# Working Paper

## Implementation and Effectiveness of International Environmental Regimes During the Process of Transformation in Russia

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WP-94-123
December 1994

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## Preface

Hundreds or even thousands of international legal instruments on "the environment" are in existence. What happens to international environmental agreements once they are signed, and how does the process of implementing such agreements influence their effectiveness? These are the questions that motivate the IIASA project "Implementation and Effectiveness of International Environmental Commitments (IEC)". Research teams are examining these questions from many angles and with different methods.

In this paper, Vladimir Kotov examines the ways in which international environmental agreements are implemented in the former Soviet Union, especially Russia. The massive transformation under way in the former command economies poses interesting questions and many difficulties for scholars. Transformation affects behavior in all sectors of the society, and implementation of international environmental agreements is also intended to affect behavior. How can scholars disentangle the influences on behavior due to transformation and those due to implementation of international environmental agreements? Kotov examines the major elements of the transformation under way in Russia and focusses on how implementation of international environmental agreements might affect and be affected by the transformation. In doing so, he lays one foundation for disaggregating these different influences on behavior.

Transformation is marked by the relative absence of planning and implementation because the old system of commands has collapsed and a new system has not yet effectively emerged. A major challenge for the new system is to manage the decentralization of authority and decision-making that accompanies the organization of society around markets rather than commands. Kotov notes that during the transformation process much more of the activity and policy planning that is relevant for implementation of international environmental agreements now takes place at the local level. Direct implementation of plans and standards has decreased markedly; the role of negotiation has increased, leading to widely varied outcomes. Under the command system, when the planning process was mobilized to implement an agreement, implementation was easier. Many decisions made during the transformation period will have long-term consequences for the implementation of international environmental agreements. Among these are choices about distribution and control over property rights.

The IEC project is now sponsoring several in-depth case studies--notably on the European acid rain agreement (including a study of implementing acid rain controls on the Kola Peninsula) and the agreements to control pollution in the Baltic Sea. Those empirical studies employ some of the concepts and questions elaborated in this paper.

## The context of this paper in the IEC project

This paper is one of several IEC working papers that survey the existing literature, place the project in a framework of prior research, and identify the major questions that deserve further study. At the outset, members of the project decided to prepare these papers to ensure that we were adequately aware of other research in the field and, especially, to ensure that we would be studying the most important questions in the proper context. The papers that play these roles are listed below, divided into each of the three areas of IEC's research program. Fuller descriptions of different parts of IEC's research program are available in the IEC project description (copies available from IEC) and in the prefaces and working papers listed below.

1. Historical case-study and comparative research

Most of IEC's research is directed at studying how international environmental agreements have been implemented historically through examination of case-studies and focussed comparisons among selected cases. Teams are studying domestic implementation as well as international and transnational processes. Eight papers review the relevant literature and establish the context and research questions:

Research on implementation at the domestic level in Western Europe and in the Eastern economies undergoing transformation:

- Steinar Andresen, Jon Birger Skjærseth, and Jørgen Wettestad, 1994, "Regime, the State and Society--Analysing the Implementation of International Environmental Commitments".
- Vladimir Kotov, 1994, "Implementation and Effectiveness of International Environmental Regimes During the Process of Economic Transformation in Russia".
- Elena Nikitina, 1994, "Domestic Implementation of International Environmental Commitments: a Review of Soviet Literature".
- Alexei Roginko, 1994, "Domestic Compliance with International Environmental Agreements: a Review of Current Literature".

Research on international and transnational processes of implementation:

- David G. Victor with Owen J. Greene, John Lanchbery, Juan Carlos di Primio and Anna Korula, 1994, "Roles of Review Mechanisms in the Effective Implementation of International Environmental Agreements".
- David G. Victor, John Lanchbery and Owen Greene, 1994, "An Empirical Study of Review Mechanisms: Report on Work in Progress".
- David G. Victor with Anna Korula, 1994, "What Is an International Environmental Agreement?"
- Owen J. Greene, 1994, "On Verifiability, and How It Could Matter for International Environmental Agreements".

2. Development of a database

IEC is developing a database that will consist of key variables related to the development and effective implementation of international agreements. It will allow systematic use of historical evidence from a large number of cases. The goal is to make possible the testing of hypotheses and the drawing of general conclusions about which variables are causally linked to "effectiveness". One paper reviews the major hypotheses related to the formation and effectiveness of international regimes:

- Marc A. Levy, Oran R. Young and Michael Zürn, 1994, "The Study of International Regimes".

3. Other research and policy activities

IEC researchers are applying their research findings to current and future policy issues as opportunities arise. The project is also sponsoring a major simulation-gaming exercise to explore issues of institutional design, implementation and compliance in international environmental agreements. Simulations can help promote creative thinking about political options for international management of climate change, identify potential pitfalls, integrate policy-relevant knowledge from a variety of domains, and identify important policy-relevant knowledge needs. One paper surveys the benefits of using simulation-gaming as a policy and research tool:

- Edward A. Parson, 1995, "Why Study Hard Policy Problems With Simulation-Gaming?"

*The above list includes only the papers that the project has used in establishing the framework for its research activities. A complete list of publications and copies of papers are available from the IEC offices at IIASA.*

## Executive Summary

A major feature of the massive transformation underway in the former communist economies is the atomization of power. Former command economies are giving way to markets; decisions formerly made and implemented by the center are now dispersed. The new market-oriented economy will coalesce around new institutions, ideas, interests, behaviors, and means of influence. In the interim, transformation obviously affects virtually all aspects of life, including how international environmental agreements are implemented.

This paper outlines the major elements of the transformation in Russia and their potential consequences for the implementation and effectiveness of international environmental agreements. When compared with the relatively stable countries of Western Europe, it is hardly clear whether systematic analysis of the implementation of international environmental agreements in the context of massive transformation is possible. However, an informed awareness of the issues at stake is clearly very important given Russia's large size and relevance to the effective management of many international environmental problems. This paper offers one starting point for empirical research that is now underway. It is intended as an exploration of the major questions that will arise and should be addressed in such research. Other transformations in the former command economies have taken different paths; careful research on the Russian situation can be used in comparisons with other economies to further reveal the aspects and decisions that characterize the different transformations.

Economic and political transformation in Russia is marked by eight types of change:

1) **Actors.** Some actors are entirely disappearing from political influence--such as *Gosplan*, the Russian State Planning Committee. Others are relatively new, such as foreign-owned companies. For the first time, fully fledged private enterprises, banks, trading companies, investment funds are present in Russia. In addition, new institutions have been formed, notably stock and commodity exchanges and the market itself. Privatization is changing ownership of key polluting industries--away from the state to shareholders and workers--resulting in changes in property rights and the locus of decision-making. Changes in government actors include the creation of the Ministry of the Environment (1992), which is implementing the wholly new Environmental Law (1991).

2) **System linkages.** The command economy was linked vertically, with tight connection to the center; the market system is linked horizontally, with decisions originating and flowing from market signals. In practice, the move from vertical to horizontal systems has not been accompanied by a complete change in governmental institutions that manage linkages--notably, interdepartmental planning commissions, vestiges of command planning and implementation, still exist. New institutions and practices are sometimes built on top of the old.

3) **Interests.** Under the command system, officially it was legitimate to express only the interests of the state, although in practice they reflected the ambitions of the narrow group, the *nomenclatura*. In the transition to the market system the expression of private interests is both legitimate and encouraged--the collective interest is presumed to be an aggregation of private interests expressed through market decisions.

4) **Environmental priorities**. Under the Soviet system the negotiation and implementation of international environmental agreements was motivated by the pursuit of other international political goals, for example to offset tough Soviet stances on other issues such as human rights. Beginning with the political liberalization of *perestroika* the pursuit of environmental protection has become a legitimate interest in its own right. Changes in priorities and interests may also affect how the new Russian state views the obligations and treaties to which it is now the successor of the Soviet Union.

5) **Regions**. The shift from a centralized to a federal system has led some to hope that environmental protection would be more effective when implemented by (perhaps more influential) regional and local authorities. Whether this will occur remains to be seen.

6) **Nature of economic development**. The shock of transformation oppressively affects economic development, hopefully only for a short transition period as the new economic system is built. Sharp decreases in production, aging of technologies, and the dismantling of productive capacities are all abundant.

7) **Military complex**. The military was both one of the largest polluters under the old system, and one of the most powerful institutions. It freely violated the norms of international environmental agreements when that met its interests. The roles and power of the military in the new system are unclear, but if transformation diminishes the power and increases transparency of military activities then that may improve the prospects for implementing international environmental agreements.

8) **Behavior**. The purpose of enumerating these elements of the transformation process is to allow explanations of how behavior might change. However, in addition to direct changes in behavior, the transformation process also results in wholly new forms of acceptable behavior, and these new forms also constrain and feedback on behavior. Under the totalitarian system, independent behavior was punished whereas the new system tolerates independence. Because the command system could not contemplate that actual behavior would be different from the command, it was (and is) particularly difficult to distinguish real behavioral change from what the command system ascribed as behavioral change. Further, the command system's control over information led to strategies such as underestimating domestic potentials for implementing a program, demands for excessive resources, falsifying statistics, and embellishing the real results of implementation--these strategies are more difficult to employ in the absence of central control. The modes of controlling behavior when power and information are decentralized are quite different, but the particular forms of control have not yet emerged.

Taken together, these eight elements are the visible characteristics of the transformation process; notably that process results in massive changes in behavior. International environmental agreements are also intended to drive changes in behavior--namely the behavior of individuals and enterprises that pollute or degrade the environment. The extent to which we assess an international environmental agreement as "effective" depends upon the ability of the agreement to change the relevant behavior. The research task is to describe all of these causes of change systematically so that the effects of transformation can be untangled from the effects (if any) of international environmental agreements.

The process of transformation markedly changes the procedures and pathways by which an international environmental agreement might be implemented. Under the command system, implementation was entirely the province of the planning process, and implementation was fulfillment of a plan. Typically separate plans were not prepared for a particular international environmental agreement; rather, implementation was part of the normal planning of the economy, energy system, and society and, more recently, environmental plans. Because all aspects of the economy were planned, implementation required adjusting not only the behavior of polluters but all other linked aspects of economy, such as suppliers of fossil energy, pollution control equipment, and manufacturers of new technologies. The key feature of planning and implementation under a command system is that the chain of influence is very long--starting with an international environmental agreement, winding its way through the state, and ultimately affecting many dispersed units of the economy.

Long chains impart many risks to implementation because failure at any link would result in implementation failure. The problem for implementation during transformation is in part that vestiges of the long implementation chains still remain in the economy--the economy does not yet have the robust and self-correcting features of a functioning market yet also does not have the power of central command. Implementation chains remain long and interconnected, and the links have weakened. This weakness is in addition to other challenges to implementation, such as lack of financial resources.

However, the new Russian Constitution gives greater weight to international law than was true under the Soviet system, primarily because international law now has (within limits) direct applicability without legislation that "transforms" international norms into the domestic setting. Under the old system failure to implement international law in large measure stemmed from the (conscious) choice of simply not formulating the necessary transforming legislation. It is unclear whether the new Russian system or the old Soviet system results in generally more effective implementation. Under the new system international law has (on paper) greater weight but implementation chains are probably more fragile due to the collapse of central control and the still uneven decentralized administration that will replace command planning during the tranformation to a market economy. Under the old system, effective implementation was possible (and effective) when it fit with the interests of the Soviet state and ruling elite.

These insights suggest four aspects of the transformation process that are of special importance to the effective implementation of international environmental agreements in economies undergoing transformation:

1. **Planning and programs.** The fundamental shift in the development and implementation of policy is from central planning to a system of programs. Environmental "programs" consist of goals and incentives for behavioral change, but they differ fundamentally from planning in that they do not presume central control over behavior and information. How programs are actually translated into incentives for behavioral change remains thin in the Russian economy; yet this is the crucial precondition for allowing the market to adjust and yield outcomes that reflect social preferences.
2. **Property rights.** When major polluters are no longer owned by the state the mechanisms of control must change. The state can control as regulator, where

regulatory mechanisms exist, but no longer as sole owner. At times this regulatory role conflicts with other roles of the state, such as seller of an enterprise (where the goal is to get the highest price) or guarantor of low-cost services to consumers (who are also voters). The State still owns many of the largest polluters, but in practice authority is divided between many actors: the state, directors of an enterprise, local and regional authorities, and the workforce. Transformation is a mosaic of shifting property rights and control. None of the groups that have access to decision-making is also the clear owner of the enterprises. Opportunities for blocking decisions are many, and the incentives lead individuals to act in their own interest (which can vary markedly from the collective interest). One consequence of uncertainty and misplaced incentives is that aging anti-pollution equipment is not maintained or replaced; long-term investment is not favored.

3. **The State.** The destruction of the old political and administrative system--notably the removal of the Communist Party as a major organ engaged in implementation--has left a vacuum of traditional state authority. It is unclear if powerful environmental agencies and other governmental bodies--similar to those in many Western countries--will fill the gap. At present, the shift of power from the center to local authorities has scattered influence and authority into the countryside. The variance in local and regional responses to environmental issues will probably be high; the ability to implement coordinated nation-wide policy will be low.

4. **Bargaining.** Transformation has practically eliminated direct control; elements of control that remain are dominated in many cases by bargaining. Uncertainty and change in the transformation process has led to a massive increase in bargaining at all stages of implementation. Thus the outcomes of implementation are more indeterminate than they were under the centralized system or than they will be under a functioning market system. Entire blocks of the state administration, property owners, and other stakeholders are constantly implementing their own interests, and bargaining reflects the incessant effort to seek and capture opportunities.

Finally, the paper implies that the economic transformation has changed Russia's geopolitical interests and power, and that in turn affects how Russia behaves in international negotiations. On balance, transformation may make Russia (and especially the other former Soviet Republics) less arrogant and more realistic in international negotiations, including those concerning environmental matters, and may affect which types of international agreements Russia will ultimately implement and the reasons for Russian compliance. Further, transformation of the society--towards a free press and exchange of information--has made Russian society more transparent and it much less likely that purposeful concealment of failure to comply with international environmental obligations will be successful.

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## INTRODUCTORY REMARKS

Many countries that have emerged after the collapse of the Soviet Union now seek a transition to a democratic political system and a market economy. Some of them, and especially Russia, have started to carry out radical reforms. This transformation process will clearly have a significant impact on the implementation of international environmental commitments. The vast majority of international environmental regimes of which Russia is a member were initially created and implemented under political and economic conditions which have now changed fundamentally. The sheer scale of these changes does not allow us to ignore them. This transformation will take place over a long-term period. Geographically the area under transformation covers one-sixth of the world's territory, and the environmental situation there might have an impact on neighbors and the global environmental context. In the midst of such a massive transformation it would seem that there is only modest room for theoretical and methodological concerns about implementation of international environmental agreements. However, this first impression is deceptive. Actually the range of problems that claim our interest, and the details of particular cases, have serious claims to theoretical research.

In contrast to domestic policy research that has a mono-country character, in the case of international environmental regimes implementation takes place in several countries in a framework of several implementation mechanisms. International environmental regimes deal with one basic program (an international environmental agreement and its protocols) which is being performed simultaneously within several national implementing structures. The goals envisaged by an international environmental agreement are common, but pathways to provide this result are inevitably different across countries. The chosen instruments would be quite different, as would the initial problems to be solved (with the common features prescribed by the common international environmental agreement). The structures of implementors and addressees, the instruments chosen, their institutional organization, and the interactions between them would vary.

Uniformity and commonality are defined by the norms of a regime, and in particular by the targets and commitments of an agreement. But besides this uniformity the differences in national mechanisms of implementation are the subject of this research project. These differences may be increased by the process of transformation. Transformation radically changes those structures that condition how the regime is implemented in a country.

Industrial, agricultural, and transport enterprises as polluters appear to be among the major targets (addressees) of environmental programs. Environmental programs elaborated especially for the purpose of changing the behavior of such targets does not occur in a vacuum, but in certain economic and political conditions. In order to take into account the effects of these factors the theory of implementation has introduced a notion of "situation" (Mayntz, 1980, 1983). The concept illustrates that the behavior of implementors and addressees is defined not only by a program designed to change the targets' behavior but also by factors exogenous to the program. This "situation" in which implementors and addressees function is not amorphous, but rather organized and structured, primarily by the type of

economic and political system of the particular country. In relatively stable and highly independent countries (e.g., those of Western Europe) this factor might be disregarded to some degree because all enterprises and programs function in broadly the same economic and political framework. But in considering the implementation process in the states that are changing their systems, this feature might be of importance as a deteminant. Further, differences in the transformation may yield important differences in the "situation," and these in turn may yield important differences in the implementation of international environmental agreements, allowing informative comparisons and research results relevant to advising the process of transformation.

## I. REGIME AND A "BLACK BOX"

If the student looks at the results of several dozen international environmental regimes currently in place, he will find that some of these are being implemented rather successfully, while others have become "dead letters" or "empty law". One explanation may lie in the agreements themselves. According to this point of view, everything depends on the quality of agreements and potentials of regimes based on them.

In contrast, if the student studies regimes more closely, he may notice variations in the implementation of and compliance with the regime across different countries. "Good", or disciplined, member countries exist together with "bad" ones. What can be done in this situation to improve discipline under the regime? Regime-centered analysts advocate policies that adjust the regime to its relationship to the parties, for example: increase control and monitoring of compliance with an agreement, impose possible sanctions and pressures on violators, improve the work of a secretariat, etc. Certainly these measures are available, but the major problem is that while they are sometimes effective, in many cases they are not.

A diametrically opposed approach is to seek explanations for regime effectiveness entirely at the domestic level. Noticing high variation in the behavior of member countries of a regime, a student might guess that the regime - or in particular international agreements - are unable to provide significant influence over its participants. And he proceeds from a notion that the domestic structures with which a regime interacts on a national level are so powerful that the signal of a regime's influence is very weak. Within the "black box" of domestic implementation the signal of a regime is absorbed and disappears. In this case the answer to the most important questions - *how* and *why* this happens - are not provided: the "black box" remains to be unpacked. And whether or not the goals declared by a regime are attained by a country is the result of unknown processes taking place within a "black box" full of puzzles and mysteries.

Certainly in each of the two cases we are dealing with extremes: One is an overestimation of the possibilities of a regime, and the other an understatement of a regime's influence. However, as often happens, the extremes meet. These two different points of view have a common basis. They are rooted in an inadequately differentiated approach towards the implementation of regime on the most important stage that occurs after the formation of a

regime. This problem is not well developed - and it reflects specific aspects of the whole body of literature dealing with the issue of implementation and effectiveness of international environmental regimes (e.g., Andresen et al., 1994; Levy et al., 1994). Only recently have analysts paid growing attention to this problem, trying to compensate for the lack of distinct notions about mechanisms of domestic implementation of international environmental regimes, about patterns of their interactions with diversity of forms of economic and political behavior on national arenas that form the context of implementation. The terminology used to define this important sphere of implementation - "situation", "structure", "black box", "exogenous variable", "x" - is further proof that for the description of this process symbols (that might be used also to define other objects, the essence of which is not clear for observers) are applied, rather than appropriate scientific terminology. However independently from the symbols in use, the essence of the problem is unchanged: the contents of the processes of domestic implementation are not clearly defined, and the "black box" remains unpacked. It is not difficult to see that the linkage between international and domestic regimes is part of a more general problem of an unpacked "black box" now at the frontier of political science research on domestic-international linkages (e.g. Evans et al., eds, 1993). The aim of the domestic implementation research conducted by the "Implementation and Effectiveness of International Environmental Commitments (IEC)" research project leads to the laborious work of unpacking this "black box". In particular, the research on the countries undergoing transformation will unpack the "black box" in that situation.

**"Black box" - implementation within a system?** Broadly, the IEC project seeks to explain implementation of international environmental commitments, and to trace the factors related to their effectiveness. This part of the project deals with their domestic implementation in Russia as the country undergoes its transformation from one political and economic system to another. This process will be a protracted one by virtue of its complexity. Since implementation of international regimes is also a complex process defined by domestic economic, political and social factors, implementation of a regime in a country undergoing transformation obviously depends to a significant extent on the nature of that transformation process.

Since transformation is a change in systems, the existence of linkage between regime and transformation becomes a compound of a more general question: to what extent is implementation of a regime interlinked with system frames? If the degree to which regime implementation is embedded into a system and its mechanisms is high, then inevitably the transformation of the system will strongly affect the regime. If such linkage is absent, then regime and transformation are not intertwined categories that must be studied together.

Current research proceeds from the notion that there is a tight causal linkage between implementation of international environmental commitments and systems within which this implementation takes place, and therefore there is a causal linkage between a regime and transformation. It seems obvious that both theoretical and empirical proofs exist for this. Here we examine the concrete forms of such linkages in Russia today.

## II. TRANSFORMATION: WHAT DOES IT MEAN FOR REGIMES?

Transformation modifies the system frames in which the regime functions, and it creates new mechanisms and pathways for its implementation. The adjustment to new conditions is neither automatic nor painless. The problem of adjustment poses the question: how effectively are regimes implemented during and after the transformation?

Here we examine the elements of the transformation and pose questions that arise from each of these elements.

**1. Changes in the nature of the actors.** Some actors are disappearing completely as a result of the transformation process. The State Planning Committee in Russia, *Gosplan*, is one such example. Some of the actors have only recently appeared, such as enterprises under foreign ownership and foreign companies, which were sparse during the 70 years of Soviet rule. However, most actors are regenerating and changing, rather than being completely destroyed or born anew. The object that faces the process of transformation, does not disappear but rather changes its form radically. For example, a metallurgical plant - a severe environmental polluter, which formerly had been state property, currently is the private property of a single person or a group of shareholders, among them the state, or it is in joint ownership by its workers. The changes in the property rights result in changes of the rights of possession and the rights of disposition; both lead to changes in control over economic activity and resources and in turn to changes in the behavior of actors. The interests defined by the property rights and by their distribution among different groups of owners change considerably.

Within the framework of this project we are also interested in the issue of how domestic implementation of the Long Range Transboundary Air Pollution (LRTAP) regime has been modified as a result of significant shifts in the property rights on a metallurgical plant, as well as on other enterprises that are sources of transboundary air pollution. What impact does this have on the domestic implementation and effectiveness of this international regime? What is the response of foreign enterprises to the signals and requests of international and national regimes? What is the level of the environmental technologies they bring to the Russian market?

Changes in the nature of actors takes place not only in the case of enterprises. Actors represented by state and public organizations also change. For instance, green movement organizations that were marionettes under communism are now completely independent from the state and its ideology. The Russian Ministry of the Environment, established after the collapse of the Soviet Union in August 1991, is guided in its activities by a completely new Environmental Law (1991). Media coverage of environmental issues has changed radically as the media have become independent from the state as well. Do these dramatic changes have any impact on domestic implementation of international environmental regimes?

**2. Changes in system linkages.** In the course of transformation the interaction between actors changes radically. As with changes in actors, the transformation of system linkages is crucially important. In a totalitarian system, all these linkages are vertical: the command economy and society derives its directions from the top. In contrast, a market economy is characterized by horizontal linkages. These types of system linkages between various actors, functioning in the context of a linked system, might be regarded as channels through which the signals of international regimes reach their targets, but passing through many filters.

Within a command system there was not, and could not be, any direct linkage between an international environmental regime and a polluter as a final target of the regime. (That does not mean, however, that no contacts existed, for instance, between the scholars of the national Academy of Sciences working in the natural reserves and representatives of international regimes.) Rather, all influence passed through the command of the center, which then issued commands to lower levels along a strictly structured chain. The major element in this chain was a governmental commission composed of representatives of the ministries directly responsible for ground-level implementation of commands received from the center.

The transformation process has virtually destroyed the vertical system linkages, and resulted in serious changes in the system. *Gosplan* and sectoral ministries (major instruments in the execution of a plan) have been dismantled. Instead of a command economy, a market-based economy, where market linkages are dominant, is evolving. However, the practice of interdepartmental commissions responsible for regime implementation still exists. New institutions are not emerging onto an empty stage; rather, they incorporate the debris of the old ones. Today the institution of interdepartmental commissions functions with new members in their structure, and it functions under completely new system conditions. What remains of the old institution is largely a shell, since the chain of command on which it used to depend no longer exists and enterprises no longer implement orders from the center.

What is the structure of the regime implementation chain under current conditions? What substitutes for command? In what cases is the command and rule preserved? How is command being executed in cases where vertical linkages still exist, and where it is not possible to cope without centralized control, even under market conditions? How does the interdepartmental commission responsible for international regime implementation function today? What are the interests of the organizations represented in it? What new organizations are involved at different stages of implementation? What is the role of the federal Ministry of Environment in this process, and what are its functions regarding the management of domestic implementation of international regimes? Does it have special bodies within its structure responsible for regime implementation? What other institutions are involved in regime implementation, and what is the division of functions between them? What role in the implementation process is played by the new legislative authorities in Russia? What are the approaches of the Russian parliament towards the ratification of new regimes? What is being done by its subsequent commissions? What is the role of new economic instruments in meeting the goals of international regimes? Do they function at all? What is the role of

local authorities and local environmental management organs in the implementation process? What is the role of the newly created environmental funds?

**3. Changes in Interests.** Political and economic transformation has created new interests as well. For the first time in Russian history the pursuit of internal interests of different actors has become legitimate. Under the command system there was, officially, only one category of legitimate interests, those of the state, although they in fact reflected the ambitions of a narrow group, the *nomenclatura*. Under transformation all actors are preoccupied primarily with revealing and expressing their own private interests. Under the market system broadly, the collective interest is presumed to be the aggregate of market exchanges by actors pursuing their private interests. Public and state interests are a consequence of competition--the collision and exchange of separate private interests. Yet clean water and air are not goods created through the competition process. On the contrary, competition demands from economic subjects to reduce expenses, at times transferring ("externalizing") costs to nature, society, and the state. Thus one of the central problems relevant to regime implementation under transformation is who represents the collective interests of society within this new system, and how?

What has been modified here in comparison with the former system of representation of interests? How are public environmental interests being shaped and represented? What potential conflicts might be associated with the development and expansion of public interests? What is the role of public organizations in maintaining these environmental interests? What is their attitude towards implementation of and compliance with international environmental accords by Russia? What are the major changes on this issue in comparison with the former system? To what extent is representation of environmental interests still monopolized by state institutions? What is the role of the recent weakening of the state authority as a major institution to protect nature? What is the impact of these processes on implementation of regimes?

**4. Changes in environmental priorities.** Domestic interests that affect implementation may change, and so may interests in addressing and negotiating international agreements). Changes in the structure of interests during the transformation process may seriously affect how environmental issues rank on the scale of social priorities, and thus to a certain extent the formation of international environmental regimes. From the second half of the 1970s through the early 1980s, Soviet entry into international environmental regimes tended to be motivated not so much by the desire to solve environmental problems as by the pursuit of political goals. During the negotiations within the Helsinki process, particularly of environmental issues grouped within the second "basket", Soviet representatives made several concessions to compensate for the tough Soviet stand on human rights. Environmental issues ranked somewhere near the bottom of the government's agenda during this period, but they served as a useful trading chip in Soviet efforts to achieve overall security goals as well as recognition of East Germany and the postwar borders in Europe. As a result of transformation, the significance of environmental issues increased independently, and environmental goals were especially manifested under Gorbachev's *perestroika*. Many

analysts have noted that in the Soviet Union and Eastern Europe, "environment" was one of the few areas of legitimate protest. The broader protests that ultimately led to revolutions and the collapse of the Cold War had strong roots in "environmental" interests.

This phenomenon has a dual significance for our research agenda. First, a new category appears on the scene - a category of national environmental interests. This group of interests was not revealed within the command system because it was suppressed by other goals of international policies. What might be the impact of Russia's newly evolving national interests on the country's approach towards the entry into international environmental regimes? What is the content of its national environmental interests? How does the "external ecological balance" of Russia's inter-relation between export and import of pollutants) - a measure of vulnerability to transboundary environmental problems - compare with that of other countries? What are the attitudes within Russia itself towards environmental problems covered by a regime? These attitudes may be rather subjective, and they may depend on a subjective perception of national ecological interests, and on evaluation of the place of the country within the process of international environmental problem-solving. What environmental problems are considered of utmost importance today?

A second aspect of this problem is the assessment of international environmental regimes already acting in Russia, but now under modified conditions caused by transformation. There may be changes in the approach to specific regimes that were signed by the USSR and inherited by Russia by virtue of its declaration of succession to Soviet international obligations. Which regimes still correspond with Russia's national interests? Which regimes are becoming "empty law" and "dead letters"? Do some remain relevant influences on behavior although they do not conform to the new interests of the country?

The significance of this problem might be better understood if one also takes into account the changes in the course of transformation in the geopolitical position of Russia as a participant in international regimes. The geography of the country has changed, as has its location among neighboring polluters. Prevailing western winds transport significant levels of air pollution to Russian territory from the Baltic republics, Ukraine, Belarus and Moldova, which did not exist as independent states when the LRTAP agreements were signed. Similarly, because of political reasons, air pollution originating in like-minded socialist bloc countries - primarily Poland, East Germany and Czechoslovakia - was previously considered more benign.

Are the new states that have been established on the territory of the former Soviet Union members of environmental regimes? Have they signed and ratified the agreements? If so, how do they implement them? Is their signature just a formality, and is there a gap between their declarations and actions? These factors were introduced by the transformation process, and it seems that they might have a serious effect on the attitudes of Russia towards international environmental agreements.

**5. Larger roles for regions.** As Russia moves from being a unitary to a federal state, the dismantling of the center's monopoly on the decision-making process has greatly increased the rights and powers of regional and local authorities. This development has led to high hopes among the public for improvements in carrying out environmental policies, now that regional and local authorities are directly dependent on the electorate and thus should have an incentive to influence governmental environmental protection policies. Whether this will in fact occur remains to be seen. Most likely the results will be very diverse, depending on the particular interests at stake and the expression of local government power.

To what extent are regional and local authorities actually able, as a result of changes in their legal status following the adoption of a new constitution, to influence environmental policy? What is the impact of the sharp increase in the scope of local power on the implementation of international environmental agreements? What are the functions of the local authorities as regards regime implementation? Are they aware of international regime norms and rules? What are their attitudes towards a regime's provisions? What are the specific characteristics of their behavior in this respect? What new serious problems are associated with these changes?

**6. Changes in the nature of economic development.** Transformation inevitably affects the process of economic development. When one system is being dismantled and others have not yet taken shape, the shock and instability of transformation oppressively affects economic development. This continues until stimulation from the new system is able to reverse the negative influences of shock, instability and change.

Such a negative effect of transformation on economic development, although hopefully only transient, might be evident in all countries experiencing this process. However, this phenomenon is manifested most clearly in Russia. The sharp decrease in production, reductions in investment, the aging of technologies, and the dismantling of productive capacities are all abundant.

What impact do these processes have on implementation and effectiveness of international environmental regimes? The decrease in production results in reductions of pollutant discharges. What is the effect of these processes on investments in environmental technologies and cleaner industries? What is their effect on attaining the goals of international regime? To what extent have the risks of technological catastrophes and breakdowns changed? What are the chances under these conditions for the installation of purification facilities by enterprises to meet norms of international regimes? What is the situation with the national scientific community, and how do these processes define changes in its impact on international environmental policy formation in the country?

**7. The role of the military complex.** Under the command system the military appeared to be one of the major environmental polluters in the country. Its activities resulted in great environmental damage which often had a transboundary character. The military held an extremely powerful position which allowed virtually uncontrolled activity over huge

territories. Now we are aware that the military had freely violated the norms of some international environmental regimes when it was necessary for its purposes.

What has changed under transformation in the behavior of the army in Russia regarding environmental issues? Does the military now more readily comply with the norms of international regimes? How are environmental control and monitoring being provided over territories under its "jurisdiction"? What is the role of regional control? What are the functions of the Ministry of Environment in this respect? Does the military still provide self-control as it was before? What will be the consequences of lifting (at least partially) the veil of secrecy that previously shrouded military activities?

**8. Behavior.** Fundamentally we are trying to explain changes in behavior at the level of individuals and enterprises that are the causes of environmental problems. We are also interested in changes in the behavior of the state--the legitimate member of intergovernmental agreements--which is in part comprised of the behavior of individuals and enterprises but also includes the behavior of governmental actors such as bureaucrats who adjust incentives, promulgate laws, and file international reports. As noted elsewhere in the IEC project (e.g., Andresen et al., 1994; Levy et al., 1994), behavioral change is our measure of effectiveness. Later parts of this paper will examine in more detail the causal mechanisms that lead to behavioral change in the context of economic transformation, and the implications for research on this topic. Our basic intention is to identify which changes in behavior are due to the process of transformation and which reflect implementation of international environmental agreements. However, here we note a few aspects of behavioral change that are elements of the transformation process that will, in turn, affect the process of implementation.

The operation of a totalitarian regime reinforces and selects certain behaviors, and thus the process of transformation may induce large behavioral changes as the old selection mechanisms are destroyed and replaced by new ones. Under a totalitarian regime and command-based economy, commands are provided only from the top level - from the center, and all other players in this process are just mute executives of these commands. All other forms of behavior are seen as undermining the basics of this system and must be instantly rejected and aborted by it. However, within the command system a set of forms of actors' behavior evolved, forms that externally conform fully to the system, and hence are non-punishable, but actually they appear to reflect and coincide with the interests of different actors, engaged in execution of commands from the center.

The control of the command economy meant that it was possible to contemplate a variety of implementation strategies that would otherwise not be possible in a decentralized system. Thus it was (and is) particularly difficult to distinguish real behavioral change from what the command system ascribed as behavioral change. Typically, several options were available to central planners for domestic implementation of a regime, and optimal control required synergistic changes in many actors (e.g., ministries, enterprises, individuals). Control over information led to such strategies as underestimating domestic potentials for the

implementation of a program, exaggerating the difficulties associated with its execution, demanding additional financial and material resources for this purpose, falsifying statistics, and embellishing the real results of implementation.

The transformation process has broadened the number of forms of economic and political behavior. Today independent behavior is no longer a form of violating system rules, but can be regarded as one of the basic features of the new system. Transformation has created conditions when a dam curbing the pressures from different forms of behavior is collapsing. Without exaggeration it may be said of contemporary Russia that a flood of various possible forms of behavior, sometimes uncontrolled ones that ignore any restrictions, have overwhelmed the country. This has created a tremendous potential for initiative, which was strictly suppressed before, but has also bred many problems of chaos.

What is the interrelation of this flow of new behavioral forms with the implementation of international environmental regimes? Does this flow aid or obstruct the implementation process? What are the most typical forms of behavior? Are international regimes able to restrain the behavior of certain actors and modify behavior in the necessary direction? Why and how are they able (or unable) to deal with this problem?

As we have seen, there is a rather wide list of areas where transformation and regime are closely intertwined. It is easy to note that much is now in flux - not only the linkages between regime and transformation, but also deep interactions between regime and systems replacing each other. The analysis of these problems might serve as a basis for research design, but simultaneously it poses a broad range of further serious questions. These questions are not only numerous but also difficult to answer. That is why it is inevitable to explore the issue with the help of which scientific apparatus it is possible to deal with these problems, and what research instruments might be used for this purpose.

## III. REGIME AND SYSTEM: PHASES OF IMPLEMENTATION

**Regime's phase and system's sphere.** It may prove helpful to systematic analysis to distinguish phases in a regime's implementation. The process of implementation passes from one sphere of social organization into another. We identify six phases, starting from the moment when environmental problem emerges:
1) phase of scientific realization of a problem;
2) phase of social and political formation of ecological interests, including their realization as a part of national, international or global ones;
3) phase of regime formation;
4) phase of performing a regime via state institutions, as well as via non-governmental structures;
5) phase of implementation of a regime by targets - polluting enterprises and consumers;
6) phase of control over the results of regime functioning, of enforcement, and learning lessons from its experience.

In the awareness that there might be other schemes of gradation, let's look at the latter one as corresponding profoundly to the set of tasks before our analysis. Movement of the implementation process along certain phases allows to indicate that each of them is characterized by its own specifics. Differences between phases are of principal character. Each time moving through its separate stages the implementation process passes through a certain "environment" -since each time this is a particular sphere of a system, where its own type of actors function, as well as rules of behavior and its own language prevail.

The first phase is primarily conducted within science, and scientists are the major actors here. The number of actors is relatively small. The discussion is framed mainly in scientific terminology, and the major result is scientific formulation of the environmental problem.

The second phase has its basis in the formulation of responses to solve an environmental problem. The major actors here might be public organizations, the green movement, various political parties, and policy-makers. The actors' behavior is defined mainly by the rules of political behavior. The problem that was formulated earlier in scientific terms becomes a policy problem, which is the major result of this phase. It acquires social and political status within society's agenda. National ecological interests are formed, sometimes including formulation of environmental doctrine. One of the major results in this phase is perception of the fact that joint international actions of a group of countries are needed to solve this environmental problem.

The third phase results in formation of an international environmental regime to solve this environmental problem - its norms, rules, procedures and institutions. The major actors are the governments of member states, governmental officials and bureaucracies, and representatives of international organizations. Major interests are national ecological interests but united by a common desire to achieve a solution to the international environmental problem. Interstate conflicts are blunted by this common interest. The behavior of actors is described mainly in terms of political behavior, and problems under consideration are mainly in the terminology of international law and political science.

Under the fourth phase the transplantation of norms and rules of an international environmental regime into a domestic implementation mechanism takes place. Re-coding of the signals from the international regime into signals that match the "system" (within which implementation takes place) occurs in a manner that is available and easy for actors to comprehend and execute. This is achieved through the transformation and reformulating of the regime's norms either into a command or into the signals that result in shifts in the economic function of polluting enterprises. The major actors in this scene under the command-based system are planners, governmental officials. In a market and democratic system they are joined by various non-governmental organizations which attempt to influence the polluters' behavior. The actors' behavior is defined mainly by the rules of bureaucratic behavior, modified according to one system or another. As a whole this phase serves as a "transmission" between a regime and polluters. The analysis of the processes in this phase is

being held in the terminology of the theory of economic systems, theory of political systems, and bureaucratic behavior.

The fifth phase is decisive in the process of implementation. Independent of the quality of a regime, its institutional organization, and the functioning of governmental mechanisms, the ultimate success of a regime depends on the actors' behavior in the economic sphere. The final results of the whole implementation process depends on what polluting enterprises actually do, how and to what extent they are influenced by the regime's signals, which reach them through long and intricate channels of influence and communication. The major actors on this scene are polluting enterprises and consumers. The number of actors varies considerably across particular regimes, but in some regimes it is especially high. Environmental behavior of actors is defined by the rules of system economic behavior. The regime is able to introduce certain modifications and corrections into it, transforming behavior in a way necessary for the regime to function. But for this purpose the regime has to use adequate methods and postulates. The major result of this phase might be pollution reductions due to changes in the environmental behavior of actors. The processes of regime implementation in this phase are described in the terminology of the theory of economic systems and the theory of economic behavior.

The sixth phase represents elements from different spheres. The major actors here are monitoring organs, governmental bureaucrats from different levels, regime secretariats, courts and inspectors in member countries, mass media, etc. Despite a complicated composition of actors, the procedures for sanctions enforcement in case of violation of regime rules, which are applied towards polluters on national level, illustrate rather clearly the embeddedness of this phase into system frames. The application of sanctions outside the rules of the system is not workable. For instance, the system of charges within the command-based economy is totally inefficient - it implies simple reallocation of resources from one governmental pocket into another (losses of states enterprises under the command economy were instantly covered by donations from a budget). This phase in general provides rather important functions of inverted linkages.

The analysis across phases of implementation proves the assumption introduced earlier that the implementation process is tightly interlinked with those economic and political systems within which it occurs. Only two out of the six phases - that of science and of regime formation - might be more or less independent of the system. The remaining four phases of implementation are intensively intertwined with the system environment.

## IV. REGIME AND SYSTEM: CHARACTER OF LINKAGES

The theory of economic systems distinguishes two types of systems--ideal and real. The "market economy" and "command economy" are types of ideal economic systems. Each is characterized by basic, constitutional elements: allocation of resources and system linkages, property rights, character of stimuli and sanctions, and financial system. These are the

major blocks of an economic system, and they constitute its foundation. If these elements are transformed, then a change from one system to another occurs, i.e., its transformation.

In practice, ideal types are modified by many other elements. At the level of concrete countries, economic systems function in different ways and constitutional elements are supplemented by additional elements. Both of them shape real economic systems and behavior. For example, among these additional elements might be national public mentality, including people's relationship to nature, people's legal obedience and aspiration towards order, or on the contrary lack of discipline and inclinations to anarchy, peculiarities of labor recruitment in a country (e.g., recruitment for one's whole life in Japan), the scales of a state sector (e.g., high in Italy and Austria), the character of state regulations of a market (e.g., specialized banks in the USA and universal ones in Germany), and many others. In the environmental sphere they might include, for instance, the presence or absence of specialized governmental organs responsible for environmental protection, their place within a governmental structure, the rank of environmental protection within the scale of social priorities, etc. All these elements taken together constitute the real system, which functions on a national level. A notion of "system" usually envisages its ideal type, and those combinations of constitutional elements which form either a market or a command system.

The transformation underway in Russia involves the replacement of the major constitutional elements of one (ideal) type of an economic system by another. Yet many elements that shape (in addition to constitutional elements) the real type of the system in Russia remain unchanged (they are defined by national, geographical, and other characteristics of a system). In this case the country's peculiarities remain a constant, but a system undergoes massive transformation.

**Regime and transformation.** There is a certain nuance that should not disappear when one poses a question about a linkage between regime and transformation. Most regime analysis assumes that a certain polluting country exists, the regime is introduced, and the regime then introduces a certain order. This legitimate assumption logically leads to the questions: what effect has the regime produced, what has the regime altered, and what has the regime affected?

The context for regime research during the process of transformation is quite different. A regime might already exist for a certain period of time in a country under transformation. The changes observed are not due to the introduction of a regime, but rather due to the onset of system transformation. History seems to stage its unique experiment specially for students involved in the analysis of international regimes. It has turned a constant that has been in existence for seventy years into a variable. While real systems are subjected to constant marginal changes over time, economic systems in their ideal type usually remain unchanged during the life-cycle of certain international regimes. A market system in the West has existed for several centuries and is reasonably treated as a constant. System transformation is a rather unique phenomenon in history, especially in the history of international regimes (and particularly regimes concerned with environmental protection). However,

transformation provides an opportunity to expose the problem of regime implementation somehow from the other end: it makes it possible to approach the issue by evaluating the impact of a system change on regime implementation and effectiveness.

**Regime and system.** An economic system in its ideal type is exogenous, independent of any given international regime. The international regime is not able to change the constitutional principles of the national system. Implementation of regimes in the USSR did not mean to modify the system of centralized planning and state property. It only meant to transplant the norms of international regimes into the system of planning that served as the basis for the whole implementation mechanism of the command economy. The "object" to be transplanted from a regime into a domestic system should have a certain shape in order not to be rejected by the economic and political systems of a country implementing the regime, but in practice there is usually considerable flexibility in the interpretation and implementation of international commitments. If signals from a regime were able to find a proper place in the appropriate cells of a system, then implementation was able to develop without any serious problems. It was so in the case of the norms established by international regimes because norms in their essence do not contradict the principles of command system. Regime norms either substituted for existing national norms, or were placed within cells where the meaning of a norm was insignificant. Thus international norms of a regime are transplanted into a domestic system and are able to change the behavior of polluters. In practice, polluters often may not even have been aware that these established norms reflected international law. They were not very much interested in the international context because, e.g., financing for the installation of purification equipment was provided by domestic financial institutions, and all relevant incentives were executed at the domestic, not international, level.

The following question might be posed: can a regime modify a system by changing the behavior of its targets, and by being incorporated into domestic practice? We do not have a definite answer about the effect of Helsinki process on the Soviet political system modifications, but regarding the changes in behavior of economic actors, the answer might be: a regime's norm is not able to change the basic type of behavior in a system. In a market economy the system's behavior is aimed at maximizing income (or maximizing turnover); in a command economy the system vigorously pushes enterprises to fulfill a plan. Thus the incorporation of an international environmental norm must be based on the respective forms of behavior. In a market economy environmental norms might result in shifts in the economic and productive functions of an enterprise; in a command economy the norm should be incorporated into a structure of the enterprise's plan targets. In both cases a certain modification of economic behavior takes place, but only on the basis of system forms of behavior, and without changing the fundamental nature of the system. A regime does not change the constitutional principles of a system if we bear in mind a system of an ideal type, but it transplants its norms and rules within frames defined by a system. Without changing a system type a regime interacts with a system by changing its periphery, i.e., elements of real type of a system.

## V. EFFECTIVENESS AND TRANSFORMATION

Transformation obviously affects the pathways of regime implementation, but how does it influence the effectiveness of a regime?

**Inevitability of a variety of effectiveness indicators.** Measures of effectiveness might take several forms: the extent to which an environmental problem is solved, goal attainment, fulfillment of an agreement, or changes in behavior (Young and Levy, 1995).

The multiplicity of indicators emerges from the nature of the implementation process - different indicators refer to different stages of the process. The indicator of problem-solving reflects the full cycle of implementation, incorporating the maximum number of phases. From the point of view of scientists formulating an environmental problem this indicator would probably be the most important. In contrast, the indicator of goal attainment reflects the effectiveness issue more narrowly - it incorporates fewer phases, and is probably most relevant for policy planners and analysts.

Some analysts have compared and assessed the merits of different indicators (Young, 1994, ch.6; Levy et al., 1994). Among the most vividly discussed is an indicator of environmental problem-solving, and that its major shortcoming is the difficulty of its measurement.

In order to illustrate shifts in the effectiveness of a regime during the process of transformation, it seems reasonable to base an analysis on its several indicators. The indicator of "problem-solving" may play a broad role. However, transformation may result in considerable changes in societal perceptions. The "problem-solving" indicator depends on the problem to be solved, and thus the social perception of which problems are most important. Changes in social perception may even create doubts as to whether a country should participate in a regime.

The behavioral change indicator for describing the effectiveness of an international regime in a country under transformation is also important. Actors' behavior and changes in it define an implementation process practically in all its phases. The economic and political behavior of actors considerably modifies the pathways of implementation. It might speed up its movement towards the solving of a problem, goal attainment, and executing regime norms and provisions, but also might prevent and detain it, and even might become a totally insurmountable obstacle to regime implementation.

Further, the "goal attainment" indicator raises many important research questions. If realization of a program, a norm or a law is considered the major task of the implementation process, then naturally the analysis should focus on the reasons for the gaps between norms and goals formulated by a program and its actual results. The behavior of actors in this context plays a dual role. Since the central goal of a regime is to change the behavior of polluters, they are the major targets of environmental programs. Success or failure of regime implementation depends on these changes.

**Treaty and non-treaty induced changes.** One of the serious research problems before us is that transformation also modifies the forms of economic and ecological behavior. During such rapid changes, how can we distinguish the changes in actors' behavior that are caused by implementation of a regime from the changes associated with the shift in a type of system? In other words, we have two categories of behavioral change in the economy: one due to changes in the system, and the other due to influence of international regimes.

The chain of implementation is rather long. As the signal from an international regime moves towards its target it is subjected to many different forces and distortions. Extraneous influences begin at the stage of translating an ecological problem from its scientific foundations into its social and policy perceptions. The process is marked by pervasive bargaining and political games and efforts to gain political advantage. Many actors participate, including policy-makers and representatives of influential economic groups (including those responsible for environmental pollution). Thus political and economic interests enter the scene. The problem acquires the structure of interests of the particular actors - ministries, industrial groups, parties and movements - who formulate national environmental doctrine and national environmental programs. In the next phase - the phase of regime formation - the initial contours of the environmental problem might be altered even further. Conflict and compromise continually shape the policy outcomes and perceptions of the environmental problem.

However, the most significant distortions and deviations from the initial formulation of the environmental program and methods to execute it, occur at a later stage after the signing and ratification of an agreement - when the governmental apparatus enters the scene to implement an agreement. The regime must be implemented in the context of the existing national situation, and in doing so the signals from the international one are brought to the targets.

## VI. IMPLEMENTATION OF REGIME IN A COMMAND SYSTEM

One's attitude to the operation of the command system might be quite negative, and it deserves it, but this should not be a cause for disregarding the options it opens for research, including research on implementation of international environmental regimes.

**Implementation as fulfillment of a plan.** Implementation represents a process of realization of plans, including those that replace market mechanisms of coordination. All aspects of implementation - major implementation institutions, financial funds allocated for these purposes, implementors and addressees, etc. - are embraced by the plan, or at least should ideally be incorporated into it. Implementation within a centrally planned system also occurs in the context of a broader plan that governs all economic activity. Domestic implementation of an international environmental agreement might take the form of a specialized item on environmental protection.

Both elaboration and execution of environmental programs in the framework of a centrally planned system take place mainly within the planning process. Environmental planning is a compound of a whole process of economic and social planning. Planning of a program incorporates not only its elaboration and substantiation, the fixing of goals, and collection of the necessary data, but also promoting its realization and control over its execution, thus including the most important elements of its implementation process. (For more details on scientific discussion on problems of implementation of international agreements in the Soviet Union, see Nikitina, 1994)

**The forms of environmental planning.** Environmental programs of centrally planned economies take many different forms:

- planning of environmental protection within short-term, annual, and five-year economic plans;
- environmental plans of industrial enterprises, their groups or whole branches of industry;
- regional and territorial environmental plans;
- plans in certain spheres of environmental protection.

Environmental plans are not autonomous. Rather, many plans are simultaneously shaped by the central planning organ; together they make up the national economic plan. Similarly, the mechanism of implementation of environmental plans is also not independent. As a result, the success or failure of the domestic implementation of an international environmental agreement (as well as of national environmental plans generally) depends largely on the implementation of plans within the planning system, not only within the circumscribed area of environmental planning. Plans from different spheres overlap.

If an international environmental agreement envisages certain reduction norms for discharges of pollutants in its member countries, then this norm will be incorporated by national directive organs into a five-year plan and subjected to execution. The plan must also foresee methods for achieving this task. If a plan assumes that emission reductions would be provided by the installation of purification facilities at the polluting enterprises, then in the centrally planned system it is not sufficient to allocate financial funds for these purposes. First of all, central planning organs have to plan the production of the needed purification equipment at machine-building enterprises, and envisage and fix subsequent deliveries of energy and labor resources, materials and equipment parts (metal, engines, filters, etc.). Thus compliance with the international norm would depend on accomplishing the planned targets along the whole technological chain. In this case it would not be limited at all by a short cycle:

| | | | | |
|---|---|---|---|---|
| International environmental agreement | -----> | National environmental norm that has accumulated international norms | -----> | Polluting enterprises |

Rather, the cycle would be much longer. Ratification of an agreement here might be a formality, since the center has already undertaken a decision to sign it. The whole legal framework might also represent a rather formal procedure. But the actions of incorporating a regime's norms into indicators of a plan, and providing financial and material resources for this process, would actually be the major ones in a process of regime implementation. This longer cycle would include:

| 1 | | 2 | | 3 |
|---|---|---|---|---|
| International environmental agreement | -----> | National environmental plan as a part of national economic plan | -----> | Polluting enterprise |

| 4 | | 5 | | 6 |
|---|---|---|---|---|
| Producer of purification equipment | ------> | Suppliers of:<br>- Metal<br>- Engines<br>- Filters | ------> | Suppliers of:<br>- Energy<br>- Coal<br>- Copper, etc. |

**Long chains and the risks in the implementation process.** If execution of one of the plans for a single enterprise within this long chain is violated, non-compliance with the provisions of international environmental agreement might result. Meeting the goal would be shifted to the following year and the entire mechanism would be enacted once again, and so on. (The fragility of compliance where implementation occurs in long chains to some degree has been counter-balanced by the totalitarian power that has accompanied the command system.)

This brief theoretical analysis of the implementation process the within command system leads us to some practical conclusions. Longer technological chains of implementation increase the risks of non-compliance with an international environmental agreement in a centrally planned economy. We therefore have to analyze environmental agreements from this standpoint, and to compare cases characterized by long and short chains - by higher or lower risks of (involuntarily) defecting from an agreement. Perhaps with this purpose in mind it would be possible to develop new approaches to the content of international obligations of the countries undergoing transformation and with centrally-planed economies towards environmental agreements that seek to influence these groups of countries, as well as to the issue of control over their compliance. Currently there is an impression that the application of equal treaty norms to different economic and political systems results in low effectiveness of international environmental agreements in the group of countries with centrally planned and economies under transformation.

**The problem of implementation in a command system.** The example of the USSR showed that there was no deficit in the number of environmental plans adopted. Nor would it be an exaggeration to say that the country ranked far ahead of all the industrial nations taken together in terms of the sheer number of such programs. For instance, programs in the sphere of water resources protection and conservation were adopted in 1960, 1967, 1969, 1970, 1972, 1975, 1976, 1977, 1978, and so on. They were coordinated and issued jointly by the USSR Council of Ministries and the Central Committee of the Communist party. The enormous number of programs and governmental resolutions issued is rather puzzling. It indicates that the elaboration and adoption of programs even at the highest levels does not guarantee problem-solving in a centrally planned system. On the contrary, it was an indicator that implementation is the weakest element in this whole cycle.

This is true not only of the execution of environmental programs but also of the entire implementation process in the economy and its role under a totalitarian system in general. None of the five-year plans adopted in the USSR was ever completely fulfilled. The goals of the great policy and economic programs - building communism, providing the population with food and housing - were proclaimed over and over again but never achieved. While some plans were implemented and their targets even exceeded, the majority of these were in the military sphere, not within conventional human activities. The failures in implementation became a tragedy of the system. The shortcomings of the implementation mechanism in general in the command system defined its failure and led to its decay. The phenomenon of chronic non-compliance with environmental plans in a command economy constitutes one of the basic items within the whole problem of implementation.

The new Russian Constitution gives greater weight to international law than was true under the Soviet system, primarily because international law now has (within limits) direct applicability without legislation that "transforms" international norms into the domestic setting. Under the old system failure to implement international law in large measure stemmed from the (conscious) choice of simply not formulating the necessary transforming legislation (see generally Danilenko, 1994).

In sum, it is unclear whether the new Russian system or the old Soviet system results in generally more effective implementation. This is one of the issues we seek to explore within the IEC project. Under the new system international law has (on paper) greater weight but implementation chains are probably more fragile due to the collapse of central control and the still uneven decentralized administration that will replace command planning during the transformation to a market economy. Under the old system, effective implementation was possible (and effective) when it fit with the interests of the Soviet state and ruling elite.

## VII. REGIME DURING THE PERIOD OF TRANSFORMATION

### 1. Planning and Programs

While a number of the newly independent Soviet republics have preserved the system of a command economy and centralized planning, others have embarked on market reforms.

Central planning no longer functions in these "transformation" countries. Instead of environmental planning, environmental programs are being introduced.

The primacy of planning in the centrally planned system reflects the fact that, in order to achieve behavioral change, central planners must know in detail what they want to do, and how the disparate parts of the economic system fit together. The plan is the organization and adjustment of the economy. In contrast, market systems are decentralized, and thus policy implementation does not take the form of plans but rather policy programs. The difference between plans and programs is the specificity of direction (and outputs) and instruments of control. Plans direct all relevant economic activity while policy programs are aimed at that activity, leaving the market to adjust to the rest and to coordinate separate microeconomic programs of producers within the economic system. Policy programs are not created without "planning", but the process of preparing for the future need not result in a detailed connected matrix of economic activity. Primarily, programs handle incomplete information more easily than do systems that require a full plan.

During a period of transformation some very important questions arise:

1) Environmental plans are replaced by environmental programs - what changes in their internal contents have resulted? What are the changes in the mechanism of implementation of international environmental agreements? Which elements of the old system of planning are inherited by the new one?

2) In the absence of a centralized economic plan, how does integration of environmental norms from international environmental agreements take place?

3) During the transformation process environmental programs still act in conditions of a poorly developed market. What implications does this have for implementation of international environmental agreements?

4) Elements of environmental planning also exist within market economies, notably in the form of environmental reductions in industrial countries. To what degree are the lessons drawn from those examples relevant to economies undergoing transformation - which also are characterized by a mix of market and command systems?

**2. Property Rights**

Changes in property rights also directly affect the behavior of polluters. Under the command system the major polluting enterprises were owned by the state. Once the state undertook obligations under international environmental agreements, it influenced state-owned producers to make them comply with international norms. With the transformation process the situation has changed radically. Many polluting enterprises are now in private ownership (as either newly created or privatized businesses). Thus the old forms of implementation no longer apply. To influence the behavior of this group of addressees the state has to find new instruments and mechanisms, but it has no experience in their effective application yet.

Nonetheless, a significant number of enterprises are still state-owned, and most of these are among the country's major polluters - large energy-producers as well as metallurgical, chemical and mining enterprises. Property rights in the transformation period have acquired

some specifics for state-owned enterprises. Although the state has formally preserved its ownership, it has lost much of its former ability to control its own enterprises. In place of the state, three major groups have increased their influence during the transformation period: 1) directors of enterprises and their administration; 2) local and regional authorities; 3) the workforce.

The situation with property rights is very complicated. In addition to the internal contradictions between these three groups, they also struggle with the ministerial bureaucracies over disposition of property rights (e.g., privatization of industry). Contradiction and struggle are manifested in many ways. First, certain groups of actors might block the decisions of others; this occurs above all between enterprise administrators and local authorities. Second, none of the groups that have access to the decision-making process is at the same time the clear owner of these enterprises. As a result, each group maximizes its current income from the operations of an enterprise (converting even amortised deductions into income), rather than increasing the enterprise's collective welfare. Third, in contrast to the market model, where the behavior of managers is strongly controlled by an owner or shareholders, in the transformation period control by the state (i.e, owners) is practically absent. The state behaves only as quasi-owner. Ambiguity in the distribution of and control over property rights has a rather negative impact on the implementation of an international regime. Without ownership and without actual control by the owner, the directors of state enterprises virtually avoid all investment. Aging equipment is not renewed; new purification facilities are not installed.

From this analysis it is clear that solving environmental problems is inextricably linked to solving the problems of transformation as well as to the progress of economic reforms. Thus the international community may be directly interested in sorting out the issue of property rights during the transformation period in Russia for many reasons. A great deal depends on the progress of these reforms - not least the environmental security of both the East and the West, including implementation of international regimes.

### 3. The State

The political system plays an important role in all types of implementation. In the Soviet command economy the greater part of economic commands and directives were provided via political channels. Communist party organs on different levels played the role of main implementors. Adoption of an environmental program or entry into an international environmental agreement was not possible without a special resolution of the Politburo or the Central Committee of the Communist party.

Formerly environmental policy was devised by the center with little regard for regional and local interests. Now the situation has changed considerably. Have any improvements in environmental protection occurred since the shifting of authority from the center to the local level?

The problem of implementation of international regimes via mechanisms of a political system is very important in the transformation period. Much of the old political system was destroyed. In Russia the old political and administrative system was dismantled in such a way that simultaneously the major state authority structures were ruined as well, resulting in a deficit of state authority. The weakening of the state naturally has an impact on implementation of environmental programs, including international environmental regimes.

Implementing organs, including their functions and structure, have also been modified during transformation. Is it possible to assess a linkage between environmental degradation during transformation and the extreme weakening of a state authority? Or probably the contrary - is this degradation associated with the corrupt apparatus exploiting the environment by the use of state authority? What are the attitudes and interests of old and new *nomenclatura* groups towards environmental protection issues? Are there any channels to influence their behavior? To what degree does the new federal environmental ministry have real authority, and what is its position within the power structure in general? How does it interact with regional and local authorities? Does it have any real instruments of support for and control over implementation of environmental programs?

**4. Bargaining**

The process of transformation has markedly increased the role of bargaining. One of the reasons for the increase in bargaining is that under a weak state authority the command method does not work adequately within the administrative structure itself. Entire blocks of the state administration are engaged in implementing their own interests, and bargaining reflects the constant effort to seek and capture opportunities.

Bargaining occurs not only in market and democratic systems but also in centrally planned systems. Private interests cannot be eradicated, and communist systems are incapable of suppressing them entirely. However, they are realized in rather specific forms. In a centrally planned system some ministries participate in and dominate the bargaining over allocation of governmental resources. In a centrally planned system that is characterized by a deficit of everything, the objects of the bargaining were material and financial resources. Each ministry and region tries to maximize its share. This ministerial competition for resources affects the execution of all programs and plans. As for environmental programs, they have never been "fortunate", since environmental institutions do not play leading roles in the ministerial competition.

Further, neither the public nor state protection organs were able to control the army's behavior towards the environment. Under a veil of secrecy it turned into a major polluter. What has been changed during transformation? What mechanisms could be used to make the army comply with environmental norms and programs?

## CONCLUDING OBSERVATIONS

Let's enumerate the major conclusions from our analysis:

Transformation - the shift from one type of economic and political system to another has resulted in a serious upheaval of social structures in many countries. Perhaps one-fifth of world territory is now under transformation. As a result, the conditions under which international environmental regimes function have changed radically. Inevitably this raises the question of whether regimes function effectively during transformation.

Neither the "regime-centrist" nor the "black box" approach allows full analysis of the problem of the transformation's effect on international environmental regimes. Unpacking the "black box" - domestic politics - appears to be a prerequisite for solving this problem.

The process of implementation occurs in many phases. The studies of labyrinths of a "black box" might be staged according to by-phases analysis of the implementation process. Several different spheres of societal organization are involved in that process. At the same time all these spheres are interlinked and combined into a unified economic and political system. In this way implementation is closely connected with the system framework.

Linkages between the international regime and the domestic system exist in several degrees of intensity. The embeddedness of a regime in a system can be empirically described. The extent of embeddedness is characterized particularly by the number of polluting enterprises involved into the sphere of the regime's impact, by the character and scales of environmental financing to provide its functioning on a domestic level, etc.

Within the implementation process international regimes are closely connected with the economic and political system of the country where their implementation takes place. Implementation of international environmental regimes occurs with the help of the transplantation of their norms and rules into a new environment, where its system rules act. A regime's norms do not act directly, but rather must be built into the indigenous institutional mechanism.

Certain linkages and interactions exist between a regime and a national system. The regime is not able to change the basic constitutional elements of a system. Its norms and rules have to be placed either in the spare cells of a system, or have to correct and modify existing norms.

Polluting enterprises and consumers are among the final targets of a regime. Only as a result of changes in their behavior is it possible to reduce the anthropogenic pressures on the environment as envisaged by a regime. Polluters function in the economic sphere, and their anti-ecological behavior is an element of economic behavior. The goal of the regime is to modify this behavior. By affecting the incentives and calculations of economic units, the regime alters their behavior. Tracing and explaining changes in the economic behavior of polluters is one of the important items of our research. The analysis of deviations in the

economic behavior of polluters from the standard norms of economic behavior in the course of implementation of an international agreement is necessary for evaluation of the agreement's influence on behavior (i.e. its effectiveness). The links between the norms of a regime and behavioral change of polluters can be long. The transmission of influence from the international regime to locality can be influenced by many factors - it is neither direct nor neutral. For instance, the behavior of bureaucracies significantly affects the trend in implementation of a regime.

Phase-by-phase analysis of the implementation process indicates that it develops via different spheres of economic and political organization. The functioning of each of these spheres is described by specially developed disciplines with their own terminology. It is impossible to move forward in deep analysis of international environmental regimes implementation without their help. Under these conditions the role of implementation theory and its terminology may be regarded as a unifying instrument in this type of analysis, which comprises all stages of this multidisciplinary research.

Under transformation the question of interactions between a regime and the structures that surround it on a national level may be put a bit differently. Under ordinary conditions an international environmental agreement and the international regime based on it "arrive" at a member country and result in certain effects. Under transformation the whole situation is quite different. In a country where dozens of regimes already function, transformation "arrives". The systems are under change and the structures with which the regimes have interacted are radically modified.

Transformation has resulted in changes to a series of major institutions without which implementation of a regime is impossible. These include property rights, system linkages, state structures, and the division of authority between the federal and local level. We envisage analyzing all these forms of special interactions. The selection of specific environmental cases is under way, and one of the main criteria being used is a tightness of linkages between a regime and the transformation process.

Empirical analysis is supposed to return regularly to theoretical constructions and methodological instruments of analysis, the basics of which have already been elaborated, in order to constantly improve them. We intend to focus on further dividing the phases of implementation process into stages, as well as on elaborating possible forms of economic and ecological behavior and deviations from these, which occur *inter alia* under the impact of an international environmental regime.

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