

HORTICULTURE FARMERS LEAD THE WAY IN ADOPTION OF PRECISION TECH

Relevant for: Indian Economy | Topic: Major Crops, Cropping Patterns and various Agricultural Revolutions

The biggest problem Indian farmers face is a disparity in information on demand, coupled with lack of market linkages

India is among the top three producers in the world for most major [agricultural commodities](#). That's not surprising with half the country's workforce involved in farming on 140 million hectares of agricultural land, nearly half of which is irrigated. At the same time, the vast majority of farmers in the country are poor and we see the spectre of thousands of suicides by them each year.

The biggest problem Indian farmers face is a disparity in information on demand, coupled with lack of market linkages.

"The injustice we have done to our farmers is not being able to ensure that their produce has a market where they can get better returns," says Abhilash Sethi, principal at agritech venture capital (VC) firm Omnivore.

It's estimated that farmers receive only 30% of the value of their produce, and that's an average across all crops. The returns are usually lower in conventional commodities like rice, wheat, potato and onion.

Foodgrains are where market linkages are the poorest as farmers are yoked to agricultural produce market committees (APMCs). All states, except Kerala, Manipur and Jammu and Kashmir, enacted the APMC Act to stipulate that agricultural staples should only be sold in mandis. This was supposed to prevent exploitation of farmers by traders and middlemen, but it got corrupted over time.

Lack of clarity

"Paddy and wheat farmers go to the APMC without knowing if their produce will get sold that day or in 15 days, who will buy from them at what rate, or how the quality of their produce will be assessed. There are a host of issues in the post-harvest scene there," points out Sethi.

The government's agricultural reforms aim to break these shackles by allowing farmers to sell their produce to anybody anywhere, including online trading platforms. But there's pushback from stakeholders in states like Punjab and Haryana where a complex web of subsidies and support prices has got entrenched since the green revolution.

One fallout of this is that growers of conventional crops mostly live hand-to-mouth. This in turn prevents them from adopting technology that could reduce their farm input costs and raise productivity.

"They are just not generating enough cash to do some discretionary spending," says Sethi.

That's one reason why agritech startups trying to improve farming activities have initially focused on horticulture. India is now the world's second largest producer of fruits and vegetables, which doubled in quantity in the past two decades, overtaking foodgrain production in 2012-13.

Horticulture farmers make bigger investments and get higher returns per acre than rice and wheat growers. Their productivity and export value are higher too.

"These farmers know there is a demand and market for their produce where the price will not fluctuate as wildly as it does for crops like potato and onion," says Sethi. "Hence they are assured of cash flow and have moved on to adopting technologies to lower the cost of cultivation and increase the productivity as well by safeguarding their yield."

For example, it's the grape farmers of Karnataka, pomegranate farmers of Maharashtra and shrimp farmers of coastal Andhra Pradesh and Tamil Nadu who have been taking to precision farming with IoT devices from startups like Fasal in horticulture and Eruvaka in aquaculture.

The first level of technology is figuring out the right amount of input at the right time, as in water, fertilizer and pesticides for horticulture and feed in shrimp farms. The next stage will be to raise productivity with better seeds, mechanized planting, crop management and so on.

Tailwinds from covid-related disruption of traditional supply chains and consumer awareness of health, such as a demand for lower chemical residues, have added to this growing adoption of technology. A survey of 67 agritech companies in an Omnivore-Accel study revealed an uplift in demand for most players across the value chain in 2020, with several of them expecting to see positive sales growth for the year.

Boosting incomes

"By disintermediating the supply chain, companies like Ninjacart and Clover have increased farmer realizations by up to 20%," says Prashanth Prakash, partner at Accel, one of the co-authors of the study. "Companies like Agrostar have at the same time improved the quality of farm inputs by sourcing them directly from manufacturers, thereby combating spurious product supply."

But perhaps the biggest change in the year of covid has been in the tech-based correction in the overuse of pesticides.

Farmers in India have tended to err on the side of spraying extra because of lack of access to good insurance schemes. But an enhanced focus on chemical residues in export markets has created a new incentive to use technology, such as Fasal's IoT devices, for India's horticulture farmers to continue their progress towards becoming the leading source of nutritious food for the world.

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