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METHODOLOGICAL BASIS FOR ENVIRONMENTAL AUDIT, RESULTS OF THE AUDIT, PREPARATION OF AUDIT REPORTS AND OPINIONS, AND WAYS TO IMPROVE THEM

Мақолада ресурсларни ифлосланишини камайтиришда экологик аудитни мақсади, роли ва усуллари кўриб чиқилган. Глобал атроф-мухитнинг бузилишида ва табиий ресурслардан нотўғри фойдаланишни бартараф қилиш ва уларни асраш, сақлашда экологик аудитнинг роли.

В статье рассмотрены цель, роль и методы экологического понижения загрязнения ресурсов. Роль экологического аудита в устранении последствий глобального нарушения окружающей среды, для сохранения и правильного использование водных ресурсов в Республике Узбекистан.

Key words: *environmental audit, environmental protection, environmental damage, aggregates, securing natural, a decline, control areas, a broad application, the contamination, forecast changes, environmental violations, negative consequences.*

In 2013 the country’s GDP grew 8%, also the producing goods increased 8,8%, agriculture 6,8%, retail turn over-14,8%.

The degree of inflation was predicted and it was 6,8%.[1].

Relations in the field of environmental protection and rational use of natural resources in the Republic of Uzbekistan is regulated by the Republic of Uzbekistan on Nature Protection, as land, water, forest legislation, the legislation on subsoil use and protection of atmospheric air, flora and fauna, other legislative acts of the Republic of Uzbekistan[2].

Tashkent - the capital of the Republic of Uzbekistan and the largest city in Central Asia, located in the eastern part of Uzbekistan, an area 334.8 km2 and is the administrative, political, economic, cultural center in Uzbekistan. The population is 3.3 million people. Administratively divided into 11 districts. Power of Water Works is 2326 m3/day from 7 intakes, centralized water supply of 99, 5%. The district heating system of the city of Tashkent includes 9 large thermal power plants of Tashteplotsentral, Inc. Tash TS GAK Uzbekenrgo providing 88% of the load to join. The city has more than 34,500 different companies, of which about 27,400 are micro firms, 4,950 small and medium-sized enterprises in 2230 with foreign investments[3].

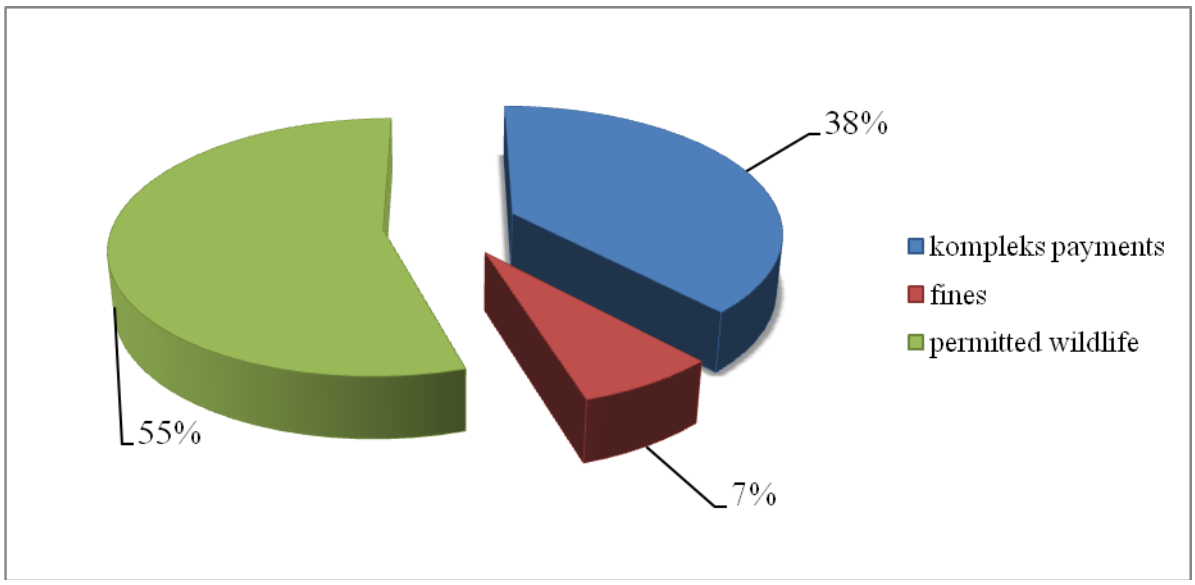

Figure1. Structure formation MFOP.

The city is made aircraft, railroad cars, tractors, excavators, many types of agricultural machinery, electrical transformers, various instruments and mechanisms, medical and electronic equipment, and more. In the Republic of transformations is the harmonious development and human well-being, the creation of conditions and mechanisms of the interests of the individual, but the need to take into account the concept of differentiation of the economic impact of environmental violations and environmental damage. Damage to the environment - is the damage caused to it by human activities or natural disasters. In 2010, MFOP received 498.4 mln.soum the I half of 2011 - 328.9 mln.soum. (Figure 1.) *Structure formation MFOP*. Specially authorized bodies for the protection of nature on the territory of Tashkent is Tashkent City Committee for Nature Protection, created in 1988, part of a unified system of the State Committee of the Republic of Uzbekistan and its functioning as a unit territory City Committee for Nature Protection realize comprehensive environmental management activity in the widespread use, mainly economic methods of environmental protection and use of natural resources, establishes and leads to natural resources tailpipe emissions (discharges) of pollutants into the environment; imposes on businesses and individuals claims for damages for harm to nature as a result of pollution and natural resource management. Instrumentally environmental control design and deliver specialized laboratory Uzstandart accredited and certified GosSIAK, 42 of which utilized the procedure for determination of pollutants in the air, 22 methods for the control of water resources and 10 procedures for the control of soil. Currently, the following approaches to the assessment of environmental damage: direct and indirect. Let us dwell on the direct approach. When it all identified losses translated into cash, are summarized[4].

The direct approach uses the following methods: control areas, analytical relationships and combined. During 2011 and the first half-year 2012-g. carried out in 2078 by the state control facilities. Due to increasing demands on the part of the inspection of the violators of environmental legislation effective due diligence is maintained at the level of 100.0%.

If destroyed or damaged as a result of the resource used or could be used in the economy, the loss of his money is exposed Estimates, and we can talk about the economic effects of environmental violations. It includes direct and indirect impacts on resources, actual and potential losses, the cost of eliminating the effects of pollution, as well as losses due to deteriorating health.

Proper assessment of the economic impact of environmental violations (which for brevity will be called environmental) is very important for the economy and is a necessary part of an environmental audit of all kinds; indispensable for investment projects and environmental insurance[5].

When the first method is that the state of the recipients selected for the evaluation of the damage depends only on the test exposure. Indicators of the recipients are compared with those in the control area, where all values reassumed to be known. But because of the complexity of selection of a control area, as much as possible similar in the studied parameters on this, this method is difficult to use directly. Computer modeling in this area substantially alleviates the problem.

The method uses the analytical relationships aggregates data on the impact of the studied factors on the condition of the recipient. Using the obtained regression equations expressing the influence of this factor on the parameters studied, allowing us to make estimates and forecasts. What is essential is that the implementation of this method requires a large amount of information and, of course, the modern methods of data processing.

The combined method can be used when possible to calculate the entire loss, using only one of these methods. In this case, some parts of it are calculated using the first of them, the rest of the second. With indirect approach, all of the negative consequences of the influence of a factor on the environment can be fixed with a special system of standard fixed parameters, which creates a great opportunity for a broad application of this approach. The examples below are proof of that.

The Republic of Uzbekistan is a general and special nature. The general nature carried out by citizens free to meet vital needs without securing natural resources for individual users without granting a permit. By way of a special nature to enterprises, institutions, organizations and citizens have the possession, use or lease of natural resources on the basis of special permits for a fee for the implementation of production and other activities[6].

Examples of calculating the total environmental damage

From the discharge of pollutants into water bodies in Uzbekistan: analysis and prediction.

Example 1.

The territory of Tashkent area of 22.9 thousand hectares of irrigated irrigation network. It should be noted that prior to 1991 discharge in open waters was carried out about 70 enterprises in the city, 50 dumped industrial waste water without treatment. Consider the problem of calculating the total damage from the discharge of major pollutants in water bodies during 2010, 2011 and I half of 2012, the Republic of Uzbekistan, and to identify major trends and forecast changes in damages for the future[3].

Fortunately, these dangerous substances are not included in the list of major pollutants discharged into water bodies of Uzbekistan; K*ei* - an indicator of the relative aggressiveness of the it pollutant measured in tones. Calculations using the formula yielded the following results, which are listed in (Table -1.) *The actual environmental damage caused by discharges to water bodies of Uzbekistan.*

Table -1.

The actual environmental damage caused by discharges into water of Uzbekistan in 2009-2013., Bln.

Substances	$К_{эi}$	2009 y.	2010 y.	2011 y.	2012 y.	2013 y.	total
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
Petroleum products	20	1,84	1,345	1,102	0,869	0,729	5,884
Suspended Islands	0,15	0,619	0,627	0,491	0,433	0,38	2,55
phosphorus	1	0,257	0,209	0,1 7S	0,151	0,146	0,941
phenol	550	0,334	0,257	0,231	0,205	0,154	1,182
surfactants	11	0,334	0,251	0,216	0,205	0,185	1,192
copper compounds	550	2,055	0,77	1,541	0,514	0,514	5,394
iron compounds	1	0,227	0,191	0,129	0,089	0,092	0,729
zinc compounds	90	0,504	0,462	0,378	0,336	0,294	1,975
total		6,17	4,14	4,14	2,803	2,492	19,846

The data presented in this form, it is difficult to analyze. Therefore, we take the total damage for a year as 100%, while its distribution for selected pollutants takes the following form (Table 2.). *The distribution of environmental damage by pollutants dumped into waterways.*

Table -2.

The distribution of environmental damage by pollutants dumped into waterways, %

Substances	2009 y.	2010 y.	2011 y.	2012 y.	2013 y.
1	*2*	*3*	*4*	*5*	*6*
Petroleum products	30	33	26	31	29
Suspended Islands	10	15	12	16	15
phosphorus	4	5	4	5	6
phenol	5.5	6	5	7,5	6
surfactants	5,5	6	5	7.5	i
copper compounds	33	19	36	18	21
iron compounds	4	5	3	3	4
zinc compounds	8	11	9	12	12
Total	100	100	100	100	100

The table shows that over the years the bulk of the contamination (29-33%) is accounted for petroleum products related to Group II in terms of the relative aggressiveness and copper compounds, which are at the end of the group and

approaching the danger of a third (18 - 36%). Phenols same, although having Kei equal to 550 as copper compounds do not affect significantly the overall picture of pollution (their share of 5-8%) due to the small number of discharges. If we consider the table by columns, we can see that the share of each pollutant in the total damage is sufficiently stable for 5 years (the deviation in one direction or another minor).

The only exceptions are compounds of copper, whose share in 2009 decreased from 33% to 19%, then in 2010 increased to 36% in 2011 fell to 18%, and in 2012 increased slightly to 21%.

Unfortunately, reliable information on the causes of such swings is missing, but it can be assumed that emissions reductions were due to the decline in production and exports of copper ore abroad.

For ease of analysis, we make the following: Imagine the damage from each pollutant for the period for 100%, and examine changes in the share of damage for each substance in the dynamics (Table 3.). *Damage from the main pollutants of water bodies.*

Table -3.

Damage from the main pollutants of water bodies, %

Contaminants	2009 y.	2010 y.	2011 y.	2012 y.	2013 y.	Total for 5 years
Petroleum products	31	23	19	15	12	100
Suspended Islands	24	25	19	17	15	100
phosphorus	27	22	20	16	15	100
phenol	28	22	20	17	13	100
surfactants	28	21	18	17	16	100
copper compounds	38	14	29	9,5	9,5	100
iron compounds	31	26	18	12	13	100
zinc compounds	26	23	19	17	15	100
For all pollutants	30	20,5	22	14	13,5	100

Consider a table row. From this table it can be seen a steady decline in all types of discharges of pollutants. How can this be explained? According to the State Statistical Committee of the Republic of Uzbekistan, the main sources of wastewater discharge to surface waters were the objects listed in Table 1., taken from the above-mentioned report of the State. The table shows that the discharge of agriculture and housing and communal services during this time changed slightly, thus reducing discharges could occur mainly due to industry. \

Table-4.

Dynamics of wastewater waves into the surface water, million'

Uzbekistan	2009 y.	2010 y.	2011 y.	2012 y.	2013 y.
Housing and communal services	31,843	27,025	59,571	50,186	43,456
Agriculture	45,068	31,65	31,72	25,74,	32,64

Industry	101,68	86,19	85,74	74,43	73,35
Electric Utilities	259,264	255,474	211,310	229,475	210,636
Wood and paper industry	20,19	16,91	17,99	14,43	13,23
Chemical and petro-chemical industry	18,947	20,013	16,723	17,565	18,555
Ferrous metallurgy	18,244	120,997	119,842	121,556	130,463
Engineering	952,1	842.6	782,1	640,45	623,94
Non-ferrous metallurgy	537,6	514.3	529.0	482.73	425.30
Building materials industry	32,966	27,563	22,382	19,579	20,460
Oil Industry	25,3	29.7	31,1	24,73	21,01
Natural gas industry	4.3	5,0	4.5	5,92	2,8

Let us follow the dynamics of industrial production in Uzbekistan. In the total emissions of pollutants accounted for the bulk of the energy, oil and gas, iron and steel industry. (Table 4.).

So, during this period there was a decline in industrial production in all types of industries. The only exceptions were non-ferrous metallurgy, chemical and petrochemical industries, engineering, and construction materials, which has recently been a slight increase.

At the same industries, dumped the most polluted wastewater are electric power and chemical industry. The quality of treatment facilities for this time mostly remained the same or deteriorated due to lack of funding, although in some areas there have been positive changes. For example, in the electricity industry in 2012 at the commissioning of facilities for wastewater treatment 148,172.7 million was spent amounts, and the protection of water resources in the industry in that year was spent 463,489.8 mln.soum. (Goskomstat). At the same time, the coal industry in 2012 only 38% of treatment facilities provide regulatory clearance. New capacity of treatment facilities is insufficient, acting physically worn out, and requires the construction of new capital investment, absent due to non-payment.

Table -5.

Indices of production by industries (in% to the previous year)

	2007y.	2008y.	2009y.	2010 y.	2011y.	2012y.	2013y.
The entire industry	92	82	86	79	97	96	102
Of all industry sectors:							
Electric Utilities	100,3	95	95	91	97	98	98
Oil Industry	90	94	91	93	96	98	101
Gas	101	97	95	94	99,6	99	98
Ferrous metallurgy	93	84	83	83	ПО	98	101
Non-ferrous metallurgy	91	75	86	91	103	96	105
Chemical and Petrochemical Industry	94	78	79	76	108	93	103
Engineering	90	85	84	69	91	95	104
Forestry and wood	98	80	84	73	92	83	96
Building materials industry	91	85	81	70	99.3	83	101

Let us now return to the table 5. Looking at it, you will notice a significant discharge of copper in 2010 compared with the previous and subsequent years. From table 3.1.9, it can be seen that in 2010 compared to 2009 increased discharges in the wood, coal and oil industry, increased slightly in ferrous and nonferrous metallurgy. This could be caused by a tightening of environmental authorities to the quality of water discharged (namely, the expansion of the list of polluting ingredients) and as a consequence of the transition from the category of water treated in the regulatory insufficiently treated.

If we consider separately the damage on the components of its pollutants, it can be concluded that the increase in the 2010 total damage has occurred due to a large release of copper this year. Also note the stabilization of damage from all pollutants in 2011 and 2012. at 14% of 5 years. Obviously, this is due to an increase in release of iron from 12% in 2011 to 13% in 2012 for all other pollutants; there is a clear reduction of discharges for the period. Based on the data charts have been made of the dynamics of damage from the discharge of pollutants into water bodies. At the same time as the independent variable were taken years (2008 was considered as zero), and the dependent variable reflects the corresponding damage.

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