4. Environmental insurance as an environmental policy tool: research concept and approach

As discussed in Chapter 3, insurance can be an effective means to provide financial security with risk spreading, risk segregation and risk reduction functions. Its application to specific types of risk is normally regulated by 'invisible hand' of the market. In the field of public environmental policy there has been growing understanding of limitations of rigid regulatory schemes to control corporate environmental performance and interest to employing market-based approaches or 'soft' environmental regulation (OECD, 2003).

Environmental insurance is one of available instruments to ensure environmental safety of industrial operations. It is the choice that those who formulate public policies for assuring environmental security may make - either to use this risk management tool to achieve the societal goal of improving environmental safety. Making this principal decision on integration of EI into public policy, developing policy options, designing specific policies for improving environmental safety with EI provisions and aligning them into national and or regional policy for assuring environmental security, and finally implementing these policies are specific stages of the relevant policy process.

The principal decision on acknowledging EI as a environmental policy tool may be considered as a starting point for the formation of an EI system (national or regional one). The current section presents an analytical framework to study the process of the EI system development; it will be applied to the EI system of concern (national and/r regional). It starts with understanding the relationships of stakeholders with regard to environmental insurance (exploring EI policy network). Then the author derives criteria to analyze an EI system in place.

4.1 Insurance for environmental security: stakeholder analysis

Every policy process is influenced by a number of interest groups (stakeholders) that exert power and authority over policy-making. These influences affect each stage of the process from agenda setting, to the identification of alternatives, weighing up the options, choosing the most favorable and implementing it. Therefore, a crucial aspect of any policy research is to identify who is involved and then understand roles of particular stakeholders and a network of relationships among them.

Insurance may be defined as a financial tool to support legal system of risk transfer (Freeman and Kunreuther, 1997). Therefore, a number of both economic and institutional actors which represent all three sectors of modern society (public, private and civil society structures) are involved in environmental risk insurance policy process. Based on the discussion in the research literature (e.g. Freeman and Kunreuther (1997), Tchepurnyh *et al* (1998), Kreuzer (2001); Stone *et al* (2001), Bergkamp (2003), Davydova (2002), OECD (2003); MIT (2004)), a list of EI stakeholders were compiled. It includes the following categories of interested parties:

- **Industrial enterprises** (private and state) whose operations can cause damage to environment.

  They are the potential *insured,* i.e. they are potential 'recipients' of the environmental liability policies and among key economic actors who can contract insurance to transfer environment-related commercial risks. One should distinguish between *site owners* and *site operators* whose liabilities for environmental damage are different (see O'Reilly (1995) for details).

- **Insurers** that provide insurance coverage for environmental liabilities of enterprises thus protecting them from unforeseen or extraordinary losses.

  This category includes *insurance companies* accepting environmental deterioration risks for underwriting, *reinsurance companies* underwriting primary insurance carriers if they want to cede part of the risk undertaken, and *insurance brokers* who act as mediators between an insurance compares and the potential insured.

- **Lenders** (national and international)

  These are firstly banks and other credit organizations that hold or invest in loans in which real estate is used as collateral. On one hand, contamination and/or other damage of the collateral property leads to significant decrease of its value, placing the lender at financial risk. One the other hand, the lender may incur liabilities for cleanup/restoration costs and for third-party damages under joint and several liability scheme. Financial institutions may become policyholders themselves or require a borrower to purchase environmental insurance to reduce their environmental risks.

- **Consultancies**

  This category brings together private firms engaged in the assessment of environmental risks and those providing consulting services in the field of financial assurance. They advise potential insureds (enterprises, lenders). As lenders,

consultants are potential clients for insurance companies if they are willing to protect themselves from the risk of being sued for negligence. At the same time, they are practitioners who address and solve the problem of predictability and insurability of environmental risk and marketability of environmental insurance.

- **Legislators**

  Institutional policy actors whose decisions set up a scene for relationships between insurers, potential insured, and victims (beneficiaries). Developed regulatory framework is a key prerequisite for success with implementing insurance into environmental protection and management.

- **Regulators**

  Firstly, one should point on governmental agencies and their regional brunches responsible for implementation of state policies including environmental liability and safety policies (environmental-and health- related). Moreover, this category embraces agencies supervising economic development as a whole and developments in specific segments of the market including insurance sector.

- **Courts**

  Judicial system enforces civil liability rules; under some jurisdictions courts interpretations of insurance policy terms defines the amount of compensation for victims. Modern environmental insurance mechanisms are claim-based, i.e. an insurance carrier pays if a claim is made by victim(s) during the policy term.

- **NGOs and advocacy groups**

  This category covers structures of civil society that have mission in protection of the environment or human rights including right for favorable environment. They are to watch on public and private actors

- **Research institutions and think-tanks**

  Key role of researchers in environmental insurance mechanism is further developing environmental risk assessment and pricing methodologies to improve environmental risk predictability and insurability.

- **International aid organizations**

These organizations focused on the problems of environmental protection and sustainable development are generally act as a vehicle for introducing innovative approaches to environmental risk managements including insurance. United Nations Environmental Programme (UNEP) with Insurance Industry Initiative for the Environment is an illustrative example of promoting sustainable financing and application of insurance to mitigate adverse consequences of industrial operations[6].

- **Industry and Trade Associations**

  This class of NGOs express interests of key actors of the environmental insurance process – industrial enterprises and insurers. One can refer to chambers of commerce and industry and insurers' professional associations as most evident examples

- **Local authorities**

  It is local government who is to response on the concerns of the citizens and plan local development in a sustainable way. Local governments are not entitled to develop laws and other tools of the top-down approach to regulating environmental performance of enterprises. However, they have enough leverage to block any industrial development if it harms interests of local citizens. In many jurisdictions they issue a permit for industrial development and can introduce a requirement of purchasing an environmental insurance policy to as a condition receiving this permit. Moreover, local government operation of hazardous facilities in place if they refuse contracting environmental insurance. Besides this regulatory function, the local government may become an affected party and claim for damage compensation if, e.g., municipal lands are contaminated due to environmental accident. Of importance, local authorities play key role in holding dialogue among local stakeholders including company-community interactions.

- **Media**

  Traditional role of media is information dissemination and attracting attention to burning issues including environmental quality, environmental performance of industrial enterprises, efforts invested in preventions of environmental accidents and compensations to victims.

[6] Statement of Environmental Commitment by Insurance Industry under the auspices of the UNEP Finance Initiative is available at http://unepfi.net/iii/statemen.htm.

- **Community interest groups**

  This stakeholder category is devoted to protect interests of potential victims of environmental accidents – populations living in vicinity of facilities whose operations can pose significant threat to environmental and public health.

Relationships between various groups of individuals and organizations interested in managing environmental risks through insurance create EI **policy network** (see Sutton (1999) for more in-depth discussion).

Policy network covers all stakeholders: both those who participate actively in developing and implementing a particular public policy (e.g. legislators, regulators, NGO and advocacy groups, researchers, etc) and those who are exposed to a this policy and actually and/or potentially influence policy-making process.

A subset of policy network is a **policy or epistemic community** that brings together elite experts on a policy issue who have access to privileged information and have powerful influence on policy-making through links with governmental decision-makers (Sutton 1999). Members of policy community can be representatives of various stakeholders including research community, NGOs, international organizations, interest groups not only state policy actors. The development of EI policy community may be considered among key factors to influence EI development in a particular national context (see the following section).

For the purpose of given research three clusters of stakeholders were identified by importance in the policy process within an EI policy network, namely:

I. **Primary stakeholders** – key actors, their responsibilities are legally defined;

II. **Secondary stakeholders** – their roles and responsibilities are not legally defined but they are usually influential in different national contexts;

III. **Ancillary stakeholders** – their importance in policy-making varies depending on the particular policy context.

It is worth noting that EI policy community that includes members of stakeholder clusters works as a hub within the EI policy network and triggers development of insurance for environmental protection and management.

4.2. The system of environmental insurance and its determinants

The *system of environmental insurance* is generally viewed as a legal and regulatory framework dealing with application of insurance for environmental protection and management purposes, and those addressing environmental liability issues. In the current paper, four more *determinants* of EI system (i.e. factors which determine the development of the system) are introduced. Four out of five EI system determinants considered are the operational elements of the system while the fifth one (Context) encompasses external forces influencing the system. This set of EI determinants was developed based on the analysis of international experience in applying insurance for environmental safety, as well as on findings of interviews and consultations with international and Russian environmental risk assessment and insurance experts.

Box 4.1. Determinants of an EI system

1) **Context:** conditions for the development of environmental insurance system in Russia. Three components of the context were singled out:
2) **Legal and regulatory framework** dealing with environmental liability and environmental insurance issues;
3) **Methodology** for the process of environmental risk insurance (assessment of environmental risks and damages and calculation of insurance premiums and rates);
4) **Institutional system**: a system of EI stakeholders and their relationships on environmental insurance. The following elements of stakeholder capacity were defined:
5) **Practice** of environmental insurance: how EI stakeholders with their capacity use provisions of the current legislation and methodology for environmental insurance.

4.3. Methodology for the EI system study

This section outlines general approach to review of the national EI system. To explore the its current state, a *review protocol* was developed, it is provided in Annex 1. The EI system determinants (context for EI system development, EI legislation, methodology, institutional system, and practice) were the *review areas* for the protocol. For the study of separate EI determinants 37 general and determinant-specific *research questions* were prepared. This set of research questions served as a matrix for data collection in the study of the national EI system of the Russian Federation. The review protocol was utilized for developing questions for interviews and questionnaires for in the survey of representatives of EI stakeholders – members of EI policy community.

Sources of primary data

The following sources of information were used during the current research:

- Research literature discussing theory and practice of environmental insurance world-wide and in the Russian Federation;
- Legislative and regulatory documents;
- Guidelines for environmental risk and damage assessment, managing of environmental performance of enterprises, and environmental insurance;
- Information on environmental safety in the Russian Federation, environmental risk management, economic tools for environmental protection and management, current state of the environment of the Russian Federation;
- Outcomes of a survey targeting various environmental insurance stakeholders.

The survey had a dual purpose. On one hand, it aimed at collecting additional information on the state of individual system determinants under research and to elaborate on particular issues raised at the stage of literature and documentation review. On the other hand, the survey was used as the primary method of exploring perceptions of stakeholders on the current state of the EI system determinants and evaluating EI system utility in terms of correspondence to the needs of its 'users'.

During the selection of potential respondents, it was decided to concentrate on representatives of insurance companies, environmental risks assessment and insurance experts, government officials dealing with development and implementation of state environmental policy, and legislators. In the opinion of the project consultant[7], these particular groups of stakeholders are best represented in the EI policy community.

As an alternative to interviews, the respondents were offered to fill in a questionnaire the structure of which corresponded to the set of criteria developed for the study of the system. The questionnaire contained 40 information (closed and alternative) and open-ended questions. The majority of questions offered two or more answering options. Specific versions of the questionnaire were developed for interviews with representatives of the key groups of stakeholders participated in the survey.

[7] Gennady A. Motkin, DSc, Head of Laboratory Market Instruments for Environmental Management, Market Economy Institute, Russian Academy of Science.

Altogether ten participants (70 % of the request sent out) participated in the survey. Five of them agreed for an interview to discuss the questions in more detail. The list of survey participants is provided in Annex 2.

Methods for data analysis

Based on the data collected a review of each national EI system determinants was prepared. Key features of each determinant are outlined in respective sections of Section 5.4. In the process of this review factors that influence EI system development were identified.

In Russia environmental insurance was introduced into public policy agenda in transition period when the idea of applying economic tools to solve environmental problems emerged among decision-makers. The author follows the idea of incremental model to explore decision making process that emphasizes reactivity to various external factors and importance of political considerations (see Lindblom (1959); Weston (2000) for details).

A number of factors influence (positively or negatively) development of an EI system. In theory, their impact may be neutral as well. The authors assumes that these factors can be broadly classified into **internal** (related to the system under consideration) and **external** (originated from the policy context).

Based on this decision one can decide that the formal SWOT methodology can be applied to analyze the system of environmental insurance. The key **strengths** and **weaknesses** of the system under consideration, as well as **opportunities** and **threats** presented by the context within which the system develops, were to be identified to define priority directions for improvement (see Section 5.5).

4.4. Methodology for case study analysis

The preliminary review of regional experience with EI promotion in Russia revealed a number of initiatives throughout the country. For the purpose of current research the author was to conduct a limited number of case studies in order to define 'ingredients of success' for EI promotion.

All range of activities on EI development in a particular region is defined as a distinct initiative subject to review with the use of developed research methodology. For several regional projects especially funded by aid agencies one can define start and end dates precisely. However,

the author decided not to limit the review to these strict timeline to cover preconditions and outcomes (in terms of their impact on regional environmental policy) of these initiatives.

The following criteria for classification of potential case studies were applied:

- Time period of the project implementation,
- Whether the project was a regional or 'external' initiative, mainly in terms of funding,
- Links to previously implemented regional initiatives.

Following recommendations of national EI experts four cases were selected for the review of experience with EI development at the regional level in the Russian Federation:

1. The Moscow Region case,
2. The Nizhniy Novgorod Region case,
3. The Leningrad Region case,
4. The Bashkortostan Republic case.

The author considered all range of activities on incorporating EI into regional environmental protection and environmental management policies in a particular case region as a specific 'project' with its focus, timelines, methods for implementation, outputs and outcomes.

These cases represent all three periods in the history of EI promotion and differ in sources of funding. Non-profit projects were undertaken in two of the target regions and had significant influence on further EI development there. Three of them compile a succession line: experience with EI development of Moscow Region was used in Leningrad Region while in Bashkortostan Republic project developers and implementers were guided by the lessons learnt during both previous initiatives. Nizhniy Novgorod Region, in turn, is referred as a pioneer of pilot testing of mandatory environmental liability insurance in Russia initiated and funded by the regional government.

The selected cases were explored using a set of qualitative *case review criteria* presented in Box 4.2. These criteria cover both project structure and implementation (process-oriented criteria) and impact on the regional policy in the field (outcome-oriented criteria). One should stress that each project is perceived as a 'success story'.

The methods for data collection in case studies were similar to those applied at the national-level component of the current research: literature and documentation review and survey among EI experts (see Section 4.3 for details). Conducting the survey the author was more focused on interviews with members of the EI policy community who played the key role in implementation of specific regional projects. Four of these experts were interviewed: one per each case study.

Box 4.2. Promotion of EI at the regional level in Russia: case review criteria

I. **Process-oriented criteria:** description of the project rationale, organizational structure, inputs and outputs

1) Period of time,
2) Project objectives,
3) Implementation tools and activities,
4) Funding,
5) EI stakeholders involvement,
6) Project outputs (anticipated and actual).

II. **Outcome-oriented criteria:** evaluation of project impact on the regional policies on ensuring environmental safety and security:

8) Specific changes occurred in elements of the regional EI system (legal and regulatory framework, ERA and EI methodologies, institutional capacity of EI stakeholders, EI practice)
9) Evaluation of the current state of the regional EI system parameters
10) Key factors of success for EI promotion
11) Key obstacles for EI promotion

Case studies of regional EI promotion were planned to identify key factors that foster and impede targeted activities on introducing EI into regional environmental policies.