Project toAssist ERRA and its Partners to Restore Livelihoods in the Earthquake Affected Areas of Pakistan

Field Experience – Case Studies

Project Title

Indigenous irrigation channels to ensure irrigation sustainability

Project objectives

Rehabilitation of the irrigation channels was one of the primary needs of the community for restoring the agriculture activities of the area. The activity was envisaged to be low cost and locally available material to be used for reconstructing 600 metres long indigenous irrigation channel that would convert about 16 acres of rainfed agriculture land into irrigation farmland. These indigenous systems of irrigated agriculture represent sustainable solutions to the demands of intensive crop production.

Context

Biari darra village, Biari union council, Battagram district, lies in close proximity to the fault line. The earthquake killed 40 and destroyed agriculture infrastructure such as irrigation channels and field terraces.

Prior to the earthquake, the area was rainfed and mono-cropping was practised and maize crop cultivated. This was used as cereal, fodder and fuel. Due to the availability of water through the restored irrigation channels, multi cropping replaced mono cropping. Fruit orchids of cherry, apple, apricot, Japanese wild persimmon trees and walnut were grown in a 12 kanal area adding to the farmer's income. Flori-culture garden of gladiola was also planned in one kanal area. Use of certified seeds enhanced the quality of vegetable farming.

Population groups targeted

Farmer community of Biari darra village was targeted. With the introduction of agro-forestry and the regular supply of water through irrigation channel, the livelihoods of the communities were expected to improve significantly.

The project

Reconstruction of the irrigation channels provided the incentive to the farmers for investing in labour and material for building structures that could convey water to the fields where and when it was needed. It was also demonstrated that the activity was low cost and locally available material was used. With the introduction of agro-forestry and the regular supply of water through irrigation channel, the local communities livelihoods dependent on agriculture improved significantly.

Farmers learned to build a low cost irrigation channel with locally available material such as stone, use of minimum amount of cement, and clear silt and debris for channel maintenance.

Building capacities

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The restoration of the irrigation channels and adding to skills of the farmers directly involved in the activities was only one way of building their capacity. Indirectly, by engaging them in these kinds of activities, the farmers become part of a forum where they exchanged experience and knowledge. This was not only limited to the topic of irrigation channels, but quickly spread to include other issues they felt to be important. Finding sustainable solutions to the demands of intensive crop production was one of the objectives of the activity, therefore, knowledge of the linkages between adequate supply of water and cropping patterns was gained and shared by the project staff with the farmers and NGO partners.

This case study is a part of a series of studies to document the experience gained implementing the *Livelihoods Rehabilitation Strategy* developed by the Earthquake Reconstruction and Reconstruction Authority (ERRA) of Pakistan as part of its response to the October 8, 2005 earthquake which hit the north of the country and killed over 78,000 people. The Strategy is implemented by ERRA, Government line-departments and Non-Governmental Organizations, with technical assistance provided through FAO using Sida funding.

Challenges

- ✓ Initial planning was difficult.
- ✓ Socio cultural factors can determine the success or failure of an intervention.
- ✓ Lack of communication and coordination with the village community can lead to tensions.
- ✓ Due to 2-3 times increase in earnings, the community livelihoods and cultural practices in the watershed will improve.
- ✓ Conservation of natural resource such as water will be sustainability.

Opportunities

- ✓ Solutions must be explored to allow peer farmers to join the rest of the community and support the intervention without neglecting their crops.
- ✓ Due to stone slate lining of irrigation channel and use of local skilled labour, 60% savings of cost.
- ✓ Micro-hydel power and fish pond to positively impact the community livelihoods.

Considerations for replication

Impact assessment highlighted that the promotion of multi-cropping patterns-in particular of vegetables and fruit – improves access to a variety of food, even during the winter months, proving particularly successful. Participating households noted with the increase in the availability of food, there was wider diversity of their diet leading to improved nutrition and health of the people. With the surplus in vegetables, construction of fish ponds and micro-hydel power, they were able to generate more income. NGO partners observed that neighbouring villages outside the project intervention area were also involved in the indigenous construction of irrigation channel on their own initiative, clearly indicating the success of the intervention and its potential sustainability.

Irrigation schemes development has to be seen within the context of socio-economic circumstances of the user communities. In order to promote a broad based strategy for crop and agriculture production, it is necessary to consider

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irrigation as a focal point. Targeting irrigation channels to small community groups is desirable as it raises the economic stakes at an individual level and increase the potential for success of irrigation schemes. Dealing with gender and population dynamics should occur at planning stage as a primary consideration. It is also necessary to adopt a strategy combining empowerment, awareness and capacity building and training to facilitate prospects for continued prosperity.

The experience described here can be successfully scaled-up/replicated under the following conditions:

- ✓ Irrigation channels should be reconstructed within an integrated policy and programme development so as to ensure sustainability and coherence.
- ✓ Participatory approaches are used with farmers who have to be involved in all stages of project activities.
- ✓ The construction of irrigation channel is preceded by community group formation and capacity building to ensure effective participation, ownership and sustainability.
- ✓ The building of the irrigation channel is implemented by the whole community.
- ✓ The project acidity is accompanied by relevant training such as maintenance and upkeep.
- ✓ Promotion of muti-cropping cultivation by selecting the most appropriate local seed varieties of vegetables and fruits.
- ✓ Use of knowledge and experience of local populations as they are more aware of the constraints and opportunities of their environment.

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