Evaluation of remediation recommendations: Stakeholder Workshop 3 Eskişehir, Turkey

1. Introduction

Since the Eskişehir study site is situated in the mountainous northern part of the Eskisehir region, where hill slope gradients and precipitation are relatively high compared to elsewhere, the main goal of remediation here is to decrease water erosion. Due to the long-standing nature of this problem, together with a lack of any previous initiatives to prevent soil erosion, soil profiles are thin, stoniness is high and soil organic matter content is low. Dry-farming fields in the vicinity exhibit severe rill erosion (Figure 1) which has been facilitated by agricultural practices such as ploughing abnormally deep or with the slope of the land.

The field where remediation strategies were tested was divided into three parts: i) a control plot where no remediation technologies were applied (i.e. down-slope ploughing continued); ii) contour ploughing; and iii) contour ploughing with terracing.

Terracing (also called fencing) consists of wooden stakes of 150 cm high inserted into ground and woven by tiny branches in between. Part of the soil from the upslope of the fence was piled up to support stakes and prevent run-off over the fence. Contour ploughing (including tillage) was applied in the western parcel of about 50 m long. Contours here were NE-running.

Figure 1: Rill erosion in vicinity of the trial field, N. Eskişehir.

2. Priority Remediation Strategies

The previous WB3 workshops prioritised four technologies to prevent water erosion in dry farming areas in Eskişehir (Table 1). After discussion with stakeholders, some of these technologies were slightly adapted in light of local conditions and future development. Instead of planted soil bunds, wooden fences with similar advantages were tested. Contour tillage, spoken about, but not voted on during the WB3 meeting, was also tested. These two technologies were applied and monitored for two years and the results were evaluated in a final stakeholder workshop, held in June 2011 in Eskişehir.

The outcomes and disadvantages observed for each technology were explained to farmers on the basis of evidence from field trials and models. After refreshing the memories of participants with a summary of the criteria used previously to evaluate remediation strategies, participants were invited to suggest new criteria set to assess the relevance of remediation technologies for their future practice. They selected the same criteria set as used in the WB3 meeting, and used these to prioritise the technologies that had been tested in the field. As a result, wooden fences were ranked most high, followed by contour tillage (Table 1). Stakeholders prioritised wooden terraces mostly due to their economic advantages (Figure 4.3.2). They thought that this strategy was most likely to increase crop yield and decrease risks to production, though it has a significant installation cost. Generally speaking, the terracing technology was considered superior in relation to socio-cultural and ecological criteria. Contour tillage is still a relevant option to participants, with a very low installation cost, and relatively good crop yields and conservation characteristics. However, participants expressed doubts about how effectively this technology would work during extreme rainfall events.

Table 1: Ranking of remediation options before and after field trials and modelling

Rank	Pre-results (WB3)	Post-results from trials and models
1	Planted soil bunds	Wooden fences with soil bund
2	Stone bunds	Contour tillage
3	Fanya juu terraces	

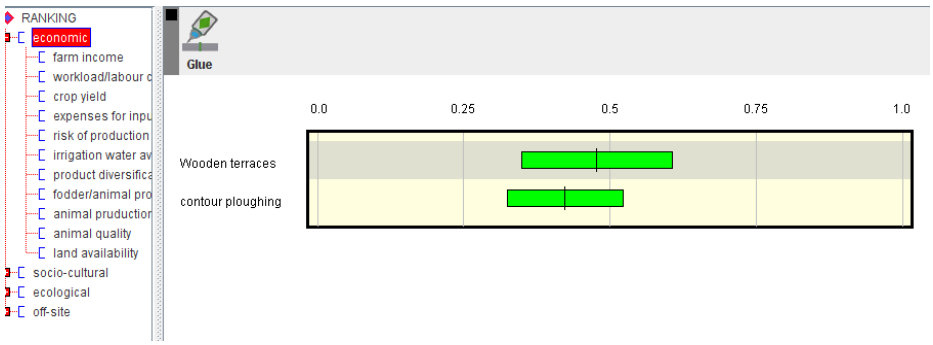

Figure 2: Ranking results and the criteria used to assess remediation technologies from the economic viewpoint

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

Stakeholders thought that the results of monitoring activities would be of central significance in facilitating the adoption of remediation strategies by farmers (Figure 3). They thought it was

important to simply explain the likely yield increase and types of expenditure associated with each technology in well designed brochures and in meetings/conferences with stakeholders.

Carefully designed popular articles to be seen in local newspapers were considered equally useful. More detailed policy briefs were thought suitable for policy makers at various levels. The main obstacle to adoption was perceived to be economic and demographic constraints e.g. decreasing welfare and emptying of rural settlements due to migration.

Figure 3: Stakeholders are discussing the remediation options at WB4-5 workshop.

4. Feedback from participants

All participants agreed that the inclusive nature of the DESIRE project was particularly useful, although it was time-consuming. Farmers especially welcomed the team's approach to determining future steps through discussion with them. More funding and involvement of farmers during the experimental phase of the project would increase the probability that remediation strategies were adopted more widely. The project team felt that the farmers "excessively credit the results of experiments, so they could not dare to express their contradictions".

5. Next steps

The following next steps were agreed at the workshop:

- Project management and scientific staffs promised to prepare and send this workshop report in October 2011 (it was done in time)
- A brochure including the virtues of wooden terraces will be prepared and disseminated by Dr. İnci Tolay and Dr. Zehra Altaç during November 2011
- A newspaper article on the remediation strategies will be prepared by Dr. Faruk Ocakoğlu in September 2011