

IAF EARTH OBSERVATION SYMPOSIUM (B1)
Interactive Presentations - IAF EARTH OBSERVATION SYMPOSIUM (IP)

Author: Dr. Benovsha Mehdiyeva
Azerbaijan National Aerospace Agency, Azerbaijan

Dr. Kamala Agayeva
Azerbaijan National Aerospace Agency, Azerbaijan

ASSESSMENT ON THE BASIS OF SATELLITE IMAGES OF CHANGES IN NATURAL OBJECTS
LOCATED IN THE TERRITORY OF GUBADLI DISTRICT OF EASTERN ZANGAZUR

Abstract

Illegal activities and exploitation of natural resources in the Gubadli region of East Zangazur have led to a number of environmental problems. As a result of deforestation and burning, pollution of water resources, changes in river beds, destruction of flora and fauna, looting of the subsoil in the region, the ecological balance has been disturbed.

With this in mind, the assessment of changes in the environment using space imagery from different years has become a topical issue.

1: 100000 scale topographic map is georeferenced on the basis of GIS technology. Each of them was brought to the UTM projection and the WGS-84 rectangular coordinate system, and maps were combined based on several reference points. The parts reflecting Gubadli region were taken from the georeferenced and combined maps.

Landsat-ETM satellite images, Arc GIS software package of Geographic Information Systems (GIS) technology, archive, internet materials were used as input data.

First of all, information on the geographical location, relief, nature, types of natural objects of the research area were collected and systematized as follows.

Based on the topographic map of the research area, a digital model of the terrain was constructed, space images reflecting the research object were processed, changes in natural objects of Gubadli region for 30 years were assessed and mapped.

Based on the decoding, interpretation and classification of space images, new information about the studied area was obtained and updated. Using all the information obtained, various electronic maps of the research area were created based on GIS technology. This was done with the ERDAS 10.5 software of the NDVI (normalized differential vegetation index) index. The Interpreter tool was used for this. Then, moving to the Spectral Enhancement Index, we can obtain the NDVI of the status indicators of changes in natural objects for the study area.

Areas of natural objects that have undergone changes in the territory of Gubadli region during 1991-2021 were calculated using normalized differential vegetation indices. The obtained results are presented in the form of electronic maps, tables and graphs.