

Evaluation of remediation recommendations: Stakeholder Workshop 3 Yan River Basin, China

1. Introduction

Six options were prioritized in the initial WB3 workshop: level bench terrace; reforestation; check dams; level groove on the slope; fish-scale pits; and mulching. Three of these were trialed in WB4 (details provided in Table 1).

Table 1: Description of remediation options trialed in the Chinese study site, including of brief description of the technologies (Dot), the nature of the desertification problems that need to be tackled in the study area (Dp) with accompanying photo and a short description of the results of remediation strategies (Dor)

<p>Level bench terrace</p> 	<p>Dot: a kind of construction to make small flats on the slopes that could increase the infiltration of rainfall and the yield of crops.</p> <p>Dp: the soil erosion and water loss in this region is very severe and induce land degradation and lower output.</p> <p>Dor:</p> <ul style="list-style-type: none"> - according to the survey in 2009, terrace (4500 kg/ha, maize; 3200 kg/ha, millet), slope cropland (maize 1100 kg/ha, millet 1200 kg/ha) - according to the simulating rainfall and small plots: no erosion terrace and 4800 t/km² on the slope of 20 degree with rainfall intensity (55 mm/hr) in 30 minutes
<p>Check dams</p> 	<p>Dot: a kind of construction (check dam) on the downstream of gullies to silt the sediment from the upper streams induced by erosion on the slopes and gullies. After a certain time, the area in front of the dam would be check dam land with sufficient water and fertile soil for crops.</p> <p>Dp: to reduce the sediment delivery to the river from gullies, mitigate the gully erosion that would make the landform much broken.</p> <p>Dor:</p> <ul style="list-style-type: none"> - according to the survey in 2009, terrace (7800 kg/ha, maize), slope cropland (maize 1100 kg/ha, millet 1200 kg/ha) - no erosion normally.
<p>Reforestation</p>	<p>Dot: a kind of vegetation measure to increase the land cover by</p>

	<p>crone and residues to reduce the rainfall erosion energy and increase the infiltration of rainfall.</p> <p>Dp: the soil erosion and water loss in this region is very severe and induce land degradation and also induce the land broken.</p> <p>Dor:</p> <ul style="list-style-type: none"> - according to the simulating rainfall and small plots: soil erosion rate with grass (70% of coverage) being 2400 t/km² and 4800 t/km² on the slope of 20 degree with rainfall intensity (55 mm/hr) in 30 minters
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The workshop was held with two sessions. The first session was held on 22 June 2011 with local farmers, including six village heads and two farmers from Zhenwudong Town, Ansai County, Yan'an City. These two farmers also carried out monitoring of soil erosion and soil water and conducted an economic survey. The second half of the workshop was conducted with policymakers at the county level on 23 June 2011, and was attended by:

- Mr. Su Wenlin, Deputy Director, Ansai Senior Association of Sciences (this association was founded by the former officials and local experts of Ansai County and almost all of them with plentiful local knowledge and experiences both in practices and management)
- Mr. Xue Shengming, Deputy Director of Ansai Bureau of Water Resurces (bureau for the soil and water conservation planning and implementation of projects, and water supply and resources protection)
- Mr. Bai Sunbao, Assistant of "Grain for Grain Project" Office of Ansai County
- Mr. Wu Ping, Assistant of Ansai Bureau of Forestry (bureau for forestry management, protection of natural forests, the forest right of local farmers)
- Mr. Xue Wei, Deputy-Director of Yan River Management Office, Ansai Branch (integrated river basin management office, normally concerning of all aspects of natural condition, policies and coordinating the different departments)

Additional interviews are planned with selected Government departments and experts in the following months to further disseminate project findings.

2. Priority Remediation Strategies

Table 1 shows that the priority remediation strategies selected in the initial WB3 workshop were also ranked in the same order after participants had been presented with evidence from field trials and modelling. The three strategies prioritised during the initial workshop are clearly the most important options in this region given their benefits in relation to ecological, economic and socio-cultural criteria. This was supported by field trial results. Other comments from workshop participants that help explain their rankings include:

- Flat land in the valley can be used soon after building check dams and will not suffer from siltation for 10 years or longer
- There are many terraces abandoned in Ansai County because they are far away from villages and the net income is very low, especially when considering the value of labour
- Reforestation could save time and enable land owners to obtain subsidies from the Government. Some participants also suggested how to improve the management of low-yielded forest

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

Rank	Technologies ranked in WB3 workshop	Technologies ranked in WB4-5 workshop
1	Check dams	Check dams
2	Reforestation	Reforestation
3	Terraces	Terraces

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

The selected strategies should be compared carefully and shared with land managers and/or policy-makers widely to let them to know the benefits, especially the environmental impacts beyond of the direct economic benefits.

There is an on-going check dam engineering project called “Light-point Engineering” being run by the Ministry of Water Resources that will build many check dams to stop the delivery of sediment to the Yellow River. The Ministry of Agriculture has protected and encouraged local governments and farmers to protect the cropland area in the region since 1980, and terraces could be built and protected well under this policy, even though the economic return is lower for some time.

4. Feedback from participants

Feedback about the workshop was very good. The objective was very clear and all participants had a chance to express their opinions.

Feedback about the project was good. However, participants thought it would be better if there were more investment for the region.