

## Issues of financial Assurance of Economy Greening in the Regions

Natalia V. Shekhova<sup>a,b</sup>, Ekaterina E. Kireeva<sup>b</sup>, Michael A. Nazarov<sup>a</sup>,  
Dinara R. Peskova<sup>c</sup>, Elena P. Gusakova<sup>a</sup> and Vladimir E. Dorozhkin<sup>d</sup>

<sup>a</sup>Samara State Economic University, Samara, RUSSIA; <sup>b</sup>Samara State Technical University, Samara, RUSSIA; <sup>c</sup>Ufa State Petroleum Technological University, Ufa, RUSSIA; <sup>d</sup>Russian State Vocational Pedagogical University, Ekaterinburg, RUSSIA.

### ABSTRACT

The relevance of the analyzed issue is caused by the need to internalize environmental externalities in the modern world. The purpose of the article is to examine the issue of financial support of the green economy using the example of the regions included in the Volga Federal District (VFD). The leading methods to the study of this issue is a comparative analysis of environmental taxes and charges in Russia and countries of the European Union (EU) and the analysis of environmental problems in the regions of the Volga Federal District, which allow identifying the shortcomings of the existing environmental payment system and proposing measures to modernize the system of financial support of the green economy. The key shortcomings of the existing environmental payment system: low rates of environmental payments; the inappropriate use of funds received from environmental payments; concentration of 97% of revenues from environmental payments in the federal budget. The contents of the article may be helpful for public authorities of general and special competence to develop the principal directions of environmental policy and plan activities aimed at improving the green economy.

### KEYWORDS

Internalization of externalities, payment for negative technogenic impact, payments for using natural resources, ecological payments, ecological tax

### ARTICLE HISTORY

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## Introduction

One of the most relevant problems of modern environmental management is internalization of ecological externalities. It is to be solved due to the expansion of negative impact of a technogenesis on the environment as this influence often goes out of the territories that were developed in an economic aspect.

V.V. Lebedev (2004), N.V. Pakhomov & K.K. Richter (2003) promoted the development of externalities theory; V.I. Danilov-Danilyan & K.S. Losev (2000)

**CORRESPONDENCE** Natalia V. Shekhova ✉ [nataly65vf@gmail.com](mailto:nataly65vf@gmail.com)

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researched ecological aspects of a sustainable development; S.N. Bobylev, O.V. Kudryavtseva & Ye. Yu. Yakovleva (2015), N.V. Khilchenko & T.M. Kudryavtseva (2012), V.M. Razumovsky (2003) researched mutual problems of environmental management economy, environmental protection and ecological management.

Now the solution of practical tasks of ecological externality internalization is complicated by the fact that there are no effective tools of externalities regulation. Today fiscal tools of internalization namely ecological payments are used in most cases, but this system has a number of drawbacks that significantly limit their effective application.

Also externalities regulation is complicated by essential territorial distinctions of the regions in an ecological situation. In this regard externalities internalization can be implemented only at the regional level in spite of the fact that the problem of externalities management cannot be solved without the development of corresponding federal economic and legal tools. Application of internalization methods at the regional level is caused by a problem of using ecological territory capacity.

At the regional level special ecological situation is formed under the influence of various endogenous and exogenous factors, its research and control can be carried out effectively only taking into account ecological situations in the neighboring regions and general global technogenic background. Regional features of technogenic impact on the environment and expenses on the compensation of ecological damage have to be studied as the fact that technogenesis influence on the conditions of environmental management is extremely big. At the regional level the ecological situation is getting critical. To take emergency measures on the restoration of environmental ecological properties financial resources are needed. Therefore within this article it is offered to improve the system of expenses on environmental protection and to create ecological funds at the regional level.

## **Methods and Results**

### ***Financial sources of economy greening***

There are two approaches to financial leverage concept: the American one and the European approach. The American approach defines financial leverage influence by valuation of correlation between net profit and NOPLAT. Financial leverage here shows the level of financial risk of the organization as the organization which uses borrowed funds has greater risks than the company working without it. The European approach characterizes the efficiency of borrowed capital usage. So the financial leverage effect means some surplus to ROE which was received by using the borrowed funds.

Ecological externalities internalization assumes the compensation of related damage (Dulal, Dulal & Yadav, 2015; Shekhova, 2016). In Russia a form of partial compensation of ecological damage is payment for negative impact on the environment; its share makes 53% of all incomings of ecological taxes and payments in the Volga federal district.

To identify the main problems of financial security of economy greening it is necessary to assess the existing situation both in Russia in general, and in the regions and to compare data with foreign experience. These tasks are worked

out in this research by means of general and special methods of scientific knowledge: analysis and synthesis, induction and deduction, scientific generalizations, graphic method.

In EU the payment for pollution makes a small share in total of ecological taxes. The payments connected with power, transportation and use of natural resources belong to ecological taxes (Grazhdankina et al., 2013; Kireenko, Baturina & Guolowan, 2014). The structure of ecological taxes and payments in Russia and member countries of Organization for Economic Cooperation and Development (OECD) is presented in Table 1.

**Table 1.** Comparative analysis of ecological taxes and payments in member countries of OECD and Russia

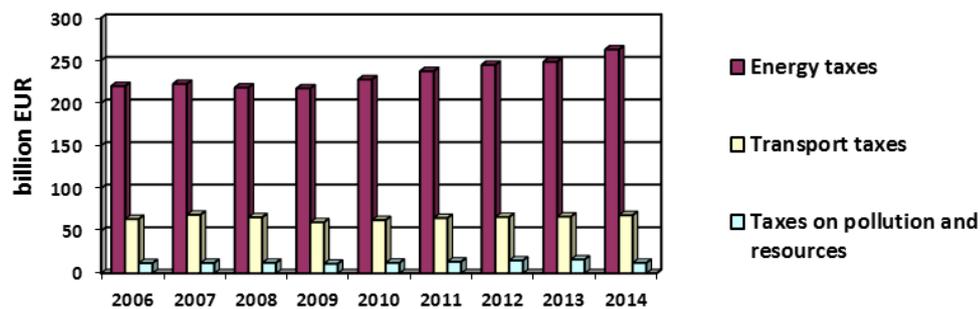
Groups of taxes and payments	Member countries of OECD	Russia
Energy	Energy taxes (taxes on energy products, including coal, oil products, natural gas, electric power, transport fuel, thermal energy, etc.)	No
Transport	Transport taxes (taxes on import, operation and utilization, on sale and vehicles resale, use of roads, plane tickets)	Utilization fee
Environmental pollution	Payments for environmental pollution (emissions in the atmosphere, sewage, noise, waste, etc.)	Payment for negative impact on the environment: emissions, dumpings, waste placement;
Use of natural recourses	Payments for use of natural resources (water intake, intake of biological resources, production of raw materials (for example, minerals, oil and gas), change of landscape and cutting down trees)	Tax on mining, Water tax, Payments at using natural resources (when using natural resources; for use of the woods; use of water biological resources; use of water bodies), Charges for using fauna items and for using the objects of water biological resources

Source: The consolidated budget of the Russian Federation and budgets of state non-budgetary funds. (2015).

Ecological taxes are more and more widely used in member countries of OECD to influence the behavior of economic entities - manufactures and consumers. The EU uses these tools more and more because they are flexible and economically effective to strengthen the principle "a pollutant pays" and to achieve goals of environmental policy (Environmental tax statistics, 2016). Many authors agree about the opinion that optimal environmental policy stimulates economic growth (Ebert & Welsch, 2011; OECD, 2010).



In EU ecological taxes are considered to be all taxes, tax base of which (physical unit or its assessment) has a proved specific negative influence on the environment (Environmental taxes, 2013). And the greatest share from ecological payments is power taxes 76,5% in 2014 (see figure 1). Information of 2014 is the most relevant regarding ecological taxes in the EU.



**Figure 1.** Structure of environmental charges in the European Union  
**Source:** Environmental tax statistics. (2016).

In Russian tax practice no payments can be referred to the group of power taxes in spite of the fact that fuel excise duty is connected with fuel sale. However this payment under the law does not belong to ecological payments. In 2015 gasoline excise rate on an ecological class 5 was 1,3 times less, than rates for gasoline of all other classes, in 2016 the rate for the 5th class is 1,4 times less in the first quarter and rates for all other lower classes (Tax code of the Russian Federation, 2016) are 1,3 times less in next quarters. And in 2016 all rates were raised on average by 40% since January 1 and then by 30% since April 1 in comparison with the size of the rates operating in 2015. But since January 1, 2017 gasoline excises for all classes will be lowered by 10-25% to implement so-called "tax maneuver". Therefore, the existing practice of fuel taxation does not provide incentives to decrease negative impact on environment.

Transport taxes take the second place in ecological payments in the EU. In Russia a car recycling tax is possible to be referred that represents a single payment in favor of the government taken from the buyer of a vehicle to ensure ecological safety of environment and protection of life and health from harmful transport effects. In other words, the money received as a fee upon car purchase has to be directed to its utilization according to environmental standards. The amount of car recycling varies depending on vehicle manufacture year, its weight and other physical characteristics. Car recycling tax from vehicle manufacture date of which more than 3 years passed is on average twice higher, than for a new vehicle. Other payments connected with transport sale and operation in Russia such as transport tax, car sale excise are not connected with economy greening at all.

So, in EU energy and transport taxes make in total about 95% of all incomings from ecological payments. In Russia only car recycling tax can be allocated in these groups of taxes, but it takes 1,6% of incomings from all ecological payments.

The third group of ecological taxes in EU is the most insignificant in terms of incomings. These are payments for environmental pollution and use of natural resources. In Russia the share of these payments makes more than 96% (see Table 2).

**Table 2.** Incomings of ecological payments in the consolidated budget of the Russian Federation in 2014

Ecological payments	Roubles	% to GDP
Tax on mining and mining regular payments	2 929 957 787 538.79	4.10
Water tax	2 202 946 044.09	0.003
Charges for using fauna items for using the objects of water biological resources	5 166 354 966.07	0.01
Payment for negative impact on environment	27 681 091 680.19	0.04
Payments for using natural resources, for using the woods and water bodies	128 627 882 537.68	0.18
Utilization fee	102 505 206 703.36	0.14
<b>Total</b>	<b>3 196 141 269 470.18</b>	<b>4.48</b>

Source: The consolidated budget of the Russian Federation and budgets of state non-budgetary funds Source: (2015).

The volume of incomings of ecological payments in Russia is more than in EU and also makes 4,48% of GDP (4,35% in 2013). This indicator value is caused by a large volume of various resources in Russia, first of all, hydrocarbonic raw materials. A similar indicator in EU is only 2,5% of GDP (see Table 3).

**Table 3.** Ecological payments in the European Union in 2014

	(million EUR)	(% of total environmental taxes)	(% of GDP)
Total environmental taxes	343 641	100,0	2,5
Energy taxes	263 031	76,5	1,9
Transport taxes	68 322	19,9	0,5
Taxes on pollution and resources	12 288	3,6	0,1

Source: Environmental tax statistics. (2016).

At the same time certain EU countries have a higher share of ecological payments in GDP similar to the Russian indicator. In relation to GDP ecological tax revenues reached a maximum in Denmark – 4.1% (4,3% in 2013), then comes Serbia (4%), Slovenia and Croatia (on 3.9%). The lowest indicators of ecological tax' incomings in GDP were recorded in Lithuania, Slovakia and Spain - it is lower than 2.0% (Environmental tax statistics, 2016).

In spite of the fact that incomings from ecological payments in Russia are higher, than in any of EU countries, public expenditures on environmental protection make only 0,7% of GDP that are less than incomings by 6,2 times. In EU countries at smaller incomings from ecological payments, public expenditures on environmental protection make about 0,7% of GDP (Environmental protection expenditure, 2015). Insufficient financing of ecologically significant events worsens ecological situation in the country (Bobylov, Kudryavtseva & Yakovleva, 2015).



One more problem of financial security of economy greening is that 97% of all incomings from ecological payments are accumulated in the federal budget. And the mining tax makes nearly 92% of all incomings from ecological payments, at the same time more than 98% of incomings of this tax are accumulated in the federal budget. Water tax and utilization fee come to the federal budget in full (Kopytova, 2012). The only payment which is enlisted in the consolidated budget of the Russian Federation entities is a payment for negative impact on the environment (see Table 4).

**Table 4.** Distribution of ecological payments on the budget levels in the Russian Federation in 2014

Ecological payments	Federal budget		Consolidated budgets of Russian Federation entities	
	mln. roub.	Share in % to the incomings into the consolidated budget of RF	mln. roub.	Share in % to the incomings into the consolidated budget of RF
Mining tax and mining regular payments	2 881 987.30	98%	47 970.49	2%
Water tax	2 201.47	100%	1.48	0%
Charges for using fauna items and for using the objects of water biological resources	3 101.93	60%	2 064.42	40%
Payment for negative impact on the environment	5 514.23	20%	22 166.86	80%
Payments at using natural resources, for using woods and water bodies	117 994.27	92%	10 633.61	8%
Utilization fee	102 505.21	100%	0.00	0%
<b>Total</b>	<b>3 113 304.41</b>	<b>97%</b>	<b>82 836.86</b>	<b>3%</b>

Source: The consolidated budget of the Russian Federation and budgets of state non-budgetary funds (2015).

At the same time externalities management at the regional level can be operating more effectively at due financial security. Regions are not provided financially to implement expenses on environmental protection.

The financial leverage shoulder characterizes the strength of influence of its positive and negative effect received by the degree of financial leverage.

## Results

### *Problems of the regions regarding financial expenses assurance on the environment*

Management of ecological externalities can be implemented effectively at the regional level where there is an opportunity to define factors of an ecological situation precisely. At the regional level it is possible to make a quick and in time decision on internalization, that will reduce the risk of environmental pollution.

The ecological situation in the Volga federal district is unfavorable. On three of seven main ecological indicators the situation in Volga federal district is significantly worse, than across Russia in general, environmental problems requiring urgent solution confirm that fact (see Table 5).

**Table 5.** Comparison of main ecological indicators in Russia and the Volga federal district

Ecological indicators	Russian Federation	The Volga federal district
Intensity of emissions on GDP unit (GRP), t/million rubles.	0,509	0,608
Share of urban population living in the cities with high and very high level of pollution of atmospheric air, %	19	6
Share of polluted sewage in total amount of dumpings, %	33,6	36,5
Share of water tests to quality standards, %	90,9	92,9
Intensity of waste formation on GDP unit of (GRP), t/million rubles.	84,603	18,339
Intensity of the formation of solid utility waste, cubic m / persons.	2,6	2,6
Share of used and neutralized waste, %	45,6	27,6

Source: The state report "About the condition about environmental protection of the Russian Federation in 2014". (2015).

One of the main problems, as well as in any other spheres, is insufficient financing of economy greening in the regions. In the regions of the Volga federal district expenses on the environment is 0,03% to GRP while incomings from ecological payments are 0,09% to GRP. Therefore, the most part of the incomings from ecological payments is blended in the regional budget and only their third part goes to environmental protection (see Figure 2).

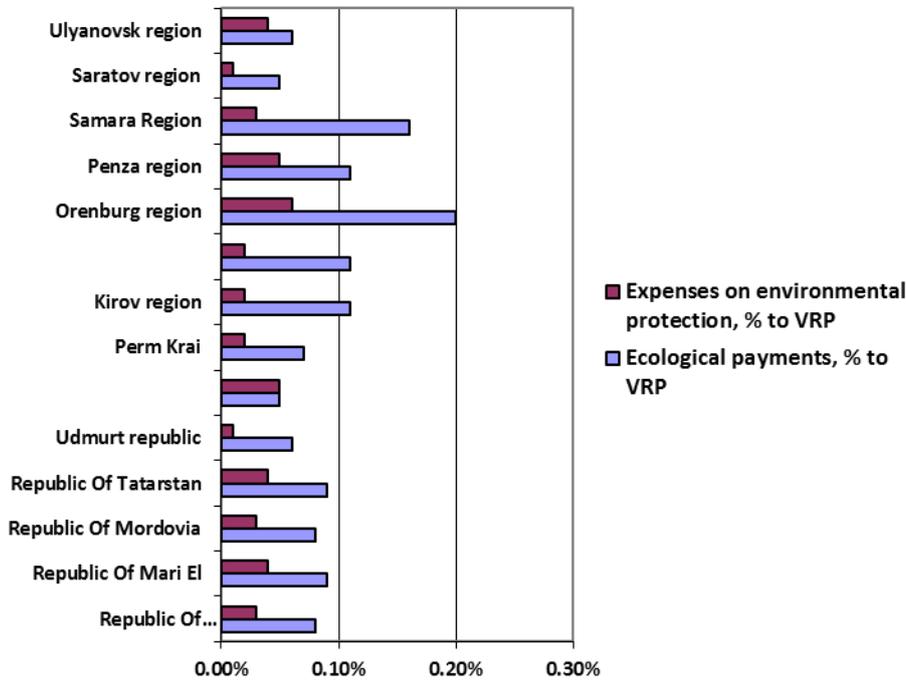


Figure 2.

A ratio of ecological payments and expenses on environmental protection in the regions of Volga federal district in % to VRP

Source: Open information resource according to the analysis of financial and social and economic development of territorial subjects of the Russian Federation on the basis of official sources: Ministry of Finance of the Russian Federation, Federal Treasury, Rosstat. (2015).

In the certain regions such as Republic of Mari El, the Kirov region a big share of ecological payments makes payments for using the woods, but in the most regions of the Volga federal district it is a payment for negative impact. In the Republic of Tatarstan and the Samara region the share of payments for negative impact in ecological payments exceeds 80%. The structure of incomings from ecological payments in the regions confirms that negative technogenic industrial impact on the environment is big in the Volga federal district. That is why this district requires special attention to finding a compromise between preservation of the industrial potential connected with considerable technogenic impact on the environment, and improvement of an ecological situation in the district.

To achieve this compromise the existing mechanism of ecological payments is to be modernized, the main shortcomings of this mechanism are the following.

Firstly, now in a real law-enforcement practice in the Russian Federation the exact distinctions between ecological taxes, payments and charges that are stated in standard and legal documents are not considered. In practice all this three types of fiscal tools are considered as synonyms, however in theory they differ essentially. So, the tax which main objective is to replenish the budget is individually non-reciprocal. The objective of any payment charging is to restrict

any activity, payment is individually required. For example, the ob of collection of ecological payments is restriction of the activity which is followed by negative technogenic impact on environment.

After in 2002 in Russia the federal system of off-budget ecological funds was liquidated, ecological payments became fiscal tools. All financial recourses coming from their charging are blended in the budget and are directed on certain purposes including those which are not connected with the implementation of environmental measures (only the third part of incomings from ecological payments goes to the environmental protection).

Secondly, small rates of ecological payments do not allow them to carry out not only fiscal, but also regulating function (Golubtsova, 2012) which stimulates natural recourses users to reduce negative technogenic impact on the environment by means of influence on their property interests. In this situation it becomes more favorable for natural recourses users to pay for pollution and continue to pollute, than to invest into environmental protection. Specific weight of ecological payments in GDP of the industry is 0,05%. To achieve economic payback of environmental events the range of current base rates has to make from 18 to 58 times (Khilchenko & Kudryavtseva, 2012). Then the enterprises will become more interested in the investments to equipment modernization within the economic goals.

Rates of ecological payments are low owing to the fact that their indexation does not consider a real inflation rate, so it discredits the principle "the pollutant pays". Within four years from 2012 to 2015 lag of payments indexation from a real inflation rate made about 15%. Such situation does not promote internalization of ecological externalities (see Table 6).

**Table 6.** Ratio of an inflation rate that is taken into account at the indexation of ecological payments and an official inflation rate in the country

Year	Inflation, %	Inflation rate taken into account at the indexation of ecological payments, %	Divergence, %
2012	6,58	6,2	-0,38
2013	6,45	7,3	0,85
2014	11,36	5,9	-5,46
2015	12,05	5,2	-6,85
2012-2015	41,57	26,9	-14,67

Source: Inflation rate in the Russian Federation. Table of inflation. (2016).

Considering the increase of base rates and an inflation rate at the indexation of ecological payments it is necessary to apply rates differentiation taking into account "coefficients of an ecological situation and ecological importance" (Khilchenko & Kudryavtsev, 2012). It will enable to consider priorities of regional environmental policy.

Thirdly, today there is no cost control mechanism that comes from charging ecological payments. The reason for that is the introduction of the first part of the Tax code of RF which changed the concept of payments for negative impact on the environment into the concept of an ecological tax and one more reason is the abolition of the system of off-budget ecological funds. These funds were redistributive, it means that payments come from pollutants, and come back to them to implement certain environmental events. Also these payments can be spent on the improvement of an ecological situation in general that enabled to



operate ecological activity and to implement it according to common objectives of environmental policy.

The liquidation of the system of off-budget ecological funds intensified the situation with financing of environmental programs at all levels: federal, regional and local. In addition, natural resources users lost an opportunity to receive finance to implement environmental events. All these factors reduced the efficiency of ecological payments as regulation tools of ecological externalities.

Fourthly, there is a concentration of incomings from ecological payments in the federal budget. As it was already told earlier, 97% of all incomings from ecological payments are accumulated in the federal budget. Payments into the federal budget such as mining tax, water tax, utilization fee are logic. But it would be more reasonable to direct 100 % of charges for using of water biological resources and 100% of payments for negative impact into the regional budgets if there is cost control mechanism.

Now incomings from charges of water biological resources are distributed as follows: 80% – in the regional budget, 20% – in the federal budget. The structure of incomings distribution from payments for negative impact is presented in a Table 7.

**Table 7.** The distribution of payments for negative impact on the environment

	2005-2015	from 1.01.2016
Federal budget	20%	5%
Regional budget	40%	40%
Municipal budget	40%	55%

Source: According to the Budget Code of the Russian Federation of 31.07.1998 number 145-FZ (2016). Articles 51, 57, 62.

Ecological payments into regional budgets would be more effective as within the region externalities management is more efficient, than within the country.

Offers on modernization of system of financial security of greening of economy.

## Discussions

The modernization of the system of ecological payments in Russia has to consider, first of all, a payment for negative impact as this payment makes the greatest share of incomings connected with environmental management in regional budgets. Some changes are included into this system by means of changes in Federal Law "On Environmental Protection" (2015):

1) the objects influencing negatively on the environment depending are divided into four categories;

2) the enterprises of the first category making considerable negative impact on the environment and referring to those which apply the best available technologies have to apply technological standards;

3) the coefficient for temporarily allowed emissions, temporarily allowed dumpings and industrial and consumption wastes with the excess limit on their placement from 5 to 25 is increased;

4) the coefficient 100 is established for the volume of emissions of polluting substances, dumpings exceeding volume or weight established for the objects of

category I and also exceeding volume or weight specified in the declaration on impact on the environment for objects of category II.

The main task of system modernization of ecological payments is that they could carry out all three functions: compensatory, stimulating and economic. But there is a problem that compensation of ecological damage, stimulations of reduction of negative technogenic impact and ensuring payments are not compatible with each other. For example, the system of payments that creates real incentives to pollution reduction will not be able to provide essential financial incomings. And, on the contrary, the system providing increase in financial incomings can not create incentives to reduce ecological damage.

Generally speaking, it is impossible to increase financial incomings introducing the system of ecological payments. It can be possible, but only if the budget will be replenished due to the deterioration of an ecological situation. But in this case it is necessary to understand that finally we will come up with the fact that nobody fills the budget. If the main objective of introduction of the system of ecological payments is the improvement of an ecological situation, then it is necessary to set other objectives and to find alternative solutions.

Taking all above mentioned into consideration, and also considering the shortcomings of the system of ecological payments today, we offer the following events which need to be carried out for its improvement.

Proposition 1. It is advisable to change the approach to defining the object of ecological payments. The object should be the use of ecological territory capacity as a natural resource, but not negative impact on the environment. It is logical to consider negative impact (pollution) only as one of consequences of such use. To implement the specified approach it is necessary to change essentially Federal Law "On Environmental Protection" as the current version of this law does not allow to replace the pollution pays principle by a pays principle of ecological territory capacity.

According to available statistical data, 90% of polluting substances come to the environment within standards. At the same time about 80% of ecological payments fall into the share of payments for standard influence. For this reason the Ministry of Natural Resources of RF considers it to be necessary to raise payments for negative impact within standards. The real policy in the country was directed to it. But the described approach contradicts basic concepts on which the Federal Law "On Environmental Protection" is constructed.

So, the certain law refers waste disposal to one of the types of negative impact on the environment. But waste disposal has not only ecological (negative) meaning, but also technological (positive) meaning as it represents a technological act, one of production stages. Therefore, waste disposal has to be considered as use of ecological territory capacity, but not as negative technogenic influence. It is obvious that payment for waste disposal should be raised, but at the same time it is not negative influence. There is one more rather valid argument to raise payments for use of ecological territory capacity as an original natural resource.

Proposition 2. It is necessary to change methodological approach to ecological rationing essentially. The existing system of ecological standards does not meet modern scientific expectations of environmental management rationalization and therefore needs a certain adjustment. The goal of ecological



rationing should be the definition of complex indicators of ecosystems' stability that provide maintenance of technogenic influence at the permissible level and it allows keeping favorable conditions for the environment both for human health, and for plants and animals (their physiology, survival, growth, development, ability to reproduction, specific structure of communities, etc.).

At ecological rationing it is necessary to apply a landscape (geocological) approach that is focused on biotope preservation, and not only a biological approach, that is focused on biocenosis as an object of negative impact (Shekhova, 2015).

In this regard there is an issue of creating the system of ecological standards that is applied for certain area. Here the most complex problem which solution requires implementing additional research is the differentiation of standards of negative impact on a certain ecosystem, each of which is unique in its own way.

Proposition 3. It is necessary to observe the principle of strict target use of financial recourses that come from ecological payments. It is necessary not only to carry out fund raising, but also to provide ecological tolerability and economic efficiency, their distribution and expenditure. If these conditions are not met, then it will be impossible to achieve the objectives for the sake of which the principle "the pollutant pays" is realized. The irrational and inappropriate means expenditure will interfere with the implementation of measures to reduce negative technogenic impact on the environment. The principle observance of target use of recourses can be provided by the system recovery of governmental ecological funds, and also by the introduction of the principle of claimed recourses expenditure.

The main reason for system liquidation of off-budget ecological funds is the contradiction of tax and budget legislation that is being formed to the logic of legal regulations of environmental legislation though in some documents there is mentioned economic inefficiency of specified funds and numerous cases of inappropriate use of their recourses.

The principle of target use of recourses from ecological payments that come to off-budget ecological funds contradicted the standards of the Budget code of RF according to which budgets income that are formed at the expense of tax and non-tax income types cannot have a target focus and to be coordinated to certain budget expenses. The exception is made, first of all, for the income of specialized budgetary funds to observe the principle of common (cumulative) covering of expenses; secondly, for the income of state non-budgetary funds - Social Insurance Fund, Fund of Compulsory Medical Insurance, the State employment Fund of RF, the Pension Fund (The Budget code of the Russian Federation, 2016).

Considering all above mentioned, it is possible to draw a conclusion that providing in the modernized system the ecological payments for environmental pollution are recognized as non-tax, the principle of target use of recourses that come from their charging within the Russian budget legislation will not be realized until the system of state ecological funds (off-budget or target budgetary) is restored.

The decision on giving the status to ecological funds as off-budget (not non-target budgetary), is more preferable. The reason is that at consolidation of

ecological funds into the budgets of various levels, the transfer schemes from ecological payments become very diverse and essentially complicated. It is explained by that fact that it is very difficult to combine appropriate organizational mechanisms of requirements combination of budgets formation procedure with real practice of funds operation.

Practical consolidation of ecological funds into the budgets of appropriate levels assumes the transition from existing formation schemes of revenue part of funds to the system where tax inspections collect payments into treasury accounts, and only after that recourses are given to implement environmental events. Practical experience already showed negative consequences of such funds consolidation into budgets.

The principle of claimed effect can essentially increase the efficiency of public environmental policy. It means that a recipient independently declares target use of recourses provided that he achieves economic, ecological and social results. The principle of claimed effect will enable to provide, firstly, the transparency of the relations within financial streams control; secondly, to allocate these funds to environmental protection.

Proposition 4. The system of ecological payments has to be regulated by various branches of the legislation. The pays system of environmental management should not operate within the tax legislation (It has to occur if the corresponding chapter of the second part of the Tax Code of the RF is put into force). It is obvious that taxes are a serious economic incentive; they represent a fiscal tool, that serves, first of all, to replenish the state treasury, and not to provide ecological safety.

Considering all above-mentioned, we offer the following structure of ecological payments system.

1) Ecological tax is a non-reciprocal, fiscal payment (charged at the federal level) is paid by people and legal entities in a form of conveyance of economic control or operational recourses management that belong to them on an ownership right for production or consumption of ecologically harmful production, and also products which are produced and utilized by ecologically unsound technologies individually.

According to the Russian ecological legislation, ecological payments are charged for negative impact on the environment, for its pollution. The tax, unlike payment, is charged from positive result of the activity of an economic entity (Hemmings & Tuske, 2015), that is from monetary incomes that are gained from products and services.

According to the Tax code of RF, production volume, cost, the volume of investments, etc. can be taken as a tax base. As a tax base of an ecological tax this statutory instrument determines a lot of emissions (volume of dumpings) polluting substances, the volume of disposable waste, actual level of harmful effects on the environment. All components have no added value and in this connection it is impossible to apply a monetary form to them as a cost universal equivalent. To charge an ecological tax in a natural form is nonsense. For this reason products, production, processing, storage, transportation, consumption and utilization connected with negative technogenic impact on components and environmental elements have to be charged with ecological taxes. The rates of an ecological tax have to be established in absolute expression from a unit of



measure, or as a percentage to the production cost. The purpose of ecological tax introduction has to become, firstly, the reduction of all types of waste by means of recycling, processing and use; secondly, the greatest possible reduction of volumes of natural resources that are used in the production sphere. According to experts forecasts, the volume of financial resources which come at the expense of ecological taxes will exceed the recourses received from ecological payments. Corresponding privileges on ecological taxes have to be provided only as support to a positive externality (Greene & Braathen, 2014).

So, the retention of operating ecological payments system at the simultaneous introduction of ecological taxes will promote the creation of reliable financing sources of environmental events that are directed to reduce ecological damage and externalities internalization (Nazarov & Loshkareva, 2014).

Besides federal ecological tax it is expedient to keep natural recourses payments that are charged at the federal level: mining tax, land tax and water tax.

2) Payment for using ecological territory capacity (it is charged at the regional level) is non-tax, compensation, individually paid payment which is paid by the subjects of economic and other economic activity which are carrying out environmental pollution, and is charged to compensate negative consequences of this pollution. The object of this payment are emissions and dumpings of polluting substances, (including those, negative consequences of which for the environment can't be register in a local location of a pollution source).

The payment for using ecological territory capacity has to be carried out by all pollutants. As for mobile pollution sources such as railway and motor transport it is difficult to apply the concept "using ecological territory capacity", the payment for negative impact should be replaced with an ecological fuel excise. Negative impact from transport is directly connected with the volume of fuel consumption. The existing fuel excises insignificantly stimulate a consumer to purchase fuel of higher ecological class (fuel excise of the 5th class and all other classes differs by only 1,3 times), and in the long term the government is planning to lower fuel excises. Therefore this payment has to be modernized to perform an ecological function by it.

The ecological damage considerably differs from using the fuel of this or that class. The emissions of the car (Euro-4 engine) are 5,5 times less, than of the car (Euro-2 engine) (Leontyeva & Mayburov, 2015). Fuel excise rates are necessary to be differentiated depending on an ecological class of fuel. Using ecological taxes will promote problem solution of economy greening (Ian, 2012; Ekins et al., 2011).

Besides, not only enterprises, but also households have to be payers for using ecological territory capacity. In the countries of the European Union the share of incomings from ecological payments from households in the field of energy-producing industry is 45%, and in the field of transport is 68%. In certain countries indicators of a share of ecological payments from households in the field of power industry are much higher: in Slovenia (70%), Cyprus (65%), the Netherlands (58%) and Denmark (57%), and also in Serbia (89%). (Environmental tax statistics, 2016). In Russia taxation of ecological payments is still unknown.

Besides the regional payment for using ecological territory capacity it is expedient to keep natural resource payments that are charged at the regional level: payment for using the woods, payment for using water bodies, payment for using fauna items and for using water biological resources.

3) Ecological penalty (it is charged at the local level) is the sum of compulsory withdrawal which is carried out according to the legal responsibility provided by certain legislation branches (civil, administrative, law and others).

The updated structure of ecological payments will fully represent all spheres of environmental management (energy production, transport, use of resources, pollution) and will be closer on the coverage to structure of ecological payments in the European Union.

If in environmental management the propositions considered above are taken into account, then it is represented that the mechanism of ecological payments will become really an operating tool to regulate ecological externalities and reduce negative technogenic impact.

## Conclusion

By the results of conducted research the following conclusions are formulated.

1. The existing mechanism of ecological payments system does not allow it to carry out a regulation function of ecological externalities and therefore does not promote economy greening. The volume of finance coming from ecological payments exceeds more than six times real public expenditures on environmental protection.

2. Now in the regions of the Volga federal district there are a number of environmental problems demanding urgent measures. However, the possibility of their timely decision is problematic because of the fact that incomings from ecological payments are blended in regional budgets, and only one third of them goes to environmental purposes.

3. The main shortcomings of ecological payments system are lack of regulated differentiation between this system elements, low payments rates, inappropriate spending of the recourses, concentration of financial recourses in the budget of the federal level.

4. To achieve the goal of economy greening of environmental management by authors are offered:

— transition from the payment for negative technogenic impact to the payment for using ecological territory capacity as a natural resource;

— change of a biological approach to ecological rationing into a landscape approach;

— ensuring strict target use of financial recourses coming from charging ecological payments by creating the system of off-budget ecological funds;

— consolidation of incomings from ecological payments into the funds of regional level;

— introduction of a federal ecological tax.

## Disclosure statement

No potential conflict of interest was reported by the authors.



## Notes on contributors

**Natalia V. Shekhova** is Dr. of Economics, professor of Samara State University of Economics, Samara, Russia and Dr. of Economics, professor, Head of Department of Samara State Technical University, Samara, Russia.

**Ekaterina E. Kireeva** is PhD of economics, Associate professor of Samara State Technical University, Samara, Russia.

**Michael A. Nazarov** is PhD of economics, Associate professor of department of taxes and taxation of Samara State University of Economics, Samara, Russia.

**Dinara R. Peskova** is Dr. of Economics, professor, Head of department of economic theory, Ufa state petroleum technological university, Ufa, Russia.

**Elena P. Gusakova** is PhD of economics, Associate professor of department of Economics and agricultural production of Samara State University of Economics, Samara, Russia.

**Vladimir E. Dorozhkin** is graduate student of Russian State Vocational Pedagogical University, Ekaterinburg, Russia.

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