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The Global Social and Environmental Problem - Approaches to Solving

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Abstract The postulate of Vernadsky on the inevitability of civilizational coevolution modern biosphere, socio- and technosphere into the noosphere are discussed. The main obstacle to this transition – is the negative consequences for the ecosphere related to global social and environmental concern (GSEC): the exhaustion of non-renewable material and energy resources, chronic pollution and loss of biodiversity ecosphere. Discuss agroecological projects, operating within the national interdisciplinary research noosphere program would contribute to the development of the necessary recommendations on the elimination and / or minimize adverse impacts of GSEC in the agricultural sphere.

Keywords: V.I. Vernadsky, a global problem, biosphere, noosphere program, agroecological project, Rio-92.

Introduction

Mankind continuously has been affected the nature of the planet since the Neolithic. The population of the Earth for the first time confronted with the negative effects of the global social and environmental issues (GSEP) - "Exhaustion, degradation and damage of natural resources under the influence of technogenesis" during its most active development (in the second half of the twentieth century). This problem is a negative consequence of scientific and technological progress or rather, expansion and overexploitation of modern technosphere as an impasse, antiecological path of modern civilization. Apparently, it is time not only to evaluate its negative consequences, but also to offer reasonable measures to remedy the situation.

The main negative consequences GSEP

There are three main components of GSEP. These are: a) the

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accelerated depletion of renewable and non-renewable natural resource depletion:biological, energy, raw material, soil, etc .; b) local and regional pollution by production and waste products of the components of the biosphere: soil, water, surface air, biota, outstripping their natural self-cleaning. Finally, it is: a) irreparable loss of biodiversity and the gene pool of the planet due to the massive destruction of biota and / or damage to the environment of its habitat.

The negative effects of GSEP manifested in the increasing volume and virtually everywhere. That is why operational measures for their monitoring, forecasting and minimizing have global significance and certainly are important for Russia. The current task today is to minimize the number and extent of local man-made disasters and prevent them from becoming a global cataclysms.

According to ecologists, modern humanity in recent decades, virtually ignores the most important negative consequence of the widespread manifestations GSEP - loss and / or damage of natural resources. It is believed that in this regard we have already come close to the "point of no return." The need for immediate, radical change in the social and environmental policy, operational applications serious effort to recovery, greening and treatment ecosphere are not fully recognized. The well-known Russian biosferologist Y.A. Israel noted [1]: "I want to stress once again that our actions to preserve the biosphere or scientific insufficiently substantiated or not beyond the rallies. Therefore, I urge focus on the development of evidence-based measures to protect the biosphere and the climate system, while there is still time". An active part of society to accelerate the approximation of the noosphere can be he way out of this situation can be. As rightly considered [2]: "The transition of mankind on the path of development noosphere is a <...> a survival strategy, an urgent need for construction and operation of a society based on reason". It is obvious that such a transition should be based on comprehensive fundamental-weighted application.

Summary of the agroecological project

The main idea of the noosphere interdisciplinary programs can be designated as "Scientific substantiation of strategy of coevolutionary development of the biosphere into the noosphere." Shortly before his death Vernadsky wrote: "The course of history has gone to unite humanity to the

noosphere - the future unity of the human organism as a single planetary effective structure" [3]. We'll try to answer partly the question of how to implement the goals and programs of noosphere attempt by the example of its integral component - agroecological project. It is formulated as a "purposeful arrangement of agrosphere of Russia by elimination and / or minimize the negative effects of the global social and environmental issues". In modern life, the primary role belongs to the four types of resources: ecological and biological, food, energy and raw material. They all more or less related to agricultural production. However, monitoring, evaluation and prediction of the dynamics of the state, in particular, ecological and biological resources are not systematically carried out not only in the world (as a whole), but in the scale of individual countries (regions). Their irrational consumption and / or damage with the perpetrators - individual countries, entities or individuals, almost are not charged. We believe that their comprehensive assessment and analysis should be carried out in the framework of agroecological project. In parallel, fundamental research problems of agrarian and social ecology are essencial.

Improvement of the quality of life in Russia, most important practical purpose, is realized during the solution of the main tasks of the Project - the economy of resources, the preservation and maintenance of biodiversity, minimizing pollution of agro and sociosphere. The system of innovative regional activities should be offered according to the results of a comprehensive analysis of the state of natural resources of agrosphere. This system shold provide: a) a rational reproduction of natural resources, b) the creation of new forms of biota, c) production of environmentally friendly agricultural products, d) the economy of resources and saving the resources, e) social, environmental and economic effects.

Biosferological ideology underlying the noosphere program has been formed in the world still in the 20-30 years of the twentieth century, with the active participation and under the influence of natural-philosophical works of scientists from different countries. However, the leading role here, of course, belongs to Lomonosov of the twentieth century - Vladimir Vernadsky. He is considered to be the founder and developer of modern biosferology and noospherogenesis [2]. Appeal to the great scientific heritage of brilliant scientist is explained by the fact that only the global scientific community recently became aware of the extent, importance and relevance of its global natural-philosophical research and generalizations. Only in the last third of the twentieth century, the concept of the biosphere-

noosphere of Vernadsky got its concrete directly reflected in the general line of development of world scientific thought - a strategy for sustainable development of the world society, or the concept of Rio-92.

The concept of the Rio-92 generally indicates negative consequences of GSEP, no alternative in the priority solution social and environmental problems [4]. The outcome of sustainable, balanced socio-ecological and economic development in Russia in the foreseeable future should be: a) to ensure efficient economy, b) creation of favorable environmental conditions, c) optimization of the social situation. The modern civilization evolution of the biosphere into the noosphere without successful resolution of the triad of interrelated and obligate tasks is not possible!

General approaches to minimize the negative effects of GSEP

The real way to minimize the negative effects of GSEP could be rational, lasting, environmentally friendly and noospheric using of nature resources based on the work of prestigious academic experts, modern followers of Vernadsky. Eco-friendly environment must meet several general conditions. Firstly, the use of renewable natural resources should not exceed the rate of their regeneration. Secondly, the rate of removal of non-renewable resources should not exceed the rate of production of man-made substitutes. Thirdly, the intensity of the emission of pollutants in the process should not exceed technogenesis assimilation capacity of ecosphere and speed of its self-purification.

Using of noosprere should be based on the existing global economic development strategies ("Rio-92", "92 Rio + 10", "Rio + 92 20"), the principles of social humanism, self-restraint and to optimally rational consumption of natural resources and agroproduct on sanctions for environmental offenses. Again emphasize that any environmental measures to minimize the negative effects of GSEPare relevant not by themselves, but under the condition of their social significance: a consequence of their implementation should be a significant improvement in the quality of life of the populationAll-Russian research Institute of Phytopathology. While that is the position of many economists and ecologists underestimated, it is not sufficiently reflected in the concept of Rio-92.

Measures to optimize the social and environmental conditions should be evaluated with economic positions that do not always. Methodological evaluation of socially significant environmental events is still very imperfect;

the "trial and error" is predominant here. In particular, in some climatic zones of Russia, the share of natural trees and bushes planted (forested areas) unreasonably reduced below a critical level, and the share of tilled until recently, on the contrary, exceeded the allowable limit, it is unlikely that the socially and / or economically feasible. At the same time, soil effects, profitability, and other energy-saving advantages of widely advertised "minimum" and "zero" tillage is often measured at the end of one season and not for crop rotation, that is incorrect.

Further, for the European part of Russia restoration and improvement of waste heaps and quarries are relevant. In recent years, they either do not recultivate or this work is carried out satisfactorily. Even more ambitious example is the misallocation of resources (liquid hydrocarbon fuel) in the operation of different engines, as well as the traditional use of pesticides and agrochemicals by their polydisperse dispersion. Not only the specific fuel consumption and drugs in comparison with the use of monodisperse [5] is significantly (by ~ 25%) overestimated, but also chronically poisoned the social and natural environment that is harmful to health and causes serious economic damage. Finally, the environmental benefits provided by the system of precision agriculture at the expense of targeted, differentiated application of chemicals in a qualitatively different loci fields remain are at the stage of demonstration experiments, or reduce to the organization of "tramline", which, of course, is not enough [6].

At the same time, most of the traditional research carried out by the National Research and agricultural universities of Russia, for many years actually solve problems of agroecological project. For example, the collection of the gene pool of the biota, new forms of micro-organisms and biological products, donor genes of plant resistance to diseases, pests and pesticides, high-yield plant varieties and animal breeds are all powerful, and it is a real contribution to increasing the biodiversity of agro-ecosystems. Profitable production of biofuels (vegetable oils, ethanol, fuel pellets) is a real way to save non-renewable energy resources. A variety of techniques and technologies anti-erosion, organic and precision farming, the production of bio-organic fertilizer, organic waste disposal, cancellation chemical protective treatments based on pest forecasting precision and local application of agrochemicals, revealing the fate of pollutants in soils and agricultural landscapes, their ecological and sanitary and hygiene regulation, stable to pests cultivars reduce the load on the ecotoxic load on agro- and

social system improves the ecosphere, integrally helping to improve the quality of life of Russians.

With regard to the Russian agricultural sector is still extremely relevant not only innovative research ideas for breakthrough, more efficient techniques and technologies, but also their practical implementation, in strict observation of the ecological imperative - DO NO HARM!

Conclusion

According to Vernadsky nowadays civilizational co-evolution of the biosphere and the sociosphere into the noosphere become a reality. However, biosphere negative processes inhibit such developments. With regard to agricultural and sociosphere they are exhaustion, degradation and damage of natural resources induced by technogenesis and are vital to society.

What is the fundamental and applied research that should be key in the implementation of the program of noosphere, in particular, its integral part - the "agroecological project"? The fundamental comprehensive study of global-regional issues of agrarian and social ecology is at the state level. Among them are: environmental and food security of the country; agroecological impacts of climate change; preservation and maintenance of the main functions of soils, landscapes, other components of the agricultural sphere; principles of obtaining efficient biofuels. The practical result of industrial applied research should be a system of innovative regional and local actions and recommendations, providing the economy of resources, and production of environmentally friendly replacement of researches agricultural products.

So far, the research relevant to the future agroecological project do not become systemic. They must be coordinated and significantly expanded. In particular, should be developed objective methods for assessing the environmental risks and sustainability of agricultural landscapes to new tools and technological methods; domestic environmental regulatory framework should be harmonized with international standards. Finally, applied science and production in desperate need for the correct method to assess the economic effects of social and environmental innovation.

Solidarity meet priorities of noosphere program and its agroecological project will make a significant contribution to improving the quality of life of Russians in the updated concept of the Rio-92, and in the future - and in the formation of a new "Strategy for sustainable progress" or

"Noospheric social and environmental strategy" of world society based on open V.I. Vernadsky patterns of evolution of the biosphere.

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