Chukotsk autonomous okrug. All of them are experiencing serious mechanical damage of soils and landscapes, accumulation of wastes, while dealing with the consequences of land damage is especially difficult in the Arctic conditions. Levels of contamination with heavy metals are high: in Chukotsk autonomous okrug the contents of heavy metals in the upper layers of soils in the areas of mining operations are 3-4 times higher than background levels.

Another type of environmental pressure is air and water emission of chemical pollutants. Norilsk Nickel ranks number one among non-ferrous enterprises in Russia for emissions of air pollutants, and especially of sulfur dioxide (95% in the structure of its air emissions). As a result sulfur dioxide concentration in the air of Norilsk on Taimyr peninsula is regularly 200% higher than its allowable norms, and on some occasions it exceeds the norms by 30 times. Occasional concentrations of nitrous oxides exceed the norms by 25 times. As a result acidification of the environment on the neighboring territory of about 400 thousand sq. km is registered; forests are damaged on the territory of 5650 sq. km, and completely destroyed on 1800 sq. km. Negative impact of Norilsk Nickel facilities in Monchegorsk, Zapoliarny and Nickel on the Kola peninsula is extensive. Contribution of these enterprises to cumulative air emissions in Murmansk oblast amounts for 70%. About 1000 hectares of forests have died within the impact zone of Pechenganickel, and ground

waters in the area of Zapoliarny and Nickel are polluted with heavy metals, mainly nickel (exceed norms by 25 times)<9>.

Transregional Pollution. The major portion of pollutants is transported into the Arctic by the *rivers* flowing into the Arctic ocean, as well as by *air flows*.

The coastal seas are accumulating polluted waters coming with about 70% of the total river flow of Russia. Annually about 1225 million of cubic meters of non-purified sewage (contains 36 thousand tons of ammonium nitrogen, 37 thousand tons of nitrates, 3 thousand tons of iron, 0,5 thousand tons of mercury) is deposited by rivers into the Arctic ocean. The river flow, industrial and municipal sewage, and marine fleet represent the major source of pollution of the Barents sea and the coastal waters of the White sea. According to official environmental data Enissey, Ob, Lena, and Kolyma are major transport routes for pollutants flowing to the rest of the Arctic seas - for hydrocarbons, heavy metals, phenols, organic matter, pesticides, radionuclides and other substances, which are usually deposited in delta zones and marine coastal areas. Polluting substances are also transported along the periphery of the Arctic ocean by the circumpolar currents. Table in the Annex shows the level of pollutants' discharges into the Arctic seas.

Air pollutants are transported into the Arctic with long-distance air currents both from continental regions of Russia, and from abroad. Annual transport of air pollutants (sulfur oxides and nitrogen) to the Arctic from Europe amounts to about 400 thousand tons. Approximately one-third comes from the European Russia. Arctic accumulates about 230 thousand tons of sulfur dioxide and nitrogen transported from the sources situated in West and East Siberia, from Krasnoyarsk kray, the Far East, Kazahstan, Central Asia, as well as from China and Japan.

2. ENVIRONMENTAL POLICY: NEED FOR NEW APPROACHES

Policy Reorganisation. During the 1990s, Russia's environmental policy in the Arctic has been modified considerably, but the process of the Arctic environmental policy formation is far from being finilised. Major innovations in environmental policy in the Arctic form an integral part of the national reform in environmental policy initiated in Russia since early 1990s, and they depend to a high extent on the further progress of the latter. Main components of national institutional reform in environmental protection have been adopted by the Arctic regions during this decade. Reforms in national policies appear to be the main driving forces in contemporary formation of the Arctic environmental protection policy. These new national policies envisage principally new instruments and mechanisms of environmental management aimed at achieving sustainable development goals, and at addressing environmental degradation which was, to a considerable extent, a heritage of the Soviet regime of extensive use of the environment. Reforms in institutional framework with the creation of a special agency dealing with environmental protection, modifications in the vertical dimension of environmental management, i.e. decentralisation and atomisation of power and control rights away from the center, adoption in 1991 of the first national Law on the Environmental protection in the history of Russia, as well as introduction of principally new economic mechanisms for environmental protection <1> were among innovations especially important for its performance in the Arctic.

Major issues of environmental protection reform in the Arctic include:

- profound changes in organisational structure of environmental management;

- elaboration of the new federal and regional environmental protection legislation;
- decentralization of environmental management with shifting the authority from the center to the regional and local levels;
- introduction of economic mechanisms of environmental regulations, including fees for pollution and natural resources utilisation;
- creation of a system of specialised regional and local non-budget environmental funds;
- introduction of obligatory environmental impact assessment for all kinds of economic activities and projects;
- development of ecological *glasnost* and free access to information regarding ecological situation.

Results of our study do not allow us to agree with some conclusions of an interesting research on the Arctic environment done by a group of Russian scholars <2>. According to a peculiar tradition which became quite trendy recently they neglect any improvements in the recent environmental policy in the Russian Arctic noting with alarm that nothing has been done to improve ecological situation in this region. Our analysis indicates that serious policy reform is underway, but the main issue is that it faces considerable obstacles to implementation, and serious problems exist regarding the outcomes when its new instruments are applied in practice.

Constraints to New Challenges. Our analysis of implementation and effectiveness of new environmental policy in the Russian Arctic indicates that there is a great deal of serious problems and obstacles in this field. During recent years, a *widening gap* can be observed between intentions of these new policies, and their implementation and translating policy goals for the northern regions into actions. The standard instruments of environmental management, which have quite effective results when used in the West, and which were borrowed by Russia and widely introduced by the northern regions, often demonstrate non-standard results and outcomes when applied domestically. Today, the results of institutional reform and of decentralisation of power look impressive, but their actual effects on environmental problem-solving in the Arctic and on changes in behavior of polluters located in the north seem to be more modest than expected.

Part of the reason is that during 1990s formation and implementation of environmental policy in the Russian Arctic is defined to a high extent by various groups of multifaceted factors which are exogenous to environmental protection process, but strongly affect its outcomes.

First, new immense opportunities for improvements in environmental protection and environmental problem solving in the Russian Arctic have been opened during 1990s by the systemic changes in the country: through *political reforms* with a shift from a totalitarian to a democratic society, and through *economic reforms* with the transition from a command and control system to a market economy. Major part of positive developments in environmental protection in the northern regions of Russia depend on further progress of these societal changes. Formation in the course of these reforms of a new institutional framework for environmental protection in the country in general, and in the Arctic in particular, can be regarded as a success of new Russia.

Second, together with significant positive challenges for application of new environmental policies the specifics of *transformation* in Russia have negative implications and brought certain limitations for their implementation and effectiveness. The environmental protection in the Arctic has become increasingly dependent on situational factors, on specifics

and distortions in economic and political development, on the over-all instability of the transformation period. The following factors rooted in specifics of political and economic transformation have an extremely negative effect, and they shape today implementation and effectiveness of environmental protection in the Arctic:

- weakening of the state authority and control
- corruption and shadow economy
- formation of oligarchic groups and regional elites; peculiarities of linkages between the government and business groups
- specifics of changes in property rights, including not sufficiently reformed property rights
- economic and financial crisis, and deficit of the state budget
- curtailing in industrial investments
- deficit of public control over realisation of suggested environmental protection measures
- impoverishment of population

Third, governmental environmental protection priorities move today towards the bottom of the Arctic sustainable development agenda in relation to considerable economic and social concerns, structural problems accumulated in these areas during many decades of its unsustainable development. Many problems of the current Russian society find grotesque expression in the Arctic regions. Indeed, according to recent official data, in the major part of the northern regions a decline in industrial production is registered. In 23 of 27 federation subjects totally or partially included into the Extreme North category, more than a half of enterprises are unprofitable. In the northern regions the state debt for salaries amounted for 37% of Russia's value, and level of unemployment - 24%, and real incomes of population decreased. From the beginning of 1990s the number of population in the Extreme North has decreased by 1 million people, and among those who moved recently from the Extreme North to other areas 70% are people of productive age, whereas the share of pensioners in the structure of the northern population increased, amounting to one-fifth of its total. At the same time in these regions the fertility rates, average life-expectancy, especially among indigenous people have decreased, while mortality and deceases rates grew<3>.

It is not surprising that in this situation the environmental concerns are sliding to the bottom of the Arctic policy priorities. However, it is alarming that in the public polls the ecological problems have also shifted down from the top of the list during 1990s, while the issues of economic survival, inflation, unemployment, crime are among the most important public concerns. At the same time public control over implementation of environmental programmes in the Arctic is still very low, as well as public participation in environmental decision-making. This is accompanied by lowering of the rank of the Arctic environmental problems on the agendas of policy-makers.

Goals and Approaches. National Arctic environmental policy is aimed at taking into account the *specifics* of this unique region of Russia, and at incorporating instruments allowing to ensure specific approaches in the process of environmental protection. Today, however, only first steps are taken to incorporate the environmental specifics of the north into regulative mechanisms (for example, introduction of higher fees for discharges of one unit of harmful substances in the Arctic versus their national average rate). In fact, well-defined and comprehensive scheme to regulate environmental uses and environmental protection in the North is not being yet in effect. Recently, the appeals of the scientific community to elaborate at the governmental level the national Arctic doctrine, and the Arctic federal programme of ecologically sustainable development have become more frequent and insisting. But, there is

still not enough response from the federal government. Various goals, strategies, mechanisms formulated recently by the government are characterised by certain inconsistencies, overlaps, discrepancies, or, are too general in their character. Some examples are shown below.

Initial steps have been made in this respect recently to codify new government *approaches* to environmental protection in the Arctic by the federal law. First, it envisages the need of government environmental regulation in the Arctic which takes into account ecological specifics of the northern regions in comparison with other Russia's regions. Second, the law underlines the sustainable development principle for the Arctic. Third, it establishes the priority of government regulation of all types of activities there, including industrial development in the North, protection of the environment and traditional activities and life styles of indigenous people <4>.

Today the governmental Arctic environmental policy attempts to take into consideration the specific *national environmental interests* in the North. These interests envisage that, due to fragility of nature, the standard methods of environmental management used in other Russian territories might appear to be dangerous and destructive for the northern ecosystems. Consideration of its vulnerability is a major component and condition for secure development of the Arctic. Preservation of its ecosystems form the basis for survival of Russia in general, on the one hand, and of the northern indigenous people, on the other hand. At the same time national interests also reflect the global importance of the Arctic: many of its areas, and especially the Arctic islands, have unique ecosystems which do not have their analogs anywhere in the world, and some of its flora and fauna species form the world's biodiversity gene pool. Arctic plays a special role in the preservation of the global climate and global ecological balance.

Main *goals* of federal environmental policy of Russia in the Arctic are to *provide environmental security through active governmental environmental regulation and stimulation of environmental protection activities* which are indicated in a concept of "Fundamentals of government policy in the Arctic", elaborated recently by Goskomsever together with other government bodies <5>. During parliament hearings in the State Duma on Russia's environmental policy the *achievement of sustainable schemes of environmentally secure development of this macro-region* was established as the major aim of governmental environmental policy in the North In attaining these goals it was suggested to depart gradually from a lop-sided orientation to natural resources extraction, and in the long-term perspective to rehabilitate the ecological stability of individual ecosystems, as well as of the entire nature-climatic zone.

As a *mechanism* for realisation of governmental environmental policy in the Arctic, the 1997 hearings in the State Duma propose to develop:

1. Governmental *strategy* of the northern nature utilisation with determining maximum allowable limits of incorporation of natural resources into economic activities, as well as defining technologies of resource mining and processing according to the principles of rational resource-use.

2. *Economic mechanisms* of environmental uses in the North, consisting of the system of ecological limitations and assessments of allowable interferences in natural complexes, charges and fees for environmental uses, financial transfers for nature protection.

3. *Legal basis* for environmental protection in the North, and regulation of environmental uses within economic activities.

4. *Programme and mechanisms* of ecologically oriented industrial transformation and diversification of environmental uses on the basis of integrated impact assessment of renewable resource potential (water, soils, land-based and marine biological resources).

5. *System of rehabilitation measures* for amelioration of the environment in the areas with crisis and critical situation <6>.

Priority directions of governmental environmental policy in the Arctic attempted to reflect the specifics of environmental protection in the region. According to existing federal legislation they include:

- rational and effective use of renewable and non-renewable natural resources;
- elaboration and introduction of ecological norms according to natural and climatic conditions of the North, which are obligatory to all organisations and people;
- decision-making regarding creation of special protected natural areas, organisation of ethnic-ecological zones, and allocation of limits and quotas for biological resources for various actors according to ecological requirements;
- elaboration of measures for ecological amelioration in the zones of environmental stress and for mobilisaton of finance for these purposes;
- dissemination of information regarding projects on development in the North among non-governmental organisations of indigenous people;
- integrated assessment of Arctic programmes, and actual trends in their implementation;
- development of technologies of recultivation of anthropogenically damaged landscapes <7>.

State Protectionism and Control. Currently, an active discussion is underway in Russia regarding the role of the state in environmental protection in the Arctic. The idea of active, or *special role* of the state with its wider participation in regulation and formation of a *specific environmental regime* for the northern areas is very popular. It envisages introduction of system of governmental regulations and norms stricter than for other regions of Russia, stronger requirements to industrial technologies applied in the north, and limitations or bans on certain types of activities with destructive ecological consequences, accompanied by strong state control over their enforcement. It suggests that regulation in the use of the environment and its resources should be within the competence of the state: its executive bodies should have a right and obligation to regulate all aspects of environmental uses by both administrative and economic instruments. Priority of federal legal acts and higher role of federal authorities in regulation of environmental protection, natural resource use, and in social and economic sphere are envisaged <8>. This is to be combined with the system of government support for economic actors and different interest groups involved in sustainable development in these areas and realisation of environmental benign projects. Tax benefits are to be granted by the government to the firms investing in reconstruction of purification equipment, in environmentally clean technologies, etc. (it does not include financing of liquidation of negative consequences of emergencies). Advantages in credit allocation for environmental purposes are to be provided for economic actors involved in the implementation of sustainable development projects in the Arctic, for example, the creation of facilities for processing of products of deer-breeding and wastes disposal. According to this approach the *state protectionism* should be one of the major features of the national Russian policy in the Arctic.

Some of these approaches have been established by national legislation adopted recently. In the 1996 federal law "On fundamentals of government regulations of social and economic development of the Russia's North" a special role of the state in regulation of environmental protection in the Arctic is outlined (art.12). As one of the main principles of

government regulation in the region within new economic and political framework, this law envisages the state protectionism (support), and establishes privileges for main economic sectors provided that their activities are aimed at satisfaction of the needs of the state in their products to be consumed in the north. *Selectiveness* in governmental support is declared as another principle of supporting the producers meeting the needs of the state in solving the social problems. However, particular environmental needs in the region are not underlined specially. The mechanisms of governmental support presuppose "privileged crediting of perspective producers", as well as allocation of governmental support for organisations "participating in providing for the needs of the state" are among others<9>. The law specially emphasises introduction of governmental incentives for investments and allocation of credits under privileged terms to actors who create new jobs, and especially within the sector of utilisation and processing of wastes from mining and forestry (art. 6). Specific mechanisms of governmental support for environmental protection in the Arctic indicated by this law include *regime* of environmentally benign uses which takes into account high fragility of northern nature, participation in implementation of federal and regional *environmental programmes*, formation of non-budget governmental *funds* accumulating a portion of finances from payments for the use of non-renewable natural resources, and *limitation* of economic activities in certain areas of the North (art. 4, 5).

Although the core idea of these new approaches seems to be attractive, the effects of implementation of such approaches in practice might be limited in the current reality in Russia. The situation is characterised by extreme weakness of the state authority at all levels. Over the recent years actual authority of the state has become a contradictory issue. On the one hand, under the impact of lobbying by different interest groups, the state is creating concessions and preferential regimes for certain economic actors, or regions, through a system of various privileges (tax benefits, credit preferences, privileged quotas and licenses, subventions, offsets of debts, etc.). On the other hand, the state plays a very weak role in enforcement of established laws and rules, in providing effective functioning of institutions, and any kind of discipline. It is not able to counteract corruption and a shadow economy, to collect taxes and fines. Serious gap between tremendous obligations that the state has undertaken in all spheres, and its weakness to perform them effectively is becoming more and more obvious, and it is progressing over time.

Moreover, it is peculiar that when authorities in Moscow are indicating increased role of the state protectionism in the Arctic, usually they do not envisage the government support to the environmental sphere. Social and economic support of this macro-region represents the current priority, and environmental issues are slipping into their shadow. At the same time, the environmental protection is skillfully used by the state and many politicians as an umbrella when they declare their intentions in the field of sustainable development of the North. But in reality frequently it has nothing to do with their real actions at the stage of implementation of the declared goals and programmes. They easily forget about the issues advertised earlier, and environmental concerns are being substituted by concerns regarding the use of natural resources, and primarily of mineral resources, and protection of interests of their users. Often current priority is the 'improvement of interactions in the use of nature' (read: use of subsurface resources) between the federal center and northern territories.

3. FORMATION OF ENVIRONMENTAL LEGISLATION

Development of legislation for environmental protection in the region is included in top-priority tasks of governmental environmental policy in the Arctic. Today, preservation of the environment in the Arctic is based on the system of *federal* environmental laws and legal acts of general and special competence, on *regional* environmental legislation of the northern subjects of federation, as well as on agreements on *division of competence* in environmental sphere between the federation and federation subjects of the north.

Federal Legislation. There is no framework legislation specially focusing on regulation of environmental protection in the Arctic, and many scholars characterise its absence as a serious gap in domestic legislative practice in this field <1>. The legal basis which would ensure comprehensive environmental protection in all spheres of environmental uses of unique Arctic nature is underdeveloped. The major federal environmental laws adopted during the 1990s need additional provisions reflecting the specifics of environmental preservation in the Arctic. For example, it was noted that the effective federal laws on Environmental impact assessment, on the Subsurface, on Continental shelf and some others do not reflect adequately the environmental specifics of this region <2>. Specific regulations are needed regarding protection and conservation of certain types of natural resources, regarding protection regimes for specially protected areas in the north, and additional requirements of integrated ecological assessment of various economic projects in the Arctic. Federal legislation is also expected to envisage the system of stronger rules and norms for this area in comparison with other regions of Russia. Also, it should contain provisions establishing strict mechanisms of control and monitoring over their enforcement of these rules. Effective federal legislation contains vague division of competence on environmental regulation between the federation, regions and locales. Some regional environmental laws contradict the provisions of the federal legislation.

Environmental legislation aimed at environmental protection in Russia in general, and in the Arctic, in particular, is based on the RF Constitution (art.71, 72) adopted in 1993. This legislation consists of basic federal environmental laws (the 1991 RF Law on Environmental Protection), and federal laws of functional and subject character (the RF laws on fauna, on air protection, water code, land code, forest code, on wastes, on the use of nuclear power, on continental shelf, on specially protected natural areas, on environmental impact assessment, on hydrometeorology, and others) adopted during the 1990s. Many environmental laws adopted during this period were supplemented by normative acts which were developing further the legal basis for environmental protection and for improving interactions between the government and actors involved in environmental uses. Within this system a special role is played by the RF Criminal Code which includes 16 types of environmental violations (including, art. 163 - illegal fishing; art. 166 - illegal hunting; art.169 - illegal timber cutting; art.223 - pollution of atmosphere and water bodies). All these federal laws and normative acts are applied to regulation of environmental protection in the Arctic.

According to the RF Constitution, the Federal Assembly adopts federal laws that are obligatory for the whole of Russia. Russia's federation subjects have the right to introduce their own environmental regulation within their territories, including adoption of laws and other normative acts. The RF Constitution establishes a general rule providing that the laws and normative act of the federation subjects cannot contradict the federal laws. In case of contradictions, the laws, or rules of the Russian Federation are applied.

Federation- Northern Regions. Today the regulation of interactions in the environmental field between the federation and the regions of the Arctic is of special importance. According to the RF Constitution (art.72) the use and management of land, subsurface, water, and other natural resources, protection of the environment, promotion of environmental security, maintenance of specially protected natural areas, counteracting natural and technogenic disasters are within the *joint competence* of the federation and the subjects of federation. The 1991 federal Law on Environmental Protection consolidates the fundamentals of these interactions. Particularly, it contains articles regarding the competence in environmental regulations of:

- republics within the RF, autonomous oblasts, autonomous okrugs (art.8);
- krays, and oblasts (art.9);
- municipalities (art.10).

While determining the scope of competence of the Arctic territories in regulation of environmental protection, the latter articles should be applied along with the articles of the RF Constitution and the RF Federal Treaty containing the provisions regarding the division of spheres of competence between the federal government authorities, on the one hand, and government authorities of the federation subjects, on the other hand.

Within the scope of their competence the government authorities of the federation subjects in the north of Russia are able to execute their *own regulation* of relations in the sphere of environmental protection on their territories according to the effective RF laws. According to the 1991 Law on Environmental Protection the subjects of federation beginning with the current decade have got a right to define the main directions of environmental protection within their territories. Simultaneously, more specific tasks include the allocation of licenses, permits, and quotas for emission of pollutants, for the natural resource use, for wastes disposal, as well as the definition of rates of charges, their collection and further transfer and distribution, performance of environmental impact assessment, exercise of environmental control, closing of heavily polluting enterprises, and maintenance of specially protected natural areas. However, this law does not ensure a clear vertical separation of particular environmental functions between different levels. The regulatory rights of government authorities regarding natural resources are being realised according to the specific status of a particular natural resource, i.e. only regarding natural resources being in their territorial competence (municipal, oblast, kray, republican, or federal resources). According to the RF Federal Treaty division of natural resources into federal, or other territorial levels is based on mutual agreements between the federation and its subjects.

During recent years the framework treaties on *division of competence* between the federal government authorities and government authorities of a number of subjects of federation have been signed on the basis of the RF Federal Treaty and the RF Constitution. In addition, different agreements between the RF government and administrations of the subjects of federation have been concluded on particular matters, such as the division of competence in environmental protection, in fuel and energy sector, in the development of the subsurface, in management of the Northern sea route, etc. Nowadays, the framework bilateral treaties and subsequent agreements have been signed between the Russian Federation and the Republic of Sakha (Yakutia), the Komi Republic, and the Murmansk oblast.

For example, in 1997 the "Treaty on the division of competence and subjects of authority between the organs of government authority of the RF and organs of government authority of Murmansk oblast" was adopted. It was followed by a package of 17 agreements covering

different matters, such as: "Agreement between the RF government and administration of Murmansk oblast on the division of competence in environmental protection and promotion of environmental security", "Agreement between the RF government and administration of Murmansk oblast on the division of competence on environmental monitoring and forecasting of natural disasters", "Agreement between the RF government and administration of Murmansk oblast on the division of competence on the use, protection and conservation of forest fund within the territory of Murmansk oblast", "Agreement between the RF government and administration of Murmansk oblast on the division of competence in prevention and dealing with the consequences of environmental and technogenic emergencies", "Agreement between the RF government and administration of Murmansk oblast on the division of competence in fuel and energy sector development", and others. Among 15 agreements on different subjects signed between the Russian Federation and Sakha Republic we may note "Agreement between the government of the Russian Federation and of the Republic of Sakha (Yakutia) on environmental protection and use of natural resources" and "Agreement between the government of the Russian Federation and of the Republic of Sakha (Yakutia) on the management of the Northern Sea Route " <3>.

The contents of these agreements in environmental sphere have a lot in common, and are based on a unified scheme. For example, the 1997 "Agreement between the RF government and administration of Murmansk oblast on the division of competence in environmental protection and promotion of environmental security" <4> envisages the division of competence between the federal and oblast levels of government authority. It also indicates the spheres of joint actions. According to its article 2, the federal level is responsible for elaboration and realisation of unified governmental environmental policies, for implementation of federal ecological programmes, for establishing the regime regulating environmental uses in the Arctic zone taking into account the interests and specifics of this macro-region. It is also responsible for the decision-making in the sphere of imposing the limits or bans on actors' activities in the Arctic in case they violate the environmental legislation and norms. The competence of the Murmansk oblast administration has a more specific character, and includes, *inter alia,* participation in elaboration and implementation of federal ecological programmes; compilation of inventories of environmentally hazardous objects within the oblast's territory; allocation of permits for pollutant emissions and defining the rates of charges for particular actors; testing economic mechanisms of environmental regulations, control over the use of resources from the oblasts's environmental fund, and over financial transfers to the federal environmental funds (art. 4). The agreement indicates additional rights of the Murmansk oblast administration, particularly, the adoption of oblast normative acts and norms in the sphere of environmental protection which are not contradicting Russia's federal legislation. Government organs are able to establish differentiated rates (based on the basic norms of charges defined by the federal legislation) for pollutants emissions and for the use of natural resources within the oblast territory. In the absence of federal basic rates, Murmansk oblast may introduce provisional rates of fees (art.5-7). The agreement includes the following issues in the joint competence: coordination of environmental policies and preservation of territories of traditional uses of natural resources by the indigenous northern people, development of specially protected natural areas, joint implementation of environmental programmes, financial and technical support of territorial environmental protection organs and their inspections, governmental support of producers transferring their facilities to low-wastes and resource-saving technologies (art. 8). Development of international contacts in environmental field is also within a sphere of the

joint competence. In general, the provisions of this agreement are based on the federal environmental legislation in effect, and are not contradicting it.

Currently, a number of the northern federation subjects, i.e. some autonomous okrugs are involved in the elaboration of treaties and agreements on the division of competence with the federation on several issues. For example, Yamalo-Nenetsk and Koryak autonomous okrugs have prepared the draft agreements on the division of competence with the federal level and covering different subjects, including environmental protection, and management of the Northern Sea Route. However, certain difficulties and obstacles exist within this process. For example, prior to the conclusion of a bilateral agreement with the federation, the Yamalo-Nenetsk (YANAO) autonomous okrug has to sign a trilateral agreement on the division of competence with the Russian Federation and with the Tyumen oblast (YNAO is included into Tyumen oblast). In this particular case, the chain presupposes at its initial stage the adoption of the agreement between the Russian Federation and the Tyumen oblast, which has not been signed yet.

Provisions of these treaties and agreements on the division of competence between the federal authorities and authorities of the Arctic territories in the area of environmental protection are usually aimed at specification and supplement of federal norms, and simultaneously are not interfering with them. These agreements may have an intermediate status between the federal legislation and legislation of the Arctic territories within the Russian Federation, and provisionally fill in the gaps in the existing federal environmental legislation.

Regional Legislation. Active development of environmental legislation, norms and rules of environmental protection have been taking place in the 1990s in the country. More than one thousand legal and normative acts in the environmental field have been adopted in 1996 by the subjects of the Russian Federation. About one hundred environmental legal acts have been introduced in the Arctic regions. The largest amount, i.e. 32, have been adopted in the Republic of Sakha (Yakutia), it was followed by Chukotsk autonomous okrug with its 20 acts; in Murmansk oblast and in Dolgano-Nenetsk autonomous okrug 5 and 4 acts have been adopted respectively. They include regional laws, ordinances, resolutions of legislative and executive organs, resolutions of territorial administrations, normative acts of the environmental committees at different level of regional hierarchy. Federal environmental legislation and regional rules of executive and legislative authorities serve as a basis for the development of regional environmental legislation.

The greatest amount of regional environmental acts of the Arctic territories concern the sphere of protection and conservation of flora and fauna, of specially protected natural areas, as well as institutional innovations in environmental management at the regional level (regulation of major functions of territorial environmental organs, including the governmental control, governmental assessment, licensing, establishing of norms, etc.). In Murmansk oblast in 1997, the package of legal acts included the adoption of the status of the oblast environmental committee, legislation on the oblast environmental fund, resolutions of the oblast administration on quotas and payments for pollution in general, and for major air polluters Pechenganickel and Severonickel, in particular. In Archangel oblast in 1997 the resolutions of the oblast administration were adopted on biological zakazniks (type of a specially protected natural area), on the inventory of specially protected natural areas, on expansion of the protective territory around the Pinega governmental zapovednik (type of a specially protected natural area), on payments for the use of fauna, and on licensing of water reservoirs use. In Nenetsk autonomous okrug in the same year, its administration adopted the

normative acts on the environmental fund, on rates of charges for pollution, on control over transport in tundra areas, and on adoption of environmental education programme. In Nenetsk autonomous okrug in 1996, its governor adopted a resolution on indexation of payments for pollution, on environmental protection measures for water transport, on protection of deer pastures against fires, on hunting rules, and on hunting for the northern deer. In Sakha among the whole package of environmental legal acts one can emphasise the adoption of rules for hunting, resolution on the republican Red Book, on quotas for valuable fish species, on allocation of permits for collecting and sales of wild mushrooms and berries included in the Red Book, on payments for the use of water, adoption of a special regime for unique lakes, on waterfowl recommended for inclusion into the list of RAMSAR convention, on control over the stay of the foreigners in the republic with the goal of hunting and use of the flora, on moratorium on hunting for wild hoofed animals <4>.

4. REORGANISATION OF ADMINISTRATIVE FRAMEWORK

Major Changes. During 1990s, institutional system for environmental management in the Russian Arctic underwent significant innovations. They were defined by the *institutional reform* of environmental management in Russia, which predetermined changes in the institutional framework of environmental management in the north.

Serious reorganisation took place during the nineties in *vertical institutional dimension*, with modifications in vertical institutional interactions, and in vertical distribution of governmental authority. Today, dissemination of power away from the center, and emerging of a new role of the regions in formulating and realising the environmental policy are the core of these processes. With the development of a real federalism in Russia, the northern regions are playing an increasing role in environmental policy. This is a new phenomenon, since during the Soviet period their impact was reduced to zero. In fact, the regions were not able to implement their own environmental policies, and their environmental interests had been subdued. Such situation was attributed to two major reasons. *First*, the Soviet system of command economy was built on a sectoral principle, including the system of environmental management, but not on a territorial one. *Second,* federalism in the USSR was of a declarative character, and actually unitarism prevailed. Regional environmental policy simply did not fit into the Soviet system. As a result, in the overall structure of power there were no institutions available which were able to represent adequately the environmental interests of the regions. However, the need for regional environmental policies was obvious, since considerable variations in environmental conditions, environmental problems and environmental interests of different regions existed.

Recent increased role of the Arctic regions in environmental policy performance became possible as the result of fundamental changes in economic and political systems in Russia. Together with dismantling of command and control economy the former system of management based on sectoral principle was abolished. Thus, the opportunities for the shift towards territorial principles of environmental management were opened. As the result of changes in political system, and transition to real federalism, regional authorities in the North acquired larger role in performing environmental policies within their territories. According to the new RF Constitution, the nature protection became a joint competence of the federation and the regions. As it was indicated above, Arctic regions are elaborating today their own environmental legislation, norms and rules which regulate environmental protection activities in the north.

As a part of the new environmental policy and its decentralisation the federal level progressed to sharing its authority with a regional level. It seems that federation is doing it more and more willingly, sharing its responsibilities, financial support, and practical efforts in environmental protection with the regions. According to the federal 1991 Law on Environmental Protection the joint competence of the federation and the regions involves:

- elaboration and implementation of environmental programmes;
- establishment of fees for pollutants discharges;
- allocation of permits for the use of natural resources, and for the wastes disposal;
- governmental environmental impact assessment;
- governmental environmental control and monitoring;
- decision-making regarding the closure of industrial enterprises damaging the environment;
- organisation and maintenance of nature reserves;
- environmental education.

What institutions perform environmental functions in the Arctic today?

Institutional reorganisation of environmental management with institutionalisation of environmental management function within the government system was the major result of environmental reform of 1990s in Russia. Specialised government environmental body was created. It was a significant achievement since under the Soviet regime there was no environmental agency responsible for environmental protection activities and implementation of national environmental policies. The environmental protection function was dispersed among about two dozen government ministries and bodies engaged simultaneously in economic activities, and environmental protection, and each institution had to control environmental enforcement over its own activities mainly aimed at utilisation of the environment. This had the most negative implications for the Arctic environment: the economic interests were attributed the higher priority than environmental interests, and nature and its resources were severely plundered. The ministries of non-ferrous industry, of fuel and energy, of coal industry, which controlled activities of mining enterprises-polluters in the Arctic, formulated a major objective of the achievement of economic development plans and extensive extraction of raw materials, but not meeting the goals of environmentally sustainable development and pollution reduction.

Currently, national administrative capacity for the implementation of the environmental policy in the Russian Arctic is under formation, but still it is rather low. Within the framework of national institutional system there is no governmental organ specialising in regulation and control over the Arctic environmental policy implementation. These functions are distributed *horizontally* between several federal government institutions, the RF State Committee on Environmental Protection (Goskomekologia) and the RF State Committee on Development of the North (Goskomsever)<1> among them. According to the 1991 Law on Environmental Protection, the national environmental agency is interacting closely with federal sèctoral and functional governmental bodies, ministries, and committees. Although this law does not define their particular set, among the bodies engaged in the realisation of certain elements of environmental protection function in the north of Russia are the following: the Ministry of Natural Resources, the State Committee on Hydrometeorology, the Ministry of Agricultural Production, Gosatomnadzor, Sanepidemnadzor, the State Committee on Lands, The State Committee on Emergencies, Administration of the Northern Sea Route, Federal Security Service, etc. Their environmental functions are being implemented jointly with federal executive bodies participating in the implementation of different aspects of regional policies in the north of Russia. Vertically, these federal institutions are interacting

with their territorial affiliations established in the Arctic regions, as well as with the executive bodies in these subjects of federation and self-governance authorities. This system is being supplemented by the *coordination mechanisms* of the governmental interdepartmental commissions - Interdepartmental Commission on the Arctic and Antarctic, Interdepartmental Commission on the Development of Cooperation in the Barents/EuroArctic Region. Together, they form the institutional system for the Arctic environmental policy implementation.

In this study we aim to analyse the pattern in distribution (horizontal and vertical) of environmental protection functions between different institutions involved in environmental protection in the Arctic, and to look the way they interact with each other in this respect. Study of their control functions over implementation of environmental policy and their possible overlaps is equally important.

Major Bodies. Currently the **RF State Committee on Environmental Protection,** Goskomekologia, is the major federal institution responsible for formation and implementation of environmental policy in Russia, including in its Arctic regions. According to the national law it has *regulatory* and *control functions* in environmental protection, and it is nominated as a "federal executive body for intersectoral coordination and functional regulation in the sphere of environmental protection, providing environmental security and preservation of biodiversity, in combination with governmental environmental control and environmental impact assessment, and implementing the state policy on these issues"<2>.

Goskomekologia is responsible for the formation of vertical organisational structure for environmental management in the country. Within its framework, a system of its territorial affiliations and bodies in all 89 subjects of the Russian federation has been established. In the Arctic regions, it has a top-down hierarchy of republican, oblast, and autonomous okrug governmental committees on environmental protection. The regional Arctic institutional framework includes the territorial environmental committees in Republic of Sakha (Yakutia), in Murmansk, Archangel oblasts, in Nenetsk, Yamalo-Nenetsk, Taimyr (Dolgano-Nenetsk), Koryak, Chukotsk autonomous okrugs. In their turn each of them has its territorial affiliations in the locales (local, region and municipal committees). Together with its territorial organs the structure of Goskomekologia includes the control organs - specialised environmental inspections, which also have their territorial branches in the northern regions. Besides, it has a number of special research institutions. Within the internal structure of Goskomekologia there is no special department responsible for the implementation of environmental policies in the Arctic; these issues are coordinated within its department on regional environmental policies.

In course of recent environmental reform regional organs were supposed to become an important instrument in implementation of environmental policies in the Arctic. Today, regional environmental committees interact directly with local enterprises, and they control and enforce their environmental protection activities. This is one of the most important achievements of the national environmental reform, since now the management function is positioned closely to the object of control, and there is no need for directives to move within long top-down bureaucratic chain. During the Soviet period, major decisions on the activities of producers functioning in the northern areas were undertaken in the center at the federal level, and northern regions' authorities were only formal participants in decision-making. Nowadays, the situation changed radically. As Russia progresses from unitary to federal state, the northern regions and locales are becoming more active players in domestic environmental policy formation and implementation. Today, especially regional level of the state authority provides actual regulations and control over environmental behavior of an enterprise in the

Arctic. They issue permits for emissions of pollutants for particular enterprises, they define norms and levels of discharges, and impose environmental taxes on each particular enterprise within their territory. They are responsible for collecting these payments, for control over their regular flows, for interactions with enterprises violating the rules of payments. They monitor adherence to environmental regulations by enterprises, provide regular inspections of purification facilities, and control level of emissions. They have a right to limit or to ban the economic activities of the actors not conforming with the legislation or conditions of their license, as well as to forbid operation of objects built or reconstructed with violation of environmental norms. Also, their officers can inspect domestic or foreign vessels in terms of their compliance with ecological regulations, and in case of violations they have a right to arrest them until the question of compensation for environmental damage is solved. Today as a result of environmental management reform every Arctic region in Russia has its regional environmental fund accumulating environmental payments from enterprises acting within its territory.

The major functions of Goskomekologia institutional framework which are important for the execution of the governmental policy and control over its implementation in the Arctic include the following. First, it is a formation of legal basis, ecological norms and standards, elaboration of instructions for establishing the levels of fees and collecting payments for pollution from particular enterprises, as well as for limits and quotas for the use of certain types of natural resources; control over meeting these norms is also within its competence. Second, it allocates licenses for discharges of pollutants, for utilisation of wastes (except radioactive), for export and import of biological objects and their collections, included in the national Red Book, and for ecological auditing. Third, Goskomekologia is responsible for environmental impact assessment. Fourth, its competence includes the organisation of the monitoring over the sources of anthropogenic pollution, over fauna and flora (except forests), as well as holding the inventory of sources of environmental pollution. Fifth, it is responsible for the formation and management of the special protected areas system, and for the national Red Book. Goskomekologia's regulatory functions cover not only land-based ecosystems and activities, but marine environment as well. Together with other responsible institutions it provides protection and conservation of marine environment and its biodiversity, enforcement of compliance with the existing environmental norms within the internal waters, territorial seas, continental shelf, and exclusive economic zone of the Arctic seas. It is within the competence of Goskomekologia to prohibit import or transit of environmentally dangerous loads, raw-materials, wastes. The decisions of Goskomekologia and its territorial organs in the environmental management sphere are obligatory for executive authorities, for physical and juridical persons.

The **RF State Committee on Development of the North** - Goskomsever (in late 1998 it was transformed into the RF Ministry of Regional Policies, Minregion), is specialising in intersectoral coordination and functional regulation of governmental policy regarding social and economic development of the northern regions of Russia, and protection of rights of indigenous people. Regulation of environmental protection is among its other functions. According to its statute<3> it participates in the elaboration and implementation of the state environmental policies and environmental monitoring. It prepares recommendations on the development of the northern special protected areas, it participates in drafting the provisions of a special regime of environment and resource-utilisation in the north of Russia, and especially in the areas of indigenous people settlements. It participates in the elaboration of measures to deal with environmental and technogenic emergencies, and measures to support

the northern deer-breeding. One of its function is to issue (in coordination with other responsible governmental institutions) permits for tourism in the northern marine coastal areas for Russian and foreign physical and juridical persons.

In course of a constant governmental reorganisation during 1990s modifications in Goskomsever's functions in environmental field took place (in 1993, 1996, 1998). Analysis of this dynamics reveals that some of its initial competence in environmental field was transferred to other governmental bodies. For example, regulatory functions regarding the use and protection of natural resources in the north were transferred to the newly created RF Ministry of Natural Resources, while participation in environmental assessment of the northern territories in terms of environmental security to the RF State Committee of Emergencies. At the same time, during 1990s its competence in environmental management was expanded, and now its environmental protection function is formulated more broadly. For example, it was supplemented by "participation in ecological monitoring and in providing special regime of environmental uses", and its competence "in participation in preparation of recommendations regarding governmental environmental regulations" was supplemented later by "implementation of environmental policy"<4>. However, there are certain doubts regarding the real ability of Goskomsever to implement environmental policy in the Arctic, since it does not possess the basis and potential necessary for this purpose. It does not have adequate information and material framework, does not have a regular access to regular environmental reports from the territories, which are concentrated within Goskomekologia network. It does not possess either control, or enforcement functions in environmental management. It cannot be regarded as an independent governmental institution in terms of environmental policy implementation, since it has to share all its major functions in this field with other bodies.

Overlaps and Competition. An *overlap of competence* among governmental bodies responsible for environmental policy implementation is among one of the serious problems of the Arctic environmental management institutional framework. Their functions have never been clearly separated from each other, and certain disbalance characterises this institutional system. This inevitably results in their duplication and parallelism allowing many institutions to avoid real responsibility for the results of their activities. For example, the statute of Goskomsever indicates that it shares its responsibility with the Ministry of Agricultural Products in the development of the northern deer-breeding, and with the State Committee of Emergencies, the responsibility to liquidate the consequences of emergencies in the north. However, it is not indicated and legally established what represents the particular function(s) of each of these bodies, and who is controlling the realisation of measures in the field. Moreover, the division of regulatory environmental functions of Goskomekologia and Goskomsever is vague. While the functions of Goskomsever are clearly identified in the sphere of social and economic development, the procedures and mechanisms of its participation in decision-making, and, especially, in policy implementation are quite uncertain in the environmental field. Also, it is interesting to note that today Goskomsever is legally appointed as a governmental 'customer' for all the federal programmes on social and economic development of the northern territories. As specialised federal environmental programmes for the North are non-existent nowadays, and environmental issues are included in the Arctic federal programmes of economic and social development, it means that Goskomsever can be regarded as a major 'customer' for federal environmental subprogrammes as well.

An *institutional competition* for control over financial flows for development of the northern regions is among the problems of administrative framework for environmental policy

implementation. Competing with each other, different governmental organs try to establish their responsibility over implementation of federal programmes which are supported by certain budgetary and non-budgetary financing. For example, Goskomsever acquired an over-all responsibility over management of the 'State Programme of economic and social development of indigenous people of the North'; the directorate of this programme and stabilisation fund to control financial transfers have been established in Goskomsever. Goskomsever coordinates management of a subprogramme on environmentally sustainable development, its financing, division of responsibilities between the participating organisations, and consolidates non-budgetary resources and finance from the budgets of the subjects of federation. It controls the resources allocated, orginises tenders and places orders for deliveries necessary for research and development under this programme, and concludes agreements with investors and subjects of federation. Unfortunately, current reality in Russia shows a great deal of examples when substantial financial flows may be simply wasted (or, stolen), and responsible institutions at the final stage are not able to provide an account of the issues they controlled.

Coordination. Coordination between different governmental institutions is an important issue of institutional organisation of environmental protection in the North is . It is especially important when there is no clear division of functions between them. One of the possible options to solve this problem is to form federal specialised bodies responsible for *interdepartmental coordination.* However the practice of their functioning in Russia indicated that this mechanism is not effective: a coordinating institution does not posses enough power and responsibilities to make other actors function in compliance with its requirements.

Governmental **Interdepartmental Commission on the Arctic and Antarctic** has been created for intersectoral coordination of economic, social, scientific and environmental protection activities in these two polar regions, as well as for the control over implementation of decisions regarding these areas undertaken at the higher level of the state authority in Russia. Coordination of activities of governmental institutions and organs, participation in elaboration of recommendations regarding development of governmental policies, enhancing of cooperation with the rim states (its competence here partly overlaps with the Interdepartmental Commission on the Development of Cooperation in the Barents/EuroArctic Region) is among its goals. It is responsible for recommendations regarding incorporation of financing of the Arctic and Antarctic activities into the state budget, and also for regulatory rules and norms being adopted<5>. In the environmental sphere, it is engaged in the evaluation of regional environmental protection programmes envisaging intersectoral coordination, and in the analysis of governmental organs recommendations which require governmental decisions. Interests of different groups are represented within this commission: governmental sectoral and functional institutions, regional administrations, representatives of the leading industrial companies <6>. The head of Goskomsever is the chairman of this commission, and the latter has its apparatus in this governmental institution.

In evaluating the effectiveness of such mechanism of governmental interdepartmental coordination one may indicate several defects of this institutional system. One may inevitable question a mechanism with the help of which interdepartamental commission is to make not only governmental institutions, but also non-governmental actors, many of them recently privitised, act in conformity with its decisions in environmental sphere. The same mechanism existed within the command and control system, fitting into it (although a number of problems of coordination could be enumerated there as well). However, it is questionable how the commission would be able to apply effectively the same command-and-control mechanisms

within the market system, especially, when it has lost power over the producers, and when the power of the state is quite weak.

New Problems. New institutional system of the Arctic environmental management with its new vertical dimension and with new regional structures has been in force in Russia only during several years. However, together with positive features of this new vertical system, serious problems emerged recently, and regional institutional framework appeared to acquire certain specifics. Indeed, the territorial organs appeared to be under a *dual subordination* both to the federal environmental agency, and to the regional authorities simultaneously. This practice is widely used by the Russian bureaucracies in order to mix up the issue to their own benefit, and then to try to escape from the responsibilities. In fact, the Arctic territorial organs of the federal environmental agency appeared to be under control of the regional administration. Regional authorities are gradually spreading their control over activities of the environmental organs. Unfortunately, such specifics of institutional framework of environmental management can be regarded as a negative one.

Control rights of the federation and the regions over territorial environmental organs overlap. Dualism emerges in this respect, and it results in the evasion of responsibility, in vagueness of both rights and obligations of territorial environmental organs. At the same time, it seriously complicates the decision-making process. There are negative examples in the north when territorial organs find themselves under thorough control of regional administration. In particular, such control becomes obvious when it concerns the allocation of financial resources for environmental protection, and, especially, over resources accumulated in environmental funds. Sometimes, the regional administration attempts to spread its authority over regional environmental funds, and to use their financial resources not for ecological purposes which is against the law. Regional authorities interfere quite often in the actions of environmental organs relating to regulation of economic activities of polluters, into results of their environmental impact assessment. Often, administration decides against closure of a polluting plant because of its economic, or social importance for the region, despite decisions undertaken by environmental organs which are based on ecological considerations.

5. GOVERNMENTAL PROGRAMMES

Approaches. Nowadays, there is neither national environmental strategy for the unique Arctic region, nor a comprehensive programme for environmental protection in this area. General declarations about importance of sustainable development in the Arctic contained in the major recent governmental resolutions and documents regulating activities in the Russian North cannot be regarded as a real and comprehensive government strategy. The overall picture is quite dispersed as the elements of environmental subprogrammes are scattered as components within a number of federal government programmes (functional, or regional) dealing mainly with social and economic development of the region, and with indigenous people of the north. They are supplemented by a number of governmental environmental programmes being adopted at oblast or local level in some Arctic regions.

Several attempts have been undertaken recently at the governmental level to formulate the major items for the Arctic environmental strategy taking into account the environmental specifics of the northern areas.

For example, they are contained in a document prepared in 1997 by Goskomsever jointly with a number of other government bodies which has been a contribution to the elaboration of national Russia's policies in the Arctic. Major directions of the Arctic environmental strategy include:

- formation of environmental legislation, standards, norms and requirements to economic activities in the region;
- shift in economic activities towards ecologically oriented development with a limitation of production processes resulting in increased environmental pressures;
- diversification of environmental uses taking into account traditional knowledge;
- improvement of environmental situation in the areas with unfavorable ecological situation via reconstruction of obsolete industrial facilities, and via rehabilitation measures;
- implementation of measures aimed at rational use and reproduction of land resources, biological resources, including those of the Arctic continental shelf;
- formation of the Arctic ecological monitoring system for land-based and marine ecosystems on the basis of its territorial components;
- development of facilities for utilisation and dumping of wastes, including radioactive;
- expansion of northern zapovedniks and specially protected areas including marine regions with establishment there of transport corridors;
- undertaking special measures for the use of natural resources in the areas of indigenous people traditional settlements;
- undertaking efforts to ensure ecological security at military sites;
- prevention of environmental emergencies;
- amelioration of public ecological education, training, dissemination of environmental information including among indigenous people <1>.

Although many of these goals still seem to be quite general, and might be equally applied to other regions of Russia as part of new approaches aimed at environmentally sustainable development, attempts to elaborate such strategies are very important for the Russian Arctic. They indicate that the process of the Arctic national environmental strategy elaboration has started after a long period of neglect in this field. During 1990s the Russian scientists called for urgent elaboration of a "national environmental strategy for the Arctic to save it from the approaching ecological catastrophe" and a "federal programme of sustainable and environmentally secure development of the region"<2>.

One of the major crucial issues in this respect is to make a shift from the former Soviet practice in governmental strategic planning and programming when the major efforts were concentrated on the initial stages of a long chain in the process of national programmes realisation, i.e. on elaboration of programmes' goals and tasks, with their poor implementation afterwards, or even the absence of the implementation process as such. The most important stage of implementation of these plans used to be quite weak. Usually, their carrying out in reality remained to be in a domain of "best wishes", and mainly, did not have the desired practical results, but resulted in a socialist utopia, for which the Soviet state was famous. The mechanisms of institutional control over programmes implementation also have been weak.

Taking into account the severity of the economic and financial crisis in Russia, the implementators of the Arctic programmes might face enormous difficulties with their putting into action. Today the major problem in this field is limited financial resources for their support. In fact, only one-tenth of the federal environmental programmes already adopted are maintained by the federal budget. Mobilisation of non-budget financing, for instance, from environmental funds, is also associated with economic and financial problems. Recently,

enhanced contradictions between the regions and the center over the division of sources of financing between the regional budget, and the federal budget for the regional development in the Arctic aggravate even further the process of environmental programmes implementation. Currently, the desire of the state to solve the environmental problem in the north contradicts its ability for the implementation of this goal, and it is expressed grotesquely in the Arctic regions. Negative assessment of the current state-of-the-art in implementation of environmental programmes in these areas is also confirmed by decision-makers and practitioners from these regions: "elaborated and partially implemented environmental programmes do not create prerequisites for radical improvement of environmental situation in the North"<3>.

Below we intend to analyse mechanisms and problems in implementation of governmental programmes in the Arctic. For this purpose we would like to dwell upon two examples of federal and regional environmental programmes.

Federal Environmental Programmes. In 1996 an environmental subprogramme *"Preservation of the Environment and Amelioration of Ecological Situation"* has been adopted within the federal programme "Economic and Social Development of Indigenous People of the North"<4>. It is aimed at environmental problem solving in the region, and its major goal is defined as "creation of prerequisites for sustainable development of the territories of indigenous people settlements on the basis of preservation of biosphere and rehabilitation of their traditional patterns of environmental uses"<5>. It is supposed that rehabilitation and rational use of natural resources potential will contribute to an increase in the level of employment, on the one hand, and to preservation of traditional activities of indigenous people of the north, on the other hand. Amelioration of the environmental situation in the Arctic is regarded as a component of the problem-solving.

Among concrete environmental measures envisaged by the programme are the following:

- rehabilitation of ecologically damaged areas of oil and gas developments, and oil and gas storage sites;
- cleaning up of water bodies;
- removal of household wastes from the territory of northern settlements, with their further processing;
- cleaning of territories from industrial wastes, including missiles' residues;
- shifting of 20 enterprises to environmentally benign technologies;
- creation of 5 natural zapovedniks, ecological and ethnic protected areas on the territory of 100 000 sq. km;
- land-cover rehabilitation;
- forest reproduction on the territory of 200 000 hectares;
- regulation of hunting, fisheries, and aquaculture;
- construction of bridges over pipelines for wild and domestic animals;
- construction of fences around pastures;
- shooting the predators by deer-breeding farms;
- amelioration of ecological situation around fur-animal farms, and utilisation of manure;
- development of cage animal breeding;
- organisation of deer breeding farms;
- dissemination of environmental information and education among local population.

Although the environmental subprogramme was considered within this federal programme among its top priorities, and sustainable development approaches of the whole programme have been widely advertised, its financial support in the total volume of financing envisaged, for example, for 1997 had the lowest ranking in comparison with other five subprogrammes (household services, employment and development of traditional activities, medical services, development of communications, education, and culture). The relative level of financing for implementation of environmental measures indicated above was ridiculously low and accounted for 0,8% of the total amount of financing required for the whole federal programme. It indicates at still low priorities of environmental issues in the national Arctic objectives (when it concerns practical steps in the implementation of ecological goals).

Regional Environmental Programmes. Various environmental programmes have been elaborated almost by every Arctic region. Currently, about 20 regional environmental programmes are underway in the Russian North: the Sakha republic implement 7 programmes, Krasnoyarsk kray - 5, in Taymyr and in Chukots autonomous okrug - 4 programmes each.

Environmental programmes of the territories cover a broad range of issues. Mainly, they are of a general, comprehensive character, and they are aimed at solving various ecological problems and issues of rehabilitation in the Arctic regions. A number among them has specialised character. For example, in Sakha republic the following republican programmes are being implemented: "Environmental protection and environmental security in Sakha (Yakuitia)", "Inventory of biological resources", "Programme of conservation of biodiversity", "Programme of the government system of ecological monitoring", "Radon programme". Currently the Yamalo-Nenetsk autonomous okrug is implementing "Environmental programme of YNAO", Taimyr okrug - a programme on "Assessment of fisheries stocks" and "Conservation of wild northern deer population", the Archangel oblast - "Household and industrial solid wastes disposal", "Water supply and sewerage system in Archangel oblast"<6>.

In the majority of cases these are mid-term environmental programmes. Government authorities of different levels, i.e. federal ministries and institutions, territorial organs of Goskomekologia, administrations of the northern subjects of RF and regional executive organs are their usual customers. Various sources of financing are allocated for their implementation, including the federal, regional and local budgets, resources of enterprises, environmental funds, credits, etc. Such combination of financing sources is envisaged for the major part of the programmes. At the moment, federal financial transfers and resources from enterprises comprise the major sources in the structure of government environmental programmes' financing. High share of federal financing in governmental resource transfers is indicated in Archangel and Murmansk oblasts, and it is lower in Sakha and in Komi republics. The share of enterprises in financing government environmental programmes is substantial in Komi republic, and in Yamalo-Nenetsk autonomous okrug<7>.

Problems of Implementation. During recent years some new approaches to elaboration of the Arctic environmental programmes can be indicated.

First, in comparison with the Soviet period, these approaches include more detailed and concrete formulation of measures and steps to be undertaken for their implementation. *Second*, mechanisms of institutional management and control over programmes implementation are elaborated in detail. *Third*, diversified schemes of allocation of material and financial resources are outlined. *Fourth*, combination of sources of financial transfers,

and, most importantly, integration of different non-budgetary sources with the budget resources is envisaged. Division between federal, regional and local sources is included. *Fifth*, usually highly qualified scientists and practitioners are involved in environmental programmes elaboration.

However, considerable gap between the stated goals of the Arctic programmes and their implementation still exists, and it is widening over the recent years. The situation is expected to get even worse in the nearest future, mainly due to financial and economic turmoil. Recent experience with implementation of the northern programmes revealed at serious failures in implementation process. For example, the previous 1991-1995 governmental programme for economic and cultural development of indigenous people of the North was actually a failure. The number of objects put into operation accounted for 13% of those planned by the programme. Shortages of governmental financing and delays in their transfers are the major reason. In 1991-1995, the resources at a level considerably lower than planned have been allocated for its implementation, and moreover, they showed a tendency to decrease sharply over this period: 30% from the planned financing has been transferred in 1991, 17% - in 1992, 4% - in 1993 an 1994, 2% - in 1995 <8>.

There is a danger that already adopted Arctic environmental programmes would be turned into dead letters. As indicated above in the case of regional programmes it is surprising that under current conditions their implementators still link the prospects of their implementation with the transfers from the state budget. However, some implementators are looking for new approaches and possible solutions. *First*, they envisage diversification and combination of various sources . *Second*, they intend to make a wider use of market instruments for their implementation to compensate, at least somehow, for a decrease in the budget financing. One of the goals is a broader utilisation of non-budget financing. In the Arctic, a great deal of attention in this respect is paid to industrial companies operating in the area, particularly mining, and oil and gas producers. For example, it is envisaged that 52% of "Economic and Social Development of Indigenous People of the North" federal programme budget would be covered by non-budget financing. According to experts evaluation, the recent experience in the implementation of "Hydrometeoroogical Services in Support for Economic Development" state programme indicated that non-budget sources contributed to meeting some of its targets in the northern regions. In 1996 they provided raising of funds for construction of automatic hydrometeorological station for the Arctic and remote areas, introduction of technologies for processing data on ice situation, and automatic tsunami warning system in Kamchatka <9>. Non-budget sources are envisaged to cover certain items in environmental subporgamme of "Economic and Social Development of Indigenous People of the North". For example, they are to cover completely the construction of animal bridges across the surface pipelines, of pasture fences, support of cage animal-breeding, transition of enterprises to environmentally benign technologies. Together with the local budgets they are to participate in cleaning of the territories of oil and gas developments, areas of oil and gas storage facilities, and around the pipelines. Construction of biogas production facilities around the cattle breeding farms is supposed to be supported by the federal budget and private investors, with the predominant participation of the latter<10>. Within the framework of another regional northern programme, i.e. a the programme for testing of a pilot regional model of transition to sustainable development in the North of Russia to be implemented in Magadan oblast during 1998-2005, it is planned to use "non-budget resources of the Russian and foreign banks, and other organisations together with the oblast's budget" <11>. Still, a great deal of unresolved issues are left in this respect, and especially those concerning concrete mechanisms and initiatives for investors to participate in the implementation of the

programmes and in investment process in the North of Russia. The major problem is that it is quite difficult in the current economic situation to attract investors' money to the extreme north. The overall picture regarding methods of mobilisation of resources is quite uncertain. Recently the RF government formulated task for Goskomsever "to elaborate mechanisms for mobilisation of resources of economic actors functioning in the North of Russia for social problems solving in these regions"<12>.

6. NEW IMPLEMENTATION MECHANISMS

Major Innovations. The transition of Russia to a market economy creates a new systemic framework for environmental management. Since 1991, economic instruments of environmental management have been introduced, and they comprise one of the major innovations of the new environmental policy in the Arctic. Market-based economic instruments are envisaged to become main regulators in providing incentives to polluters to change their behavior. The major idea of this new policy based on economic instruments is to use 'polluter-pays' principle, and to shift to a wider use of internal resources of enterprises for environmental protection. Economic instruments' introduction resulted in general modifications in environmental financing mechanisms. The shift from such traditional sources of finance as the state budget to mobilisation of new diversified sources with broader involvement of non-governmental actors took place. Such economic mechanisms as payments for pollution, environmental taxes and fines accumulated in environmental funds of the Arctic regions are expected to play a more significant role in the mobilisation of finance for environmental protection here. However, there are considerable obstacles to the implementation of this system in Russia during transition period <1>, and they are especially serious in the Arctic regions.

The major elements of environmental policy innovation governing the interactions between the state organs on environmental protection and polluters include:

- license and agreement on pollutants discharges and use of the environment
- payments for pollution
- federal and territorial environmental funds

Licenses

The system of permits for the environmental uses and pollutants discharges is functioning in Russia<2>. According to it each company involved in environmental use has to conclude an environmental agreement with the state executive organ, and to get a *license* (permit) for the use of the environment. Regulation of interactions between the state and a polluter in the environmental sphere is based on these two documents. Thus, an enterprise or an organisation dealing with the use of natural resources in the Arctic, or with emissions of air and water pollutants, or with wastes disposal has to get a license to acquire such right, and to conclude an environmental agreement with governmental organs. Usually the territorial organs of Goskomekologia allocate such permits (with the exception of huge industrial project for which the permit from the federal level is required) <3>. This is an innovation within the new system, and it underlines the greater role of the territorial organs in the environmental management. To get a permit, an actor has to present a package of documents containing the information on its activities and results of environmental impact assessment of its project. The agreement specifies the procedures, requirements, and rules for the environmental uses, as

well as its rights and obligations, including the dispute settlement. It contains the individually set limits for pollutants discharges, detailed schemes for environmentally protection measures, levels and schemes of payments for pollution.

Payments for Pollution

New Design. Since 1991 the new system of environmental management has introduced payments for pollution in the Arctic which became a major economic instrument of environmental management<4>. Currently, a polluter in the Arctic pays for water and air pollutants discharges (from stationary and mobile sources), and for solid wastes disposal. Later, the system of payments was introduced for sewage discharges into municipal sewerage systems, and payments for the use of water, including its consumption and discharges into surface water-bodies, territorial and internal seas, in hydroelectricity production, in recreation, in mining of raw materials, in timber-floating<5>. According to the latter federal law, the basic rates of payments for water discharges had been fixed for every water-user within their individually allowable limits (on the basis of regular rate of Rbls 3,2-27,0 per one thousand cubic meters of sewage). The rates have regional variations by different economic regions, river basins, lakes, and seas.

For example, for the northern areas minimum and maximum rates of payments for water sewage discharges have been fixed as follows (in Rbls per 1 thousand cubic meters of sewage discharged): for the Pechora River 6,5-9,7; N.Dvina - 5,6-7,7; other rivers and lakes of the Northern Region - 8,6-10,8; Ob - 6,6-9,8; Enissey - 6,6-11,7; Lena - 5,5-10,6; for the White Sea - 3,3-4; the Barents Sea - 3,3-3,7; the Kara, Laptev, E.Siberian, Chukotsk Seas- 3,2-3,5; the Bering Sea - 4,5-7,9 <6>.

Currently, efforts are made to spread pollution payments to other types of pollutants and spheres, such as radioactive wastes disposal, electromagnetic pollution and noise, marine and ground waters pollution, carbon dioxide emissions, production and consumption of ozone depleting substances. However, this system faces not only methodological problems, but sometimes has to counteract interests of powerful industrial groups. For example, previous efforts of environmental organs to introduce earlier payments for CO2 emissions had been suppressed by powerful energy lobby.

Under this system of charges for pollution, a firm acting in the Arctic regions may discharge various types of pollutants up to individually specified limits, but is required to pay fees. The fees are increased usually five-fold against the basic rate when a polluter exceeds allowable limits. Payments for pollution within the allowable limits are subtracted from production costs, and payments above the allowable limits are taken from the polluter's income. Differentiated basic fees for each pollutant are fixed by Goskomekologia. The limits of allowable emissions are set by its regional (or local) branch in the northern areas for each particular enterprise in a region. These emission limits are incorporated into an environmental agreement and a license allotted to a polluter. On this basis the level of payments (for each substance) is established for each particular firm by territorial environmental organs. Also, they may introduce corrections into a basic rate of payments depending on the regional circumstances. This is particularly important for the Arctic regions with their environmental specifics and fragile ecosystems, and this possibility is being used quite often in the north. The basic rate of payments is multiplied by special coefficients depending on ecological factors characteristic for a particular northern area. For example, in 1996 the territorial

environmental organs of Hanty-Mansy autonomous okrug have introduced the regional coefficients for calculation of payments for pollution level taking into account the state of the northern ecosystems and their elements (2,4-2,8 - for air pollution; 2,4 - for wastes disposal; 2,1 - surface and ground waters)<7>. Finally, this regulatory mechanism incorporates changes in inflation (by using inflation index established by the federal government) <8>. Despite several corrections of the basic rates during 90s they lagged behind the inflation rates in the country, and in its turn this reduces the effectiveness of the whole system.

Limits and Obstacles. The system of pollution charges was intended to provide incentives for firms to reduce emissions. In practice it appeared to be not as effective as envisaged, and expectations for amelioration of environmental situation as a result of its implementation have not been met. Some of the factors of internal design of this system, coupled with a number of exogenous reasons account for certain distortions and limitations in performance of its schemes. One of the reasons is that the fees assessed are much lower than the cost of investing in more environmental responsible technologies. For example, according to expert evaluations of the World Bank for Pechenganickel and Severonickel non-ferrous facilities on the Kola peninsula, annual payments for pollution of these two major polluters in the Russian North are about 1000 times lower than the level of investments necessary for transformation of their behavioral patterns <9>. The result is that polluters often prefer to pay for pollution above allowable limits of emissions rather than to invest in environmental facilities. In some Arctic territories it appears that in the structure of payments collected by the environmental organs the transfers from payments for pollution above the allowable limits predominate. In Archangel oblast in 1994 the level of fees transferred from enterprises for pollution above allowable limits was 1,6 times higher than for pollution within the limits <10>.

Under these circumstances, many northern enterprises pay for pollution, but do not invest in purification facilities, although this contradicts the national Law on Environmental Protection which underlines that "environmental payments do not free from undertaking environmental protection measures"(art.20, i.6). At the same time the governmental organs are not able to increase the basic rates of payments for pollution, since they are guided by economic considerations to protect domestic producers against bankruptcy and closure (due to environmental reasons).

Lenient enforcement is another factor lowering the effectiveness of these pollution charges. Certain *modifications* have been introduced during 1990s into this system, mainly under the impact of economic considerations and under impact of economic crisis. When economic concerns only govern adaptation of new environmental instruments to current reality, they bring negative results. At present many Russian firms, and not only in the Arctic, are exceeding their allowable emissions and incurring the fivefold increase in fees. Enterprises complain to the regional administration that increase in payments for pollution would bring them to the verge of bankruptcy, and they would be closed down. *Instead of a closure* regional governmental organs have to apply protection measures, and they introduce 'as an exception' certain concessions and provisional norms into the system of environmental payments. Thus, the environmental organs adopt *'provisionally coordinated levels of emissions'* for particular polluters. In this case a firm still pays higher fees, but can deduct all of them as costs (in comparison with the above-mentioned deduction from its income). Such protection measures are applied today not only to firms experiencing severe financial deficit under economic crisis. Even rich enterprises-polluters, such as Norilsk Nickel, for example, managed to get governmental concessions. In return for governmental protection efforts, an

enterprise is supposed to set up a programme of measures to reduce emissions to allowable levels and promises to meet its goals, while local environmental authorities control its implementation. However, it is very likely that adoption of such programme does not lead automatically to emission reduction, and that the same story might be repeated again. As a result, the use of provisionally coordinated levels of emissions is increasing, and the effectiveness of payments for pollution system is decreasing.

During recent years a new trend is developing within this system when payments for pollution of a firm can be *offset* against its financing of investments into environmental protection. During the recent years the share of offsets is rapidly increasing. In mid-1990s the exempt from payments for pollution as offsets was extremely high: in 1995 it was twice as big as the collected sum of payments for pollution, and about 1680 enterprises were using offsets <11>. This regulatory mechanism appeared to have a great deal of distortions. For example, sometimes firms functioning in the Arctic unilaterally decide to use offsets and not to transfer payments for pollution into environmental funds without coordination and adoption of offsets by environmental organs. Moreover, institutional control, verification and monitoring over the use of the offsets by a firm to finance implementation of their environmental programmes is poorly developed. There is no guarantee that offset funds would be used effectively according to ecological priorities. Under current economic conditions, the offset sums are too low to provide for true environmental reconstruction. As a result this practice can be used as a concealed mechanism of release from payments for pollution.

In some regions inadmissible practice is developing when as a result of petitions from enterprises the levels of *payments for pollution are reduced*, or even they are being *exempted from payments*. In 1996 about 2414 firms in Russia were being released completely from payments for pollution (Rbls 70 billion), and for 1251 enterprises the levels of payments were reduced (Rbls 465 billion)<12>. The main reasons in a great deal of cases have been either the difficulties in financial situation of enterprises, or their undertaking of measures in social or cultural fields which serves as a basis to grant exemptions from environmental payments. Such modifications in environmental policy implementation negatively affect its results and lead to serious distortions in the effectiveness of economic instruments of environmental regulations.

Usually, decisions regarding offsets or release from payments of a particular enterprise are taken by the territorial authorities. For example, in Sakha Republic, according to resolution of its government <13> the offsets for Rbls 1 billion have been granted in 1997 to the firm ALROSSA, one of the world's leading producers of diamonds. The Sakha government also decided to exempt the large electricity producing company Yakutskenergo from payments for pollution for Rbls 1,3 billion (its insolvency was indicated as an official excuse for such measure). It means that republican environmental fund in 1997 lacked about Rbls 2,3 billion. In Archangel oblast the offsets have been granted in 1997 to 42 enterprises (including organisations of military complex, communal sector, paper and pulp industry, Rosneft company), 216 enterprises were exempted from payments for pollution, while levels of payments have been reduced for 28 enterprises <14>. Similar practice is actively developing in other northern regions.

The system of payments for pollution faces enormous obstacles to implementation in the Arctic regions because of the weakness of the governmental authority in Russia in general. It offers producers another means of avoiding pollution charges: simply not paying them. Incredible as it may be seem to people in the West, and despite the nominal existence of penalties, the practice of not meeting one's financial obligations is quite common today. Firms have evaded taxes, defaulted bank loans, and have failed to pay their suppliers and employees,

and black market transactions are rampant. However, the territorial environmental organs being under subordination to local administration are often weak enough to apply true levers of control and enforcement towards polluters. How can one consider stable flows of finance from payments for pollution when government-business relations in many regions of the north are rife with corruption and abuses? Under these conditions, environmental fees and fines are not as effective as desired.

The level of collection of payments from enterprises in the Arctic regions is much lower than normative. By mid-1990s some northern regions which were recognised as heavy polluters have disappeared from the list of leaders in payments for pollution. It did not happen because they have considerably decreased their emissions. The major reason was the weak authority of the control governmental organs not able to force many important polluters to pay environmental charges. For example, in Sakha in 1996 the actual level of payments for pollution transferred from 510 enterprises accounted only for one third of the expected flows from these enterprises <15> (only in Nenetsk and Chukotsk autonomous okrugs the envisaged level of fees collection was achieved).

Environmental Funds

New Design. Together with the introduction of payments for pollution a system of governmental environmental funds are established to finance environmental protection activities. Financial resources derived from payments for pollution are deposited into these funds, contributing to the major part (80%) of their revenues. Fines for pollution, finance from the confiscated fishing and hunting gear, etc. are also accumulated in the funds. The system of environmental funds has three main levels: *federal* environmental fund, *regional* (republican, oblast, kray), and *local* (municipal and district) environmental funds. In the Russian Arctic regional environmental funds have been created in the republic of Sakha, in Archangel, Murmansk, Kamchatka oblasts, in Nenetsk, Taymyr, Yamalo-Nenetsk, Chukotsk and Koriak autonomous okrugs.

The mechanism of distribution of financing within this system of funds is the following. After deduction of 10% of the resources accumulated from environmental charges and fines in the federal budget, 60% goes to the local level, 30% - to the oblast and republican level, and 10% - to the federal level. Such scheme of distribution of financing indicates that the major part of resources from payments for pollution is accumulated at the regional and local levels. It is a considerable achievement of the environmental reform in Russia, since during the Soviet period transfers of financial resources had been controlled from the center. Today, the northern regions have a right to use the major portion of resources derived from environmental charges and fines. According to some experts, introduction of this new system at the regional level will provide "a shift from sectoral to territorial principle of environmental management with subsequent changes in the structure of investments into environmental protection"<16>.

What Practice Does Show? The transfers from payments for pollution into environmental funds appeared to be lower than predicted. According to the assessments of environmental organs, it amounted to 40-50% of the planned level<17>. In the Arctic regions the situation is similar, in some areas being even worse. There are several approaches of territorial environmental organs to the possibilities to increase financial transfers into environmental funds. Some of them suggest to increase the level of collected payments for pollution by revising the mechanisms of indexation of charges. For example, in Hanty-Mansy

autonomous okrug it was established for 1996 as 31<18>. Some of them propose to establish charges for other types of pollutants, shifting to crediting and loan operations (instead of gratis allocation of finance), and to reevaluate the basic level of payments with their increase. However, many enterprises complain that a number of environmental funds attempt to use resources from payments for pollution for banking operations instead of environmental financing, and to use their resources for goals other than environmental. This appears to be true in the case of Murmansk oblast, when representatives of Norilsk Nickel indicated that they possess an information that oblast administration attempted to use finance from territorial environmental fund for the purposes having nothing to do with the environmental protection <19>.

According to national environmental legislation, the resources accumulated in environmental funds are to be used exclusively for environmental purposes - for financing environmental protection activities, such as the implementation of environmental programs and projects, construction of purification facilities, support of national parks, research and monitoring, education and training, information exchange and publications, etc. The structure of spendings from territorial environmental funds varies from region to region depending on the regional priorities. On average, in Russia about one-third of resources from environmental funds is allocated to construction of environmental facilities and introduction of new technologies, and its share seems to be quite low as compared to other items of expenditures, especially bearing in mind the special role of the funds to meet this particular goal. Unfortunately, in some Arctic regions this share is even lower: in Yamalo-Nenetsk autonomous okrug, for example, it accounts for 26%, in Sakha - for 13%. On the other hand, such item of expenditures as "improvement of material basis of environmental protection organs", and its portion has increased by two-fold during the first half of 1990s. It is especially high in Sakha, amounting to 49%<20>.

The resources from territorial environmental funds are aimed at financing regional environmental protection activities, and finance from the federal environmental fund is mainly channeled to the implementation of federal or interregional projects. In some cases, the federal environmental fund is involved in financial support of environmental programs in the Arctic regions which have interregional or national importance. For example, the federal environmental fund participates in financing the programs of the Arctic national parks development. It also supports the construction of environmental fleet, including vessels with analytical control and monitoring equipment. The basic condition for the federal environmental fund support of activities in the Arctic regions is sharing of financing with the regional or local funds. Also, the latter have to be actively involved in the regional activities, as well as to transfer regularly the finances to the federal environmental fund envisaged by the national law. However, during recent years support of the federal environmental to regional programs is decreasing, and it is understandable since the bulk of the resources from payments for pollution remains in the regions. Many regions today attempt to raise the status of their regional environmental programs in order to draw in additional finance from the federal level for their implementation. For example, the Komi Republic authorities try to raise the status of the recently adopted republican program 'Clean Pechora' to the national level.

Meanwhile, the governmental financial authorities take the advantage of this process to incorporate non-budget environmental funds in the regions into the consolidated budgets. It has negative implications for the implementation of this system in the Arctic. The consolidation contradicts the provisions of the 1991 RF Law on Environmental protection; the attitude of the environmental agency was also negative. The decision about consolidation illustrates once again a weak position of environmental institution in the current hierarchy of

power within the government at all levels. After consolidation of environmental funds, the territorial environmental organs in the northern regions in many cases have been alienated from management of these funds, and decisions were taken unilaterally by regional and local administration. The expansion of control of regional and local administrations over financial flows and over the use of finance from the environmental funds, sometimes with allocation of financing to purposes other than environmental protection is the negative consequence of consolidation. Recently, there were also attempts of the regional or local administration to spread its control over the offsets system and exemption from payments for pollution, especially in relation to enterprises which are especially important for a region. It indicates at the emerging trend in interactions between territorial environmental organs and regional administrations that are trying to spread their control over all kinds of financial transfers in the regions.

This result in distortion of the whole economic mechanism of environmental regulation, decrease in collection of financial resources and their transfers to environmental funds, as well as distortions in the vertical linkages between territorial and federal environmental fund. Although many of the territories comply with their obligations to transfer regularly the finance to the federal environmental fund, but some of them do not transfer any resources at all. In 1996, for example, Murmansk and Archangel oblast did not transfer the required finance to the federal environmental fund.

The structure and dynamics of financial transfers from environmental funds of the Arctic territories to the federal environmental fund during 1993-1996 is shown in the Table 1.

Table 1. **Financial Transfers from Environmental Funds of the Arctic Regions into Federal Environmental Fund (FEF), 1993-1996**

Territorial Environmental Funds	Transferred in 1993 *(Mln. Rbls)*	Compliance with the targeted transfers *(%)*	Transferred in 1994 *(Mln. Rbls)*	Compliance with the targeted transfers *(%)*	Transferred in 1995 *(Mln. Rbls)*	Compliance with the targeted transfers *(%)*	Transferred in 1996 *(Mln. Rbls)*	Compliance with the targeted transfers *(%)*
Archangel oblast	16,3	17,2	211,7	257,5	150,5	12,3	0,0	0,0
Nenetsk autonomous okrug	2,7	48,2	54,2	106,1	119,4	100,5	49,2	20,0
Murmansk oblast	86,1	21,7	198,8	46,0	45,0	7,6	0,0	0,0
Yamalo-Nenetsk autonomous okrug	18,4	23,7	401,5	41,2	2289,2	105,5	2855,8	94,6
Taimyr autonomous okrug	0,0	0,0	2,8	23,7	38,2	143,1	28,0	73,7
Sakha republic	12,5	5,3	0,0	0,0	204,1	23,4	446,9	40,6
Kamchatka oblast	24,4	33,6	418,3	76,9	541,8	68,1	119,3	20,2
Chukotsk autonomous okrug	29,5	38,1	94,8	50,3	257,7	154,3	180,9	100,0
Koryak autonomous okrug	1,1	100,0	99,3	93,7	45,8	27,4	192,7	96,4
TOTAL: (FEF in total)	**3161,0**		**20141,3**		**37893,3**		**49343,1**	

Source: "Russian Environmental Funds", Moscow, Goskomekologia., 1997, p.24-27

During 1993-1996 transfers from the environmental funds of the Arctic regions into the federal environmental fund accounted for 7% of its total. During this period Yamalo-Nenetsk

autonomous okrug, Kamchatka oblast, Sakha Republic, Chukots autonomous okrug have been responsible for the main flows; Taimyr autonomous okrug, Archangel and Murmansk oblasts have been among the modest contributors. The environmental fund of Yamalo-Nenetsk autonomous okrug is among top-ten territorial environmental funds in Russia for financial transfers to the federal environmental fund. Yamalo-Nenetsk, Chukotsk autonomous okrug, Komi republic provided regular flows, while Murmansk, Archangel oblasts, and Sakha republic were among debtors<21>.

Financing

Today there are three major sources of environmental financing in the Arctic areas: the *state budget* at different levels (federal, regional, local), resources of *enterprises*, and *environmental funds*. Environmental funds are considered by many experts to be one of the major sources of financial flows for environmental protection in the Arctic. Particular role is attributed to them under conditions of the state budget crisis. Indeed, during 1970-1980s the budget financing of environmental protection was a major practice in the Soviet Union, and it provided modest, but stable financial transfers into this sector. Today, the situation is modified completely, traditional budget sources have decreased significantly, and the problem of finding new sources of environmental financing has emerged. The state budget was characterised as 'anti-ecological'<22>, since the share of budget spending has been decreasing over the last few years. In 1997 the environmental expenditures from the state budget declined to 0,4% of its total expenditures against 0,6% in 1994.

It has most negative implications for environmental protection in the Arctic: it is characterised by chronic underfinancing during the recent years. The share of financing of environmental protection activities from the state budget (at all levels) in many northern regions (except Archangel and Tuimen oblast) is lower than its average in Russia (22%), and it varies considerably across different Arctic regions. The highest level of environmental protection financing from the state budget (about one-third in the total expenditures which is higher than in Russia in average), was registered in mid-1990s in Yamalo-Nenetsk autonomous okrug and in Archangel oblast<23>. Despite high expectations associated with the environmental funds in environmental problem-solving, unfortunately, their role leaves much to be desired. Their share in 1996 was only about 5% in the structure of environmental protection financing in Russia in general. In some Arctic regions it was higher than the national average (Chukotsk and Nenetsk autonomous okrugs), but in the majority of them it was even lower. In Sakha republic, for example, their share was 1,7%. Over the recent years, the relative share of enterprises in financing the environmental protection has increased. While in Russia in average it acmounted to 69%, in Sakha, Taimyr, Hanty-Mansy autonomous okrugs these sources dominated, and their share was higher than the national average.

The decline in industrial investments during the economic crisis in Russia resulted in a very low level of investments in the environmental sphere(however the rates of curtailing in this sector were lower than in other economic sectors). During the first half of 1990s total investments in environmental protection decreased by 60%. As a result, installation of air and water purification equipment has been steadily curtailing during first half of 1990s. During this period putting into operation of sewage purification equipment decreased by more than two fold in comparison with the previous (Soviet) five-year period, and installation of air purification facilities - by three fold. It is doubtful that in the nearest future the situation would improve, and industrial investments in environmental protection would increase

significantly, since they reflect the crisis situation with the investment climate in the country in general.

7. GOVERNMENT CONTROL AND ENFORCEMENT

Broadening of Tasks. The key task of the state environmental control is to make enterprises and individuals to comply with the existing environmental regulations and norms. Control functions in this sphere are being realised in Russia through an institutional framework represented by the parliament, the government, the territorial authorities in the federation subjects, organs of the local governance, as well as by special governmental organs responsible for environmental protection. Their control and enforcement activities are coordinated by Goskomekologia. As a result of environmental management reform during 1990s, participation of these institutions in control and enforcement broadened, and they acquired a wide range of control rights envisaging both inspections and sanctions towards violators. They have the right:

- to allocate permits for pollutant emission, fix their limits, and control compliance
- to control enforcement of government impact assessment recommendations
- to visit the supervised enterprises, organisations and military sites, and to get access to their documentation;
- to inspect the functioning of purification facilities, compliance with technical standards and ecological norms, and realisation of environmental protection measures;
- to participate in decision-making concerning limitations, or bans on functioning of major violators and sources of environmental destruction;
- to impose administrative fines for violation of environmental legislation;
- to bring a suit into courts and arbitrary courts for compensation of the environmental damage and damage to human health, as well as to institute criminal proceedings against violators <1>.

Implementation Schemes. What is the general scheme for practical realisation of environmental control and enforcement in the northern regions of Russia?

Nowadays, the control and enforcement of environmental norms in the Arctic regions are being provided mainly by the territorial organs of Goskomekologia. The central institution in Moscow is responsible for coordination functions in this field and for the elaboration of general guidelines and rules, while territorial organs have acquired more independence on this matter from the center, and a range of their control functions was broadened. As a result, control and enforcement have been turned into one of the major directions of their everyday activities. Usually, the control is being exercised by the territorial organs via their specialised inspections responsible for monitoring and control within particular spheres, i.e. inspections on control over air protection, over water bodies protection, marine inspections, and inspections for wildlife control. The inspections are institutionalised in the structure of territorial environmental committees in the Arctic. They are also responsible for horisontal coordination among other bodies responsible for certain aspects of environmental protection within their territory.

A set of government control organs vary slightly across Arctic regions, but in general they have a common structure. For example, in Murmansk oblast the environmental control organs are represented as follows:

- State committee of environmental protection of Murmansk oblast

- Murmansk oblast center of sanitary and epidemiological control
- Murmansk administration on forest management
- Murmansk administration on hunting
- Kola inspection on radiological safety
- Murmansk inspection on radiological safety of nuclear vessels
- Committee on geology and use of the subsurface of Murmansk oblast
- Murmansk territorial committee on water-use sector
- Murmansk basin administration on fisheries management and fish stocks conservation
- Committee of Murmansk oblast on land resources management
- Murmansk territorial branch on hydrometeorology and environmental monitoring

Each of these territorial organs is subordinated to corresponding specialised federal institutions, while general coordination of their regional activities is being provided by the State committee of environmental protection of Murmansk oblast. However, there is a great potential for institutional improvements in this field, since the actual level of horisontal coordination leaves much to be desired.

In order to have a deeper insight into the functioning of this mechanism, let's illustrate it by the example of control and enforcement activities of air protection inspection of Murmansk oblast. *First*, among its responsibilities is a block of functions on air quality control. They are implemented both at the regional level, and at the micro-level of enterprises. Regular monitoring of air quality in Murmansk oblast is being provided, and it is constantly verified with air quality norms adopted for the oblast. Control over air pollution is undertaken in 11 cities <2>. Central gas-analytical laboratory of the environmental committee is coordinating the activities of local laboratories monitoring air quality. It also verifies the monitoring results on emissions provided by laboratories at enterprises. Air quality control at the level of enterprises which are included in the register of the environmental committee and its territorial branches in Murmansk oblast is provided through regular inspections of their purification facilities and technological processes, and via verification of enterprises' emission reports. *Second*, air protection inspection regularly supervises air protection activities of enterprises, controls their reporting in this field, as well as efficiency of purification facilities functioning. According to established rules, an enterprise is holding an inventory of implemented air protection measures according to detailed reporting procedures established by the environmental organs. The reports are regularly submitted to the latter. Besides processing the reported data, the inspectors of the environmental committee regularly visit the enterprises under their supervision, especially those recognised as heavy polluters. For example in 1993, territorial inspections of the Murmansk environmental committee inspected 1.969 enterprises and military sites, as well as 134 transport enterprises. The most persistent and regular control was realised over the major air polluters in this oblast, i.e. Severonickel, Pechenganickel, Apatity and Murmansk power stations, Kovdor and Olenegorsk flotation facilities <3>.

After violation was been detected, the environmental committee starts negotiations with an enterprise regarding possible options in solving the problem, and recommendations are being issued. It is accompanied by regular visits of inspectors to this enterprise. If the they are not eliminated as agreed, fine is imposed on an enterprise. In case of serious non-compliance with the ecological requirements, switch-off, or non-efficient functioning of purification equipment the environmental organs together with oblast's administration may

take a decision to limit. or to ban the activities of this particular violator. However, in practice this extreme option in regulating the behavior of a polluter is seldom applied. Usually different groups of interests, i.e. industrial groups, regional administration, interfere into the decision-making process, fighting against a closure of an enterprise. They motivate their position by various considerations, using the interests of the whole oblast as a cover, and usually they have the final say.

Practical Results. The data regarding control and inspection activities of the territorial environmental organs may be used to evaluate their effectiveness in this respect. For example, the 1997 report of the Murmansk environmental committee submitted the following information characterising the results of control and enforcement<4>:

Total number of inspectors	57
Number of controlled enterprises	1658
Number of registered violations	1214
Number of eliminated violations	562

In 1996, Russian environmental control organs have undertaken 52.2 thousand inspections of enterprises regarding conformity with *air protection* legislation and norms. As a result about 98.1 thousand of violations have been registered. The majority of them is connected with the industrial sector, and the share of violations in energy and power production, in transport an military complex is much lower. About 112.6 thousand recommendations about possible ecological measures to be introduced at enterprises have been issued by environmental organs in Russia in 1996. About 71% of them have been fulfilled, and violations have been eliminated. The degree of meeting the recommendations of the Arctic territorial environmental organs varies across the regions. The highest rate in 1996 was registered in such northern regions as Nenetsk autonomous okrug (100%), Chukotsk autonomous okrug (92%), Habarovsk kray (83%), and it was quite low in Karelia (28%). In 1996 about 14.6 thousand enterprises and 9.3 heads of Russian enterprises were fined for environmental violations; among northern regions the Yamalo-Nenetsk autonomous okrug was number one in that respect, i.e. 326 enterprises were fined; in Sakha - 231 enterprises, in Hanty-Mansy - 165. The highest number of the heads of enterprises (569) fined for environmental violations has been registered in Sakha (however this kind of data does not characterise accurately the real situation with environmental violations, since in other regions the heads of enterprises being heavy polluters may not be fined). As a result of territorial organs' inspections in Russia in general, about 79 cases have been submitted to a prosecutor office, including 27 cases in Yamalo-Nenetsk autonomous okrug, and 1 - in Hanty-Mansy autonomous okrug. In 1996, 671 enterprises in Russia were prosecuted for violation of air protection legislation, and about half of the suits (366) were recovered. In Komi republic and in Habarovsk kray 100% of suits were satisfied, while in Yamalo-Nenetsk autonomous okrug - about 70% <5>. However, some experts note that currently the level of environmental crime is extremely high in Russia in general, and about 90% of cases of environmental pollution and poaching are not penilised, or revealed<6>.

About 54.3 thousand of water-users in Russia were inspected in 1996 in terms of compliance with the existing *water quality protection* legislation, and about 65.1 thousand violations were registered among them <7>. The major part of violations occurred among industrial and agricultural producers. The most typical were violations connected with infringements upon the sewage discharge norms, upon limits of water-use, upon the rules

established for the specially protected water bodies and adjacent coastal areas, as well as water pollution with oil and oil-products. About 61% of recommendations of controlling territorial organs regarding elimination of violations have been fulfilled in Russia in general. In the North a high rate in meeting these requirements was registered in 1996 in Archangel oblast (100%), in Chukotsk autonomous okrug (93%), in Sakha (82%), while in Kamchatka oblast it is very low. It is remarkable that the vessels are leading (83% requirements are met) among various water-users acting in conformity with governmental recommendations, while among actors in industry this indicator comprises 60%, and in agriculture and military complex - only 45% in each. The results of inspections of water purification facilities indicated that their majority did not fulfill the required purification standards. In Taimyr autonomous okrug, in Karelia republic none of the inspected facilities provided the normative sewage purification. At the same time, against the background of unfavorable situation in this field in Russia in general, and in the Arctic areas in particular, in Murmansk oblast, for example, the share of water purification facilities not conforming with the normative standards is comparatively low (11%). Such situation is better than the average in Russia where this indicator amounts to 77%<8>.

Within the framework of Goskomekologia, system control over the *quality of marine environment* was provided by 18 special marine inspections. They are located in all Russian regions having access to the sea. Recently the Far East marine environmental inspection began functioning, and the question of creating a similar control institution for the Arctic seas was under discussion <9>. In 1996 in Russia special marine inspections undertook 7.2 thousand inspections regarding compliance with environmental norms<10>. In course of them 4.7 thousand vessels were inspected; the number of emergency cases amounted to 83. About 3.3 thousand violations of environmental legislation was registered (including, 945 violations associated with marine pollution, 944 - illegal catches of living resources), and 1.9 thousand fines were imposed. The majority of fines was collected. About 13% of the total amount of suits for compensation of damage to marine environment imposed in 1996 about 13% was satisfied.

One of the problems with implementation of control and enforcement functions in the Arctic territories is the lack of capacity to provide regular controls. Not all enterprises operating in these regions and registered in the territorial environmental organs are subjected to their inspections. In total, less than one half of them are being regularly inspected. During recent years, in some northern regions (Yamalo-Nenetsk autonomous okrug, Tuimen and Magadan oblasts) their number has increased, while in others it has declined (in Nenetsk autonomous okrug, in Archangel oblast) which does not enable us to indicate any stable trend in this respect. The shortages, or the lack of specialists in the territorial inspections of the northern areas, reductions in a number of the personnel, and constant changes in the stuff are among the reasons for inadequate governmental control. Constant reduction over the recent years in the level of financial support of territorial environmental organs, unsatisfactory technical equipment supply, low wages and social insecurity of inspectors negatively affect the process. Some of the analytical laboratories are still poorly equipped, and deliveries of necessary materials for routine control and testing are declining.

Despite recently elaborated in a rather detailed manner and legally codified system of the state control and enforcement of environmental rules and norms, as well as despite adopted economic mechanisms of environmental management, the Arctic territorial organs are not able so far to provide effective legal enforcement, and to make enterprises-polluters shift

to environmentally responsible behavior, to install, or expand their purification facilities, to transfer to environment saving technologies.

8. IMPLEMENTATION EFFECTIVENESS AND IMPLEMENTATION PROBLEMS

What are the major results and effects of environmental policy implementation in the Russian Arctic during 1990s? Was it able to contribute to environmental problem solving and to amelioration of environmental situation in the region? Did it have an impact in forcing the major environmental polluters to change their behavior to environmentally responsible?

Amelioration of Environmental Situation? Analysis of dynamics in major indicators of human pressures on the Arctic environment reveals that they have decreased over the recent years. Decline in air pollutants and water pollutants discharges, in industrial wastes disposal has been officially registered during 1990s. This trend is characteristic for the most of the Arctic regions. For example, in Archangel oblast air emissions from stationary sources decreased by 39% during 1990-1996, in Sakha republic - by 47%, in comparison with 40,5% decline in Russia in general. During this period the sewage discharges into the White Sea fell down by 27%, into the Kara Sea by 24% (into the Enissey basin - by 45%, while in the basin of the Ob river they remained at a constant level)<1>. Tables 2-3 contain data characterising the dynamics in air emissions in different Arctic regions during 1990s, and dynamics of polluted waters discharges into the Arctic seas.

Table 2. **Air Emissions from Stationary Sources in the Arctic**
(*thousand tons*)

	1990	1991	1992	1993	1994	1995	1996	1997
Russian Federation, *mln tons*	**34,1**	**31,8**	**28,2**	**24,8**	**21,9**	**21,3**	**20,2**	**19,3**
Komi Republic	912	901	782	754	990	945	925	874
Archangel Oblast	546	580	506	457	395	358	350	342
Nenetsk autonomous region	...	...	...	49	45	24	17	18
Murmansk Oblast	699	650	617	539	469	543	501	557
Tuimen Oblast	2982	2370	2079	1975	1806	1876	1613	n.a.
Hanty-Mansy autonomous region	...	...	...	1353	1150	1050	1028	1084
Yamalo-Nenetsk autonomous region	...	...	...	525	560	757	609	548
Krasnoyarsk Kray	3148	3183	2810	2515	2431	2526	2598	2671
Taimyr autonomous region	...	...	...	25	21	22	18	18
Sakha Republic	192	191	178	136	134	120	119	129
Chukotsk autonomous region	...	...	...	97	70	72	66	56
Koryak autonomous region	...	...	...	9	9	13	14	15

Source: "Regioni Rossii, 1996", Moscow, Goskomstat RF, 1997; "Gosuidarstvenny Doklad O Sosotyanii Okruizhauishey Prirodnoy Sredy RF", Moscow, Goskomekologia, (several years); "Okruizhauishaya Prirodnaya Sreda Rossii", Moscow, EKOS, 1995

Table 3. **Discharges of Polluted Waters into the Arctic Seas (*billion of cubic meters)***

	1990	1991	1992	1993	1994	1995	1996
Russia, *total*	27,8	28,0	27,1	27,2	24,6	24,5	22,4
The Basin of the White Sea	1,1	1,1	1,1	1,0	0,9	0,9	0,8
The Basin of the Kara Sea	6,2	5,9	5,5	5,3	5,0	5,2	4,7
including, the Enisey Basin	3,1	2,7	2,3	2,0	1,8	1,8	1,7
the Ob Basin	2,8	2,9	2,9	3,0	2,9	3,1	2,7

Source: Rossiisky Statistichesky Ezhegodnik. Moscow, Goskomstat RF, 1997, p.280

Specific Linkages. At first glance, the data characterising emission reduction during the period when a new environmental policy started to be implemented in the Arctic seems to be very encouraging. However, a more scrupulous analysis indicates that the main reason for the improvement in environmental indicators is mainly not the result of the effects of environmental management instruments' application, and is not mainly associated with the enforcement of new environmental rules and norms aimed at changes in polluters behavior. The major reason is the *decline of industrial production* in the Arctic regions under the impact of the economic recession in Russia. Economic crisis in Russia has caused a sharp drop in production and GNP during 1990s (by 55% and 50%, respectively, from 1990 to 1997). Official national statistics indicate at the decline in industrial production during this period almost in every Arctic region (except Sakha republic and Nenetsk autonomous okrug where a slight increase in industrial production was registered in 1996). In some of them the decline in industrial production is even more dramatic than in Russia in general. The most severe shrinkage was registered in Koryak and Taimyr (Dolgano-Nenetsk) autonomous okrug, and in Archangel oblast.

Thus, the decrease in anthropogenic pressures on the Arctic ecosystems in the majority of cases is not attributed to the effectiveness of anti-pollution measures. Compliance with environmental norms occurs even without implementation measures. Main share of the decline of pollutant emissions has practically nothing to do with installation and modernisation of purification equipment in the Arctic regions (the rates of installation of purification facilities decreased over the first half of 1990s by 2-3 times in comparison with the second half of 1980s). Also, it is not mainly a result of measures undertaken by industrial companies-polluters in response to environmental rules and norms and to new requirements of management regulations introduced during 1990s. Economic depression in Russia in general, and in the Arctic regions in particular, appeared to be a more powerful tool in reducing anthropogenic press in the North. Its effects for achieving the targets of environmental programmes have been much stronger than the effects of regulatory measures.

The results of an interesting survey undertaken recently among the territorial organs of Goskomekologia show that the majority of respondents (44%) indicates a decline in industrial production as the key reason for emission reduction. Among other reasons for the decrease of pollutants discharges are implementation of environmental protection measures (24% of respondents), fuel switch (11%), decrease in consumption of liquid fuel and energy (9%),

modernisation of technological processes (5%), curtailing of heat and energy generation (3%), and decline in volume of transported industrial goods by roads (3%)<2>.

However the decline in emissions in the Arctic is not proportional to curtailing of industrial production there: its rates are lower than of the latter. This is a very important factor characterising the actual state of affairs in environmental problem solving. In fact, aging of purification equipment, its damage, or its switch-off complicate the whole problem. Until today, in major Arctic regions the industrial sources of air emissions are very poorly equipped with the modern purification facilities. The level of equipment of stationary sources with scrubbers, for example, is extremely low in Taimyr and Hanty-Mansy autonomous okrug accounting for 1%, and in Yamalo-Nenetsk autonomous okrug it is only 0,3% (!). Only in Murmansk oblast it is higher than Russia's average (22%) and amounts to 56% which is also quite low. From the total number of air purification equipment inspected in 1996 in Russia by governmental organs 6% appeared to be out of order, while 6% were functioning ineffectively. In the northern regions 100% of the inspected equipment in Komi republic, and 70% in Karelia republic were assessed as operating ineffectively. In addition, application of ineffective technologies of oil and gas production in the north of Russia results in extensive permanent gas flaring. Only in Yamalo-Nenetsk autonomous okrug in 1997 about 450 thousand tons of gas was flared, with about 60 thousand tons of polluting substances emitted into the air<3>.

An important question is, How will emissions and anthropogenic press be controlled when economy of the northern regions recovers? It seems that new environmental management systems in the forms they function currently in the Arctic are unlikely to be able to deal with the problem in the future. Regulatory measures to reduce pollution are not effective enough. Indeed, in the regions where decline in industrial production is not so dramatic, or, a shift to a slight increase (or stabilisation) in production is noted recently, the pollutant discharges after their decline started to grow. For example, in Sakha republic air emissions grew by 8,5% in 1996 from their 1995 level following a slight increase in industrial production (growth by 1%)<4>. After Kola facilities of Norilsk Nickel increased their production, air emissions in Murmansk oblast increased (see table).

Obstacles to Effectiveness. What are the major obstacles to effective implementation of new environmental policies in the Arctic? What are the main factors negatively affecting its performance? Why its progressive goals and standard market-based instruments of environmental regulations many of which have been borrowed in the West, do not have standard results while applied here? Our analyses showed that the main group of reasons is rooted in the specifics of the transition period, which Arctic regions are undergoing together with the rest of Russia. Difficulties and associated uncertainties of economic, social and political reforms negatively affect environmental policy implementation, and they introduced distortive modifications into economic instruments of environmental regulations. Many factors of the transition period along with the creation of a new framework for environmental policy implementation impose serious limitations on its effectiveness. Negative consequences are felt not only at the national level, but also at the regional level. The destabilising impacts of these 'situational factors' are especially strongly revealed in the Arctic regions (see section 3). The cumulative effect of these factors introduces significant distortions into environmental problem solving. Below, we are trying to speculate about their implications, and to explain the shortcomings in effectiveness of environmental policy implementation.

Constant *institutional reorganization* in environmental management and uncertainties in the division of competence between governmental organs responsible for environmental protection in the Arctic affect the outcomes of the institutional reform of 1990s when a specialized governmental organ, the RF Ministry of Environment with a network of its regional organs in the Arctic has been created. Under an impact of institutional competition over control of functions in protection and use of natural resources, of lobbying interests of powerful financial and industrial groups in the government, *first,* the role of the environmental ministry was diminished, and its status (together with territorial network) was lowered in 1996 to the state committee. It means that its influence and the status of participation in governmental decision-making has become relatively lower, and it has less impact and levers to pressure other governmental bodies towards environmentally sound decisions. Such weakening in its positions and power suits the interests of industrial ministries involved in the decision-making process regarding the development in the Arctic, since they acquired broader freedom in taking into account its environmental directives. Numerous protests against 'disqualification' in the status of major environmental body (its formation was one of the achievements of environmental reform at the beginning of 1990s) of the scientific community, and of the Ecological committee of the State Duma did not help. This governmental decision reflected, however, the modest ranking of environmental concerns among the Russian politicians, governmental officers, and financial and industrial elites.

Second, in the process of bureaucratic competition at the top level, part of former functions (protection of natural resources) of the environmental ministry were withdrawn from its competence, and they were transferred in 1996 to the newly created Ministry of Natural Resources. The latter became responsible for coordination of the use and conservation of natural resources<5>. It is not always able to preserve the right balance between the interests of resource utilisation and resource protection. This shift in institutional competence has important implications for the Arctic environment, where the major industrial activities are associated with the use of natural resources. Moreover, our analysis of the recent reform in the system of government support of the North, and especially of functional division of competence in environmental protection in the Arctic between different governmental institutions indicated that serious concerns might evolve regarding the effectiveness of the suggested institutional system. Among functional responsibilities of different governmental institutions enumerated in the 1997 governmental resolution "Reform in the system of government support of the regions of the North" Goskomekologia's role, as a major governmental body responsible for environmental protection, is not legally defined, or more precisely, it is not even indicated <6>. While the Ministry of Natural Resources and Goskomsever, according to this governmental decision have got their roles to play in the field.

Once again, it indicates the trend developing since mid-1990s when against the background of the general weakening of the state authority in Russia, the positions of the environmental institutions weakened as well. The effect of institutional reform of mid-1990s was that the set of environmental functions legally consolidated at the beginning of this decade was distorted. It appeared that within a new structure of power the major governmental environmental body, including a network of its territorial organs, is not able to coordinate and control effectively implementation of its earlier decisions relating to other governmental and non-governmental actors. The inevitable result is that many of the governmental resolutions and requirements are not complied with. Instability of the institutional structure over the recent years, constant changes in its framework and rules leads to certain discrediting of such system among actors-targets of regulation. Many of them even explain their violations of the

rules by the difficulties of meeting new requirements of the constantly changing institutional framework.

Crisis situation with the *state budget* in Russia has the most negative consequences for environmental problems solving in the Arctic and implementation of environmental policies there. The share of budget spending which had been the traditional source of financing of environmental protection over the recent couple of decades, has been decreasing dramatically over the last few years. In the 1997 budget, the environmental protection accounted for less than 0,1% of GNP. Such low level has been registered in none of the developed countries. The financial support from the state budget for major governmental environmental programmes in the Arctic is decreasing: even resources allocated by the state budget plan for their implementation are not provided. This trend definitely causes doubts about the prospects of their implementation. Alarming situation can be noted with the prospects of Arctic environmental programmes implementation. Some governmental officials indicate that it is supposed that in 1999 the governmental financing according to traditional items of spending in the Arctic might be stopped. For example, financial transfers for implementation of federal programme "Economic and Social Development of Indigenous People of the North" would be terminated. According to data of Goskomsever, the Ministry of Finance transferred in 1998 extremely low financing for regional development in the north, and especially, for support of the ice-breakers fleet, for polar hydrography, for maintenance of the northern seas routes <7>. Allocation of finance in the state budget for support of Arctic hydrometeorological stations in 1999 is not envisaged. Under these conditions implementators of environmental programmes in the Arctic consider mobilisation of non-budgetary sources for environmental policy implementation to be of crucial importance, and efforts are being taken to define the incentive mechanisms to attract investments to the north. However, the economic crisis resulted in the decline of industrial investments. Financial difficulties of producers in combination with deficit of budget financing resulted in a practical paralysis of investments not only in the commissioning of new purification facilities, but also in modernisation of obsolete and inefficient cleaning equipment, which is very widely spread in the northern regions.

Some trends within transformation process in Russia have greatly distorted a number of the state's functions. They have lessened the power of the state, thereby constraining its ability to enforce environmental regulations. Recent *weakening of its authority* vis-à-vis industrial polluters and various potential violators of environmental rules in the Arctic has negative implications for nature. The complexity and conflicting pressures inherent in this situation make it difficult for the governmental organs to wield much influence in the environmental area. Many government acts were not enforced, and a great deal of violations of environmental legislation is registered. The conflict between industrial companies and the government is aggravating, and many domestic actors are not complying with government regulations. Annually according to official data, only not more than two-thirds of recommendations on the improvement of the situation with environmental protection in the north issued by the control organs after their inspection of the facilities are fulfilled. The violators list a great number of excuses and arguments rooted in the hardships of a transition period. Environmental control organs do not have adequate levers and are not able to make industrial companies to clean their emissions. For example, in Sakha republic where the total volume of sewage discharged decreased due to decline in industrial production, a number of polluters, in violation of ecological requirements, increased their discharges by reduction in the level of purification. Fifteen percent increase in discharges of unpurified waters (flows are

organised to avoid purification facilities) from the municipal sector and from gold mining in Mirny and Yakutsk was registered in 1996. Lower quality of sewage purification in towns of Chersky and Pokrovsk and gold mining sites at Chersky and Neruingry resulted in 44% decline in normatively purified waters discharges. Environmental control organs are not able to control the situation<8>. Moreover, under conditions when the state is not able to collect various kinds of taxes from enterprises (arrears of consolidated RF budget increased during 1995-1998 by 4,3 fold, and of the federal budget - by 4,5 fold<9>) what can be said about payments of environmental charges?

In addition, due to recent modifications in the institutional design (in response to conditions of a transition period), the new system of economic regulations of environmental management appear to be less effective than envisaged at the start of reforms. The pollution charges were intended to provide incentives for firms to reduce their discharges. In practice, however, it did not solve the problem of emission reduction. It did not create a stimulus for enterprises to increase environmental investments. A great deal of firms prefer today to pay for pollution, rather than to increase their investments into purification facilities. Currently, when many industrial producers are at the verge of bankruptcy (more than a half of industrial enterprises in Russia are unprofitable), the state is changing institutional rules granting concessions to such actors in order to save them from closure. It results in changes in the market-based instruments of environmental regulations: introduction of provisionally coordinated norms of emissions, offsets, reductions, or even a release from payments for pollution. Consequently, economic mechanism appears to be distorted, and its effectiveness reduced. An inevitable consequence in this chain is that the system of non-budget environmental funds which was expected to provide a solution in the mobilisation of finance for environmental problem solving in the Arctic under the deficit of the state budget was not as effective as desired. Collection of payments for pollution by the funds is one half lower than envisaged.

In Russia, *decentralization*, especially the transfer of management functions in environmental policy from the center to the local level, was associated with great hopes for the improvement of environmental management. This innovation was supposed to ameliorate considerably the environmental situation in the Arctic regions. However, these hopes have not been justified in many cases. Formation of democratic institutions at the local level proved more difficult than at the federal level, and local elites retain power in the majority of local institutions, spreading their control over environmental protection, over development of natural resources (quite often not in the interests of sustainable development, but in their own interests), and over finances allocated for these purposes. The tragedy of the current situation is that, having eliminated control from above, local authorities managed to avoid democratic control and accountability before the public, which is of the utmost importance in the environmental sphere. The local elites obtained the "carte blanche" to deal with natural resources of the Arctic regions. Implications for the northern regions would be most dramatic: under weak public control, which is a specifics of domestic reality in Russia of nowadays, economic interests always appear to be stronger than environmental ones.

Currently a competition regarding division of competence between the center and the regions is still going on. However, its focus has shifted. The main target today is control rights over natural resources, and the main question is who would control these resources - elites (authorities) in the center, or elites (authorities) in the regions. The red thread in this competition is who would benefit financially from their use, rather than the control over rational use of natural resources and their environmentally benign exploitation. Environmental

protection policy in the regions that are rich in natural resources appeared to be dependent and subordinated to resource-utilisation issues. It often serves today as an instrument in regulation and limiting access of undesirable competitors to natural resources.

Poor capacity of the government at all levels to control and enforce environmental rules results in a growing number of their violations in the Arctic regions. During recent years there was an upsurge of poaching in the Arctic. Together with illegal hunting, the scale of illegal fisheries increased. Unlicensed harvesting of marine biological resources within exclusive economic zone and continental shelf grew. In Russia in general the level of catches declared by the fishing companies is much lower than actual ones. As a result of illegal activities and illegal export operations, according to some expert estimations, about $ 4-5 billion bypass the RF budget, and it surpasses by several times the value generated by the Russian fishery sector <10>. These resource nourish a shadow economy. Recently published data suggests that from annual catches of 4 million tons of marine biological resources, 1 million tons is directed to a domestic market, 1 million tons - for export, and 2 million tons is illegally exported abroad <11>. According to the RF Border Guard Service, about 150-200 Russian vessels fish permanently in the Barents Sea, and the service is practically not able to control their entry into the Norwegian ports for sales of their catches <12>.

And finally, today *corruption* is widely spread in government institutions. According to major analysts, the regional and local levels of the state authority are contaminated by the most severe forms of corruption. Getting licenses for activities damaging the environment, violation of environmental norms by enterprises, allocation of development sites within special nature protection zones - all these issues are often resolved via bribes, particularly, at the regional level.

ENDNOTES

Introduction

1. See, for example, *Engaging Countries: Strengthening Compliance with International Environmental Accords*. E.Brown Weiss and H.Jacobson (eds.), MIT Press, Cambridge, Mass., London, England, 1998; *The Implementation and Effectiveness of International Environmental Commitments: Theory and Practice*, D.G.Victor, K.Raustiala, E.Skolnikoff (eds.), IIASA, Austria, MIT Press, Cambridge, Mass., London, England, 1998; *Governing the Environment: Politics, Policy and Organisation in the Nordic Countries*, P.M.Christiansen (ed.), Nord, Copenhagen, Stockholm, 1996; *Public Policies for Environmental Protection, P.Portney* (ed.), Resources for the Future, Wash., D.C., 1990

2. Kotov V., Nikitina E. Natural Resources Management in Russia: New Role of the Regions. Report for the European Commission, Brussels, 1999

3. Two broad categories of environmental issues, i.e. land use and natural resources, as well as matters of pollution and environmental impacts of industrial mining activities are extremely important for the Arctic. These issues are quite distinct and institutional dynamics associated with each of these categories is quite specific. In this study, however, we are focusing on the institutional reorganisation in the environmental protection in the Arctic.

4 *Sobranye Zakonodatelstva RF,* N 2, 1998, p.426-427

5. Materials of RF Goskomsever, 1998; Resolution of Governmental Commission of the USSR Council of Ministers on the Arctic and Antarctic, 24.04.1989; "Ob obiavlenii territoriei Souza SSR zemel i ostrovov, raspolozhennyh v Severnom Ledovitom okeane", Resolution of Rresidium of CIK SSSR, 15.04.1926

1. Environmental Situation

1. Calculated on the basis of statistical data from: "Regiony Rossii, 1996", Moscow, Goskomstat RF, 1997

2.*Ekologicheskaya Bezopasnost Rossii*, 2-nd edition, Moscow, 1996, Uiridicheskaya Literatura, p.250

3. G.Vilchek, "Kak Izbezhat Katastrofy?", in *Rossiiskaya Arktika na Poroge Katastrofy*, A. Yablokov (ed.), Moscow, CEPR, 1996 p.165

4. *Ekologicheskaya Bezopasnost Rossii...*, p.250

5. According to official national environmnetal statistics, energy production, oil and gas developments represent the major source of environmental pollution in Russia: in 1997 they accounted for 47.7% of total air pollution from industry, for 70% of greenhouse gases emission, 27% of polluted waters discharges, 30% of solid wastes disposal.

6."Ohrana Okruizhauishey Sredy v Regionah Rossii", Moscow, REFIA, 1997, p.438

7. "Gosuidarstvennyi Doklad O Sostoyanii Okruizhauishey Prirodnoy Sredy v RF v 1997 godu", Moscow, Goskomekologia, 1998, p.332

8. Ibid., p.262

9."Gosuidarstvennyi Doklad O Sostoyanii Okruizhauishey Prirodnoy Sredy v RF v 1996 godu", Moscow, Goskomekologia, 1997, p.167

2. Environmental Policy: Need for New Approaches

1. For details see: V. Kotov V, E. Nikitina, "Russia's Environmental Policy During Transition to a Market Economy. *Environment*, Vol.35, N 10, December 1993; V. Kotov, E. Nikitina "Environmental Security in Russia: Crisis of Protective Instruments", *Pro et Contra*, Autumn 1998, Moscow, Carnegie Endowment for International Peace

2. *Rossiiskaya Arktika na Poroge Katastrofy*, A. Yablokov (ed.), Moscow, CEPR, 1996

3. "O Neotlozhnyh merah po vyvody iz krizisa ekonomiki i socialnoy sfery Severa RF", *Sobranye Zakonodatelstva RF*, N 24, 1998, art.2653

4. *Sobranye Zakonodatelstva RF*, N 26, 1996, art.3030

5. Materials of RF Goskomsever, 1997

6. Materials of RF Parliament Hearings, State Duma, 02.04.1997

7. *Sobranye Zakonodatelstva RF*, N 26, 1996, art.3030

8. *Rossiiskaya Arktika na Poroge Katastrofy....*, p.167

9. *Sobranye Zakonodatelstva RF*, N 2, 1998, art.256

3. Formation of Environmental Legislation

1. *Problemy Ekologii Polyarnyh Oblastei*, L.Bogoslovskaya (ed.), 2nd edition, Moscow, Nauka, 1991, p.14; V.Pavlenko, "Problemy socialno-ekonomicheskogo razvitya Arktiki", Moscow, CNIITE, 1995, p.208

2. "Pravovye Osnovy Prirodopolzovanya v Arktike", *Main Directions in Development of Science in Russia*, Moscow, RF Ministry of Scince and Education, 1998

3. *Sbornik Dogovorov o Razgranichenii Polnomochyi mezhdu Rossiiskoy Federaciey i Suibiektami Federacii*, Moscow, RF President's Administration, 1997

4. Materials of RF Goskomsever.

5. Annual reports of the territorial environmental organs.

4. Reorganisation of Administrative Framework

1. In a course of the recent reorganisation in the government it was transferred to the Ministry of Regional Policies. Information about the official status of this new body had not been published yet in the RF Code of Legal Acts, so in our analysis we are referring to the recent Statute of Goskomsever, 1998

2."Polozhenie o Gosuidarstvennom Comitete RF po Okhrane Okruizhauishey Sredy", Governmental Resolution, N 643, 26.05.1997, *Sobranye Zakonodatelstva RF*, N 22, 1997

3."Polozhenie o Gosuidarstvennom Comitete RF po Voprosam Razvitia Severa", Governmental Resolution N 683, 30.06.1998, *Sobranye Zakonodatelstva RF*, N 27, 1998, art.3199

4. *Sobranye Zakonodatelstva* RF, N 46, 1993, art.4463; *Sobranye Zakonodatelstva* RF, N 3, 1996, art.192; *Sobranye Zakonodatelstva* RF, N 12, 1996, art.1132; *Sobranye Zakonodatelstva* RF, N 27, 1998, art.3199

5."Polozhenie o Mezhvedomstvennoy Komissii po Delam Arktiki i Antarktiki", Resolution of the Council of Ministers/RF Government, N 158, 22.02.1993, *Sobranye Zakonodatelstva RF*, N 9, 1993, art.749

6. Current members of the commission include representatives of: government ministries of transport, agricultural products, fuel and energy, natural resources, land resources, environment, economics, finance, science and technology, emergencies; Academy of Sciences, Ministry of Defense, Federal Security Service; of the leading companies functioning in the North - Norilsk Nickel, Gasprom, Rosneftegasstroy, Arktikygol; of the administrations of the northern regions; of Association of indigenous people of the North

5. Governmental Programmes

1. Materials of RF Goskomsever, 31.01.1997

2. *Ekologicheskaya Bezopasnost Rossii...*, pp.266-267

3. "Obzor Sostoyania Okruizhaushey Prirodnoy Sredy Hanty-Mansiiskogo Avtonomnogo Okruga v 1996 godu", Hanty-Mansiisk, 1997, p.6

4. The major goal of the Programme is "to provide a transfer of the indigenous people of the North towards sustainable development, and conditions for increase in the revenues from their traditional activities". This programme is being managed by Goskomsever, and it was elaborated by the Institute of Management, Russian Academy of Sciences.

5. *Sobranye Zakonodatelstva RF*, N 39, 1996, art.4566

6. "Godovoy Otchet O Rabote Gosuidarstvennogo Komiteta po Ohrane Okruizhauishei Sredy Yamalo-Nenetskogo autonomous okrug", Salehard, 1997; "Gosuidarstvennyi Doklad O Sostoyanii Okruizhauishei Prirodnoy Sredy Respubliki Sakha", Yakutsk, 1997; Materials of intervies with the representatives of territorial environmental organs

7. A. Komarov, D. Husnuitdinov, *et al.* "Analiz Deitelnosti Territorialnyh Komitetov po Ohrane Okruizhauishey Sredy Sistemy Goskomekologii Rossii v 1996 gody", Moscow, State Center of Ecological Programmes, 1998, p.42

8. "Ekonomicheskoe i Socialnoe Razvitie Korennyh Malochislennyh Narodov Severa", *Sobranye Zakonodatelstva RF*, N 39, 1996, art.4566, p.9331

9. "Gosuidarstvennyi Doklad O Sostoyanii Okruizhauishei Prirodnoe Sredy v RF v 1996 godu", Moscow, Goskomekologia, 1997, p.342

10. Reproduction of the land cover, shooting of predators, establishment of special protected areas, and hunting regulations - would be priority items to be covered by the federal budget; cleaning of water bodies,

processing of household wastes, dissemination of environmental information and education - a prerogative of the regional and local budgets

11. "O Provedenii v Magadanskoy Oblasti Eksperimenta po Otrabotke Regionalnoy Modeli Stabilizacii Socialno-ekonomicheskogo Razvitia i Perehoda k Ustoichevomy Razvitiy dlya Raionov Severa", Decree of the RF President, N 1311, 17.12.1997, *Sobranye Zakonodatelstva RF*, N 51, 1997, art.5744

12. *Sobranye Zakonodatelstva RF*, N 2, 1998, art.256

6. New Implementation Mechanisms

1. V. Kotov, E. Nikitina "Environmental Protection and Capacity Building in Russia". *Environmental Policy and the Role of Foreign Assistance in Central and Eastern Europe*, M.S.Andersen (ed.), Denmark, KPMG/CESAM, Grafik,1998

2. 1991 RF Law "On environmental protection", art.18

3. The licenses are issued for discharges of pollutants, wastes disposal, use, storage, transportation, including export-import operations with biological objects, including those from the Red Book of Russia

4. Major legal documents governing this system are the following governmental and ministerial resolutions: "Instruktivno-metodicheskye ukazanya po vzimaniy platy za zagriaznenye okruizhauishey prirodnoy sredy" (with ammendments), N 13, 9.05.1991; "Ob utverzdenii poriadka opredelenya platy za zagriaznenye okruizhauishey prirodnoy sredy, razmeshenye othodov, druigie vidy vrednogo vozdeistvia" N 632, 28.08.1982; "Poriadok napravlenya predpriatiamy, uchrezdenyami, organizaciamy, grazdanami, inostrannymi uridicheskimy litsamy sredstv vo vnebudjetnye ekologicheskye fondi", N 6344, 21.12.1992

5. RF Government Resolution "O vzimanii platy za sbros stochnyh vod i zagriazniashih veshestv v systemi kanalizacii naselennyh puinktov", N 1310, 31.12.1995; RF Federal Law "O plate za polzovanye vodnymy objectamy", N 71, 6.05.1998

6. "Ob utverzhdenii minimalnyh i maksimalnyh stavok platy za polzovanye vodnymi obektami po basseinam rek, ozeram, moriam i ekonomicheskim raionam", RF Government Resolution, N 818, 22.07.1998, *Sobranye Zakonodatelstva RF*, N 30, 1998, art.3784

7. "Obzor Sotoyanya Okruizhauishei Prirodnoy Sredy v Hanty-Mansiiskom Okruge v 1996 Godu", Hanty-Mansiisk, 1997, p.137

8. For example, Goskomekologia notified its territorial organs that the index to be used in 1997 for calculation of payments for pollution accounts for 42. Resolution of Goskomekologia, N 02-14/29-4274, 02.12.1996

9. Project Document for the Pilot Project to be Implemented as a Part of the World Bank Supported Environmental Management Project of the Russian Federation. Murmansk Oblast. October, 1993, p.28

10. "Sostoyanye Okruizhauishey Sredy i Prirodoohrannya Deitelnost v Sybiektah Rossiiskoy Federacii". Moscow, REFIA, 1996, p. 168

11. "Ekologicheskye Fondy Rossiiskoy Federacii", Moscow, 1997, pp.56,57

12. A.Komarov, D. Husnutdinov, *et al...*, p.70

13. Resolution of the Sakha (Yakutia) Government, N 108p, 28.05.1997; Sakha (Yakitia) Republican Law on Taxation Policy for 1997

14. Interview with the representatives of territorial environmental funds, 1998

15. "Gosuidarstvennyi Doklad O Sostoyanii Okruizhauishei Prirodnoy Sredy Respubliki Sakha", p.165

16. "Sostoyanie Okruizhauishey Sredy Severo-Zapadnogo i Severnogo Regionov Rossii", A.Florov (ed.), St-Petersburg, Nauka, 1995, p.344

17. "Godovoy Otchet Federalnogo Ekologicheskogo Fonda, 1996", Moscow, 1997

18. "Obzor Sostoyania Okruizhaushey Prirodnoy Sredy Hanty-Mansiiskogo Avtonomnogo Okruga v 1996 godu",...p.137

19. Interview with representatives of Norilsk Nickel, Moscow, 1997

20. Materials of the territorial environmental funds

21. "Russian Environmental Funds", Moscow, Goskomekologia., 1997, p.24-27

22. *Zelenyi Mir*, N 26, 1996,p.16

23. Materials of interviews with representatives of the territorial environmental committees, 1998

7. Government Control and Enforcement

1. "Pravila osyshestvlenya gosuidarstvennogo ekologicheskogo kontrolya dolzhnostnymi litsami Ministerstva RF ohrany okruizahuishey sredy i prirodnyh resursov", Moscow, 1996; "Polozhenie o

gosuidarstvennom komitete RF po ohrane okruizhauishei prirodnoy sredy", RF Government Resolution N 643, 26.05.1997, *Sobranye Zakonodatelstva RF*, N 22, 1998

2. Apatity, Zapoliarny, Kanadalaksha, Kirovsk, Kovdor, Kola, Monchegorsk, Murmansk, Nickel, Olenegorsk, Severomorsk

3. "Godovoy Otchet Gosuidarstvennogo Komiteta po Ohrane Okruizhauishey Sredy Murmanskoy Oblasti", Murmansk, 1994, p. 7

4. "Godovoy Otchet Gosuidarstvennogo Komiteta po Ohrane Okruizhauishey Sredy Murmanskoy Oblasti", Murmansk, 1998, p.18

5. Materials of RF Goskomekologia

6. 'Eccoacord', On-line data-base, March, 1999

7. State control of water quality and water uses have been performed jointly by the territorial organs of Goskomekologia and territorial organs of water basins administrations within the RF Ministry of Natural Resources

8. Materials of RF Goskomekologia

9. "Gosuidarstvennyi Doklad Ob Ohrane Okruizhauishei Prirodnoy Sredy v RF v 1996 gody", Moscow, Goskomekologia, 1997

10. Goskomekologia's marine inspections are usually undertaken jointly with other inspecting organs using their technical equipment, as the technical basis of the former is limited

8. Implementation Effectiveness and Implementation Problems

1. "Rossiisky Statistichesky Ezhegodnik", Moscow, Goskomstat RF, 1997, p.281

2. Data of Goskomekologia, Interviews, 1997

3. "Gosuidarstvennyi Doklad O Sostoyanii Okruizhauishey Prirodnoy Sredy v RF v 1997 godu", Moscow, Goskomekologia, 1998, p.322

4. "Gosuidarstvennyi Doklad o Sostoyanii okruizhauishei Prirodnoy Sredy v Respuiblike Sakha (Yakutia) in 1996", Yakutsk, 1997, p.6; "Regiony Rossii, 1996", Moscow, Goskomstat RF, 1997, pp.537

5. "Voprosy Ministerstva Prirodnyh resursov RF", Governmental Resolution N 1260, 24.10.1996, *Sobranye Zakonodatelstva RF*, N 44, 1996

6. "O Reformirovanii Systemy Gosuidarstvennoy Poderzhki Rayonov Severa", Governmental Resolution N 1664, 31.12.97Á, *Sobranye Zakonodatelstva RF*, N 2, 1998, art.256

7. Brechalov. A. "Bez Severa Nam ne Vyzhuit", *Nezavisimaya Gazeta*, 10.11.1998, p.10

8. "Gosuidarstvennyi Doklad O Sostoyanii Okruizhauishei Prirodnoy Sredy Respubliki Sakha",....pp.22,23

9. *Kommersant-Vlast*, N 33, 1.09.1998, p.54

10. *Zelenyi Mir*, N 15, 1997, p.9-10

11. Data of RF Navy Headquarters, 1997

12. *Zelenyi Mir*, N 15, 1997, p.9

25 January 1999

To Claes Lykke Ragner

From Professor Oran Young
Institute of Arctic Studies
Dartmouth College
6214 Steele Hall
Hanover, NH
03755-3577 USA

Subject: Comments on Kotov/Nikitina Discussion Paper

I have now completed my review of the Kotov/Nikitina paper on "Environmental Policy in the Russian Arctic" and can offer the following comments that may be of some use to you and to the authors.

This paper covers a lot of ground and contains a sizable quantity of valuable information. In its present form, however, the value of the paper will be difficult for the average reader to grasp. Partly, this difficulty arises from problems of language. I understand that steps will be taken to ensure that the final product is expressed in standard English, so I will not comment further on this topic. In part, the difficulty arises from the organization and presentation of the central themes of the paper. The omments that follow focus on these concerns.

1. In its present form, the paper is largely an exercise in what political scientists call formal, legal, descriptive analysis. There is a place for well-formulated descriptive work in the study of public policy. But as a mode of analysis, this type of work has long since passed from the scene in the study of public policy. The paper as it stands now will consequently seem long-winded and somewhat boring to most European and American readers. What can be done to liven up the paper and make it more interesting to western social scientists, not to mention the broader audience of intelligent lay readers? I have a number of suggestions which I set forth in the remainder of these comments.

2. The paper deals with three distinct types of legal/political change that may have some effect on the Russian Arctic: (i) alterations in the structure of the RF federal government, (ii) reallocations of authority among local, regional. and federal institutions in the RF, and (iii) changes in public policy per se (e.g. the introduction of licenses and payments for pollution). It would help to make these distinctions crystal clear at the outset and then to organize the discussion around an assessment of the consequences of each of these types of change.

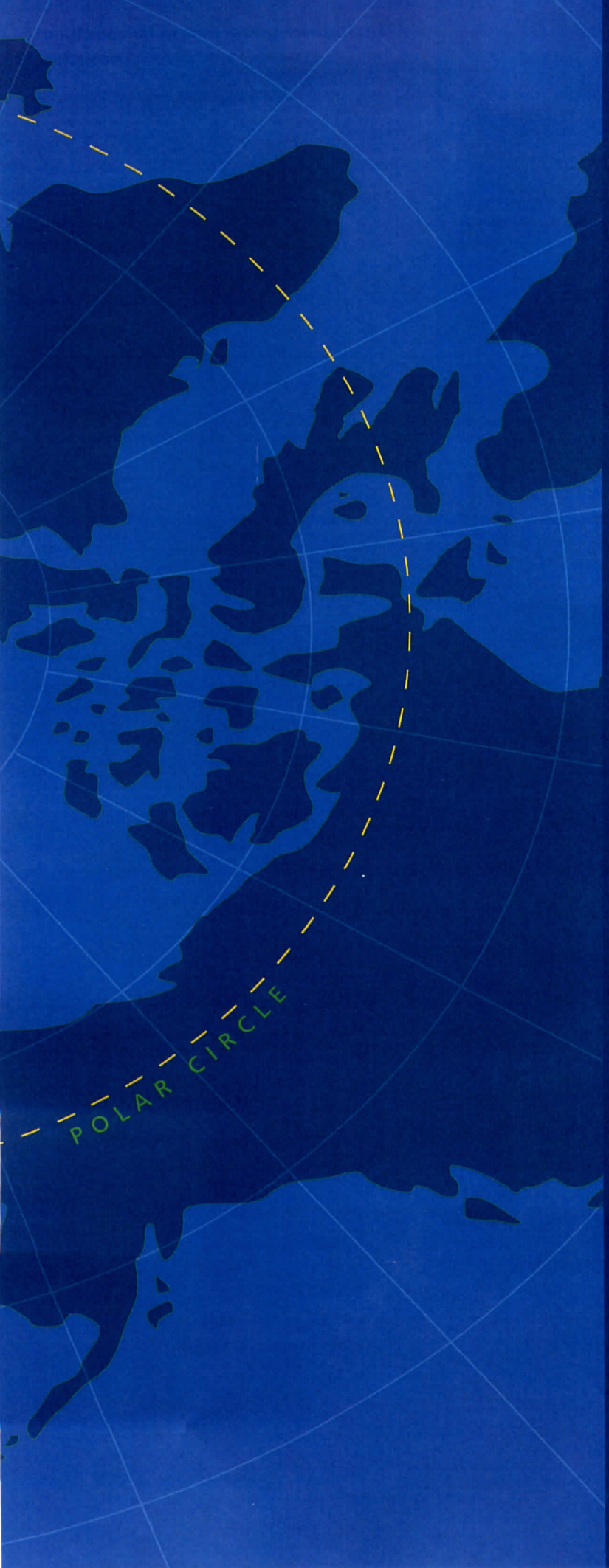
3. The paper covers two broad categories of issues: those that involve uses of land and natural resources and those that focus on matters of pollution and environmental impacts of industrial activities. As those of us who have worked in other countries have discovered, these categories of issues are really quite distinct and the political/legal dynamics associated with them are hard to deal with together. It would help this paper to organize the discussion around

the impacts of the three types of change mentioned above on the two types of public issues identified in this paragraph.

4. It would help greatly if the paper could zero in on a few case studies within the overall legal/political framework outlined in the preceding paragraphs. One of the things that makes the RF intriguing is the (co)existence of several distinct types of legal units. Would it be possible to take case studies of republics (e.g. Sakha), oblasts (e.g. Murmansk), and autonomous regions or okrugs (e.g. the YNAO) and look at them in some depth from the point of view of environmental/resource issues? Would it also make sense to select a few issues such as hydrocarbon development (e.g. on the Yamal Peninsula or in the Timon/Pechora Basin); renewable resource use (e.g. forests in Sakha); environmental protection (e.g. air pollution on the Kola Peninsula) and discuss the impacts of the three distinct types of legal/political change in these areas.

5. Most important of all is the matter of causality. How can we differentiate the impacts of the types of legal/political change under consideration in this paper from other largescale economic/political processes occurring in the RF in general and in the Russian Arctic more specifically? As Kotov and Nikitina observe, recent declines in air pollution in the RF are attributable more to reductions in industrial production than to the impact of changing environmental policy. In the North, declines in production are coupled with developments like financial collapse, population shifts, the rise of corruption, and the growth of poaching or illegal harvesting. How much of what we observe in the Russian Arctic is attributable to this combination of driving forces as opposed to changes in legal structures and public policies? Kotov and Nikitina raise these questions in their concluding observations (pp, 67 et seq.). But this concern arises almost as an afterthought, and the discussion does not carry us far toward an answer to the central questions. I would be inclined to reorganize the paper in such a way as to identify MAJOR changes on the ground in the Russian Arctic at the beginning and then to structure the analysis around an effort to sort out the effects of legal/political changes from the effects of other drivers in the body of the paper. No doubt, the answers to such questions are not simple; we are dealing at all times with highly interactive systems. But an effort to wrestle with the relative importance of these different types of driving forces would be of considerable interest not only to students of Russia but also to those who are trying to understand the dynamics of human/environment relations throughout the world.

I recognize that time is short and that it is not feasible for the authors to reorganize this paper completely. But I do hope they can take some steps to avoid boring people with an extended exercise in formal/legal/descriptive analysis. Even dividing the paper into an account of the three major types of legal/political change and adding a few case studies would make a considerable difference in these terms.



The three main cooperating institutions of INSROP

Ship & Ocean Foundation (SOF), Tokyo, Japan.
SOF was established in 1975 as a non-profit organization to advance modernization and rationalization of Japan's shipbuilding and related industries, and to give assistance to non-profit organizations associated with these industries. SOF is provided with operation funds by the Nippon Foundation, the world's largest foundation operated with revenue from motorboat racing. An integral part of SOF, the Tsukuba Institute, carries out experimental research into ocean environment protection and ocean development.

Central Marine Research & Design Institute (CNIIMF), St. Petersburg, Russia.
CNIIMF was founded in 1929. The institute's research focus is applied and technological with four main goals: the improvment of merchant fleet efficiency; shipping safety; technical development of the merchant fleet; and design support for future fleet development. CNIIMF was a Russian state institution up to 1993, when it was converted into a stock-holding company.

The Fridtjof Nansen Institute (FNI), Lysaker, Norway.
FNI was founded in 1958 and is based at Polhøgda, the home of Fridtjof Nansen, famous Norwegian polar explorer, scientist, humanist and statesman. The institute spesializes in applied social science research, with special focus on international resource and environmental management. In addition to INSROP, the research is organized in six integrated programmes. Typical of FNI research is a multi-disciplinary approach, entailing extensive cooperation with other research institutions both at home and abroad. The INSROP Secretariat is located at FNI.