

# Increasing Productivity – Ensuring Food Security

In a country which has the majority of its population engaged in the occupation of agriculture – we still don't produce enough to feed our population. The country's average farm productivity which stood around 2 tonnes per hectare is lower than the global average was about 2.6 tonnes. The last breakthrough in agriculture happened four decades ago, where the green revolution helped in significantly improving the yields. Today, the increase in farming productivity is no longer needed just to increase the economic security of the farmer but it's become pertinent to address the grave Malthus-ian concern of food security for the country.

## Objective & Strategies

The objective of this brief is to understand how could we increase the poor agricultural productivity of India. The strategy we have seen to be the lynchpin of success has been bridging the divide between research and farm.

## What are various instruments to bring the scientific innovation to the farms?

The success of Green revolution hinged on making the latest scientific research accessible to farmers. Today, while there is a greater research knowledge on the soil systems and sustainable agriculture, we haven't been able to take those messages to the farmer. Hence the core strategy to improve the agricultural productivity would be making the scientific research and best practices regarding soil type, use of fertilizers, cropping pattern, irrigation techniques, minimizing losses, current prices accessible to farmers.



1. Pilot projects through community participation



2. Awareness camps and expert lectures



3. Using tools of IT

## Instrument 1: Pilot projects through community participation

In India there are many parts of the country which are still rain-fed. The irrigated area in even developed states such as Maharashtra and Karnataka is as low as 17.6% and 25% respectively. The increasing droughts (which occurred 6 times in the last 10 years) had made the conditions worse for the farmers of Karnataka. It was then that the Agricultural Ministry in leadership of Umesh Katti approached International Crop Research Institute for the Semi-Arid Tropics (ICRISAT). This association gave rise to a soil rejuvenation pilot program called Bhoo Chetana in 6 districts of Karnataka (which was later scaled to all 30 districts). The programme aimed to collect soil samples with farmer participation. Those soil samples were later analyzed in the lab and made specific recommendation to each district regarding the amount of fertilizer and micronutrients to be used by farmers. To communicate this to the farmers 10,000 farmer facilitators were employed from within the villages to spread the word about

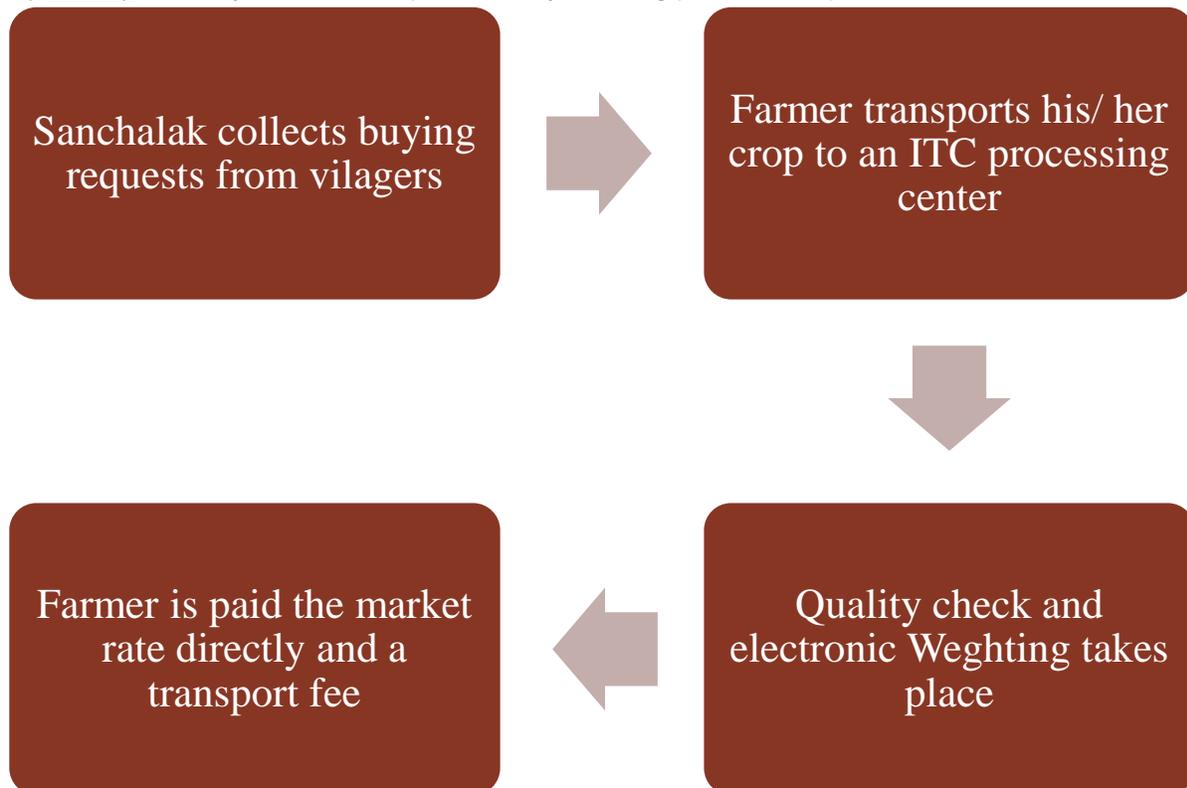
- Drought friendly plants such as chickpea, millets
- Amount of fertilizers and micro nutrients needed for specific soils

### Instrument 2: Awareness camps and Expert Lectures

To be able to provide markets with consistent food supply, farmers need to minimize losses which occur on the way to market (either due to weather conditions, or lack of proper infrastructure). Farmer's profitability takes a huge hit because of such losses and induces a vicious cycle of food deficit. A UN brief articulates how change in farming practices could help curtail such losses. It provides the example of mustard farming in India, which is traditionally planted in September and harvested in late December or early January. But often, up to 30 percent of the harvest was lost to frost. To avoid that, agriculture scientists developed a seed which had a lower maturity time period. The awareness was generated through camps where experts spoke about how lower crop maturity could not only minimize the loss but also allowed the farmers to grow a second crop in a year. The camps where clear quantum of financial gain which the new seeds would allow was presented to farmers, enabled them to circumvent the effect of frost on their crops.

### Instrument 3: Using tools of Information Technology (IT)

After harvesting, comes selling of produce to the markets. In absence of accurate information on real time rates in mandi, the profit margin of the farmer takes a huge hit due to the presence of middlemen. Such inefficiencies in the system can be rectified with the help of the technology. With projects like Digital Panchayat, there is an initiative to take computers to our Panchayat. With the presence of trained people access to internet could make the information about the price trends of crops far more transparent. ITC as a part of its CSR initiative started a unique program called e-choupal. It aims to train a farmer in each village to become a "sanchalak" who would be trained to operate the computer. He would be able to access daily closing prices on local mandis and global price trends. ITC funds the initial setup cost 1.5 L and the sanchalak is expected to pay operating cost to the tune of 50,000. Each computer aims to serve 600 farmers in 10 nearby villages. During the harvest seasons, ITC also offers a unique proposition to buy the crop directly from any farmer at the previous day's closing price and helps subvert the middlemen.



## Available Resources

Schemes	Name of the scheme	Description
<b>Central Schemes</b>	National Food Security Mission	Large crop areas will be selected for demonstration of technologies such as system of rice intensification (SRI) technique, green manuring, new high yielding variety (HYV) seeds, use of lime/liming material to correct soil acidity, soil treatment for termite control. The assistance available for demonstration would be Rs 7500 per hectare(rice/wheat/pulses) and Rs 5000 per hectare(coarse cereals).
	National Mission on Sustainable Agriculture	<ul style="list-style-type: none"> <li>• Training on soil health management will be provided to farmers including field demonstrations. Assistance of Rs 25,000 per training session for 20 or more participants will be provided.</li> <li>• One time assistance to State Governments for Creation of District-wise Digital <b>Soil Fertility Maps</b> up to Rs 6 lakh per district subject to a maximum of Rs 50 lakh for one state.</li> <li>• Assistance of Rs 10 crore per block to disseminate climate change mitigation technologies.</li> </ul>
	National Horticulture Mission	Assistance for setting up markets will only be given to those States which have amended their State Agricultural Produce Marketing Committee (APMC) Act for facilitating alternate marketing by farmers/farmer groups involved in horticulture limited to a maximum of Rs 50 crore for terminal markets and Rs 25 crore for wholesale markets will be provided.
<b>Key Resource People</b>	Village Sarpanch	Responsible for identification of beneficiaries and selection of interventions.
	Agricultural Technology Management Agency (ATMA)	An autonomous agency created by the State Government at the District Level providing technical support.
	District Magistrate / CEO of Zila Parishad	Responsible for project formulation, implementation and monitoring.