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Global majors step in to boost precision farming

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As precision farming, or smart agriculture, is gaining prominence in India, global majors are adopting innovative solutions and customised models to help small and marginal Indian farmers, whose investment capacity is limited.

Precision farming uses technology to make agriculture accurate and controlled.

It uses information technology or other technological innovations like GPS, GNSS (Global Navigation Satellite Systems) and even drones to predict accurately what crops and soil need for optimum productivity and how to reduce yield wastage.

It is also used in post-harvest activities to ensure that farm products are stored in facilities that use optimum energy to control the weather and tools.

Though precision farming as a concept has been in existence for the past few years, its reach was limited to few corporate farms and among big landholders primarily owing to higher cost in acquiring and setting up the equipment, most of which have to be imported.

The prohibitive cost of the equipment and solutions has been a big hindrance in the spread of precision farming in India.

"It is here that we are increasingly looking at custom-hiring models and tying up with local original equipment makers (OEMs) through whom we could push our products," Rajan Aiyer, managing director of Trimble Information Technologies India, told *Business Standard*.

Trimble, which has been in India through information technology-based solutions mainly in the logistics, navigation and transportation space, is increasingly looking to expand its farming footprint in the country. It currently has a range of high-tech products including laser land levellers, GPS-based pest sprayers, Soil-Information Systems for soil preparation along with solutions for real-time yield monitoring, improving irrigation yields, and drone-based applications to determine pest infestation.

An average laser-based land leveller costs ₹250,000-300,000, which might be difficult for small and marginal Indian farmer to afford, and that is where leasing and custom-hiring models come into the picture. The leveller is mounted on a laser-based device, which, based on soil pattern, electronically guides it, thus saving it from straying even minutely. This not only saves time and energy but can also do more work.

"A majority of Indian farmers are small and depend on subsistence farming. If we can break this, precision farming will become a multi-billion-dollar industry in India," Aiyer said. Several state governments are looking to include precision farming equipment in their subsidy programmes.

"A global research firm had forecast India would have 100 million cellphones by 2000 and, in reality, we crossed the number by 2000, so when it comes to India nobody can predict what the potential lies," he said. Sri Krishnan, senior vice-president, Robert Bosch Engineering and Business Solutions, says the company is increasingly looking at hyper-local solutions tailor-made for Indian farmers. The solutions include subscription to its network of highly sophisticated sensor-based digitised applications, which measure soil moisture, humidity and other critical inputs with over 90 per cent accuracy.

Bosch has digital imaging of seeds and other solutions to improve the productivity of plants in the country. They include high-quality sensors, which accurately predict crop condition in polyhouses and also in the open, which is then transmitted digitally to be accessed by subscribers through a mobile app.

"There is a growing trend of corporate farmers who can afford our equipment and sensors. For others, particularly small and marginal farmers, we have a customised subscription model and are also working with cooperative societies which can buy the equipment on rent," Krishnan said.

For post-harvest solutions, Bosch has developed a smart, IOT-based product that replaces manually controlled cold storages with technology and also addresses the problem of inadequate power.

It is also using blockchain technology to undertake the traceability of high-value agriculture products, including tracking its moisture condition at the time of harvest, etc. Alongside, big names and multinationals are working in the field of agritech and precision, and smart agriculture. There are several Indian start-ups that are working in the field, extensively using robotics, data analytics, IOT and blockchain technologies. These start-ups and agritech firms have of late started attracting an investor interest, but experts and columnists say scalability and prohibitive costs act as a barrier in attracting greater investment in this nascent sector.

SMART MOVE

- Global agritech firms increasingly looking at India-specific models to spread precision or smart agriculture
- Precision farming is the extensive use of technology to accurately control outcomes
- High equipment costs are a big hindrance to the spread of this farming model in India
- Some states are including precision farming equipment in their subsidy programmes