

Socioeconomic Impacts of Low-Cost Tank with Drip Irrigation for Vegetable Production: a Community-scale Case Study in Nepal

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1. INTRODUCTION

Background: This paper summarizes the socioeconomic implications of the adoption of low-cost microirrigation technology for vegetable production in a mountain community in Nepal. The technology was developed, field tested, adapted, and refined by International Development Enterprises (IDE)/Nepal. The village level impact assessment study was carried out in late 2004. The improved knowledgebase and learning from this community-scale case study have global significance in the search for an affordable, effective means for improving water productivity and increasing farmers' income and employment, and for meeting the MDG targets in a shorter time.

Description of the technology: The technology includes two major components (Fig 1):

- low-cost water storage tank (1500-3000 liters) with drip irrigation
- improved vegetable production practices, including off-season cultivation

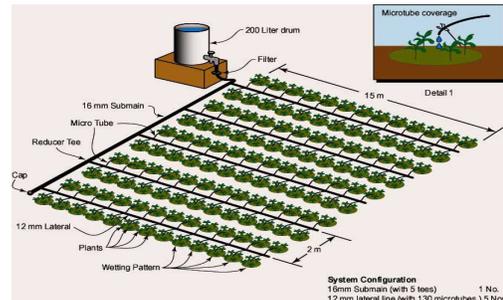


Fig 1. Schematic diagram of tank-based drip technology (Source: IDE)

In the village studied, the technology was pilot-scale tested, verified, and implemented by IDE/Nepal, under a grant funded by Hill Agriculture Research Project of the Government of Nepal- a DFID/UK funded project. Recently, this project has been up-scaled to many other districts in Nepal.

2. OBJECTIVE

To assess socioeconomic impacts of the low-cost tank with drip kit (micro irrigation) for vegetable production on farm income, employment, and other key elements of rural livelihoods.

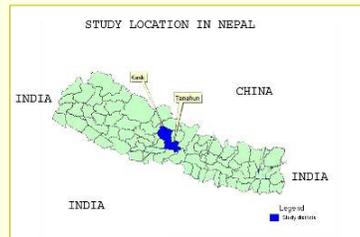


Fig 2. Map of Nepal showing the project areas



3. METHODOLOGY AND DATA COLLECTION

- The study was done in Ekle Phant village (Tanahu district), a mountain community in central Nepal (Fig 2).
- Data was collected and analyzed using Impact Assessment Framework.
- A combination of qualitative survey (PRA), including Participatory Impact Assessment (PIMA), and quantitative household survey methods were used. Forty individual households were surveyed.
- Review of project implementation and M&E related project documents, consultation with key informants and farmers' leaders.

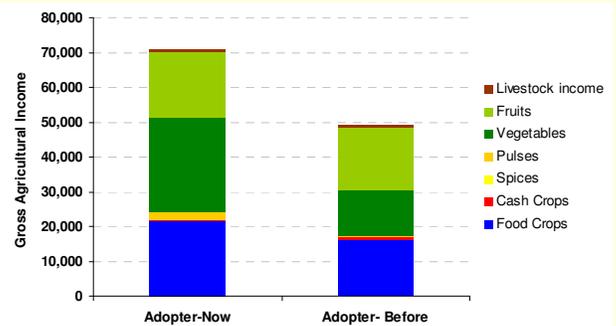


Fig 3. Adopter's income now and before the technology adoption

4. RESULTS

Key impacts of the technology on community livelihoods

- Shift in cropping patterns from cereals to off-season vegetables
- Increased cropping intensity (by 100%) and number of vegetable types cultivated in the village
- Increased crop productivity and farm income by 30-40%
- Increased off-season farm employment by more than 50 %
- Improved economic condition of farmers and the community
- Improved overall food security and employment in the village
- Improved household water security, better household sanitation and water access, and improved community well-beings

5. CONCLUSIONS AND IMPLICATIONS

- Within 2-3 years of the technology adoption, many households surveyed were able to double their annual farm income.
- The beneficial impacts of the technology are obtained by economically and socially better-off as well as worse-off groups.
- This is a pro-poor technology targeted to smallholder farmers.
- The technology became popular among smallholder farmers due to its very low cost and simple design technology.
- Adaptation of participatory tools and techniques, and application of PIMA for assessing multifaceted impacts of the technology in a community as done here contributes to the literature on "impact assessment of technology on rural livelihoods."

Reference: NARMA, 2004. Impact Evaluation of Selected Hill Research Programme Funded Project - Low cost water storage tank for dry season irrigation of high value horticultural crops (annex ix). NARMA Consultancy Pvt. Ltd, Kathmandu Nepal project (unpublished report).

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