

Agritech startups look to usher in a new green revolution with smart robots

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Startups using artificial intelligence (AI) and machine learning are looking to transform India's \$370 billion agriculture sector with fruit-picking robots, autonomous electric tractors, fertilizer-spraying drones and high-tech systems capable of digitizing farm management.

Removing weeds is an onerous task on any farm. A skilled labourer is likely to take more than a day to remove weeds from one acre.

What if a robot were to take the job? "It could do the same job within 90-120 minutes," said Jaisimha Rao, the founder



Bladerunner weeding robot from TartanSense.

TARTANSENSE

of TartanSense, which makes such robots as well as a robot for automated spraying of fertilizers.

There are 1,255 active agritech

startups in India, of which 150 have been funded, according to data shared by Tracxn, a startup data platform.

Bengaluru-based Pixel is

working on satellites that could capture imagery from space and provide farm owners information about the nutrient content of the soil and whether the farm is adequately irrigated.

"AI-based solutions are playing an important role in improving farm productivity as well as removing supply chain constraints, and increasing market access. AI can catalyse the entire agri value chain and weed out the causes for persistent inefficiencies in the business," said Mark Kahn, managing partner at Omnivore, a prominent agritech investor.

"As more and more farmers exit this sector (due to urbani-

zation), farm labour will be in short supply, and the skilled kind will be expensive. Add to that strained working capital, prohibitively costly inputs and dwindling natural resources," said Kahn.

"Affordable and efficient robotics-as-a-service can potentially solve all of the listed problems and much more," he added.

Between 2017 and 2020, Indian agritech startups received about \$1 billion in funding. The trend is expected to continue, with the \$24 billion market growing to \$30-35 billion by 2025, according to a report from Bain & Co.

"We expect this versatile technology to attract signifi-

cant funding in the coming days. Case in point, our portfolio company AgNext. Recently, the startup raised the largest Series A funding received by an Indian agritech startup to date," said Kahn.

However, getting such technologies ready for the farm land is just one part of the solution. These robots and systems also have to be adopted by farmers, which is a challenge in itself.

Agriculture accounts for 18% of India's GDP. Farmers often have to deal with arbitrary price setting, unreliable

payment schedules and low working capital, which makes convincing them to try a different working approach extremely difficult.

"For farmers, technology is not about convenience or saving time but rather a tool for augmenting incomes. If a startup can prove that its technology can deliver better returns (and pay for itself), then adoption is bound to be smoother," said Kahn.

There's also the challenge of technical skill gap and frequent power cuts in rural areas that reduces the confidence in

such solutions. The product should be designed in such a way that any person with minimal skills could use it and recognize how it will augment return on investment and profits, noted agricultural experts.

In the long run, as more and more people come online, these challenges could be addressed through education, innovation, and the support of industry and the government.

The latter is most important as well-designed subsidies would encourage competition, driving companies to improve the market through better and affordable products and after-sales services, said Kiran Raj, principal disruptive tech analyst at GlobalData.

TECHCIRCLE

AI-based solutions are playing a key role in improving farm productivity, said Mark Kahn of Omnivore