

**THE CONCEPT OF THE ECOLOGICAL SITUATION IN THE  
REPUBLIC OF UZBEKISTAN AND THE RECOGNIZED METHODS OF ITS  
ASSESSMENT**

**Abstract:** In this article, the interpretation of the concept of the ecological situation in small areas and the recognized methods of its assessment are analyzed based on the researches of scientists who have been working in this field of research until today.

**Keywords:** Ecological situation, assessment, monitoring, method, oasis, geosystem, analysis.

The aggravation of the ecological situation in irrigated lands on a global scale requires the development of scientific bases for the moderation of anthropogenic load, effective use of natural resources, taking into account the individual characteristics of geosystems. To optimize the ecological situation in irrigated lands, the application of advanced technologies for the use of land and water resources, the quantitative assessment of anthropogenic load on geosystems, the prevention of soil degradation, the improvement of water quality, the improvement of monitoring of natural processes, and the development of forecasts for the improvement of the ecological situation are important issues.

In the years of independence, large-scale measures have been implemented and achieved in the field of effective use of land and water resources of irrigated lands, improvement of land reclamation, prevention of soil salinization and increase of productivity, reduction of pesticide use, use of organic fertilizers instead of mineral fertilizers, etc. It is worth noting that in order to further increase the effectiveness of improving the ecological situation in the irrigated lands, especially in the densely populated Zarafshan oases, the study of oases as a whole paragenetic system, taking into account the individual characteristics of geosystems, the study of human influence as a

territorial-structural system using the "anthropogenic load" methodological approach, and cartographic and it is necessary to use mathematical modeling. About this, in the Strategy of Actions for the further development of the Republic of Uzbekistan in 2017-2021, "ensuring that people live in an ecologically safe environment" and "preventing environmental problems that harm the environment, population health and gene pool" are defined as special priorities

The assessment of the geocological situation in the territories is a complex issue, and there is still no consensus on it. The number of steps in the assessment of the severity of the environmental situation and the criteria for their separation are different in different authors. Even the level of tension with the same name (for example, "sharp", "tang", etc.) differs in content. Below we consider several works related to geocological assessment.

In the "Ecological map of the Republic of Uzbekistan" published under the scientific guidance of A.A.Rafikov (1997), the following ecological situation levels are given:

- 1) satisfactory;
- 2) moderately satisfactory;
- 3) average;
- 4) sharp;
- 5) tang.

Each of them is based on the following qualitative and quantitative criteria: regions with different levels of air pollution, changes in the quality of surface and underground water, soil contamination with pesticides, soil salinity, soil erosion, deflation process, vegetation cover productivity, trees and shrubs. cutting, the state of vertebrates, public health, etc. Landscapes are taken as the basis of the ecological map. Geocological conditions were evaluated by components in the "Geocological Map of the Republic of Uzbekistan" published in 1999 by the "State Committee of Geology and Mineral Resources" of the Republic of Uzbekistan. The map shows four levels of soil pollution by color:

- 1) no pollution;

- 2) weakly polluted;
- 3) moderately polluted;
- 4) heavily polluted. These levels are based on a gross index of pollutants.

In "Atlas of land resources of the Republic of Uzbekistan" (2001) "Ecological regionalization" card is attached. Districts and regions are taken as regions. All administrative regions of the republic are divided into the following regions: 0 – satisfactory (acceptable); I is sharp; II in emergency; III is fatal. The following were taken as the main criteria for evaluating the ecological condition: surface water pollution index (SII), atmospheric pollution index (AII), soil pollution with pesticides (in the amount of pesticides applied to 1 hectare of land), compliance of drinking water with the state standard, soil salinity, total population morbidity and others.

Of course, it is easy to collect various statistics related to the environmental situation by administrative division. However, local ecological situations are related to natural geosystems (landscapes). Therefore, it would be more accurate if the geo-ecological situation was evaluated by natural areas.

"Ecological Atlas " (2002) consists of 128 pages and 6 chapters. The atlas begins with a landscape map and ecological capacity maps of landscapes and their brief comments. The natural environment, medical-ecological, ecological-geographical situations were analyzed and ecological situations were evaluated. In the last 6th chapter of the atlas, the ecological status is given through the demo-ecological status card, and according to the population density, the regions are divided into four categories:

- 1) good,
- 2) satisfactory;
- 3) unsatisfactory;
- 4) heavy. Landscapes are divided into three groups according to their

ecogeographic status:

- 1) satisfactory;
- 2) tang;
- 3) too tight.

Qualitative rather than quantitative indicators were used in the division of these.

In assessing the geocological situation, B.V. Vinogradov (1998) is based on how much percent of the ecosystem area has been destroyed by anthropogenic influence and uses a four step assessment: 1) moderately - if up to 5% of the ecosystem area is destroyed; 2) risk - dangerous 5-19%; 3) strong - dangerous 20-50%; 4) fatal - more than 50%.

The analysis of works on the assessment of the geocological situation showed that most experts have similarities in their opinions regarding the last levels of the assessment scale, i.e. "catastrophic", "dangerous". Opinions differ about the remaining stages

The worsening ecological situation in any area is related to the direct or indirect effects of human economic activity. Due to the direct effect, qualitative changes occur in the components of nature. For example, changes in water quality, soil salinization, etc. Indirect effect leads to the acceleration of one or another natural processes in geosystems. In geosystems located next to each other or far from each other in the river basin, due to anthropogenic influence, the movement of substances accelerates, and substances move from top to bottom along the river basin and begin to accumulate in the river delta. Such a situation is happening in the large river basins of Central Asia, including the Zarafshan River.

Summary. Oases are geosystems that are rapidly changing under the influence of human economic activities and their ecological conditions are becoming more severe, and it was justified that the contribution of geographical sciences, which research nature as a whole system and rely on complex geographical methods, is great in their optimization and management.

Variations of the ecological situation in oasis geosystems by region and over time were analyzed. A medium-scale landscape map of the Middle and Lower Zarafshan Basin was created and it was found that the ecological situation is directly related to the landscapes.

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