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Caspian Sea is Energy and Vital Source: Human Being, Sustainable Development of Ecosystem's and Society

Abstract

Taking into account the special ecological danger of this region, the similar researches are necessary not only for estimation of natural complexes state experiencing an anthropogenesis stress, but for prediction of mutagenic and carcinogenic danger of environmental factors for the people living on these territories. The author explains these factors that in different geographical zones there are different indicators of esophagus cancer frequency 5-6 times more often than in south Kazakhstan areas. The received data have shown that oil and oil products are high-toxic and complexes substances and influencing alive body's heredity. It is reflected on the ecosystems of Atyrau area Giloy district, and all North part of Caspian Sea: the separate genotypes of existing of plant and animal species populations are disappearing. Annually Caspian Sea transgression and regression influence on huge coastal landscapes. That's why at present there is a problem of stable biodiversity, genetic resources and ecosystem protection not only local, but regional also.

Keywords: germplasm, common bean, pumpkin, productivity, variety (cultivar, or cv), seed parameters

Introduction

Environmental problems have put humanity before choosing the way of development: whether it is still focused on the sharp increase in line with the real possibilities of the environment and human body [1, 2]. Particular attention should be paid to the mechanisms and instruments that are directly related to environmental protection and exploitation of natural resources. We can distinguish three mechanisms for the implementation of environmental and economic policy: direct regulation (public exposure), economic incentives (market mechanisms), and mixed mechanisms.

As follows from the theory and practice of recent decades, to address environmental issues only on the basis of state regulation or the market just cannot to solve [7]. There are some fundamental reasons that determine the "failures" of the market (externalities, lack of laws, depressed prices, public goods, etc.) and the inefficiency of public policies (subsidies, taxes, etc.) in the field of environment and natural resources. In this regard, the most acceptable mixed mechanisms to implement environmental and economic policies on the basis of state regulation and market-based instruments. An effective environmental policy involves a combination of macroeconomic policies and activities that are strictly environmental focus. The first group includes measures that are held throughout the economy or the level of systems, sectors. They cannot an explicit environmental objective. The second group comprises ecologically oriented measures frequently are auxiliary or compensatory nature with respect to macroeconomic events.

Quantitatively and qualitatively expanding the growing needs of the population, markets, depleting natural resources, environmentally and socially generated stub ideology of economic growth based on the rampant exploitation of their own wealth and resources of nature. Extends the traditional "parasitism" by the riches of nature is continued as "parasitic" on the health and well-being of future generations. Environment and

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natural resources of the country rent the human development index generations, society genetically related - as human ecology and health of generations of mankind in the biosphere of the planet [8] In field of environmental protection the modern reforms has defined to ensure environmental (national) security of the principles of the Rio-92 and the Johannesburg-2002. They dictate a clear allocation of responsibilities between the actors and the institutions of statehood for the transition to sustainable economic and human development; determine the present and future generations of the country's natural resources in terms of entering the market, claimed its own ecological status and priorities of national interests in the countries of the world community and the global market of natural resources. The Concept of Environmental Security, adopted in 1996 by the Security Council, the country is estimated ecologically vulnerable country. Therefore, environmental security is included in the strategic and fundamental components of national security, namely the most important aspects of protecting the interests and priorities of the country in international integration processes. But in the government program since the beginning of reform dominates the traditional residual approach to very old ecological problem. This is confirmed by the practice of funding for the remainder. The average expenditure on environmental protection are less than 0.5 of gross domestic product - in a half, two times smaller than they were before the reforms, and two to three orders of magnitude lower than in most countries that have managed to overcome the environmental management of the ecological crisis [9].

Shape by the beginning of reform and the current structure and volume today of environmental investments far inadequate requirements for environmental and national security of the population, especially the environmental crisis zones regions of Kazakhstan [11]. This problem is extremely urgent for the sustainable development of all facilities and industries - agriculture (food security), industrial, energy, transportation, architecture and construction, public utilities sector and other economic sectors of society. Long-term shortage of environmental investment has led to the fact that in the areas of exploration, mining, enrichment and processing of materials, goods receipt in the environmental space of Kazakhstan emerged crisis biogeochemical provinces. Its cities and towns around the Caspian Sea surrounded by the agrarian zones, and in many towns and most villages there is a shortage of clean water.

Quality of life and health - an integrator of environmental and social state of society and the effectiveness of current policies in the country and the economy of nature [1, 5]. But so far in the country is not made integral evaluation of damage to the economy and human health from environmental pollution. By some estimates it exceeds $ 10 billion. When the prevailing policy in the economy and technology management in the regions of intensive exploitation of natural resources, ecological processes deepened poverty in a country destroyed by the natural foundations of national security and sustainable economic and human development.

Need to consider another aspect of the problems highlighted in the structure and hierarchy of priorities of national security - a system of informing the population [10]. Although this strategically relevant to sustainable development posed a problem in the concept of environmental security in the laws on environmental protection and environmental impact assessment, but its solution is in its infancy. In the republic there is no reliable state of the environmental awareness of the harmful emissions to all media life, not a system of public access to executive decision-making, has not been established full-scale, involving all levels of school system of environmental education, training and education of the population. Very rarely is held public ecological examination of objects of nature. Ecologically, universal education needed by all natural resources, especially staff of all political decision-making structures, management and business, as it primarily depends on them performance on country environmental laws and principles of the concept of environmental security. Without it, cannot to solve problems of national security and not to move to a strategy for sustainable development of natural resources.

Experimental and discussion

The assessment of pollution effect on environment and biota

That's why we have led the present research on estimation of potential mutagenic danger of environmental pollution. In particularly oil, oil products and heavy metals with using the Big Rodents (R. opimus) of natural populations as a test-system. The researcher's an estimation of genetic danger of oil, oil products and heavy metals were carried out at food chains of nutrition of Big Rodents (R. opimus) from natural population in the «oil-soil-plants-animals" scheme. As it was marked of Andersen (1985), the food chains of nutrition are convenient to use for the analysis of ecosystem structures and function. The held researches results of oil and oil products content and also forth going heavy metals in soil and it's growing plants showed that with the increase of oil, oil products and forth going heavy metals penetration to soil the level of heavy metal's consumption by plants increased appropriate [6,12].

The assessment of pollution effect on environmental and public health

High content of metals in researched districts of oil polluted territories of Atyrau area can be a result of saturation by them of underlying horizontals of soil or it is connected with ore places deposited in oil and gas stratums. According to published data in plants from oil-gas polluted territory of Atyrau region the level of a lead content exceeds background values from 2,5 up to 5 times and in our researches of oil mine territory and city's suburbs along the roads the level of lead concentration exceeds at limits from 1,65 to 13,8 times. It was earlier marked [2,3]that screening methods of Rodents biological system' s study for determination of environmental mutagens allow to take into account the induction of genetic violations in small mammals cells in vitro and in vivo systems. The frequency of cells with chromosome aberration's in bone marrow cells of R.opimus is the important genotoxic features characteristics of environmental contamination by oil, oil products and heavy metals both as intensity of the mutation process[6,12]. The amount of works on cytogenetic study of wild animal's populations is not numerous. Such approach for the characteristics of wild popu-lation's state supposes receiving of cytogenetic data on various animal species for information accumulation on a level of spontaneous mutations and estimation of reply to different negative inf1uences.

At the oil polluted territories of Giloy district the high degree of atmosphere air and soils pol1ution by carcinogenic and toxic substances causes among the population the heavy forms of a hepatitis, diseases of respiration organs, tuberculosis. The diseases as reason of mortality at last 10 years has in the region 36-37 % of adult and children's -15- 17 % [11].

Conclusions

It is underlined that among the patients with a cancer of skin, respiration organs, esophagus, urinary bubble there are more persons who had productive contact with oil and oil products. According to the studied data for 2003-2007 years the author has determined that the number of cancer diseases has made in former Emba (now -Giloy) district- 138,9 % per 100 thousand population, in Makat district -138,4 %, and on Atyrau area the indicator was -195,3 %. The author explains these factors that in different geographical zones there are different indicators of esophagus cancer frequency 5-6 times more often than in south Kazakhstan areas [11, 12].

Acknowledgements

At last time in Kazakhstan depend from increasing of the number and scale catastrophic disaster zone of oil-gas producing area we have new problem. We are needed to improving the systems of public health protection, in particularly to create first medical service. To decline of public health risks at unfavorable oil-gas producing area is employing of mobile medical help (new forms). In Kazakhstan is use 2 form now: on care and train. We are need also to reconstruction of system of extra-special medical help and to preparing new formation medical staff.

The mobile medical diagnostically center has modern equipment for:

- to inspect on living place;
- to cameral treatment of inspection data's;
- to create of video archive;

- to make on-line consultation with leader of medical specialist in Kazakhstan and foreign countries.

The mobile center is including offices: surgery, gynecology, stomatology, ophthalmo-logy, cardiology, LOR-physician, mama logy, therapy.

Have diagnostically equipment: video gastroscopy, gastroscopy, bronchoscopy, colonoscopy, USR, ECG and other. Mobile medical module is creating as moving polyclinic on base of care. The using of Mobile medical module is gave ability:

- to improve of level first medical service to people's;

From unfavorable oil-gas producing area

- to improve government attention to mother and children health protection
- to prevent of circulating of harmfully infection
- to guarantee and exposing of early diagnostic of cancer pathology, tuberculosis, hepatitis and other social diseases'.

The received data have shown that oil and oil products are high-toxic as complexes substances and influencing alive bodies heredity. It is reflected on the ecosystems of Atyrau area Giloy district, and all northern part of Caspian Sea: the separate genotypes of existing of plant, animal species and human populations are disappearing. Annually Caspian Sea transgression and regression influence on huge coastal landscapes. That's why at present there is a problem of sustainable biodiversity, genetic resources and ecosystem protection not only local, but regional also.

Taking into account the special ecological danger of this region, the similar researches are necessary not only for estimation of natural complexes state experiencing an anthropogenic stress, but for prediction of mutagenic and carcinogenic danger of environmental factors for the people living on these territories.

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