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STUDY OF LANDSCAPE ELEMENTS OF SHUSHA DISTRICT OF AZERBAIJAN ON THE BASIS OF SPACE IMAGES AND GEOGRAPHICAL SYSTEM TECHNOLOGIES

Abstract

A brief description of physical and geographical features of Shusha region of Azerbaijan, climate, relief, biodiversity, natural resources, etc. of the region were given, as well as geoinformation modelling of landscape elements in Shusha region was carried out. For this purpose, initially, the classification of landscape elements on the territory of the region was carried out. For this purpose, on the basis of aerospace photographs covering different periods, the dynamics of changes of the forest-vegetation cover in the region over the years was studied. ArcGIS 10.9 and Global Mapper software were used to process the space images, and the changes in the area were identified and evaluated. In addition to the space imagery data of the LANDSAT-8 OLI satellite dated August 28, 2013 the space imagery data of August 25, 2020 was also used to solve the problem. The resolution of the image was 15 m in the panchromatic range and 30 m in the multispectral range. The geometric and radiometric parameters of the satellite images used in the study were analyzed. For the study of landscape elements of Shusha region, on the basis of remote sensing data, the dynamics of forest-vegetation cover change was studied by means of NDVI indices. As a result of classification works carried out by Shusha region with NDVI index, 4 values were given to the area (land 0-0.2, grassland and shrubs 0.2-0.33, forest 0.33-0.66, dense forest 0.66-0.99). During the research works, after NDVI assessment, the areas of vegetation suitable for use in the territory of Shusha region were identified. As a result of the construction of the DEM model of the area, electronic maps of altitude, inclination and visibility parameters were developed. By precisely studying the inclination of the slopes, it was possible to determine the landslide points. One of the main morphometric indicators of slopes, fertility has been studied as one of the factors that play an important role in the formation of ecogeomorphological features of the relief. At the end, a map-scheme of river and road networks was developed to assess the condition parameters of the infrastructure facilities of Shusha region, aerospace monitoring of the branches of the Gargar River passing through the region was carried out. Thus, as a result of the research, it was possible to assess the parameters of the current state of the landscape elements of Shusha region.