Capacity Development
Field day report: Graduate students visit to Sbaihia pilot site
Date: 04 April 2018

Project title: Sustainable Silvopastoral Restoration to Promote Ecosystem Services in Tunisia

Pilot site: Ouled Sbaihia (Zaghouan, Tunisia)
Source of funding: FAO – W3/Bilateral **BUS number:** 200310
Starting date: 26 November 2017 **Ending date**: 31 March 2019
Project leader: Dr. Mounir Louhaichi

Main Partner: Direction Générale des Forets (DGF) **Focal Point:** Mr. Jamel Kailene
Other national partner: Ministry of Agriculture (CRDA); ESAM, GDA Ouled Sbaihia, and INGREF.

Objective: The overall objective of the project is to build resilience of a silvopastoral production system through reduced climate change impact and increased resilience to environmental impacts and natural disasters. The project also targets strengthening the capacity of communities as well as building regional platforms for knowledge sharing and collaboration.
Target beneficiaries: Smallholder farmers, livestock keepers and extension agents
Activity mapped to CRP: CGIAR Research Program on Livestock
Lead Center: International Livestock Research Institute
Flagship: Livestock and Environment

Introduction

Due to low percentage soil cover, soil erosion is a major problem in the dry areas resulting from the arid conditions and torrential rainfalls, which contribute to the degradation of agricultural land (García-Orenes et al. 2009). Coupled with this, the growing population and the increasing demand for agricultural products are putting pressure on limited grazing and rangeland resources (Zubair et al. 2018). Under such scenarios, and especially so in resource challenged ecosystems, much of the biodiversity and production levels are unlikely to be utilized sustainably without effective management interventions (Zubair et al. 2018). To feed an ever growing population with more diversified diets, more water for agriculture is necessary for producing more food, income, livelihoods, and ecological benefits at less social and environmental cost per unit of water used (Oweis and Hachum 2001). This is more evident in the dry areas, where water is the primary factor that limits agricultural production as there is a growing tendency to overexploit the natural sources of available water in pursuit of meeting the food and land demands (Oweis and Hachum 2003). Options potentially available for coping with the consequences of water scarcity in agriculture in the dry areas include the development of additional sources of water, improving the management of all water uses and harnessing as much water as is possible from the unreliable precipitation received (Oweis and Hachum 2006).

As vegetation is the main component of dry ecosystems' rehabilitation, one of the main constraints to successful restoration is the lack of sufficient soil moisture for plant growth in addition to continued soil erosion, both by water and by wind (Oweis and Hachum 2001). In light of this, a group of students from a high school of agriculture were hosted at the silvopastoral site in Zaghouan, Tunisia. The main aim of hosting these students was to educate and raise their awareness on sustainable rangeland rehabilitation strategies targeting the conservation of soil to improve overall rangeland production.

Higher School of Agriculture of Mateur students
Field visit

Date:	**04 April 2018**
Location:	**Chahda pilot site-Sbaihia-Zaghouan**
10:00 - 10:30:	**Welcome and presentation of Chahda pilot site-Sbaihia and activity** Dr. Slim Slim (ESAM)
10:30 - 12:00:	**Visit to water and soil conservation techniques** Mr. Bechir Tarchi (CRDA Zaghouan, CES Dept.)

Minutes: Higher School of Agriculture of Mateur student field visit day

The student field visit day was organized for 19 Participants from the Higher School of Agriculture of Mateur as part of their training in water and soil conservation course. The Sbaihia region is an area constantly exposed to different forms of erosion as a result of the steepness of the slopes and lack of adequate soil cover. Dr Slim welcomed the students and gave a brief talk about the different techniques employed when rehabilitating a degraded rangeland. He also highlighted the need to conserve natural resources such as soil and to preserve water, especially in a water scarce region such as the Middle-East North Africa region. Students were then taken to the site where soil and water conservation structures have been constructed. The constructed gabions in Chahda pilot site are expected to significantly reduce the runoff as well as to trap the soil carried downslope by runoff, tangible results will be recorded during the following rainy season. So far, two gabions have been constructed and there is anticipation that more will be constructed (Figure 1).

Figure 1. Stone gabion constructed within the pilot site.

In addition to the gabion technique to reduce soil degradation, ten manual land benches were implemented to further increase soil and water conservation (Figure 2). With a total distance of 700 m and a water retention capacity of 0.4m²/m, estimated water harvesting is expected to be 280 m^3 /year. This water quantity is sufficient for irrigating all planted trees and shrubs bordering the manual land benches installed in this site.

Figure 2. Benches constructed manually within the pilot site.

References

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List of Participants

1	Abbadi Ghaith
2	Barnoussi Chaima
3	Bejaoui Nourhene
4	Chemkhi Amir
5	Elmahouachi Oumayma
6	Ennahali Emna
7	Guenwati Chiraz
8	Hejiri Mohamed Salah
9	Ibnalhadj Mabrouk May
10	Kanzaoui Jihen
11	Mezlini Imene
12	Mhadhbi Yassmine
13	Rhouma Idriss
14	Selmi Iyed
15	Souara Yassine
16	Wessleti Wissal
17	Zeddini Rihab
18	Slim Slim
19	Bechir Tarchi

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