



**CHANGES IN THE NATURAL COMPOSITION OF THE LAND FUND AND ITS
PROTECTION (ON THE EXAMPLE OF KHOJAABAD DISTRICT)**

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Annotation

This article describes the level of anthropogenic load on lands on the example of Khojaabad district of the region, as well as the level of absolute and ecological stress, indicators of natural protection, changes in the natural composition and protection of ecologically reserve lands.

Keywords: Land fund, absolute ecological stress, relative ecological stress, natural protection, ecological reserve lands, anthropogenic load, protected natural areas, ecological economic balance.

In the current period of rapid development, technology is changing in line with the times, and from year to year it is spreading to all sectors of the economy. In particular, changes in the natural composition of the agricultural land fund, in addition to all the expected positive effects, also lead to negative consequences.

In the course of the study of these negative consequences, it is necessary to make the right recommendations and to conduct a consistent calculation of the study area with the help of absolute, relative ecological stress, natural protection, as well as statistics on ecological reserve lands.

Scientists around the world and in our country have used these brief factors in their research. In particular, for the first time the ecological and economic condition of the region was assessed on the example of the Moscow region and the territory of the Altai Republic (Ivanov, Kochurov, 1987; Kochurov, Ivanov, 1991). Among the geographers of our country is the study of "Geoecology of land use" (on the example of the Fergana Valley) by Doctor of Geographical Sciences, Professor Yu. Ahmadaliyev. To begin this preliminary calculation, using the following table, we will review the classification of the study area by categories and types of land resources according to the level of anthropogenic load (Table 1).



(Table 1). Classification of land fund categories and types according to anthropogenic load level

№	Types of land use	Anthropogenic load (AL)		
		Category	Ball	AL level
1	Lands for public buildings, lands occupied by buildings, lands under reclamation, gray lands, public courtyards, street roads	AL6	6	Very high
2	Arable lands in agriculture and backyards	AL5	5	Relatively high
3	Underwater lands (reservoirs, reservoirs, canals, collectors and ditches), lands of horticultural and vegetable associations	AL4	4	High
4	Lands of orchards, vineyards, mulberries, orchards and orchards, ALALs (6 categories)	AL3	3	Medium
5	Non-agricultural lands, pastures, hayfields, forests (shelters and terraces), ALALs (category 5)	AL2	2	Past
6	ALALs (categories 1-4), underwater lands (rivers, streams, lakes), lands of protected forests	AL1	1	Very low

Based on the above table, we carry out our calculations on the example of Khojaabad district of Andijan region. Initially, the AL level **very high** We will explore the areas occupied by the category AL6. 277 ha of land for public buildings, 532 ha for buildings, 133 ha for land reclamation, 278 ha for gray land, 632 ha for public courtyards and streets.

AL level **relatively high** The category of AL5 lands is 6350 ha of agricultural arable lands and 1485 ha of arable lands.

AL level **high** There are 847 ha of submerged lands (reservoirs, reservoirs, canals, collectors and ditches) in the category of AL4 lands, and no lands of orchards and vegetable associations.

The level of AL in the land fund **Medium** It includes 2638 ha of orchards, 259 ha of vineyards, 316 ha of mulberries, 249 ha of orchards and orchards.

Degree **Past** not included, category AL2 lands Non-agricultural lands 8567 ha., pastures 2040 ha., forests (reserves and terraces) 39 ha.

The level of AL is very low, category AL1 includes 7 hectares of submerged lands (rivers, streams, lakes), and no lands of protected forests.

Using the information above The areas occupied by AL1, AL2, AL3, AL4, AL5, AL6 are determined by the following formula (formula 1):

$$AL2=A+B+C+D \quad (1)$$

AL2- Relatively high anthropogenic load level;

A, B, C, D-Area of non-agricultural lands, pastures, enclosures and terraces in ha., Size;

For example: 8567 ha of non-agricultural land, 2040 ha of pastures, 2 ha of reserve, 37 ha of terraces.

$$AL2=2040+2+37+8567=10646$$

To determine the coefficients for assessing the ecological and economic balance of the region, we use the formulas proposed by the Russian geocologist B. Kochurov (B. Kochurov, 1999, 2003.).



To assess the ecological and economic balance of the region, calculations are carried out on four coefficients. They include the region in terms of absolute and relative ecological stress, coefficients of natural protection, as well as ecological reserve lands.

A high coefficient of absolute environmental stress indicates an increase and is determined using the following formula:

$$\mathbf{K_{mez} = AL6 \div AL1 \text{ (2)}}$$

Kmez- Absolute environmental stress factor;

AL6-Areas with very high anthropogenic load levels;

AL1-Areas with very low anthropogenic load levels (ALAL);

Using this formula, it is possible to observe the process of positive or negative changes in the area when comparing the coefficient of absolute environmental stress over the years.

Thus, in the example of Khojaabad district we are studying, we determine the coefficient of absolute ecological stress using the above formula (formula 2):

$$\mathbf{K_{mez} = 1852 \div 7 = 264.57}$$

Among the coefficients for assessing the ecological and economic balance of Andijan region, the coefficient of relative environmental stress also has a special place and is determined using the following formula:

$$\mathbf{K_{nez} = \frac{AL4+AL5+AL6}{AL1+AL2+AL3} \text{ (3)}}$$

Knez-Relative environmental stress factor;

AL4, AL5, AL6-Land area with high anthropogenic load index in the region;

AL1, AL2, AL3-Land area with relatively low anthropogenic load index in the region;

In general, the ecological and economic condition of a region is more characterized by a coefficient, as it covers the entire area under consideration. Reducing the intensity of the situation reduces the value of the coefficients, and when the relative environmental stress is equal to or close to 1.0, the pressure force of the region is balanced in terms of the level of AL and the stability potential of nature (B. Kochurov, 1999, p. 55).

Using this formula, we determine the coefficient of relative environmental stress in Khojaabad district:

$$\mathbf{K_{nez} = \frac{847+7835+1852}{7+10646+3462} = 0,75 \text{ (4)}}$$

KnezIn the case of <1, the stress level of the ecological-economic balance is normal. If it is high, it means that the voltage is increasing.

In the example of Khojaabad district above, the results of the study show that the coefficient of relative environmental stress is 0.75.

Ecological reserve lands means areas with high, medium, low and very low levels of anthropogenic load that are rarely used by humans. We can find the ecological reserve lands using the following formula:

$$\mathbf{R_{hez} = R1 + 0.8 \times R2 + 0.6 \times R3 + 0.4 \times R4 \text{ (5)}}$$



The Ecological Reserve of the Rhez-Zone is a generalized area of land, determined mainly by the sustainability of its environment-creating and resource-saving functions. The indicator determines the natural protection of the region;

R1-AL level very low which category corresponds to AL1;

R2-AL level past which category is equivalent to AL2;

The category with a moderate level of R3-AL is equal to AL3;

The category with the highest R4-AL level falls to AL4;

Based on this formula, the level of natural protection of Khojaabad district can be seen as follows.

$$R_{hez} = 7 + 0.8 \times 10646 + 0.6 \times 3462 + 0.4 \times 847 = 10939.8$$

Ecological and economic assessment in the districts of Andijan region can be found using the following formula to find the final coefficient of natural protection:

$$K_{th} = \frac{P_{hez}}{P_{huef}} \quad (6)$$

Kth- Natural protection factor;

Rhez- Ecological reserve lands;

Rhuef- The total area of the land fund of the study area;

Natural protection indicates a crisis level of protection of an area with an index less than 0.5 (B. Kochurov, 1999., p. 56). Here are the results of the nature protection coefficient of Khojaabad district:

$$R_{th} = \frac{10939.8}{22886} = 0.48$$

The coefficient of natural protection of Khojaabad district is 0.48. That is, the natural protection of $K_{th} \leq 0.5$ is at a critical level. $0.5 \leq K_{th}$ indicates an increase in natural protection.

In conclusion, how anthropogenic loads are distributed and redistributed across the region, and mainly the stability of the area, is also closely related to the composition of land use. Only if the critical level in the districts is organized taking into account the economic and ecological balance, the natural protection of the territories will improve the situation and allow an accurate assessment of the ecological and economic balance.

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