



*This project
is supported by:*

The NATO Science for Peace
and Security Programme

Project fiche

9 July 2009

Assessment and Monitoring of Desertification in Jordan Using Remote Sensing and Bioindicators

(ref. 983368)

The term desertification indicates possible irreversible land degradation to more desert-like conditions in arid, semiarid and dry sub-humid areas resulting from climate changes and human activities. In Jordan, several studies have shown that the country is at risk of rapid desertification due to high population growth, deforestation and intensive cultivation. The project will study an area of 1400 km² from Mafraq to Irbid in the northern part of Jordan, which is the main source of surface water for the country. In this area, heavy withdrawal of groundwater, rapid urbanisation and industry growth has resulted in an accelerating land degradation and reduction of available water resources.

The project takes an integrated approach to assess desertification by monitoring changes in soil, water, vegetation and climate using remote sensing techniques. The project includes field studies and modelling using a Geographical Information System (GIS) approach.

The overall goal of the project is to contribute to the National Action Plan to Combat Desertification managed under the Ministry of Environment of Jordan. End-users are involved in the project through the Ministry of Environment (MoEnv) and National Centre for Agriculture Research and Extension (NCARE). Both of MoEnv and NCARE will participate in data analysis, training and transfer of results. The project also works on improving capacity of researchers working in the areas of monitoring and combating desertification.

Project Co-Directors:

- Prof. William Nickling, University of Guelph, Guelph, Canada (NPD)
- Dr. Jawad Al-Bakri, University of Jordan, Amman, Jordan (PPD)
- Dr. Hani Saoub, University of Jordan, Amman, Jordan
- Prof. Saeb Khresat, Jordan University of Science and Technology, Irbid, Jordan
- Dr. Mohammad Salahat, The Hashemite University, Zarqa, Jordan

Approval Date: 3 December 2008 **Effective Start Date:** 22 April 2009
Duration: 3 years; expected completion by May 2012



Photos courtesy Dr. Jawad Al-Bakri, University of Jordan, Amman, Jordan.

Left: Desertification at the western parts of the study area near Ramtha and Irbid cities.

Right: Irrigated in the northern parts of the study area (on the main road to Syria, north of Mafraq city.)