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The papers study the following problems: sustainable development of local production systems, business strategies of LPS, innovativeness of clusters, critical infrastructure protection, corporate social responsibility, environmental protection, local production system management, governance of local production systems in Bulgaria, Poland, Ukraine and Russia, policy guidelines with some measures of general application, aimed at problems observed in all LPS, and some specific measures differentiated according to a typology of local production systems.

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# FINANCIAL ASPECTS OF ENVIRONMENTAL REGULATION<sup>1</sup>

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The paper is devoted to the problems of formation of the financial mechanism of environmental protection in the framework of local production systems. The authors identified main sources of costs for environmental purposes and analyzed the trend of reducing the fiscal costs of environmental protection. Particular emphasis is placed on the legal aspects of the use of payments for negative impact on the environment, including the abandonment of the use of funds to the budget as the price of a negative impact on the environment. The importance of environmental funds in the financing of environmental activities is shown, the importance of programmer - oriented approach to solving environmental problems is marked. The possible elements of the financial mechanism for the implementation of environmental protection measures are proposed. The main difficulties including stimulating effect in the economic mechanism of nature conservation and environmental protection are marked.

Local production systems (LPS's) are territorial-industrial combinations, which are characterized, first, by the presence of its own economic capacity for self-development of the territory and ensuring its competitiveness. Only in this case, there are preconditions that are necessary for the progressive modification of the production and spatial structure of the economy within the limits of LPS, for the growth of their level of economic development and creation of conditions for social prosperity could be possible.

Secondly, LPS must have an efficient management system, in which economic complex of the area, its social services and the natural environment are considered as control objects. With this as the subject of management can act the public authorities, local governments, and special management bodies for the implementation within the LPS's of any long-term projects and programs. Management of local production systems should be understood as an activity to regulate the processes of socio-economic development of the area in accordance with a pre-designed program and aimed at achieving the goals of improved quality of life. Under conditions of economic crisis, an important task of management bodies is to create tools to encourage the output of the region's economy of the depression and the providing conditions for development. Obviously, the development of regions, surviving depression and their further prosperity should be stimulated by the authorities.

Third, the LPS's are characterized by the existence of various public (government) and private institutions that perform, in particular, the various functions for the provision of educational services and training, research and implementation of innovation, securing funding, and others.

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Thus, the formation and functioning of LPS depends on many factors, including:

- economic (economic and geographical situation and the level of infrastructural development of the territory, transport, energy, innovation policy, the investment policy and territorial forms of social organization of production, etc.);
- social (including human capital, labor, employment, social protection of the population, the demographic balance, etc.);
- environmental (natural-resource potential, ecological potential, human impact on the environment, etc.);
- institutional (legal system and rule of law, judicial system, scientific and technical, financial and investment aspects, the system of governance, the system of market infrastructure, including credit and financial and other aspects, the system of education and science, cultural and religious values, etc.).

One of the important aspects of the study of the LPS's is to provide reliable financing process of their operation. In this article, we will focus on the problems of the formation of the system of financing environmental activities typical of the different levels of government, including the level of the LPS's.

In the field of environmental protection level of the local production systems is concentrating financial resources of various origins – from state allocations of funds to individual industries and companies – sources of pollution.

The main purpose of the economic mechanism in the field of the environmental regulation is not only providing accumulation of funds and compensation of expenses for environmental protection, but also (it's more importantly) stimulation of environmental activities, strengthening of the economic interest of industrial facilities in the rational use of natural resources and reducing pollution, in the organization of waste management and the use of secondary resources, etc. One of the important elements of the mechanism of the state environmental policy is the funding system. From as far as it is reliable and effective, depends largely on the state of the environment in the country and its regions.

Financial mechanism of protection of the environment is a complex of various financial and economic instruments aimed at promoting of environmental measures. These levers include an environmental tax policy, the system of payments for natural resources and negative impacts on the environment, environmental insurance, improving pricing for the products of industries that exploit natural resources, and other environmentally oriented industries, especially for environmentally friendly products and technologies, etc.

The purpose of the financial mechanism for the protection of the environment is to improve the environmental situation in the country with minimal material, financial and human resources through the provision of favorable economic conditions for environmental activities of the enterprises and industries. It is clear that the financial mechanism of nature management in any country reflects conducted by the state environmental policy.

To achieve these objectives it is necessary first of all to solve the following tasks:

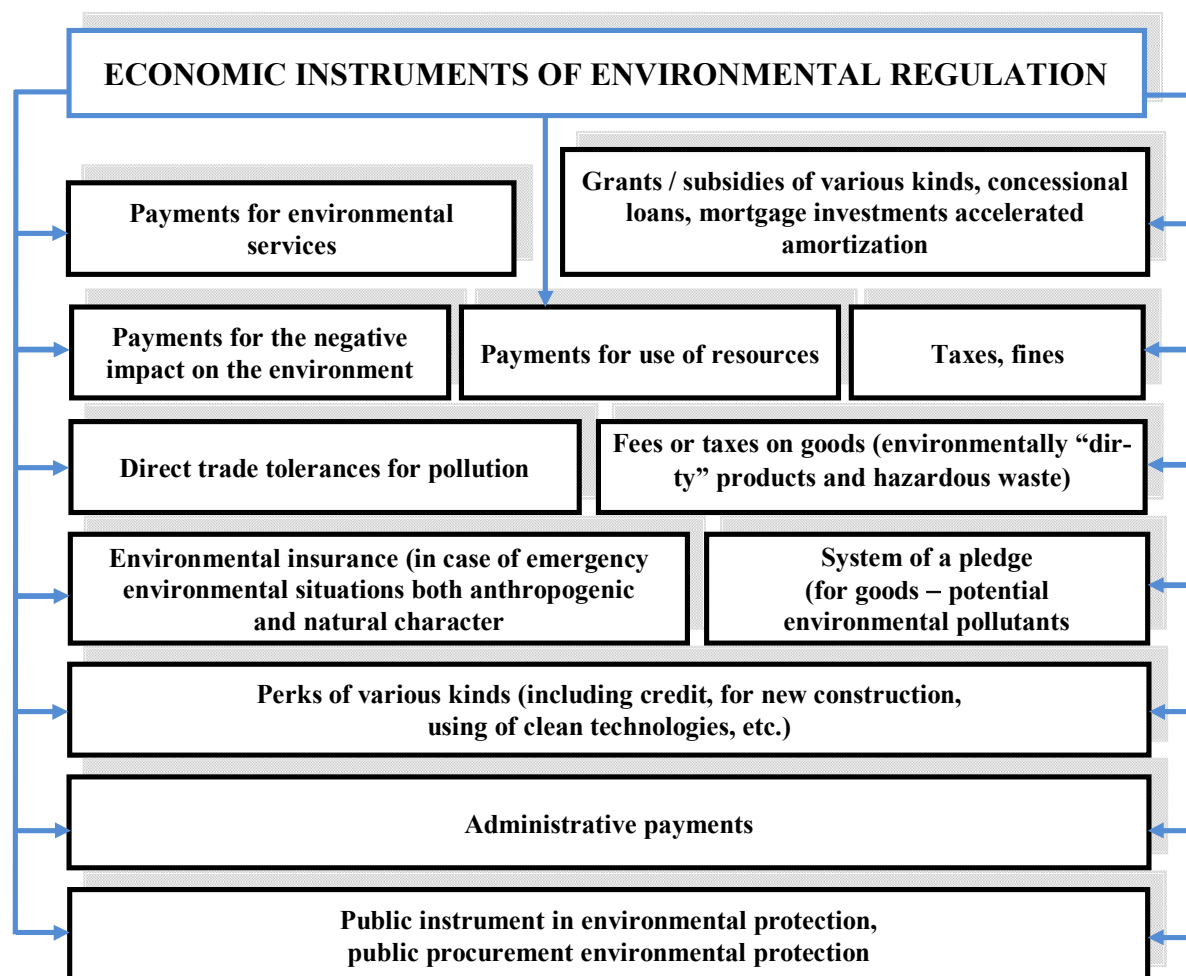
- enhance the role of budgets of different levels of funding environmental programs, environmental activities and environmental government agencies; improve the system of public environmental funds;
- implement of the system of environmental taxation and compulsory environmental insurance schemes;
- clearly define the sources of funding for environmental activities between the company's own funds, extra-budgetary and budgetary sources, as well as to ensure the reliability and sufficiency of the funds in the market conditions.

In countries with developed market economies with typically a significant advancement in the field of environmental policy, the hallmark of the existing system of environmental management is the use of economic regulators to promote environmental management while maintaining and strengthening the state and public control and regulation in the field of environmental environment.

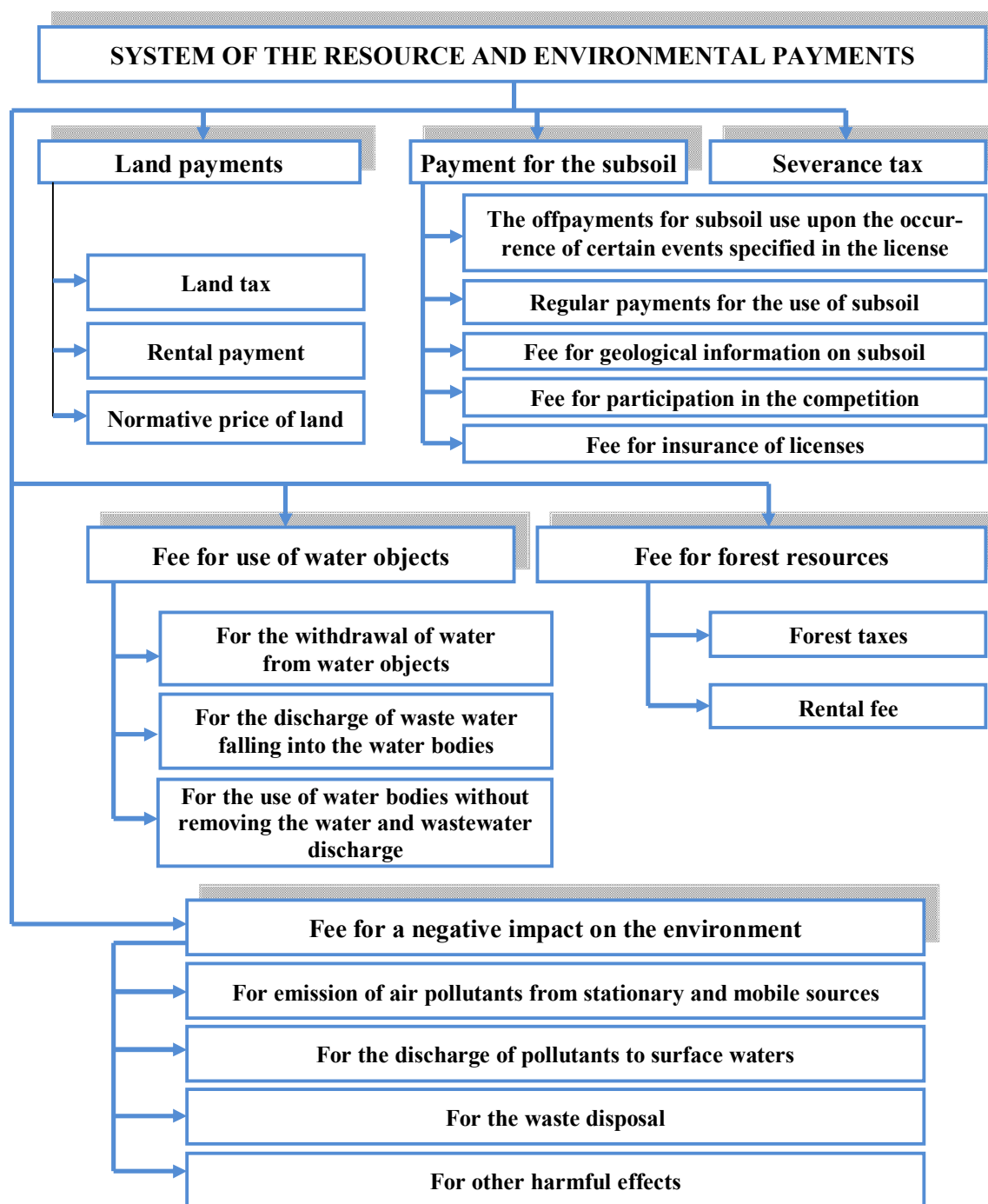
Economic methods of environmental regulation include a set of measures aimed at changing the attitudes of economic actors in a direction of changing favorable to the state of natural resources and the environment, by affecting the cost and benefits of the various options that are available to participants of economic activity.

The main purpose of economic methods is primarily in providing incentives of the environmental activities primarily through the introduction of environmentally friendly and environmentally sound technologies, and to find ways to minimize the economic costs which will be incurred by the company in order to achieve the desired state of the environment and its individual components.

Financing environmental measures in developed countries is both at the national and at the regional and local levels through national budgets, expenditures of regional and local authorities, facilities companies and enterprises. The main sources for expenditures for environmental purposes, as a rule, the government grants, loans, and loans with interest, fees and penalties for discharges and emissions, administrative fees, costs of environmental nature, payments for the use of natural resources, grants from the state and other tools (Figure 1).



*Fig.1.* Tools of the financial mechanism of nature management in developed countries



*Fig. 2.* Resource and environmental payments in the Russian Federation

In this case, the experience of developed countries shows that the focus is increasingly on not restrictive measures and punishment, but rewarding the efforts of those natural resource users whose economic behavior is to create the most favorable environment.

The existing financial mechanism of environmental protection in Russia is fragmented and consists of individual structural units. It consists of the following subsystems:

- financing of measures on the protection of the environment;
- forecasting and development of environmental programs;
- environmental pricing and taxation;
- payment for natural resources and environmental pollution;
- environmental insurance, etc.

Despite the importance of these sub-systems in environmental financing the degree of development and practical use of them is different, some of them have not yet been properly developed. To date, the basis of the mechanism of financing environmental protection constitute the payments for natural resources and payments for negative impact on the environment, including payments for emissions of air pollutants, water pollution, disposal of waste production and consumption, contamination of the subsoil and soil, etc. (Figure 2).

The introduction of charges for the use of natural resources and pollution of the environment in the Russian Federation was the result of changing relationships in the field of the nature management in connection with the transition to market economic principles. In this regard, one of the tasks of the national environmental policy is the organization of the work to ensure compliance with the principle of payment for environmental management. However, this principle does not always adequately reflected in the legislation on taxes and fees, which affects the receipt of resource payments to the budget of the country.

The implementation of the financing of environmental programs and environmental activities in the Russian Federation provides the possibility of using financing different sources, whose role varies. Among these sources, we can identify: budget funds (federal, regional and local budgets); funds of enterprises, institutions and organizations; environmental funds; environmental insurance funds; bank loans; voluntary contributions of the population; foreign legal entities and individuals, and other sources.

In general, the current Russian system of environmental financing is far from perfect and can not boast of any extensive array of different instruments and techniques, no significant grants from.

Since the early 90s there is a tendency to reduce budget expenditures for environmental protection in Russia. So, in 1995, for this purpose has been allocated 0.6% of the expenditure side of the budget, in 1996 it was 0.5%, in 1997 – 0.4%, in 1998 – 0.5% 1999 – 0.87% of the expenditure side of the federal budget.

The last decade government spending on the environmental protection was scanty value being in the range from 0.14 to 0.2% of total federal spending. In the federal budget for 2011, the costs of environmental protection are provided in the amount of 14.5 billion rubles. It corresponds to 0.14% of the total expenditures or 0.03% of GDP (compared to developed European countries, the level of environmental costs estimated in the range of 4–6%, in Japan – more than 8% of GDP) [1–3].

At the 2013 budgetary allocation for environmental protection in the Russian Federation are expected to reach 16.7 billion rubles or 0, 12% of the expenditures of the federal budget, which corresponds to 0.02% of GDP.

The plans of the Government of the Russian Federation is scheduled to increase to 2023 the share of the costs of environmental protection to 0.3% of the expenditure side of the federal budget, the problems, of course, does not solve. According to environmental experts, only to stabilize the environmental situation is required at least 2.5%, and for improving the situation need the facilities in the amount of 4%.

In 2000–2001 was liquidated Federal Environment Facility and, although formally environmental funds of the subjects of the Federation (regional funds) and district (municipal and local) environmental funds are not abolished, but their activity in the majority of cases declined. Thus, the environmental activities lost, though relatively small, but reliably collected target means at the federal, regional and local levels.

The final blow to this source of funding caused the collapse of the system of payments for environmental pollution due to environmental funds were formed. At the same time, through a system of environmental funds has financed provision by equipment Inspections of analytical control, works on environmental monitoring, environmental research, environmental education programs, support of the reserves and other protected areas, a publication of environmental literature and other kind of environmental practices. Upon destroying

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a system of environmental funds, these activities ceased in the vast majority of subjects of the Russian Federation.

In addition, under the conditions of Russian flexible mechanisms of environmental financing in the form of a market for pollution rights, environmental risks insurance and others is not being used.

In general, the existing system of government target environmental funds justified itself and, in our opinion, it is necessary its recovery. Means of such specialized funds could be one of the sources of funding of federal programs in the environmental field. Today, there is a reduction of funding and the closure of federal target environmental programs.

The abolition of federal target programs that have been funded primarily from federal and regional budgets (for example such as «Revival of the Volga», «Ecology and Natural Resources of Russia», «Waste», «State support of state natural reserves and national parks», «Protection of Lake Baikal», «Security and Development of Nuclear energy», «Energy Efficient Economy», etc.) has led to a decrease in the targeted budget funding for corresponding directions in the areas of environmental protection, which should be under constant supervision and care of the state. Since 2004, in the country is not realized none environmental program. Despite the fact that the current in the Russian federal target programs for the most part ineffective, and a number of them exist only on paper, under the closure were determined primarily environmental (or connected with protection of the environment) programs. This once again demonstrated setting the priority of the economy over the environment.

In the budget for 2013–2015 among federal target programs there occur only two environmental – Federal Program «World Ocean» and «Protection of Lake Baikal and the socio-economic development of the Baikal natural territory for 2012–2020». The share of program-oriented approach to solving environmental problems during this period is only 13–15% of the budget allocation.

Another important issue is connected with the fact that there is still the issue of payments for negative impact on the environment is not regulated in legal terms. The relevant law has not been adopted so far, although its necessity follows from the federal law «On Environmental Protection» 2002. The current system of environmental payments, not having the necessary legal framework, essentially exhausted itself and is now playing a purely symbolic role – especially because of the exceptionally low base rates. Although in the 1990-ies the system is practically and did not perform a regulatory function in the part of the capital environmental costs (due to the economic crisis and the difficult economic situation of enterprises), but it is done quite well with that function in the part the current activities of enterprises and served fiscal function. Now, this system of environmental charges is based on the extremely low base rates (approximately 10% of the rates taken in Kazakhstan, Belarus, Moldova, Georgia, and only about 2% of the rates acting in most countries of the European Union). That does not stimulate enterprises to implement environmental activities.

It should also be noted, and such, in our view, an extremely important moment (again, who had a negative impact on the environmental sphere) as a rejection of the use of funds incoming to the budget as payment for pollution. If, before the adoption of the new Law «On Environmental Protection» in 2002, the card was designed exclusively for the purpose of restoring damaged environment, which was confirmed in the previous federal law «On Environmental Protection» of 19 December 1991, then after the cancellation of the last and adoption of the new law regarding the prohibition of the use of payments for pollution of the environment for any purpose, other than environmental, disappeared.



Later, a similar approach was used in making new versions of the forest, water and other codes and federal laws. As a result, the sphere of environmental protection in Russia, has always funded at an unacceptably low level, and lost what little that was. According to Ministry of Economic Development of the Russian Federation, currently the payment within the standards for emissions (discharges) of pollutants and waste disposal is only 0.04–0.05% of the cost of industrial products, which actually imperceptibly as stimulating factor or punishment for environmentally hazardous activities.

Apart from the aforementioned shortcomings of the system of payments for negative impact on the environment, the practice of using them also showed that the set of substances for which payments were set far from complete. Besides that, there are major flaws with the point of view of the inflation factor: the value the correction coefficient is incomparable with the actual rate of inflation. As a result, the system of payments for negative impact on the environment, that is intended to be used as one of the sources of financing of the environmental sphere, and also to some extent, encourage enterprises to implement environmental protection measures, in reality (as a result of successive emasculating its essence) does not perform any fiscal or regulatory, much more stimulating, functions. The value of environmental payments should be such that not only create strong incentives for effective environmental management (and thus for the introduction of resource- and energy-saving technologies), but also be compatible (in terms of technical and technological feasibility of attainability of ecological and economic parity) with the conduct of economic activity in all sectors of the economy. In addition, these payments must receive sufficient funds to provide targeted funding for environmental protection.

Not correspond to the actual economic assessment and prevailing in the Russian system of payments for the use of natural resources. The level of these payments artificially low, and significantly (at least one order of magnitude), which proves ineffective implementation by the state the function of owner of the natural resources when huge part of the revenues from natural resource passes by budget.

In light of this, it seems necessary, first of all, the widespread introduction and development of the following elements of the financial mechanism for the implementation of environmental measures [4, 5, 6, 7, 8]:

- establishing tax privileges for environmentally responsible companies who outsource production to the best available technology (in particular, this may be exemption such enterprises from value-added tax (VAT) for a period of technical and technological re-equipment of fixed productive assets, ensuring resources saving and environmental safety of functioning production, etc.);
- the establishment of higher taxes for environmentally dangerous products and kinds of activities;
- preferential lending (for example, on the creation and implementation of new resource-saving and environmentally friendly technologies and equipment);
- accelerated amortization of the fixed productive assets of the environmental appointment;
- establishment of price premiums for green products or for the use of environmentally friendly equipment, etc.;
- introduction of various kinds of payments that could perform stimulating, compensatory, punitive functions, as well as regulatory, above permitted standard and other functions.

Use of regulators to encourage the greening of production, transition to the advanced technology, requires of modernization of tax and budget legislation. It is absolutely necessary to establish clear understandable rules for investors, for producers who, planning any economic activity, will clearly understand what would be the economic and administrative



implications of the lack of attention to the environment. Require as well a revision of penal sanctions for environmental offenses, the level of which is now so low that companies simply ignore environmental requirements. The problem consists first of all in the fact that on the one hand, to generate interest of business in environmental activities (including through the modernization of production and the introduction of new technologies, environmental innovation, etc.), and, on the other hand, environmental violations should be strictly followed the rigid responsibility, with using the appropriate penalties. In this case, success is possible only under condition of achieving a balance between sanctions for environmental violations and receiving the benefits of environmental activities. Greening the tax system will give an additional impetus for conducting the structural and technological policy, in particular, for the transition from the use of natural materials to using recyclable materials and waste.

Of particular note is the problem of development of economic mechanism of stimulating rational nature management and environmental protection, promotion and support of environmentally responsible business. As already mentioned, formed in the Russian mechanism of the environmental regulatory does not have a stimulating effect. This is manifested, in particular, in the imperfection of estimates of taxable base of using natural resources, including low interest rates of the payment for the use of natural resources and the restoration of natural resources; at extremely low base rate payments for negative impact on the environment; in unjustified reduction in the payment rates for the use of natural resources and their reproduction by individual of natural resources users; in an underestimation of the value of natural resources, the substantial absence of payments for re-use of collateral and natural resources.

Without the development and implementation of the relevant elements in a system of levers and methods of management a shift towards active transition to resource-saving and environmentally friendly technologies can not be achieved [9].

It's necessary the direct economic interest of business in solving environmental issues and the state's task – to create this interest, to support resource-and energy-efficient technologies and products, including through the introduction of market regulators in the field of environmental protection, which would stimulate enterprise actually reduce anthropogenic pressure on the environment, introduce modern resource-saving and environmentally friendly technologies. Business needs to understand that environmental protection – is not only an additional burden on the budget of the companies, but also one of the conditions to improve product quality, increase its competitiveness in world markets.

It is clear that the transition to eco-oriented technology – an extremely complex process that requires not only a huge time and money, but also the political will of the government. Such a transition is impossible without adequate serious preparation for the implementation of measures, including legislative and regulatory support, development of new technical and technological solutions, creating an effective economic mechanism of environmental regulation, etc.

In general, formed to date, financing in the Russian in the sphere of environmental protection (including budget) does not provide sufficient economic mechanism of respect for the right of citizens to a healthy environment. At the same time, environmental goals can the only really be prioritized and effective when for their achievement will be allocated prioritized resources.

Formation of adequate funding environmental sphere, that is necessary for the implementation of the strategic directions of environmental activities in the regions of Russia, requires, in our opinion, the realization of such measures as:

- attracting investment in environmental protection, especially at the expense of own funds of the companies;

- increasing the share of equity of the enterprises in activities connected with the natural resources conservation, a clear delineation of the sources of funding for environmental protection between the company's own funds, extra-budgetary and budgetary sources;
- improvement of environmental fees and charges for the use of natural resources,
- effective use of the federal budget;
- increase of funding for interregional environmental measures from the federal budget as a co-financing;
- strengthening the role of regional budgets in financing environmental programs and environmental protection measures, the increase in the regional budgets funds for environmental protection;
- increasing investment activity in the resource-saving technologies;
- securing long-term bank loans, introduction of a mandatory environmental insurance for a number of potentially hazardous industries and technologies, etc.

In order to facilitate and supplement the financing of environmental activities in the region as key directions must be the mobilization of domestic resources, which are the main source of funding for environmental measures and more effective use of external resources. The main focus should be placed on expanding the budgetary and resource base and improving the use of budget funds.

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