

# Determination and Assessment of Places at Risk of Desertification Using Geoinformation Technologies

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**Annotation.** This article is aimed at determining the global environmental problems of land protection from desertification and the areas in need of planning measures for the prevention of desertification, that is, determining and assessing the level of the risk of land degradation.

**Key words.** desertification, deflation, land cover, water bodies, decoding, geological information system, agricultural land

At the end of the 20th century, geographic information systems of a new type, which combine information on various topics into one system, were created in a user-friendly, clear and understandable way. Usually, it provides an opportunity to analyze and model geographic objects and events, unlike traditional methods, provides the connection of traditional methods of work with the database, performs a request for new data and their statistical analysis. one of the advanced computer systems is modern GIS technologies.

In order to obtain comprehensive information about the state of desertification and to develop complex measures for their prevention, thematic maps are usually drawn up.

Since desertification is a complex process, its general mapping in field conditions is more complicated and not always effective. Therefore, it is appropriate to develop a map of desertification in camera conditions based on the analysis of several thematic analytical maps reflecting deflation, salinity and other aspects, using GIS technologies in particular.

It is advisable to use the landscape method of mapping desertification when using different sources, because this method shows the spread of one or another process depending on the natural structure of the area, i.e. increase, clearly reflects the forms of decline, slopes.

The remote method is the most effective in obtaining information throughout the entire territory of the country at a given time. Compared to black-and-white photos, multi-zone and color photos, which are more effective in interpreting processes, show vegetation and soil cover, water bodies, sedimentary geosystems, and the state of agricultural land, various natural processes (erosion, halogeochemical, etc.) is convenient for decoding.

The use of the geological information system in the analysis of desertification allows to effectively combine the above methods of monitoring, especially in the mapping of desertification. In this case, there will be an opportunity to analyze the dynamics of desertification and take appropriate measures in conducting preventive measures. Maps can be made in the shortest possible time, which is important for making timely decisions on combating desertification.

Regular mapping will allow identification of desertification gradients and key drivers. In this case, it is necessary to note that it is possible to use mathematical models presented in the form. This allows to conduct an analysis and calculate a forecast and search for an optimal decision to solve environmental problems.

One or another type of desertification in the arid zone of Uzbekistan is characteristic of each natural complex. Often there is a combination of two or three types. It is necessary to consider such a phenomenon as complex desertification, which is related to the rather complex structure of the territory (geosystem) and the multifaceted impact of human economic activity.

In general, it can be said that GIS technologies provide rational use of land and their protection in new ways, in contrast to traditional methods, regular, sequential, operational acquisition of information, high-precision contouring of soil types, detection of degraded land. and reflects a new approach to assessment, mapping of natural environment components, creation of soil informatics. The essence of the concept of "sustainable use of pastures" is that, in addition to the maximum use of plants as food, it is necessary to preserve their ability to self-restore, to sprout from their seeds, and to prevent the depletion of ecosystems in terms of species and life forms. prevention is to achieve sustainable productivity.

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