



# Conceptual basics of environmental and economic policy under globalization conditions

## Conceptos básicos de la política ambiental y económica bajo condiciones de globalización

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#### ABSTRACT:

The science of environmental management has come a long way during the large period of formation and development of applied research. Modern scientific research is aimed at the development of the conceptual foundations of environmental and economic policies for particular areas in the context of globalization of world economic relations. However, a key common problem appears irrational and inefficient management of available natural resources for a long period of time. Baikal natural territory, which is the leader in Russia in terms of environmental restrictions, needs to develop and implement a unique environmental and economic policy, based on typology of problematic situations and the analysis of their solutions at different levels of the hierarchy. The essential element of the policy is to develop scenarios of cross-border impacts, both natural and man-made, on the ecosystems of model territories of Siberia and adjacent areas, as well as development

#### RESUMEN:

La ciencia de la gestión ambiental ha recorrido un largo camino durante el gran período de formación y desarrollo de la investigación aplicada. La investigación científica moderna apunta al desarrollo de las bases conceptuales de las políticas ambientales y económicas para áreas particulares en el contexto de la globalización de las relaciones económicas mundiales. Sin embargo, un problema común clave parece un manejo irracional e ineficiente de los recursos naturales disponibles durante un largo período de tiempo. El territorio natural de Baikal, que es el líder en Rusia en términos de restricciones medioambientales, necesita desarrollar e implementar una política ambiental y económica única, basada en la tipología de situaciones problemáticas y el análisis de sus soluciones a diferentes niveles de la jerarquía. El elemento esencial de la política es desarrollar escenarios de impactos transfronterizos, tanto naturales como provocados por

of an environmental management methodology based on the model of integrated assessment of region's natural capital on a rental basis, taking into account environmental, economic and environmental functions. Policy implementation should take into account the requirements for the assessment of ecosystem's services and measures for their maintenance. The main tool of environmental and economic policy in Baikal natural territory should be the mechanism of attraction of investments for the implementation of environmentally oriented investment projects.

**Keywords:** environmental and economic policy, economic globalization, Baikal Lake, Baikal natural territory, ecological restrictions, environmental management.

el hombre, sobre los ecosistemas de los territorios modelo de Siberia y áreas adyacentes, así como el desarrollo de una metodología de gestión ambiental basada en el modelo de integración Evaluación del capital natural de la región en base al alquiler, teniendo en cuenta las funciones medioambientales, económicas y ambientales. La implementación de políticas debe tener en cuenta los requisitos para la evaluación de los servicios del ecosistema y las medidas para su mantenimiento. El principal instrumento de política medioambiental y económica en el territorio natural de Baikal debe ser el mecanismo de atracción de inversiones para la implementación de proyectos de inversión orientados al medio ambiente.

**Palabras clave:** política ambiental y económica, globalización económica, lago Baikal, territorio natural del Baikal, restricciones ecológicas, gestión ambiental.

## 1. Introduction

Global environmental management process entails the increasing integration of natural and socio-economic systems, strengthening their interconnections and interdependencies. Generalization of numerous theoretical and applied research in the field of economic assessment and economic analysis of the impact on the environment leads to the main conclusion that economic development and environmental protection do not exclude, but rather complement each other, subject to appropriate analysis and adoption of necessary measures (Bobylev et al., 2014). As soon as the understanding of these relationships is deepening, the evolution of views on the problems of interaction between natural and socio-economic systems occurs. The development of theoretical and applied research began with the extensive approach, when it was believed that natural resources are free gifts of nature, and do not limit economic growth until the economic (resource) approach, dominant in modern conditions, when the concept of limitations applies not only to natural resources but to the environment's ability to assimilate the negative impact of pollution (Tsyrenov et al., 2015).

## 2. Actualizing the problem

The impact on the environment has been accounted for within the concepts of sustainable development and green economy and has a long history. But the same concept of green economy only in recent years began to go beyond purely scientific community in a more practical sense, widely discussed in many important international forums (Ayusheeva, 2014 Bardakhanova 2013). Back in 1902, one of the founders of neoclassical economics Irving Fisher admitted that the economic well-being depends on the degree of physical life satisfaction and is not a direct function of production and consumption of goods and services, and in 1934 the author of the concept of conventional GDP, Simon Kuznets said that the wealth of the nation cannot be adequately measured by national income, as GDP helps to measure relative well-being, not taking into account the social costs and environmental impact.

With regard to the current economic conditions, it is not just about sustainable development, but on the global sustainability. Sustainable development today is a world in which the economy provides the welfare of all the people who contribute to the eradication of poverty, reduction of social inequalities, provides the rationalization of production and consumption, while maintaining the climate and supporting ecosystems. The gap or separate consideration of these issues leads to a slowing of movement along the path of sustainable development (Tsyrenov et al., 2016).

The environmental and economic policy should mean the activities of the state in the field of ecological and economic relations, to determine the prospects of ecological and economic development and to create conditions for their implementation (Khaykhadaeva, 2015). The purpose of the Concept for the development of environmental and economic policy is the

development of measures for establishment and regulation of the financial and economic relations in natural resources and environmental protection between public authorities, on the one hand, and users of natural resources, on the other hand. Conceptual basics of formation of environmental and economic policy should include evidence-based directions of prospective ecological and economic development, methods to choose priorities and regulate environmental management.

The need for a new state environmental and economic policy is caused by the fact that there have been changes in the political, socio-economic and environmental situations not only in the country but also in the globalizing world. As noted in (Goryunov and Bardakhanova, 2015), at the moment there is a change of territorial development paradigm. The peculiarity of the moment is that market boundaries are gradually moving apart and no longer coincide with the borders of the state and the national economy. The status of Russian territories in the system of global exchanges is determined by their ability to set the parameters of economic exchanges. In modern conditions, regional competition for assets is won not by those producing goods, but by those controlling their flows, attracting finance, rights/titles, technologies, the most qualified personnel. By virtue of that, the objective of regional development is the increase in capitalization of the region – the growth of the value of assets located in its territory and involved in global exchanges (Slepneva et al., 2016).

## **2.1. The Importance of the Problem**

Search and analysis of typical environmental and economic problem situations and ways to solve them allow creating generalizing approaches to the choice of a particular variant of environmental and economic policy in a particular situation, in other words –enable to develop the scientific basis of management decision-making at various levels.

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## **3. Research methodology**

Basic environmental and economic situations and conditions of ecological and economic development of different territories have their own characteristics, which are determined by the difference in the potentials of regions' socio-economic development. But, common to all the territories are: long-term bad management of natural resources, inefficient measures for their exploitation and protection (Saktoev et al., 2015). This is due to inefficient use of natural capital. Natural capital is only partially involved in the production process as a raw material for production, while the raw material price is very low and does not correspond to its real value. Other components of natural capital (as a public resource in the form of environmental goods and services, as well as a resource that can assimilate the negative impact of pollution) for the most part are outside the scope of economic relations. Incomplete accounting of natural capital components creates environmental problems in the form of environmental pollution, depletion of resources and so on (Zolotareva et al., 2016). Therefore, a transition to a sustainable, ecologically balanced development is required, seeking for new quality of economic development, taking into account the preservation of ecosystems.

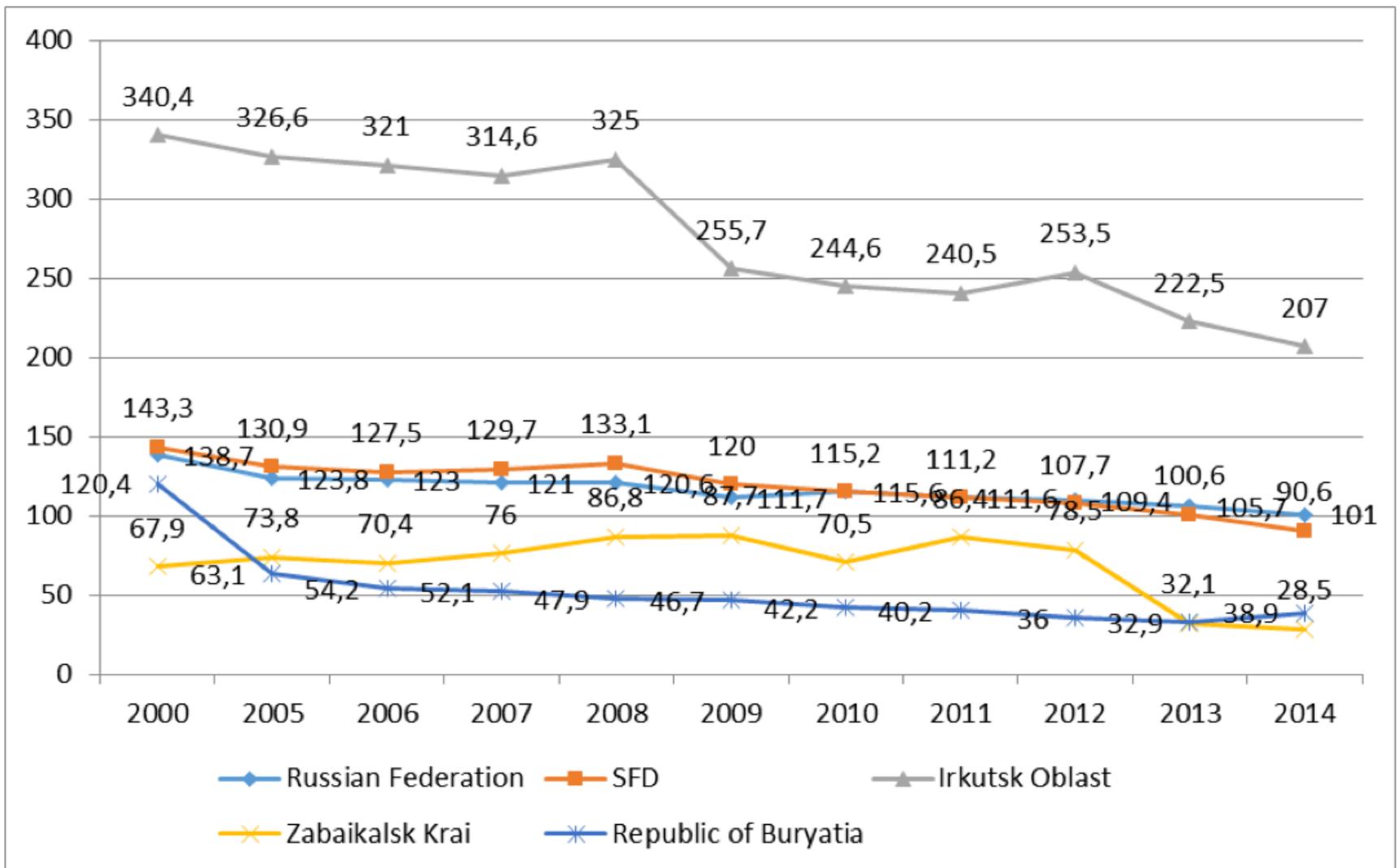
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## **4. Results**

At present, Baikal natural territory (BNT) is the leading region in the Russian Federation in connection with environmental regulation of economic activity and creation of the foundations of an environmentally sustainable future – environmental liability system and the new environmental standards (the Federal Act "On Protection of Baikal Lake" – the only federal act on a regional issue – is in force, special norms of permissible impact on the ecosystem of Baikal have been approved, some activities are banned, mandatory state ecological expertise all over BNT has been provided, borders of the central ecological zone and the water conservation zone of Baikal have been merged, etc.) (Bardakhanova et al., 2016). Republic of Buryatia together with the neighboring Russian regions, included in the boundaries of BNT (Irkutsk Oblast and

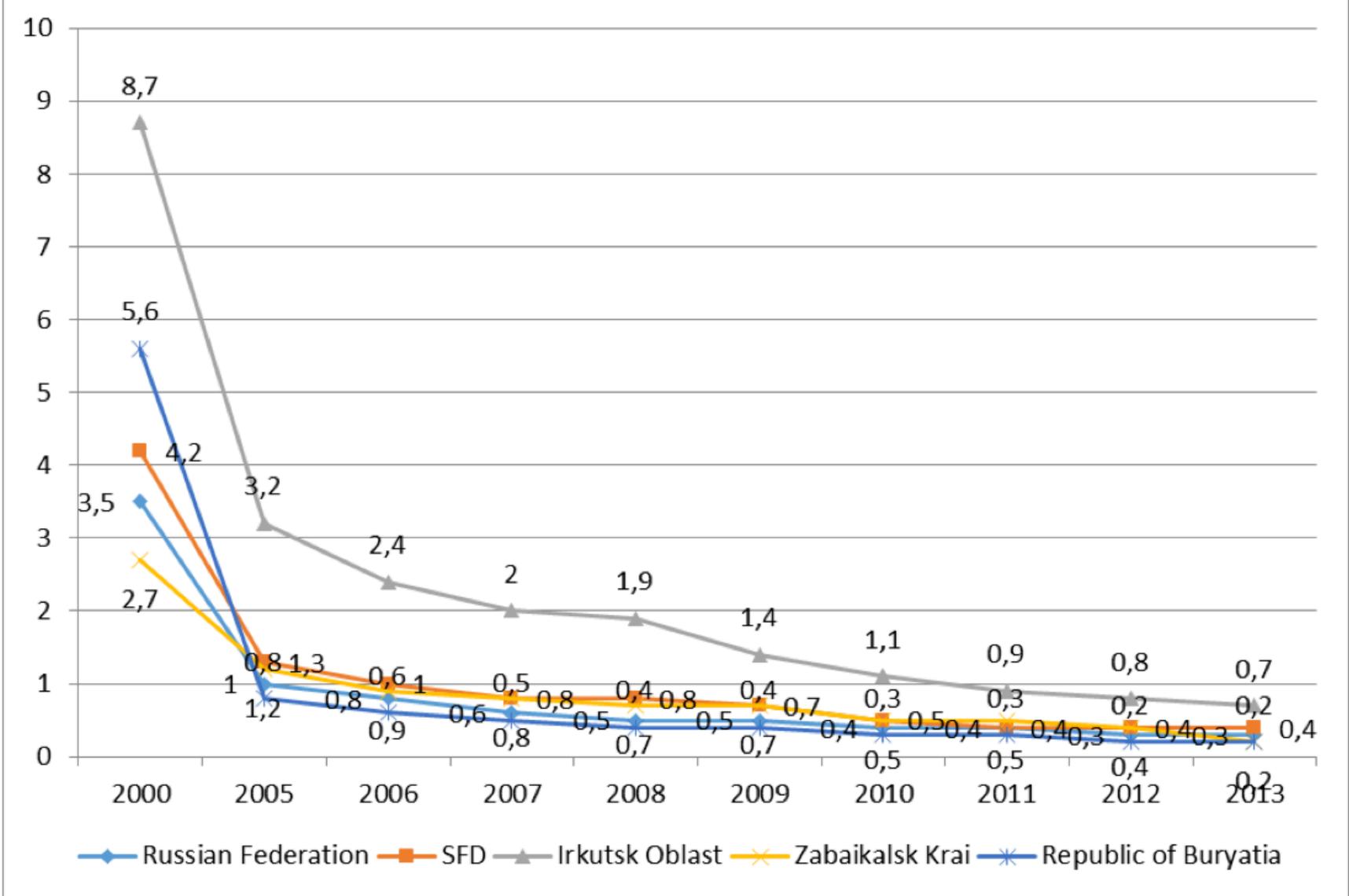
Zabaikalsk Krai), performs an essential mission of the Russian Federation for the conservation of the unique values of the largest area of UNESCO's World Natural Heritage –Baikal Lake (Chimitdorgieva et al., 2016). The agenda puts to achieve the balance between solving the task to protect the unique ecological system of Baikal and socio-economic development goals. The essence of *the Baikal problem* for socio-economic development of Republic of Buryatia is that a large part of its territory and natural complex directly relating to the bulk of the water runoff into Baikal and the preservation of the ecosystem, unique to Baikal Lake, is subject to environmental restrictions of economic activity (Mikhaylova et al., 2015).

The predominance of administrative prohibitions and restrictions in environmental management results in increased environmental costs, lost and missed profits in the economy of the region (Federal Act "On Protection of Baikal Lake"). According to the statistical bulletin "Regions of Russia. Socio-economic indicators" (Rosstat, Moscow, 2015) and authors' calculations, despite the positive dynamics of a number of ecological and economic indicators of Republic of Buryatia, compared with the average for the Russian Federation, the SFO and neighboring regions (Figures 1, 2), the worsening of the economic situation is observed (Figures 3, 4).



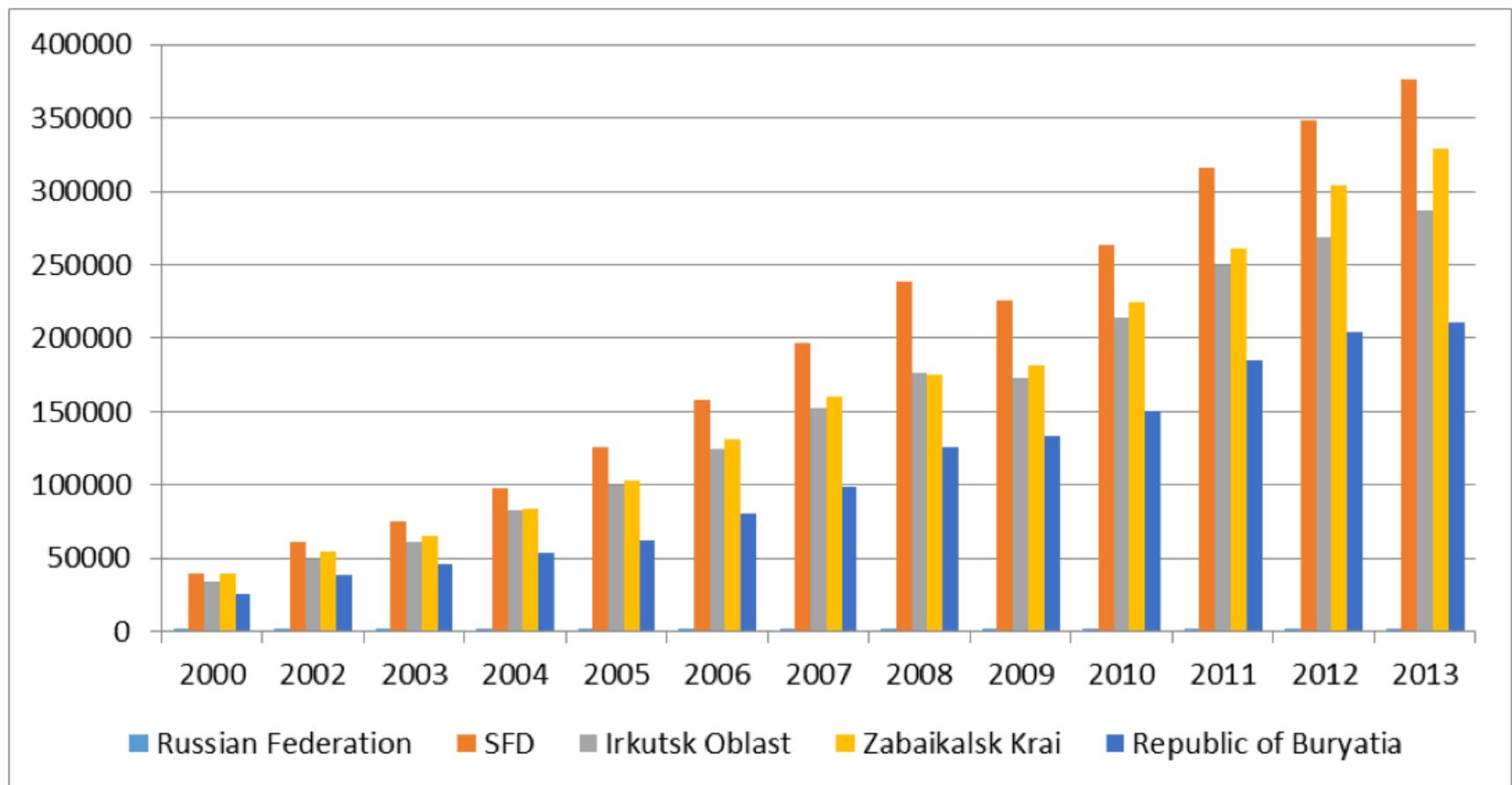
**Figure 1:** Volume of sewage discharge in surface aquatic objects per capita in the RF, the SFD, IO, RB and ZK, cubic m/person

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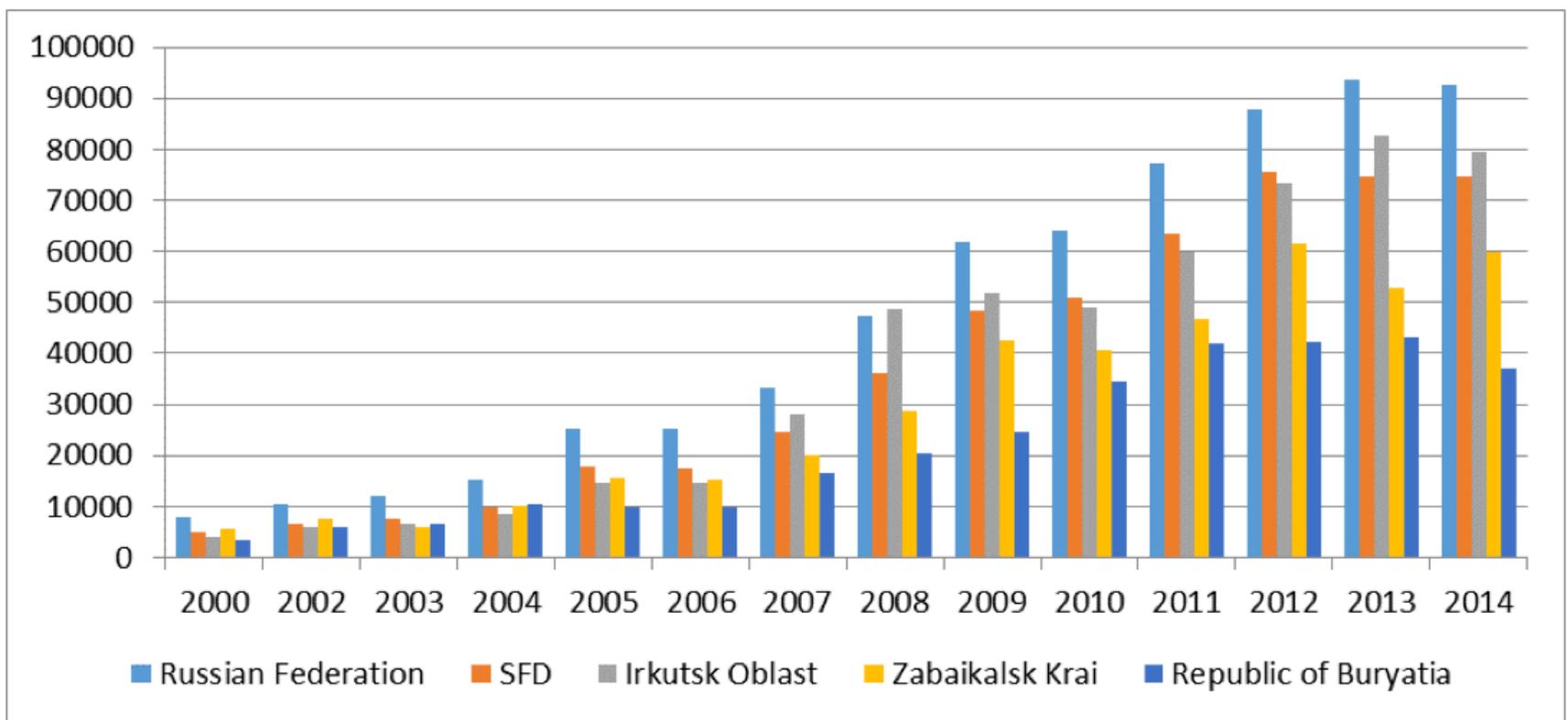


**Figure 2:** Volume of sewage discharge in surface aquatic objects per 1,000 rubles of GDP in the RF, the SFD, IO, RB and ZK, cubic m/1,000 rubles

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**Figure 3:** Dynamics of GRP per capita in the RF, the SFD, IO, RB and ZK in 2000-2013, rubles/person



**Figure 4:** Dynamics of capital investments per capita in the RF, the SFD, IO, RB and ZK in 2000-2014, rubles/person.

In the practical application of various tools in our country and abroad approaches and methods are worked out and developed to internalize external costs. The system of differentiated measures to regulate environmental management in BNT, aimed in the long term to transform environmental constraints into competitive advantages for local development of green economy and business, as well as to assess the effectiveness of a number of regional management practices are proposed in (Mikheeva et al., 2012). In (Economic instruments to manage aquatic resources in the Russian Federation, 2013).it is concluded that there is a number of discrepancies between the economic tools to manage aquatic resources in Republic of Buryatia, on one hand, and basic goals to be achieved via those tools. Actually, none of the economic tools applied complies with the criteria of efficiency as per OECD (Economic assessment of projects and policy directions in environment, 1997).

## 5. Discussions

In the course of development of environmental and economic policy concept it should be remembered that it must be implemented on the following principles:

- systematic sequence of actions to achieve important results;
- reasonability and transparency of managerial decisions, openness and accessibility of environmental information;
- environmentally focused economic development, understanding of the importance of life-supporting functions of ecological systems and maintaining a balance of public welfare needs and environmental well-being;
- reasonability of environmental management norms and accounting for long-term environmental impacts;
- liability of economic and other entities for their environmental consequences;
- information providing and transparency of environmentally-oriented activities;
- recognition of the important role of the public and business incentive in achieving the goals of ecological and economic policies and the need to support it, including in the investment sphere;
- global environmental responsibility – taking into account the impact of cross-border economic

and other activities in macro-regional and global scale, harmonization of norms and standards pursuant to the international practices, multilateral cooperation in addressing global challenges.

We propose to consider the following main tasks of the Concept for the development of environmental and economic policy of Baikal natural territory and adjacent territories and related implementation measures that will justify the directions of long-term ecological and economic development, to set priorities and environmental management tools:

**1. Typology of problem ecological and economic situations and analysis of their solutions on different levels of the hierarchical system:**

- development of a model to study problem of ecological and economic situations, identifying the causes of problem situations, typology of subsoil, forest, recreation;
- typology of the territory in terms of economic damage and the natural self-purification capacity of the environment;
- identification of development characteristics of basic infrastructure in Buryatia and Mongolia, making series of thematic maps. Infrastructure zoning of international cross-border area (the Russian Federation and Mongolia);
- development of methodologies to assess the competitiveness and identification of spatial positioning ranks of large administrative centers in Siberia;

**2. Development of scenarios of cross-border natural and man-made impacts on ecosystems of model territories of Siberia and adjacent areas:**

- assessment of cross-border natural and man-made impacts on the environment of resource and infrastructure projects in Mongolia (for the RF) under basic scenario and accelerated development of the Mongolian economy (pollution of water resources in the basin of the Selenga, sampling of water, changes in flow modes, degree of impact, etc.);
- assessment of ecosystems' services and environmental damage to aquatic ecosystems, including in the cross-border context;
- development of Russian-Mongolian cooperation in the context of protection of transboundary waters;

**3. Development of an environmental management methodology based on the model of integrated assessment of natural capital in the region on a rental basis, taking into account the ecological, economic and environmental functions:**

- methodological and methodical basics of quantity assessment of the territorial rent taking into account the specifics of nature management and specifics of the regional market of natural resources, comprehensiveness of accounting environmental costs, loss of products and missed business profit in terms of environmental restrictions;
- implementation of an integrated approach to rent assessment of the natural capital of cross-border areas in order to promote sustainable environmental management, receipt by cross-border territories of adequate rental income without damage to ecosystems that can be spent not only on restoration, protection and conservation of the natural environment, but also on implementation of environmentally significant projects and programs;
- justification of the rent component of the economic mechanism of nature management as the economic basis of levying environmental taxes and charges;
- recommendations on the formation of funding tools to regulate financial flows in the natural resources sector of the economy with the aim of redistribution of rent payments for environmentally oriented natural resource management;

**4. Development of methodological and methodical approaches to the assessment of ecosystems' services and measures for their maintenance:**

- methodological and methodical approaches to assessment of ecosystems' services and related

measures (products of forest ecosystems at the value of forest resources, products of natural pastures and hayfields, hunting resources, freshwater ecosystems, water treatment functions of wetlands, recreational services, etc.);

- assessment of the demand for water services and comparative analysis of the cost of water consumption in model areas;
- calculation of the value of carbon sequestration function of forests, assimilation services of forest environment, reproductive adaptation of the territory to atmospheric oxygen;
- assessment of resource intensity of industrial enterprises;
- classification of administrative, economic, information tools for the maintenance of ecosystems' services;

### **5. Development of tools to attract investment for implementation of environmentally-oriented investment projects:**

- creation of information system of investment projects, classification and efficiency assessment of investment projects;
  - development of investment prioritization criteria, differentiated by the level of territorial environmental technology intensity, assessment of the degree of deterioration of the basic environmental funds, economic evaluation of actual environmental damage;
  - choice of priorities of the environmentally-oriented investment.
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## **6. Conclusions**

The reasonability and practical importance of Concept for the development of environmental and economic policy and its subsequent implementation require consideration of the following points:

- the basis for coordination of the positions of various parties with regard to various options of interregional and international cooperation is the identification and assessment of potential costs and benefits;
- it is necessary to provide for the use of the best international environmental policies in environmental impact assessment procedures in the transboundary context;
- the paramount directions of improvement of environmental management tools are the formation of green technology databases, best practices, financial, economic and legislative instruments;
- it is required to rationalize the ways of increasing the effectiveness of state support for implementation of priority investment projects and best technologies available to achieve environmental quality standards in BNT and the neighboring areas. In the future, creation of funding mechanisms to support the development of BNT with own revenue sources and powers to spend;
- overall promotion and detailed work is required to facilitate the tools of BNT capitalization, including a set of measures to streamline the system of environmental regulation, formation of sources to finance environmentally-oriented activities, facilitating safe recycling of environmentally harmful products.

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