

Title: Sustainable Water Management Research and Technologies in India: Economics, Outreach and Policy Linkages

Abstract:

In India, water management strategies are important to address the existing as well as emerging water scarcity situations. It is therefore important to identify and implement the appropriate and affordable technologies at farm level. In this context, analysis of 40 years of water management research and outreach in India using data from 34 centres and 5000 farmers field trials across 23 states showed that out of the 502 technologies released, only 110 technologies (22%) have successfully been reached the farmers in different regions. The returns to water management technologies ranged from 15 to 25 % (average 21%) at research station level compared to 9-14% at farm level (average 10.8%). Among the technologies adopted by farmers, micro irrigation (drip and sprinkler) had the major share (65%). Given the current rate of adoption and rate of return, the success rate of the water management technologies is only about 12%. Hence, the two gaps-technology transfer gap and the technology performance gaps should be addressed in the future water management research and outreach programs. In this context, the paper makes the following recommendations: a) all the proven technologies, farmer participatory action research should be conducted in a cluster of 5-6 villages continuously for 2-3 years; b) as still about 80% of the practices in the farmers' fields are local wisdom based, future research should take the lead from these practices and validate them; c) capacity building programs on these technologies can be inbuilt in the extension programs of the research stations and state agriculture departments in each region; d) convergence of the government programs in technology transfer should be made so that scaling up of the technologies will be much easier through involvement of different stakeholders such as government departments, NGOs, private sectors and farmers. Wherever possible, public-private partnership in technology promotion and uptake such as drip and sprinkler irrigation can be explored by initiating local skill development programs involving the drip manufacturers and suppliers.

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