

Methodology for monitoring and assessment of Desertification in Arab Countries by using Space Technology data

Prof. Mohamad Rukieh

General Director of AAFAQ Establishment ,Syria, Damascus

Email :rukiehm@gmail.com , GSM:00963988756962

Abstract

This research aims to develop a methodology to monitor and study and evaluate the phenomena of desertification in the Arab countries, depending on space techniques, which have evolved significantly in last year's in field of the quality of the space data , resolutions of satellite images ,which content type of Satellites ,level of maps and stages of the work

Desertification "According to (UNCCD), "means land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities.

Desertification monitoring includes activities which are aimed at:

- Assessment of current states of Desertification
- Analyses of land degradation process
- Selection of basic indications of desertification
- Mapping of degraded land and other related natural resources
- Evaluating the impact of land use changes
- Monitor and assign geo-indicators for bright and hot spots

The area of the Arab World amounts to about 14.1 million km². That 90% of its territory located in the arid and semi-arid Region as shows the satellite images.

for monitoring desertification used several types of satellites

1 - environment and meteorology Satellites 2 – Remote sensing satellites for survey of natural resources, 3 - space shuttles 4 – Satellites of GNSS , which integrated with each other to provide the necessary data for these studies

Through these satellites may prepare the associated desertification Maps on several levels

1 - continental maps that their scale range from 1/5 million - 1 / 2.5 million, which can cover a large part of continents or Countries , used images with hundreds meters resolution .

2 - regional maps their scale / 1 million, and can cover different areas exceed tens of thousands of square kilometers, used images with tens meters resolution.

3 - local maps scales 1/500000 - 1/200000 - 1/100000 can cover several thousand to several hundred square kilometers and this is represented by images with a resolution (50-20) meters .

4 - detailed maps scale 1/50000 to 1/10000 or 1/5000 or 1/1000 and cover several hundred kilometers and up to several tens of square kilometers, and using satellite images with the resolution between 15 m and 0,34 m

so through these Satellites monitoring droughts and desertification lead development of various types of Thematic maps, as ,vegetation cover maps , land maps, load pastoral maps, decertified land maps, saline land or waterlogged maps, land use maps, distributed dunes Maps, Temperature distribution maps, soil moisture and fertility maps, and environmental changes maps by various scales from regional and even detailed with great accuracy,

On base of the levels of maps, I used 3-9 stages of work to prepare these thematic maps from the first level to the fourth one

Key words ; Desertification, satellites , ,thematic Maps, Arabic Countries .