Evaluation of remediation recommendations: Stakeholder Workshop 3 Zeuss Koutine, Tunisia

1. Introduction

Since the privatization of communal tribal lands, production systems have changed rapidly in Zeuss-Koutine, Tunisia, with natural resource exploitation increasing (via exploitation of groundwater aquifers and rapid expansion of fruit orchards) at the expense of semi-natural grazing lands. This has resulted in an accelerated rate of land degradation and higher risks of desertification.

Figure 1: Land degradation in Zeuss-Koutine, Tunisia: i) soil erosion by water; and ii) rangeland degradation by overgrazing

To tackle these challenges strategies selected by local stakeholders as part of the DESIRE project were based on water harvesting and improving the condition of grazing land. Strategies were selected on the basis of the biophysical and socio-economic characteristics of the study site and local knowledge/preferences. Three locations were selected within the study site, where a combination of remediation strategies trialed:

- Lathmen: Jessour, Tabia, supplemental irrigation and resting
- Zammour: Jessour, Tabia and supplemental irrigation
- Bahayra: Spreading groundwater recharge and Tabia

2. Priority Remediation Technologies

The scoring of the technologies at the WB3 stakeholder workshop (2008) and the final workshop (2011) at the three sites (Bhayra, Lathmane, Zammour) are given in Table 1.

Table 1: Stakeholder scores for remediation strategies in three locations in the Tunisian study site (note: blank scores in the 2011 column indicate that a remediation strategy was not trialed and so not re-evaluated)

Bhayra	**Score 2008**	**Score 2011**
Stone ridges	5.0	
Flood spreading & Recharge units	5.1	5.3
Tabia and jessour	6.6	5.4
Cisterns	4.9	
Range resting	5.0	
Medicinal herbal and aromatic plants	2.9	
Supplement irrigation	5.6	

Lathmane	**Score 2008**	**Score 2011**
Stone ridges	7.0	
Flood spreading & Recharge units	6.6	
Tabia and jessour	8.0	7.4
Cisterns	4.9	
Range resting	4.9	5.1
Medicinal herbal and aromatic plants	3.7	
Supplement irrigation	6.3	5.2

Zammour	**Score 2008**	**Score 2011**
Stone ridges	4.3	
Flood spreading & Recharge units	6.9	
Tabia and jessour	7.4	3
Cisterns	6.4	
Range resting	4.7	
Medicinal herbal and aromatic plants	7.1	
Supplement irrigation	6.1	5

Table 1 shows that, except for “flood spreading & recharge units” and “range resting”, most of the technologies were given lower scores after workshop participants had been presented findings from

field trials and models. However, it was noticed that for the jessour, the score falls from 7.4 to 3 in the Zammour zone, reflecting either a dissatisfaction with respect to this technique or an initial overestimation of the impacts. This result should be explored through further investigations.

Table 1 was discussed with the stakeholders during the workshop, who mentioned that:

- The same evaluation criteria had been maintained between the two workshops
- Due to the short monitoring period and the occurrence of droughts, the farmers focused on priority technologies
- Focus was made on the technologies having direct impacts on the income of the farmers

Table 2: Ranking of remediation options before and after field trials and modelling in Tunisia (based on average scores between the three locations that were considered)

Rank	Technologies ranked in WB3 workshop	Rank	Technologies ranked in WB4-5 workshop
1	Tabia and jessour	**1 =**	Flood spreading & recharge units
2	Flood spreading & recharge units	**1 =**	Supplement irrigation
3	Supplement irrigation	**2 =**	Medicinal herbal and aromatic plants
4 =	Stone ridges	**2 =**	Cisterns
4 =	Cisterns		
5	Range resting		
6	Medicinal herbal and aromatic plants		

3. How can we enable priority remediation options to be adopted?

In order to enable priority remediation options to be adopted, the following suggestions were made by workshop participants:

- Consolidate further the synergies between research programs and development projects so as to ensure a rapid and smooth promotion of remediation strategies
- Ensure maintenance of traditional techniques and local know-how in the management of natural resources while introducing improvements where it is relevant. However, site specific conditions should be taken into account
- Integration of those remediation strategies in the regional/local action plans for combating desertification and climate change impacts mitigation

- One of the major obstacles that needs specific attention is the migration of rural population into the cities for the search of alternative income generation sources and better living conditions. Therefore, diversifying the economic activities in those areas is a corner stone for any sound sustainable development plans

Figure 5.9.2: Participants during final workshop discussion in Tunisia

4. Feedback from participants

The following feedback was obtained from participants about the workshop and the overall DESIRE project:

- The participants said that it was a very good opportunity to debate frankly key issues relevant to the management of the natural resources in the region. Others participants requested to organize more frequently such events
- They highly encouraged the synergies between all the partners: research, development, policy, regional and international cooperation
- Though the direct contribution of the project was relatively not so very important, the farmers were very enthusiastic about the undertaken actions
- The major challenge: how we can have significant impacts with limited funding and harsh natural environment

5. Next steps

The following next steps were agreed:

- Participants and stakeholders and policy makers will receive workshop report by the end of October 2011;
- The field monitoring and assessment of the engaged actions will be continued within other projects; and

- The remediation strategies will be implemented within the framework of on going and future development projects.