## 1. Introduction

The last decade was marked by progressive development of various environmental policy tools aimed at preventing and/or mitigating adverse environmental impacts of human activities. Environmental degradation is now commonly considered as a negative externality generated by the industry which spread over the mankind as a whole. Moreover, it has become an national security issue. Therefore, improving environmental performance of industrial operations is perceived as a key issue for assuring environmental security from global to local level that should be addressed by special policies.

Under many jurisdictions essential role in internalizing these externalities is played by environmental liability rules enforced by courts or other authoritative bodies. In this perspective all economic actors whose activities can cause damage to the environment and the third-parties are held liable for harmful consequences of their activities. In case event that are triggers liabilities polluters are forced to compensate losses incurred by injured partied, reclamation and litigation costs.

Meanwhile, the effectiveness of environmental liability regime is directly related to the ability of polluters to cover potential costs of environmental damage. This emphasizes the importance of financial instruments in securing environmental liabilities. Insurance is one of possible ways to provide adequate guarantee with respect to environmental risks related to industrial operations.

Many authors refer to environmental insurance as a cost-effective tool to manage societal risks of environmental deterioration. Both industrial enterprises and general public may be beneficiaries and be protected from environmental deterioration risks. Apart from compensation effect, insurance is an important means to reduce risks ensure environmental safety of industrial facilities through pooling and targeted spending resources for tailored risk management measures.

In recent years, environmental insurance (EI) has become more and more recognized and acknowledged as an tool to ensure environmental safety of industrial operations and thus contributing to assuring environmental security. International insurance industry has developed a range of innovative products in response to increase in demand for environmental cover resulted from pollution exclusion introduced in general commercial liability policies. A range of environmental risks subject to insurance coverage is expanding. The role of insurance sector is managing environmental risks has been increased.

Transition to market economy stimulated a steady interest to environmental insurance from the part of many policy actors in the Russian Federation. Firstly it has been perceived as a way to attract additional funds to finance environmental protection activities, restoration of consequences of environmental accidents. Today environmental insurance is put forward as economic and legal policy tool of environmental regulatory system crucial for improving its effectiveness. Since 1991 state stakeholders supported by enthusiast insurers and researchers have invested a great deal of efforts into elaborating legal and regulatory framework for application of insurance to environmental risk management, preparing guidance on environmental risk assessment and pricing, and fostering practice of EI practice.

Despite existing legal provisions for applying insurance to manage environmental risks Russian EI system is still in the making and considerable effort is required for make insurance play adequate role ensuring environmental safety of industrial operations. At the same time, there are few Russian regions which have gained considerable experience in introducing EI into regional policies for environmental security.

The current paper aims at exploring opportunities to integrate insurance mechanisms into environmental security policies in the Russian Federation at the regional level. It starts with defining the role of insurance mechanisms in managing environmental risks related to industrial operations and discussing key issues in environmental risk liability and insurance from international perspective. Then the current state of the Russian EI system is explored to set up context for implementing environmental insurance at the regional level. Consequently, experience with EI integration into regional environmental security policies in selected case regions is reviewed in order to define key ingredients of success for EI promotion at the regional level in Russia. In conclusion, policy options to promote EI in a selected Russian region under the current public policy context are suggested.

The author considers insurance as a tool to tackle environmental risks resulted from current operations of industrial facilities. In the paper the term 'environmental insurance' is used to denote both first-party and third-party insurance aimed at covering losses of respective affected parties resulted from environmental deterioration.

A range of environmental risks of concern are risks of causing sudden, unintentional and unexpected damage to various environmental components (air, water bodies, soils etc) as a result of industrial operations. Based on the preliminary research it was decided to put emphasis on accidental pollution events otherwise called industrial disasters (accidental emissions,

discharges, spills and fires) and violations of operational pollution permits. Gradual (long-tail) pollution and historic contamination incidents are excluded from consideration.

The current research does not cover the following aspects of environmental risk and insurance domain: i) EI for merges and acquisitions, ii) EI for property transaction; iii) professional indemnity of risk assessors; iv) contractors pollution liability.

The paper consists of five sections. The Introduction (Chapter 1) summarizes the background and rational of the research. Chapter 2 discuss environmental safety from the public policy perspective as an issue of national security. Chapter 3 analyzes the current role of insurance for ensuring environmental safety to provide background for further country-specific studies. Chapter 4 outlines research concept and approach of the current study. Chapter 5 presents findings of study of the national EI system formed in the Russian Federation by now. Section 5.1 sets the scene for the discussion of the current and perspective role of insurance in managing environmental risks in Russia. After review of research methodology (Section 5.2) and a brief overview of key steps in EI promotion at the national level (Section 5.3), Section 5.4 particularly deals with analysis of the EI system determinants. The findings of this analysis are summarized in Section 5.5. Chapter 6 is devoted to case studies of EI promotion at the regional level in Russia with concluding Section 6.5 presenting key factors of success for EI implementation at the regional level in Russia. Key research findings as well as possible approaches to EI promotion it at the regional level in Russia (policy options) based on these findings are presented in Chapter 7.