



## **Geo-environmental Study to Identify the Affecting Factors on Dohuk's Dam and the city (Northren Iraq) by Use Remote Sensing Techniques**

Alaa Hamdon

Remote Sensing Center , Mosul University , Mosul , IRAQ(alaa441977@yahoo.com)

The Dohuk's dam is one of the most important Aggregated dams in Iraq, located about 1 km from Dohuk city in northern Iraq. So; this vital project provides Dohuk city by water while the city formerly dependent on wells water prior to the establishing of the dam, and this is one of the main reasons for land-use expansion in Dohuk city and its vicinity, which is meant that the Dohuk's dam safety factor, it is the key of the city safety factor. This dam has initiated the establishment of the dam in 1980 and was established in 1988, and it's capacity is 47.5 million cubic meters.

This study aims to analyze the morphometric or geometric properties and the environmental factors at drainage systems and drainage network for Dohuk area's drainage basins (which recharges water of Dohuk Dam's Lake and it is accumulated by rainfall and spring water) scientifically and geometrically. Study of the geology of construction area of the dam Structurally and tectonically.

Satellite image, topographic maps and aerial photographs used in this study for merging its results together and preparing a drainage basin's maps and a geologic interpretation map for the study area to recognize the important geologic impact on the river which comes out from dam lake, also some of the field work investigation has been depended in this study.

As a final result from morphometric analysis of drainage basins, tectonic analysis and geological investigations for study area, found as the following:

- 1 - Determining the amount of the accumulated sediments on the dam body, which has been carried by the collected rain-full water from the drainage basins, snow and spring water (the resources of Dam Lake). Study of the impact of these deposits on dam stability and evaluate the risk of these deposits on dam body and on its safety.
- 2 - Identification of geological features, which are that threaten the safety of the river of city which concern the only resource for the city and stability of dam body and its related to other geological phenomena (such as earthquakes and floods ... etc.).
- 3 - Suggestions some of the proposals for the maintenance of the dam lake to preserve the stability of the dam body and to protect the river properties.
- 4- Prepare some scientific criteria to avoid a disaster affecting human activity or agricultural or industrial, which are located in the city of Dohuk.