



## **Rainfall water and climatic changements in Syria-remote sensing applications**

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Syria-Remote sensing applications

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Amongst the most important issues of the 21st century worldwide, the water problem is a major concern for people and states. Most of the water resources have to be regenerated; therefore they depend on renewable rainfall water. It implies a better management. Remote sensing techniques have proved to be quite efficient in this field of research.

Syria experienced changing climate during time. Present climate is humid to semi-humid along the coast, semi-arid to arid in the interior. Precipitations change from about 1000mm/year, at the coast, to less 100mm/year at Al Badya (Palmyra). As a high quantity of these precipitations is lost in the sea, it is necessary to better manage the rainfall water resources.

Various settings are suitable to manage water resources: superficial wells, trenches, flat and hilly lakes, or small dams. The remote sensing techniques are a good tool to localize these settings, in places where the geomorphology is appropriate, and the filtration rate feeble.

From space images several thematic maps are established: tectonic map, lineament and their density maps. From these maps together a filtration map can be done, allowing with the elevation digital model (DEM) in three dimensions, to choose the suitable site, in correlation with the tectonic activity.

This methodology was applied to Sahel Akkar, the Southern part of the Syrian coast. Results are promising, with the hope to find optimal conditions, and consequently better manage the water resources, faster and at less cost.

Key words: Climatic changements, water resources management, remote sensing, Syria.