

# **Institutionalisation of the outputs of a participatory crop improvement project in Gujarat, India**

**A Mondal**

*Association of Social Advancement (ASA), Sahyog Nagar,  
Dahod, Gujarat, India.*

## **ABSTRACT**

A participatory crop improvement (PCI) project in Gujarat, India targeted the high potential production system (HPPS) devoted largely to rice and wheat. An NGO, the Action for Social Advancement (ASA), led this project. A new rice variety that was not officially recommended for cultivation in Gujarat greatly reduced farmers' costs of production and has spread widely. Several institutional impacts followed from the project. ASA is now leading projects that are based on the PCI approach, and has recognized the need for changes in regulatory frameworks that control the release and popularization of varieties. ASA is now beginning to actively advocate such changes.

## INTRODUCTION

The Action for Social Advancement (ASA), has worked in collaboration with the Centre for Arid Zone Studies on a participatory crop improvement (PCI) project in Western India. The aim of the project was to improve agricultural productivity of smallholder farming systems in the Godhra district of Gujarat by providing farmers with a 'basket of choices' in relation to crop cultivars and production technologies. As an example of the success of the approach we describe the value of the rice variety *Mahamaya*, identified by the project, to the farmers. ASA became convinced by these successes and has begun a process of institutional uptake.

## IMPACT IN INDIA

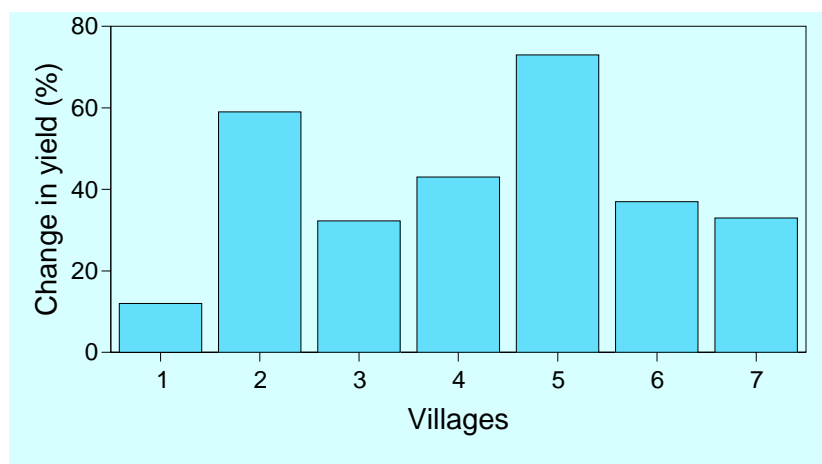
### ***Why is participatory crop improvement needed?***

It is commonly assumed that farmers in high potential production systems (HPPSs) have much better access to modern technologies than those in marginal environments. However, huge variation exists in the HPPSs and in many regions old varieties still dominate cultivation, suggesting that farmers are failing to benefit fully from modern plant breeding products. For example, in Godhra district, farm households have been growing one single variety of rice, *GR 17* in over 90-95 % of the irrigated rice area for over a decade. The variety is in very high demand and so fetches a premium over other rice varieties. However, the variety has, over time, lost much of its resistance to pests and now requires high pesticide applications which have raised the cost of production.

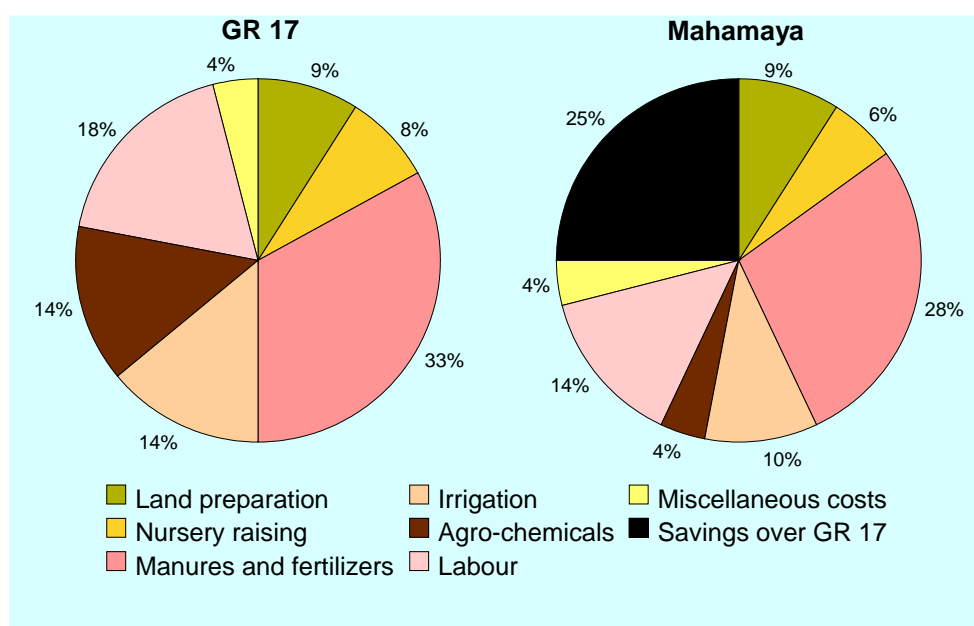
### **A higher yielding, farmer-preferred rice variety for irrigated conditions**

The participatory varietal selection (PVS) programme identified a new rice variety, *Mahamaya*, for cultivation in HPPSs. This variety has been released in several states of India, but not in Gujarat and is much higher yielding than the local cultivar, *GR 17* (Fig. 1). The increase in yield is largely due to the shorter duration of *Mahamaya* (ca. 10 days) which reduces its vulnerability to end-of-season drought.

Farmers place great importance on early maturity as it brings many added benefits, including lower costs of production. By harvesting earlier, the next crop (usually wheat) can be sown on residual moisture, thereby saving on pre-sowing irrigation. *Mahamaya* is also more resistant to pests and diseases and so requires fewer chemicals. This has both financial and environmental benefits. Overall, *Mahamaya* resulted in a net saving of 25% compared with the recommended *GR 17* cultivar (Fig. 2).



**Figure 1.** Percentage yield gains due to the introduction of the new rice variety *Mahamaya* relative to the cultivar GR 17. Data are the mean of 36 farmers in each village.



**Figure 2.** Percentage costs of production for GR 17 (local cultivar), and *Mahamaya* (PVS variety), Gujarat, India 2003.

This, and other successful examples, convinced ASA and its partners that the PCI approach was simple, effective and worthy of wider adoption. We examine how this approach is in the process of vertical dissemination and institutionalisation.

### **Institutionalisation of project outputs**

One important institutional mechanism that has been created by the PCI project is a seed producers' cooperative. This cooperative supplies seed of farmer-preferred varieties to farmers in the region and continues to do so following the official end of the project in January 2003.

In addition to the seed cooperative, some individuals have also started to supply seed within the region. For example, a local man who had worked as a research associate for the PCI project has undertaken seed multiplication of the one of the preferred rice varieties, *Mahamaya*, introduced by the PCI project. He has procured about 20 t of seed to be sold in the next season. According to him, there is an increasing demand for the variety in the area and he predicts that in the next 3 to 4 years *Mahamaya* will become the dominant local variety. He has developed a business plan to produce and sell at least 200 t of seed in the next two years and all these activities will be undertaken at his own cost. He has requested support from ASA to develop links with the research institutions for access to seed of new varieties and plans to use this seed to conduct PVS trials to identify new genotypes for future business.

Institutionalisation of PVS within ASA has also taken place. ASA is currently working in watershed and participatory irrigation management projects in four districts of Madhya Pradesh, encompassing more than 100 villages and is now using PVS trials as a regular intervention. Concurrently, ASA has submitted a proposal to a DFID supported project in Madhya Pradesh which provides support to NGOs for civil society strengthening. The core element of ASA's proposal to DFID is to provide capacity building support to at least 15 NGOs from within the existing grantees for establishment of PVS trials.

On a wider scale, ASA has also begun several initiatives to institutionalise PVS approaches within government projects and quasi-government organizations. One example is an ASA assignment to provide technical inputs to a World Bank project 'District Poverty Initiatives' together with the government of Madhya Pradesh. The project is working in 2000 villages in 14 districts of Madhya Pradesh. ASA input includes the setting up of PVS trials in about 60 villages across three project districts. These PVS trials have proved extremely successful in demonstrating the utility of PVS as well as capacity building in terms of training and gaining the trust of project personnel. The success of these trials means that it is likely that PVS will be adopted in all 14 project districts covering the 2000 villages.

A clear constraint to the PVS approach is the current regulatory framework that makes it practically impossible for an NGO or project to gain official recognition of the suitability of a variety for cultivation. In order to promote a policy for positive changes in the seed regulatory framework ASA is planning a number of workshops and preparing review/discussion papers to engage the policy makers in the coming years. Policy changes arising from such initiatives will take time, but the case will be strengthened by exposing more and more organizations to the benefits of PVS and building their capacity to participate.

