

Moisture-Yield Interaction and Farmers' Perceptions : Lessons from Watershed Projects in Gujarat

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Traditionally, farmers in dryland regions have a fairly good understanding of the critical role of soil-moisture conservation in sustaining the crop yields. This is evidenced by a number of indigenous practices which they traditionally follow. However, some of these practices, especially field bundings, often need modifications, besides proper maintenance. One of the technological options adopted more recently in watershed projects in India, is to promote vegetative barriers instead of the conventional earth or stone bunding. These measures though, technologically more sound and environmentally conducive, might bring only limited economic (yield) gains.

In that case, these measures may fail to achieve the laudable objectives of ensuring sustainability to the farmers, depending on the dryland agriculture.

This paper is an attempt to examine yield impact of vegetative bundings and understand farmers' perceptions about moisture yield interactions under the constrained agro-climatic conditions in Gujarat. The analysis suggests that (a) traditional bundings are not only widely prevalent but also considered very important for higher yields under 'normal' rainfall conditions; compared to this, yield impact of vegetative barriers - actual, as well as, perceived is low and also uncertain, (b) given the indigenous practices of soil-moisture conservation, fertiliser turns out to be the most important factor for obtaining higher yields; and (c) strategy to provide stability in yield would require large scale investments in the form of water harvesting structures and irrigation. What is, therefore, needed is to improve the net returns, hence, paying capacity of farmers rather than large scale subsidies spread thinly over a large number of watershed projects in the dryland regions.

Introduction

By the end of eighties, technolog-based development in Indian agriculture had spread widely across farms and regions, and also across crops (like maize, bajri and oilseeds) grown mainly under rainfed conditions (NCAER, 1991). Often, the yield levels achieved on rainfed crops are fairly high when compared with the agronomic potential (Shah and Sah, 1993). This is certainly not a mean achievement. In fact, the major difficulty facing the rainfed agriculture is not so much of raising the yield levels under normal weather conditions; rather the challenge is to attain stability of yields across farms and over time. The past experiences with respect to broadening the base of technology led development has also revealed that application of new inputs (like seed and fertiliser)

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