

Use of Natural Resources as an Object of Economic Incentive

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Abstract: This article indicates the critical importance of taking into account the environmental factor in the economic development of contemporary countries. The issues of formation and implementation of the economic mechanism of using natural resources are considered on the example of Russia. The central chain link of this mechanism is stimulation of use of natural resources with account for the environmental safety threshold. The author suggests her vision of the conceptual model of economic mechanism of using natural resources, which is based on cooperative strategy of market and government forms and methods of encouragement of using natural resources. The main problematic aspects of the mechanism of rational use of natural resources, which currently exists in Russia, are revealed and the ways to solve them using the international experience are suggested.

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1. Introduction

In order to ensure stable development of economies of modern countries, it has become very important for them to find the ways of rational use of the nature capital and preservation of the properties of the environmental and economic systems. According to the article Human Domination of Earth's Ecosystems by the leading American ecologists, the humankind changes the biosphere faster than realizes it [1]. It is obvious that only environmentally safe development and preservation of the natural capital are the basis of stable development of economic communities.

Currently, the world science and practice pay more and more attention to the economic role of natural and environmental services, and the environmental factor is accounted for at both the microeconomic level when developing various technology of using the natural capital, and at the macroeconomic level at selection of a socio-economic line of the country's development. The problem of natural capital preservation and environment friendly development is especially topical for modern Russia, as natural capital plays special role in the economy of the country.

Indeed, according to the World Bank, only a small share of national wealth belongs to the natural capital – in developed countries, the proportion between the natural, human, and physical capital is 2-5% : 68-76% : 18-20%. But in case of Russia, the situation is very different, as the natural capital share exceeds two third: 70% : 20% : 10% [2]. While understanding the importance of the solution of the problems of rational use of natural resources, the

Government of the Russian Federation adopted a series of strategic documents targeting increase of the economic role of natural capital. For example, the Concept of Long-Term Development of the Russian Federation for the Period until 2020 states that "formation of innovative economy means turning intelligence and creative potential of a human into the leading factor of economic growth and national competitiveness along with the considerable improvement of the efficiency of using natural resources" [3]. Ensuring economic growth in Russia is inherently connected with the pollution worsening and degradation of the natural capital. This all actualizes the study of economic regulation of use of natural resources, of which incentive is the main element.

2. Body of the work.

Highlighting the importance of the study of the problem of encouraging rational use of natural resources, we would like to remind that the 2008 world economic crisis showed depletion of the potential of export-oriented raw material economy of Russia. According to the Economic Expert Group, Russia spent for antirecessionary measures more than any other country - over 11% of its GDP, and it ended at the lowest position in the top twenty with its -7-9% of the GDP. To compare, the USA spent for antirecessionary measures only 8.4% of the GDP, and the world totally spent 7%. But it is obvious that these efforts are insufficient: for the last 50 years, nearly 60% of the world ecosystem services have been damaged by anthropogenic impact, and they are going to become deficient at the current economic growth ratio and depletion of natural resources [4]. The

renowned American ecologist L. Brown provides China as an example of this statement [5]: in order to achieve the US standards of living, this country will require more oil and paper than the world can produce (we omit the 3 billion people living in the developing economies, like India and Brazil, and other countries).

It is obvious that the world economy is in a difficult situation now with the existing environmental constraints and the contemporary model of unstable development. Therefore, an important feature of the new model of world economy must be the environmental stability and incentive of integration of environmental factor into the economic mechanism of using natural resources. Currently, the research in the area of integration of the environmental factor of the economic mechanism of using natural resources covers explanation of the causes of the environmental inefficiency of the current market mechanism, formulation of economic principles of building an environment-oriented economic mechanism, and treating environmental systems as a capital. Particularly, one of such works, the article "Assessing the Economic Value of Ecosystem Conservation" by S. Pagiola, K. von Ritter, and J. Bishop suggests to consider ecosystems as one of forms of the capital [6]. We presume that in this case, the research must be focused on the economic aspects of ecosystem services and their economic assessment and benefits.

We also believe that currently the benefits, which ecosystems and the natural capital as a whole give to the humankind and the economy, are not duly realized and appreciated. However, following the first results of assessment of ecosystem services, the aggregated annual assessment of all functions of natural ecosystems of the planet was determined at the rate of 33 trillion US Dollars, which is almost twice as much as the GNP generated by the humankind, which is equal to 18 trillion US Dollars a year. And this circumstance caused active discussion in literature [7]. For example, one of the latest works in the area of identification of ecosystem services was the research by T. Brown, J. Bergstrom, and J. Loomis. These authors identified two groups of research objects in this aspect: ecosystem amenities and ecosystem services. For example, authors included in the first group non-renewable amenities (minerals, fossil fuels) and renewable amenities (animals, plants, air, recreation, and aesthetics). On the contrary, the ecosystem services group included stabilization of the climate, care of the habitat of plants and animals, control of varmint types, and other services [8].

In case of Russia with its obviously resource nature of the economy, solution of the problems of use of natural resources depends first of all on the formation and implementation of the economic mechanism of using natural resources, the main chain link of which, to our

opinion, must be the incentive of rational use of natural resources. Let us consider such an approach. First, we need to emphasize that we understand *incentive* as the process of external impact on natural resource users with the purpose of coordination and implementation of economic interests. As we have a market economy, the incentive measures must be taken within the framework of market self-regulation. However, due to known market failures, the capabilities of market self-regulation are quite limited. This circumstance intrinsically determines the necessity of governmental intervention, so the incentive measures will involve government control. The Government Report On the State and on the Protection of the Environment in the Russian Federation in 2011 noticed that the dynamics of pollution in 1990-2010 was mainly determined by the changes of the economic situation in the country as well as the changes of the structure of fuel consumption [9]. Therefore, without forming and implementing an integral mechanism of economic use of natural resources, it is impossible to achieve truly environmentally safe development of the country.

Let us analyze the economic mechanism of using natural resources, which exists currently in Russia.

1. The practice of implementation of incentive measures in the area of environment protection shows that the effective legislation in Russia is weak and contradictory in this area. For example, the Federal Law dated 10.01.2002 #7-FZ On the Protection of Environment [10] failed to achieve its objective – creation of a single economic ground for development of the legislation in the area of encouraging protection of the environment. The main actuating elements of the economic mechanism of using natural resources in the Russian Federation are currently the natural resource taxes and payments for using natural resources, but they do not play the role of a reward for rational use of natural resources. Their role is mainly the budget revenue generators.

For example, in 2011, the revenues of the consolidated budget of the Russian Federation from natural resource fees, taxes, and duties equaled to 2,319 billion rubles, including revenues of the federal budget in the amount of 2,130 billion rubles, which is more than in 2010 by 29% and 31% accordingly. But in the structure of federal tax payments, these payments totally equaled to just 19% and this is obviously insufficient for encouraging rational use of natural resources in the circumstances of the continuous raw material development vector of our country [11].

There is another circumstance to notice: according to the same source, in the total volume of payments received for using natural resources by the consolidated budget of the Russian Federation, 88%

(which is equal to 2,043 billion rubles) are payments of the mineral replacement tax (MRT). 97% of the revenues are payments of the oil and natural gas extraction taxes where all other payments are so insignificant that we cannot state any significance of the payments for the budget and, of course, any stimulating role.

In this view, we believe that if the total amount of taxes remains unchanged (observance of the principles of fiscal neutrality), it is reasonable to change the proportion by increasing the share of taxes related to use of natural resources, which would allow to decrease the rate of destructive extraction of resources from the natural environment, on the one hand, and to encourage natural resource users to apply energy and material saving technology, on the other hand.

2. Another effective form of the economic mechanism of using natural resources is the payments for environment pollution. But they do not have the status of taxes in Russia; their rates are rather low; and they are not charged not as the enterprise's profit but as the production cost if they are within the standard values. Therefore, they do not influence the economic interests of the enterprise. However, the actual receipt of payments for negative impact on the environment by the federal budget, according to the Federal Treasury, equaled to 4.430 billion rubles in 2011, which is equal to 115.86% of the forecast volume of revenues. Consequently, there are grounds to increase this type of revenues.

To our opinion, it is reasonable currently in Russia to improve the economic mechanism of using natural resources by changing the current system of payments for pollution of environment through assigning them the status of environmental taxes. At that, the amount of tax payments needs to be increased to such a level that would encourage natural resource users not only to decrease pollution, but also to search for and implement new environment friendly equipment and technology. But at the same time, it is necessary to reward the natural resource users who pursue active environmental policy. In order to do it, we suggest to apply tax relieves on objects and processes of natural resource use, which do not require any obligatory amendments in the effective federal tax legislation, but can be implemented through using tax preferences at regional levels within the framework of regional taxes.

Thus, there are deep-rooted contradictions of economic interests in the mechanisms of using natural resources in Russia currently, but they are not eliminated and even get worse in view of absence of an integral scientifically based system of incentives for rational use of natural resources. We presume that in the nearest future, the encouragement of rational

use of natural resources must become the core of the economic mechanism of using natural resources and constitute a union of the contradictory sides – reward and responsibility. The forms of responsibility include taxes on emission and resources, fines, standards, where the reward options include loan preferences, bonus schemes, tax relieves, environmental transfers, and other preferences.

In this view, we need to remind that environmentally oriented solutions of companies, which operate in the territory of countries with comprehensive environmental policy, are not so much altruistic deeds as concise practical providence. Therefore, in the circumstances of market economy when every economic entity is interested in gaining maximum profit from its operation, the government needs to assume the role of the judge who is able to direct the development of entrepreneurial interest to solicitous attitude to the consumed natural riches. Taking into account the deficiencies of the current economic mechanism of using natural resources, we would like to suggest another concept of the mechanism.

To our opinion, we can distinguish three general types of economic mechanisms of using natural resources: 1) soft, 2) incentive, and 3) hard. An economic mechanism of the soft type assumes stating general restrictive environmental frames for regulating the use of natural resources in various spheres and sectors of the economy. On the contrary, the hard type assumes overall application of administrative methods of regulation and proscriptive measures. And, finally, the incentive type prioritizes methods that are related to taxes and loans. We can identify two important aspects in the objective of economy-wide environmental reorganization of the tax system: increase of the share of nature-related taxes and tax incentives for rational use of natural resources. In order to do it, it is necessary to increase the share of taxes imposed on the nature-utilizing sector of the economy. Such measure would promote adequate reflection of the role of the huge potential of nature in the Russian economy, enhanced rational use of natural resources, and expropriation of the natural resource rent in favor of the society.

It is instructive to recall that contemporary tax systems in the world and in Russia mainly focus on collecting taxes from the population, from income, from added value, i.e. the taxes are focused on labor and capital (according to some assessments, only labor directly or implicitly generates up to 70% of the budget revenues). We assume that if the total amount of taxes remains unchanged (observance of the principle of fiscal neutrality), it is reasonable to change the share of taxes related to using natural resources.

What we mean is, first of all, payment for the right to use natural resources and taxes related to environmentally harmful activity, which leads to pollution of the environment. Currently, the principles of environmental reorganization of tax systems are spreading around the world. The leaders in implementation of the principles are the European countries, some part of which have decreased personal income and salary taxes and increased taxes on environmentally destructive activities (Table 1).

Table 1 - Environmental reorganization of tax systems in some European countries

Country	Areas of decreased taxes	Areas of increased taxes	Total shift of tax revenues (%)
Denmark	Personal income	Engine fuel, coal, electric power, prices for water, and waste incineration and disposal.	2.5
Denmark	Salary, agricultural property	Industrial emission of carbon, pesticides	0.5
the Netherlands	Personal income and salary	Natural gas and sales of electrical power	0.8
the Netherlands	Personal income	Sales of energy, sales of water to households, alienation of lands	0.9
Germany	Salary	Sales of energy	2.1
France	Salary	Solid wastes, air pollution	0.1

As Table 1 shows, there is a tendency in Europe to impose larger taxes on environmentally destructive activities, including carbon and sulfur emission, coal mining, and land alienation. The following taxes are also imposed depending on the country: on excessive consumption of water, on utilization of agricultural land for other purposes, on deforestation, on usage of pesticides, etc. This experience should be applied in the Russian practice with account for regional differentiation and peculiarities of recreational use of natural resources.

Simultaneous creation of efficient direct or indirect economic tools and regulators for development of environment friendly types of activities and entrepreneurship on the level of federal and regional authorities would contribute to attraction of investments in this sphere and, finally, allow forming favorable conditions for implementation of rational use of natural resources in the regions. In order to achieve it, the government needs to pursue efficient selective economic policy for changing the structure of investments in various sectors of the economy based on macroeconomic regulation and indicative planning using tax tools, benefits, loans, subsidies, custom duties and payments. Among the latest works in this sphere, the Report on Measurement of Economic Development and Social Progress by two Nobel laureates in Economy J. Stiglitz and A. Sen

(2009) is worth mentioning [12]. Particularly, they noted in this article that the GDP did not cover various social processes and changes in the environment, which very negatively affected the environmental and economic development of contemporary countries.

3. Summary.

Thus, the unfavorable environmental and economic processes that take place in the world as a whole and particularly in Russia can upset the balance of development unless due attention is paid to the environmental factor during the process of using natural resources and when the economic structure is changed. It is possible to achieve truly rational use of natural resources and preservation of environmental and economic systems only provided the economic mechanism of using natural resources is formed and implemented. The vector of perfection of such a mechanism must be oriented to the development of a model of encouragement, which would combine various forms and methods of government control of the sphere of use of natural resources, including scientifically based resource taxes, payments for environment pollution, tax- and loan-related forms of government incentive, entrepreneurial forms, etc. The widely used measures on incentive of rational use of natural resources in contemporary Russia with its major disproportions in development and institutional vacuum must create conditions for unidirectionality of economic interests of natural resource users and, finally, encourage the formation of an environment friendly model of innovative economy.

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1. Introduction In order to ensure stable development of. First, we need to emphasize that we understand incentive as the process of external impact on natural resource users with the purpose of coordination and implementation of economic interests. As we have a market economy, the incentive measures must be taken within the framework of market self-regulation. However, due to known market failures, the capabilities of market self-regulation are quite limited. We are using unsustainable amounts of the Earth's natural resources. We need to improve the rate of resource productivity (doing more with less) faster than the economic growth rate. This is the notion behind decoupling. # Decoupling. Improving the rate of resource productivity (doing more with less) faster than the economic growth rate is the notion behind decoupling, the Panel says. That goal, however, demands an urgent rethink of the links between resource use and economic prosperity, buttressed by a massive investment in technological, financial and social innovation, to at least freeze per capita consumption in wealthy countries and help developing nations follow a more sustainable path. Such programmes increasingly contain incentives and economic support for a continuous improvement of environmental performance, rather than simply enforcing legislative constraints. Accordingly, the assessment and improvement of efficiency in the use of natural resources for different economic sectors have major practical implications for a region or territory and have formed an active research field. Within this framework, quantitative methodologies can increase our comprehension of how effectively we exploit our natural resources (De Leo and Miglietta. 2015). The importance of efficiency in natural resource use has been recognized for some time, and several quantitative models have been developed around. Economic Incentives and Resources.

Last Updated on Thu, 27 May 2021 | Economic Concepts. Sturhjdudiff. Main Idea. Incentives help preserve scarce resources. Reading Strategy. Graphic Organizer As you read the section, complete a graphic organizer similar to the one below by providing examples of ways to curtail the incentive to pollute. As a result, the actual amount of lost agricultural output will not be that large. When the price of natural gas was low in the 1960s, the quantity demanded was high. Because government regulated the price, however, producers had little incentive to increase its production. Congress then tried to stimulate gas discovery and production by lifting the price controls on deep gas-pockets of natural gas, 15,000 feet or more below the earth's surface. Natural resources are phenomena of nature or objects used to meet the material needs of society or for production, contributing to the creation and maintenance of the conditions necessary for the existence of mankind, as well as to improve the standard of living. Rational use of natural resources is a consequence of their reasonable study, which prevents the possibility of harmful consequences of the activity of the person himself, raises and maintains the productivity of natural complexes and objects of nature. Rational use of natural resourcesrenewable type should be based on a balanced expenditure, as well as renewal, which provides for their reproduction. Potential resources are involved in economic turnover, while real resources are actively used.