Environmental Supervision (Control) in the area of new technology appliance

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Abstract. Steady development of the Russian Federation, its population’s high life and health standards as well as national security can be provided only through the preservation of natural systems and maintenance of appropriate environmental quality. An active usage of new technologies has made modern science be focused on the complex challenges of their enforceability for human and environmental safety. Special attention should be paid to the issues of the peculiarities of State environmental supervision in nanotechnologies taking into account their interdisciplinarity and comprehensiveness. State environmental supervision aims to identify the violations of the law in the sphere of the environment protection (shortcomings, mistakes, abuse) made by economic operators, to analyze the factors of their emergence (including motive definition of the offenders, etc), to take action on their elimination and to develop preventive intervention to avoid in the future.

1. Introduction
Federal Law «On environmental security» [1] interprets environmental control as the system of measures focused on prevention, identification and suppression of the violations of the law in the sphere of the environment protection, the enforcement for economic or other operators to meet the requirements including standards and regulations in the sphere of environmental protection. Despite the concepts of the environmental law theory about importance of environmental control in ecological legal mechanism, the measure in domestic environmental practices is traditionally weak and in our opinion, is regulated insufficiently in legislation.

2. Materials and methods
We use the following legal categories environmental control, nanotechnologies, environmental protection, review of existing legislation. The used terms are not in conflict with the system of principles, methods and techniques of theoretical knowledge, underline the initiation of practical comprehension of the object according to modern science, reflect the important regularities of the establishment of modern research approaches (historical, institutional, integrated) and their features, show the structure of practical impact and the ratio of theoretical and applied aspects of legal activities. The methods used in the research are adequate. Comparative legal and logical juridical ones are among them. The used methods and approaches have helped to achieve the goal and accomplish the set of the stated objectives.
3. Results and discussion
Adoption of the special environmental control law can be called fairly progressive norm that is supposed to serve as a factor of raising the efficiency of control activities in this area. [2, p. 428]. As a management function environmental control is a system of actions on data collection of monitoring objects, its processing, evaluation and transmission for management decisions in predetermined goals. In other words it is the system of actions to enforce environmental legislation, appliance of its legal coercive measures envisaged as well as the development of adequate legislation to adopt the changes introduced in this area. State environmental supervision is activities of public authorities required by the law and management to identify, prevent and suppress the violation of the law in the environmental area, to verify meeting the requirements by natural resource users, including standards and regulations, along with natural resource management and environmental security.

The factors of inefficient work of State environmental supervision authorities include: 1) concentration of all functional kinds such as management, regulatory, permission and control in one authority; 2) existence of parallelism and duplication in the control authority work; 3) absence of close coordination of control activities; 4) imperfection of enforceability; 5) lack of qualified personnel; 6) poor logistic support and others [3].

The analysis of current legislation in the area of nanotechnological regulation development and appliance shows that environmental priorities introduced by legislator and aimed at the environmental preservation and protection of human health have only fragmented consolidation. Thus, in order to ensure legal regulation of ecological relationships in the sphere of development and appliance of nanotechnology and provide its legal justification, Federal Law on ensuring of security in the area of regulation development and appliance of nanotechnology or the law of nanosecurity is needed as departmental regulations are not binding, and the concept provides for only main focuses. Hence, only Federal Law will give a unified terminology database at the federal level, distribute rights and obligations, control and supervision of this activity, and define responsibility for the law violation in the sphere of nanotechnology appliance [4].

The difficult transition to steady development lies precisely in the transition from declarations, desires and intentions to the improvement of current legislation and creation of conditions for its effective realization. Yet of special significance is the development of modern methodology as a factor of the establishment of environmental legislation. It should be noted that among the most important mythological basis the most significant and fundamental is the formation of new law awareness, consciousness, the regularities of environmentally relevant social and economic development of society. As M.M.Brinchuck points out, «Given the extreme weakness, underdevelopment of environmental legislation of the Russian Federation the risk caused by new environmentally relevant factor such as the introduction of nanotechnology can hardly be ignored. The experts note that nanoparticles as pollutants possess the specificity which is not taken into account in the legislation» [5].

All problematic directions of the progress in science and technology require special attention of a legislator. First and foremost it is the review of many demands, standards and regulations and on the whole updating of legislative and regulatory texts. This is particularly for new current directions of ecology and legislation – biotechnology, genetic engineering, genetics usage in agricultural and food production, pharmaceutical activity etc. Nowadays increasingly Russian companies develop their own innovative projects of the technological production process improvement, not only promote cost reduction (that is very relevant in the period of economic crisis), but considerably decreasing environmental pollution.

However, the development of «ecoindustry» in Russia is hampered; it is about governmental support of ecological initiative of industrial enterprises. The situation is complicated by the fact that the realization of ecological projects first of all provides for the interaction between companies and regional and local authorities, which without the revelation from their superiors are reluctant to provide elementary support of industrialists, who implement high environmental standards on their own initiative. Along with overcoming of crisis phenomena the State is required to make considerable
efforts to minimize the resistance of influential forces, which are interested in energy supply development scenario. But the starting point as it seems is the establishment of the incentive system for emerging environmentally relevant innovative projects. But without resolving the political managerial problems in realization of environmental policy the situation may change little [7]. Their solution is possible two directions: to arrange the clear legal activities of the authorities based on democratic management tool and to ensure compulsory and constant focus on the implementation of State tasks and the defense of national interests [8].

There are environmental security and human health issues, connected with engineering nanomaterials, which can enter the environment as a consequence of nanoproducts degradation, the waste degradation of those products at the end of life cycle and the waste formed in the production process [9]. In spite of fast introduction of different kinds of nanotechnology production the influence of nanotechnology on environment and human health still remains unknown. Alongside the development of nanotechnology, great efforts have been made to understand those effects by means of life cycle assessment (LCA), which is widely considered to be a comprehensive tool for the measurement of environmental influence system [10].

As nanotechnology represent special prospects for human nutrition the problem of food security comes to the foreground. Food security is not only healthy and delicious human nutrition but national healthy lifestyle as a whole. Genetically modified organisms increasingly influence on it. Fundamental document, regulating food security in modern Russia is the Doctrine of food security of the Russian Federation approved by the relevant decree of the President of RF. The Doctrine of food security states: «The food security of the Russian Federation is one of the priorities of national security of the State in medium term, the factor for the preservation of its statehood and sovereignty, an essential component of population policy, a precondition for the implementation of national strategic priority – the improvement of Russian citizens’ quality of life through guaranteeing high standards of life support» [11]. Among the potential risks of food security technological ones are mentioned that caused by gaps with developed countries in the level of technological development of domestic production base, differences in safety requirements of foodstuffs and the implementation of verification system; agro-ecological risks, resulting from unfavourable climatic changes as well as consequences from natural and technological disasters. As it is pointed out in the Doctrine, sustainability of country’s economic development requires the implementation of State regulatory measures to overcome insufficient level of innovative and investment activity in the sphere of agricultural and fishing production, commodity and foodstuffs; the reduction of animal and plant national genetic recourses [12]. Thus, the Doctrine denotes from one hand the need of new biotechnology development (including the production of GMO), and from another hand - risk prevention, connected with production and appliance of the GMO products.

The whole integrated program which was approved by the Government of the Russian Federation in April 2012 is devoted to the biotechnology development issues [13]. It sets the directions for the development of biotechnology in the Russian Federation for the period up to 2020. There is a series of unresolved issues connected with the development and improvement of legal framework and the necessity of the research of the long-term impact of ecologically relevant activities on human health and environment at the current stage. It has become some kind of a tradition in our country to pass the legislation of indirect form with a number of reference rules, many of which sometimes deal with the regulations that have not been adopted yet and which preparation has been delayed in numerous cases for various reasons. It allows producers to operate fairly freely and overcome possible legal obstacles.

4. Conclusion
The analysis has shown that existing legal framework seeks: regulation of relations emerging in the area of genetic engineering activity, for citizens’ security and safe environment in the implementation of that activity and the use of its results; the creation of the conditions for the development of priorities in the area of genetic engineering activity. Nevertheless it is important to emphasize that genetic engineering is constantly developing which in turn demands the development of new standards,
regulations and safety requirements of genetic engineering activities. The absence of corresponding legal framework and documents frequently hinders the implementation of scientific achievements in the area of genetic engineering. Until the harmlessness of GMO application proven, negative consequences for human and environment in the long run completely excluded, the state should built the system of protective measures. Therefore basis task for the legislator and law enforcement authority in this sphere is to prevent (decrease) the risk of dangerous impact of genetic engineering activity on human life and health, environmental well-being.

At present extensive development of legal framework on the regulation of the procedure for obtaining integrated environmental solutions and introducing the best available technologies. One of the most important consequences of the best available technologies appliance apart from general reducing pollution will be accelerated technological development. The main result of the development of legal framework on the regulation of the procedure for obtaining integrated environmental solutions and introducing the best available technologies must be the establishment of simpler and more effective as far as the administration and the appliance of environmental management by enterprises are concerned. The introduction of a new environmental management system will provide: improvement of ecological situation in the Russian Federation; support competitiveness of Russian enterprises; harmonization of environmental regulation with developed countries’ practices; risk reduction for the introduction of trade and other restrictions for Russian companies on the grounds of environmental security; improvement of administration practices and raising the standards of the executive branch; economic entities activity correction on financial motivation to production modernization.

Nanoindustry is dynamically developing innovative field of science and technology and represents an integrated complex of productive, scientific, educative and financial organizations of different forms of ownership. The analysis of legal regulation of the relationship connected with environmental security of nanotechnology and nanomaterials highlights the lack and imperfection of legislation in RF in the area being considered.

The objects and tasks requiring priority attention from the developers of legal framework in the area of production and products security of nanoindustry: the regulation of nanomaterial handling and production on their basis throughout the lifecycle – from the development and production to utilization; the problems of fire and explosion hazards of nanomaterials; social, politic and ethnic risks emerging linked with the development of nanotechnology; regulation of information exchange between research organizations, controlling and regulating State bodies, nanotechnological production; coordination of activities of various official and commercial organizations, industrial enterprises and academia in the sphere of nanotechnological security [14].

The analysis of existing legislation in the area of the regulation development and appliance of nanotechnology has revealed only fragmentary consolidation of environmental security. The problems of safety in the sphere of the development and appliance of nanotechnology are not specified by law thus allowing general legal provisions, related to ensuring the security of works, observance of occupational safety regulations, and patients’ protection. However, the specificity of nanotechnology does not allow existing legal restrictions to provide security properly requiring more elaboration of these issues and their legal implementation.

The legal regulation perfection of ecological relationships in the area of the regulation development and appliance of nanotechnology implies significant modernization both State environmental management and basic environmental instruments: ecological rationing, environmental supervision and control, environmental appraisal, charges for negative impact on environment and others.

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