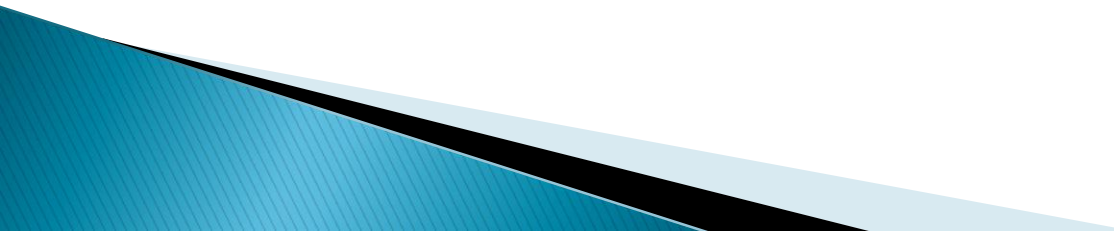


Extending Agriculture to the Poverty Heartland of India: What Matters

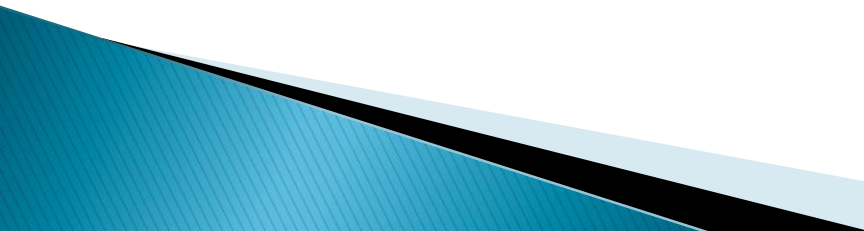
Roundtable Consultation on Agricultural Extension,
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March 15–17

By
Soumen Biswas

Green Revolution Technologies and Small-Holder Farmers

- ▶ Green revolution technologies backed by a vigorous smallholder sector have transformed Asian agriculture in the last five decades.
 - ▶ Smallholder sector produces 80% of the food consumed in the developing world and feeds one-third of the global population (FAO, 2011).
 - ▶ While millions of smallholders reaped the benefits of green revolution in India, there were millions who did not.
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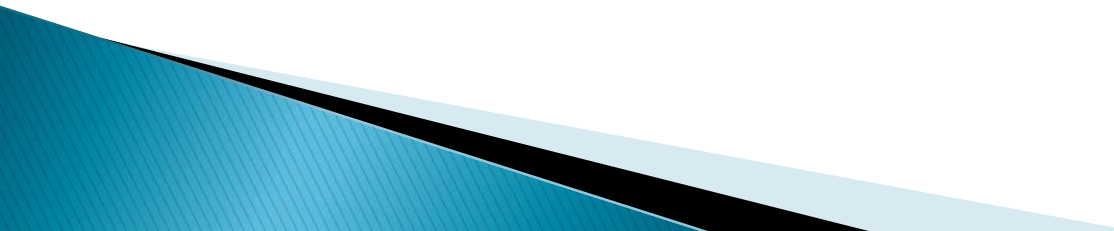
Green Revolution, The Poorer Farmer and the Difficult Regions

- ▶ The Government's efforts in agriculture were geared towards aggregate food sufficiency and not household food-security.
 - ▶ The focus was therefore on areas with potential to increase production (the plains and the valleys) and farmers who could absorb inputs and technology.
 - ▶ As a result, the poorer among the lot were left out and regional disparities increased.
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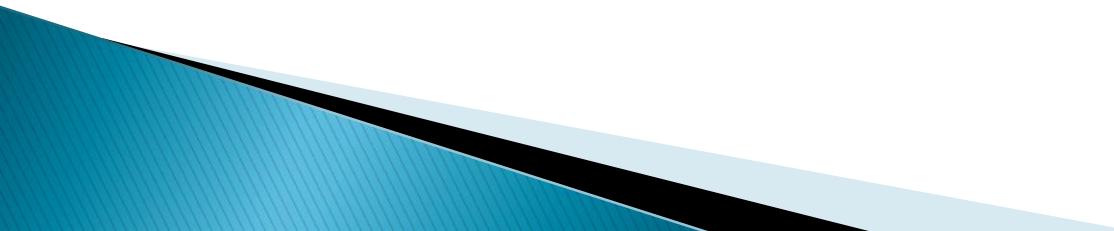
The Poorer Farmer and the Difficult Region

- ▶ Caste hierarchy correlates with economic well-being in India. Left-out households were mainly tribals and various “lower castes” – **excluded and isolated** from the mainstream.
- ▶ Agriculture in the plains prospered. Hilly and undulating central Indian tribal region (CETR) lagged far behind.
- ▶ **Two-third** of the poor households, estimated at 250 m, reside in the CETR.
- ▶ Committee, set up by the Planning Commission in 2009, estimated poor population in this region as **52%**, against a national average of 37%.

Extending Green Revolution to Difficult Regions

- ▶ Agriculture production in the green revolution areas is showing plateauing trend.
 - ▶ The Government wants to “extend the green revolution” to the areas which did not benefit from it earlier viz. the eastern part of the country and the CETR.
 - ▶ The question is, **how to do that?**
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Features of the CETR

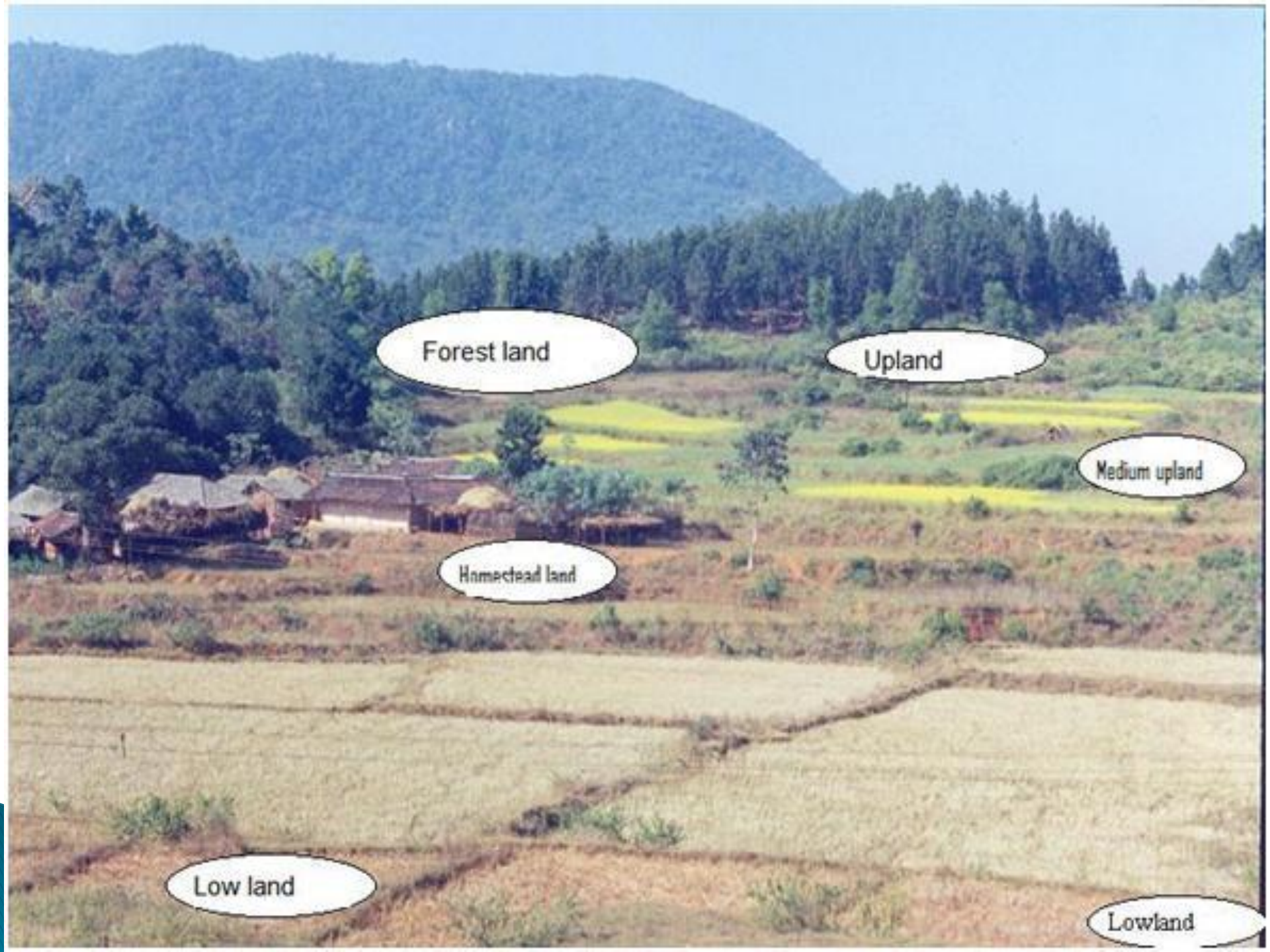
- ▶ The entire region has an undulating and hilly terrain.
 - ▶ There are sub-regional and local differences in topography .
 - ▶ It may be convenient to classify the landscape as **upper, middle and lower watersheds**.
 - ▶ Level of development in agriculture and the overall pattern of livelihoods vary with local topography and distance from urban centres.
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Features of the CETR, Contd.

- ▶ Annual average rainfall in majority of the areas is good (800 mm – 1400 mm), though pattern is very erratic.
- ▶ Positive water balance in most of the districts of Central India (ICRISAT).
- ▶ Numerous rain-fed rivers, rivulets and streams crisscross the region. Most of them go dry post-monsoon.
- ▶ Net sown area is only 26%. Very high cultivable wasteland.
- ▶ Large majority of the population are **marginal and small farmers**. Landlessness is not a major problem. Farming is mostly rainfed and monocropped.

Sub-regional Variations in Agriculture

- ▶ Forests were the principal source of livelihoods not long ago in the **upper watersheds** that have steeper slopes and are generally populated by the tribals.
- ▶ The **middle watersheds** with gentler slopes occupy the largest area of the region. People of various caste groups have been settled agriculturists, even though input use is limited and technology is dated.
- ▶ Farming systems in the **lower watersheds**, comprising minimum slopes and wider valleys, have been influenced to some extent by the green revolution led advances in agriculture.



Forest land

Upland

Medium upland

Hamstead land

Low land

Lowland

PRADAN and its work in CETR

- ▶ PRADAN is an NGO that currently works with 1.5 m population with focus on livelihood promotion
- ▶ PRADAN focuses on the **poorest of the poor**.
- ▶ Most of PRADAN's initiatives are in the CETR – in the middle and the upper watersheds.
- ▶ More than 70% of PRADAN's work is in the farm sector.
- ▶ PRADAN has developed new ways of water harvesting and irrigation, productivity enhancement of staple crops and scores of **agricultural production clusters** in remote areas of the region.

Early experiences in CETR

We focused on uplands and the cultivable wastelands.

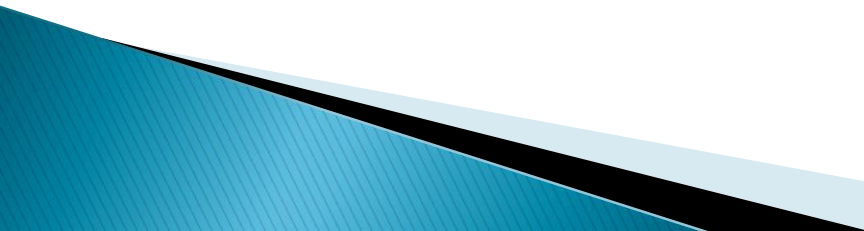
- ▶ Tree plantation appeared most suitable.
- ▶ The realisations were:
 - In many cases these lands do not belong to the poor
 - When these are held by the poor, they do not have the patience and the wherewithal for a long gestation venture
 - Overall the stake of holders on these lands is very limited and therefore initiative is missing.
 - In a free grazing situation, maintenance of the plantation is very costly and unaffordable

Next steps: Rain-water Harvesting and Micro-lift Irrigation

We realised that no agriculture development is possible unless there is minimum assurance of water for crops

- In-situ rainwater harvesting structures were devised for **medium uplands** to protect monsoon crops from rain-failure.
- Micro lift irrigations – each with a net command area of 15 hectares and 40 families on an average – were installed drawing water from streams and rivulets.

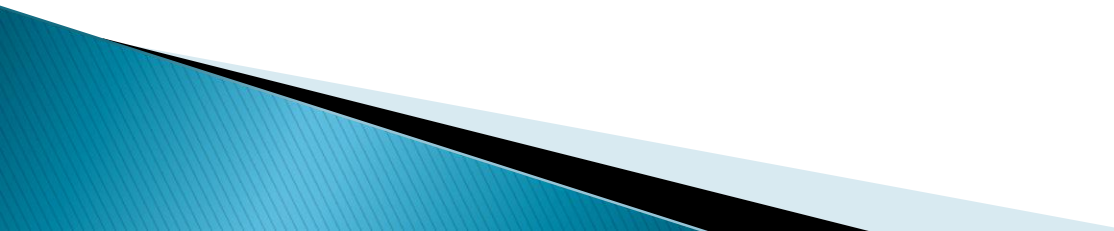
Experience

- ▶ The rainwater harvesting structures (small water harvesting pits and ponds, spread across large area) found acceptance. These protected the crops from rain failures but did not bring in more investment to improve productivity. The structures were not maintained
 - ▶ Lift irrigations were used with enthusiasm to begin with. However, command area utilisation decreased over years.
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Realisation

- ▶ Interventions, applied sporadically over a number of villages, do not help where agriculture is overwhelmingly primitive over large stretches.
- ▶ Water assurance is necessary but not a sufficient condition for agriculture growth. Intensive intervention in input supply and technology is a must.
- ▶ Change in people's thought processes is necessary. A transformation is needed from “I cannot” to “I can”.

Area Saturation, Social Mobilisation, Input linkages

- ▶ We reached out to as many poor families as possible in an area and organised the women into a **large number of small groups** around the activity of savings and credit. As many pieces of lands were targeted for intervention as possible.
 - ▶ Strengthened our focus on the **lowlands** and **homesteads** where people have their maximum stake
 - ▶ Created mechanisms for input supply by ourselves, because market linkages did not exist.
 - ▶ Experts from the Agriculture Department helped us with advice in their informal capacities, as we also got experts from the market.
 - ▶ Government grants and subsidies were tapped to create water-harvesting and irrigation facilities.
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Experience

- ▶ Water-bodies created in lowlands were widely accepted. An additional crop in the winter months was introduced by many families.
- ▶ Commend area coverage in the lift irrigation sites increased.
- ▶ While cropping intensity and productivity increased for cereal crops, introduction of **cash crops (vegetables and orchards)** was limited. They failed where introduced; when there was production, market did not exist or did not pay.
- ▶ As we attempted to withdraw after a couple of years, performance went down in a majority of the places.

Learning

- ▶ Surveys pointed out a **change in thinking** among members of self-help groups and their families. The groups had started negotiating with local mainstream institutions. The individual members thought that they should better their agriculture.
- ▶ Farmers were attempting to make use of water; however there were still many missing links. Whereas cropping of cereals was a traditional activity, cash cropping was new to them.
- ▶ For cash crops, an area too small or too large did not help. Location of the land matters a great deal. Contiguity among patches is important. Timing of sowing is crucial to synchronise with market. However, cultivation in “off season” requires higher order skills.

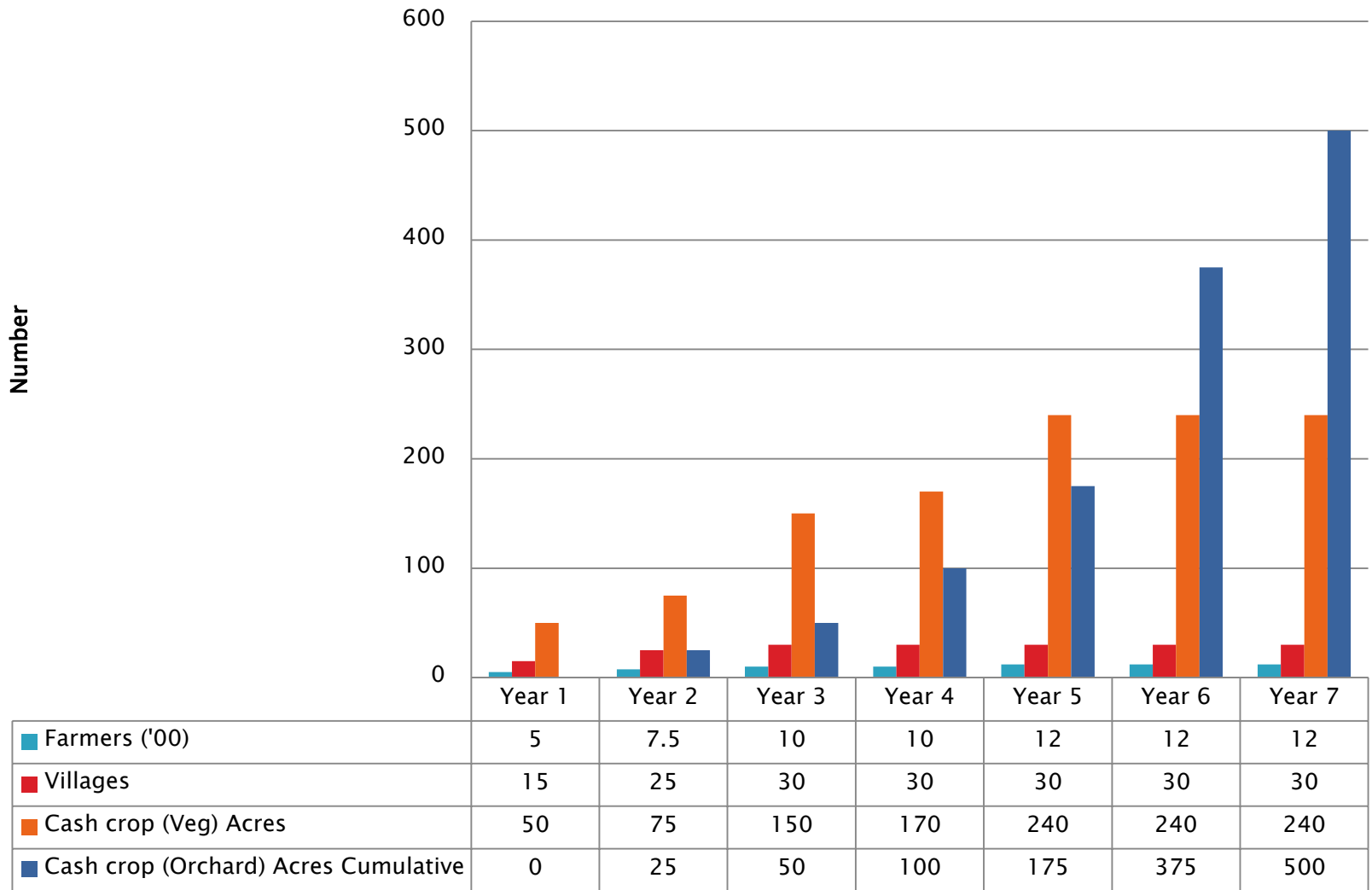
Learning

- ▶ As a thumb rule, income equivalent to **200 days of wage at market rate** is necessary from a new activity to attract a marginal farmer (approximately 320 USD). On the other hand, a Big size plot is not manageable. A farm size of **0.1–0.3 acres** and **two to three vegetable crops** a year fits the bill eminently.
- ▶ In the initial years, inter-cropping with seasonal crops in perennial orchards is a must to sustain the interest of families and provide protection and maintenance.

Learning

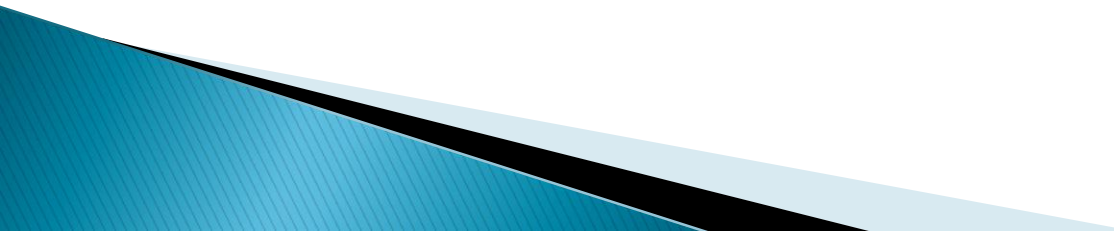
- ▶ Two–three years is too short an intervention to sustain the effects. A longer haul, spanning over **7–8 years**, is required for the growth to be self propelling.
- ▶ Building local human resources to service the farmers should start from the very beginning. The local youth as **community service providers** are great actors in technology dissemination and input–output linkages.
- ▶ **Market linkages** develop only after a threshold level of produce is available in a cluster of villages. This may take 5–7 years. It is wise to concentrate on production and be happy with a minimum remunerative price rather than floating an intermediary organisation for marketing.

Progress of a Unit of Agriculture Production Cluster over Years



Last but not Least

Our experience of agriculture development with the **excluded and the isolated** population indicated that development of APCs not only requires techno-managerial competence but also work on the **psycho-social** front; and tenacity to continue against odds over years. PRADAN professionals, placed in the villages, combined these elements to develop the APCS as they are today.



Thank You!