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GEOGRAPHIC CHARACTERISTICS OF SETTLEMENTS ON THE NORTHEASTERN SLOPE OF THE GREATER CAUCASUS BASED ON GIS AND LANDSAT 7 SATELLITE IMAGERY

Abstract

The article presents information about the natural landscapes and settlements of the northeastern slope of the Greater Caucasus, within the borders of Azerbaijan. Research conducted on the base of the Geographical Information Systems (GIS) and Landsat 7 satellite images. The supervised classification method based on ArcGIS software were used to decode satellite images. According to our calculations the total area of settlements in the research area is 47229 ha (6.7% of total research area). In order to analyze the natural landscapes and settlements the region was divided into 5 hypsometric levels, based on the DEM file. The area and share (%) of settlements at each level was calculated and presented below. The 1st level, -26-500 metres has the highest density of population and settlements make up 54.5% of the total area of settlements in research region. On the 2nd level, 500-1000 m, area of settlements makes 35.2%. The 3rd level, 1000-2000 m -characterized by a sharp decrease to 8.1% and on the 4th level, 2000-2500 m - settlements made 2.2%. On the 5th level - the areas with a height of more than 2500m, settlements occupied less than 1%. In general, as the altitude increases the number, area, and influence of settlements on the surrounding landscapes decreases. The results of our work related to the location and area of settlements in further development can be of great practical importance. The region is known for high rate of its economic development. One of the priorities - the development of green energy.The research region has a high potential and is attractive for the investments in solar and wind energy, in 2022, the foundation of the "Khizi-Absheron" Wind Power Plant was laid. The location and size of settlements will be taken into account when placing new wind farms or solar panels. Another practical application of research results could be a project to reduce the demographic load in Absheron. Migration from overpopulated plains to mountainous areas is investigated now in many countries. To control the growth and to unload the Absheron agglomeration, the proximity of research region can play the leading role. The development of industry, agriculture and infrastructure in north east Caucasus will attract internal migrants and boom the settlemnent process.