

# Monitoring of conservation technologies and approaches in the Zeuss-Koutine watershed (Médenine, Tunisia)

→ Contact address: ALTERNIA, Soil Science Centre/ Coen Ritsema, P.O. Box 47 • 6700 AA Wageningen, The Netherlands  
Phone: +31 317 48 65 17  
Fax: +31 317 41 90 00 Email: [Coen.Ritsema@wur.nl](mailto:Coen.Ritsema@wur.nl)

→ This project has been funded by the European  
Commission DG Research-Environment Programme, Unit of Management of Natural Resources  
Head of Unit Pierre Mathy,  
Project officer Maria Yeroyanni

## **Monitored techniques**

The selected monitoring sites represent the main encountered problems in the region namely: water scarcity and rangeland degradation.

Water harvesting techniques (jessour and tabias) are used for the improvement of water content of soil and thus evapotranspiration of plants and trees.

Replenishment of groundwater aquifers are ensured through the recharge structures (gabion check dams and recharge wells). Rangeland degradation is cured using the rangeland resting techniques.

## **Monitoring activities**

### **Meteorology**

- Meteo measurements
- Rainfall recording
- Outflow at subwatershed level
- Piezometric levels

### **Repeated measurements**

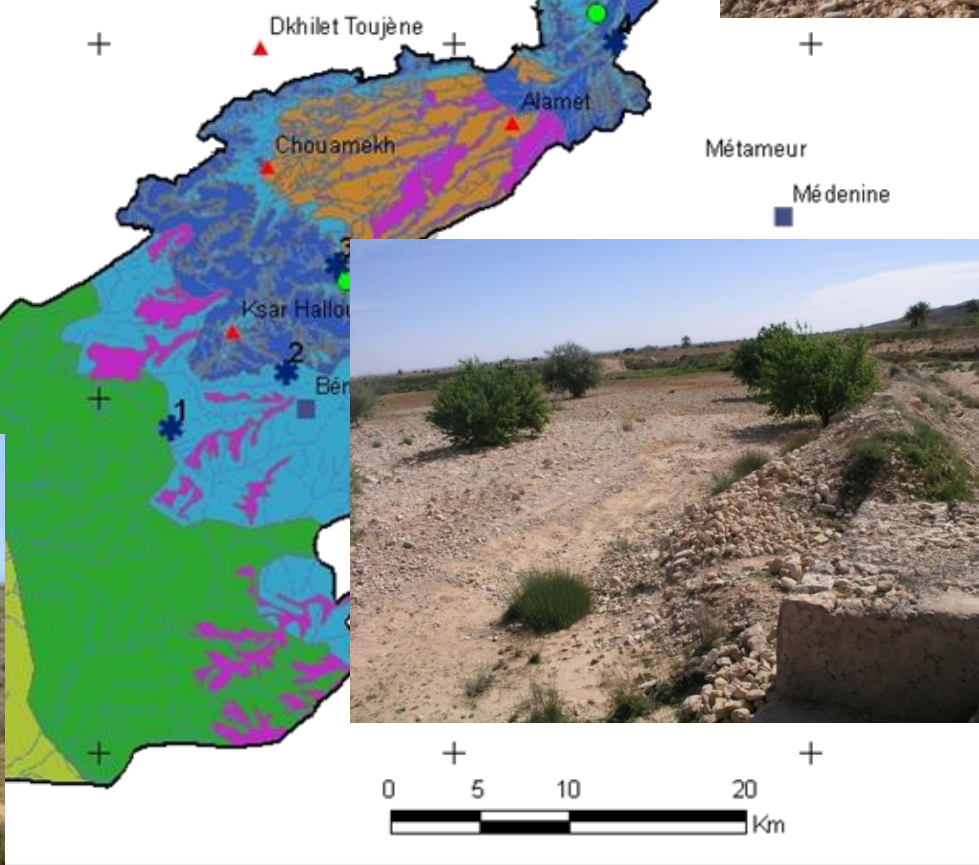
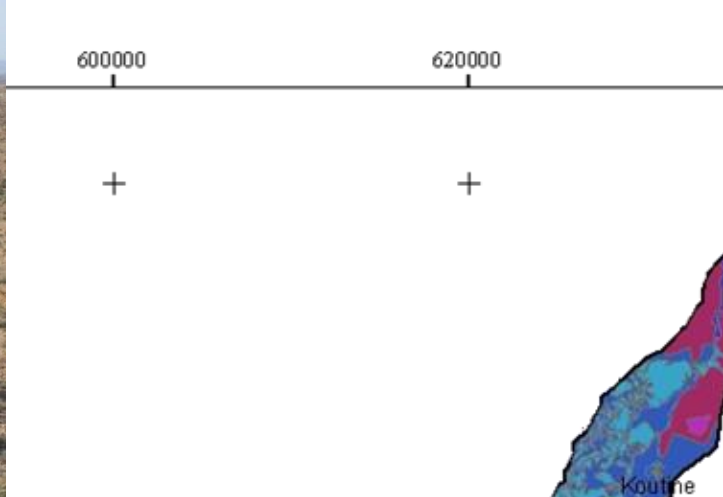
- Soil moisture gravimetric method,
- Leaf resistance using a porometer
- Plant cover, species diversity/density, biomass, range production.

### **Agronomical activities by stakeholder**

- Dates and type of tillage
- harvest and other inputs
- Animal practices

### **Yield assessment**

- Total yield in kg/ha
- General yield quality or herd/grazing quality assessment
- General impression by stakeholders.



- Legende**
- transects
  - Study area
  - Rainfall gauge
  - Weather station
  - Stream gauge
  - Wadi
  - CULT
  - CULTD
  - OLVM
  - OLVP
  - STPH
  - STPJ
  - STPJD
  - STPP

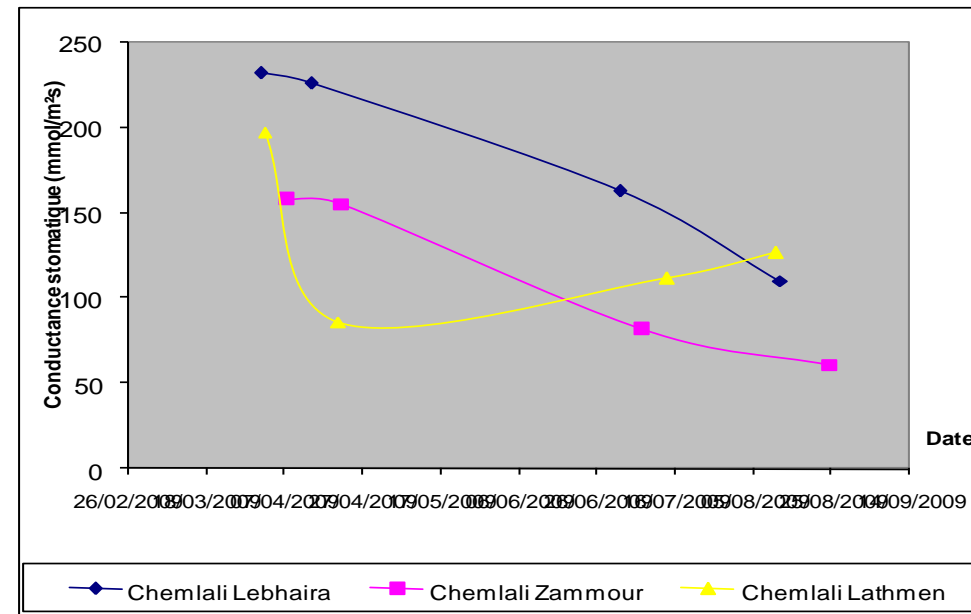
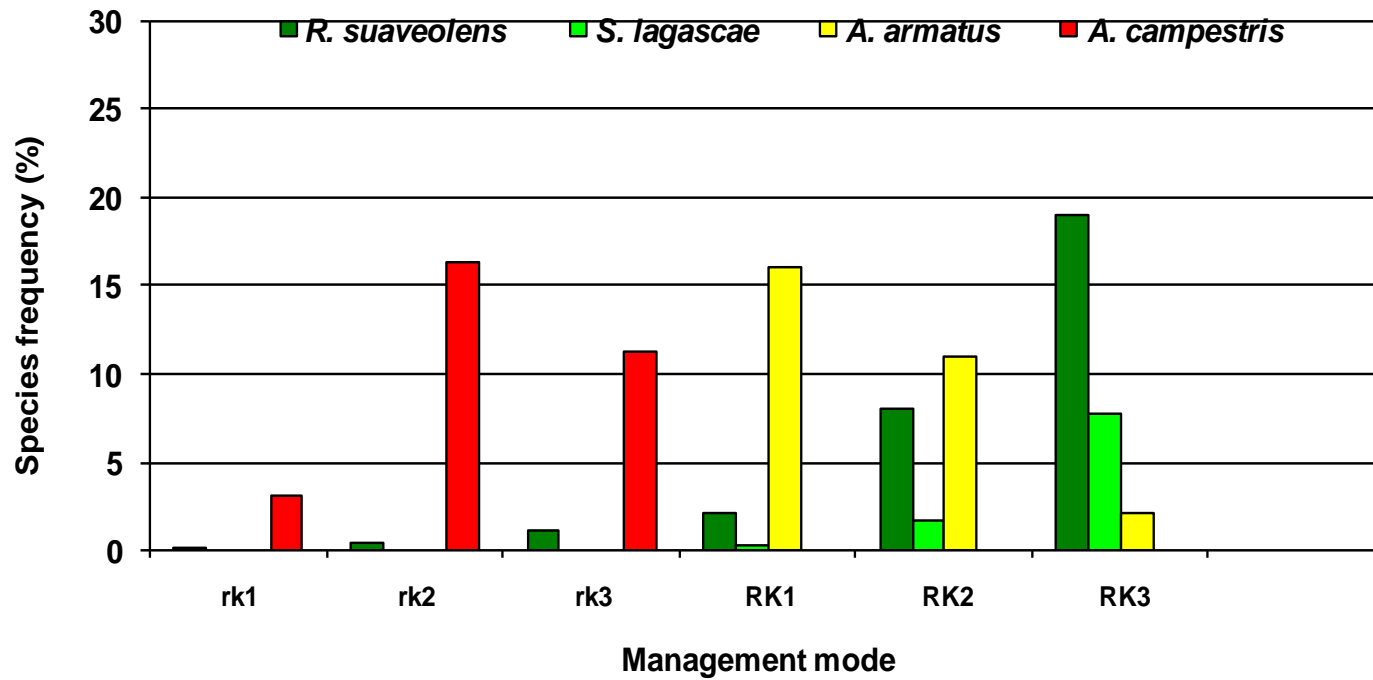






## Preliminary results

- The implementation of the SLM technologies have been conducted by a close collaboration with all stockholders who worked effectively together from the phase of planning, through the field execution and the final evaluation of the completed works.
- As farmers are already well acquainted with the technologies, the implementation was relatively a smooth exercise.
- If the simplification of the monitored parameters to the farmers is absolutely necessary to gain their implication, the involvement of the development agents is rather an easier task.
- The last year was exceptionally dry ( $\approx 100$  mm). Therefore no major agricultural activities have been carried out.



## **Main encountered difficulties**

- The highly variable rainfall regime and the slow development of local species, typical of drylands, require more patience from the researchers and the other stakeholders.
- Generally, poor farmers are more interested in immediate returns rather than long term benefits.
- Very few stakeholders do care about global impacts (off site land degradation, climate change, etc) as their concern about household living priorities.
- Parallel large development programs with consistent budgets, undermine the effects of small scale research projects with relatively very limited financial resources.