

# Zeuss-Koutine Watershed, *Tunisia*

**OVERVIEW:** The watershed of Zeuss-Koutine is situated in south-eastern Tunisia, north of the city of Medenine. The region has experienced increasing anthropogenic pressure since the 1960's, resulting in environmental degradation manifested by natural vegetation cover reduction, overuse of water resources, and poor and eroded soils. The SUMAMAD project focused on increasing groundwater recharge of depleted aquifers, rehabilitation of degraded vegetation, future land use scenarios, and alternative income generation by adding value to aromatic and medicinal plants and stimulating eco-tourism.

## *Institutional Arrangements*

*Lead Institution:* Institut des Régions Arides (IRA), Médenine, Tunisia

*Team Leader:* Dr. Mohamed Ouessar

*Partner Institutions:* Institut de l'Olivier-Zarzis; Commissariat Régional au Développement Agricole in Médenine; Association des Jeunes de Zammour in BéniKhédache; Association des Amis de la Terre in Tataouine; Association de la Protection de la Biodiversité in BéniKhédache; Association de Sauvegarde de la Nature et de la Protection de l'Environnement à Douiret in Tataouine; Union Tunisienne d'Aide aux Insuffisants Mentaux – Section de Médenine

## *Environmental Conditions*

The Zeuss-Koutine watershed of southeastern Tunisia is characterized by steppe vegetation in an arid climate. There are also some Wadi beds and watercourses with distinct species compositions. Total rainfall is low (150 to 240 mm) and highly irregular. Temperature differences are extreme between the seasons, ranging from -3 °C up to +48 °C.

## *Socio-economic Conditions*

Approximately 1 million people live in the Jaffara. Despite problems of desertification and water scarcity, the agricultural sector remains the major source of income in the area. Olive production represents the main agricultural

activity, but the cultivation of cereals and the traditional breeding of camels and small livestock also contribute to livelihoods.

## *Main Challenges*

In the Zeuss-Koutine watershed, SUMAMAD project activities were designed to address the following major challenges:

- Frequent periods of serious droughts;
- Floods causing soil erosion;
- Overgrazing in rangelands;
- Land uses competing for limited water resources;
- Poverty, unemployment, and emigration.



Photo Credit: UNESCO



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### Major Achievements

The SUMAMAD project team was able to achieve the following:

- Optimized use of the olive oil waste water or 'margins' for soil stabilization and fertility improvement;
- Alternative groundwater recharge structures (recharge wells) were tested;
- Better understanding of the role of water harvesting in flood prevention;
- Most appropriate rangeland rehabilitation practices were identified and evaluated;
- Local action plans for combating desertification put in place for BéniKhédache (Médénine);
- Economic diversification in participating communities through the establishment of ecotourism facilities was linked with the marketing of sand-based handmade crafts;
- Value was added to local production of aromatic and medicinal plants;
- The capacity of the SUMAMAD team was enhanced through post-graduate education and skills training.

