

Entrepreneurs Are Looking To Raise Agricultural Productivity With Technology And Automation, Bringing Hope To Drought-prone India

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When Ranjith Mukundan quit his job at Wipro in 2011 after 15 years, farming wasn't on his mind. Bengaluru-born Mukundan and his four co-founders were exploring the Internet of Things space, the idea of connecting ordinary objects to send and receive data. They considered telemedicine, but decided against it since many MNCs were in the business.

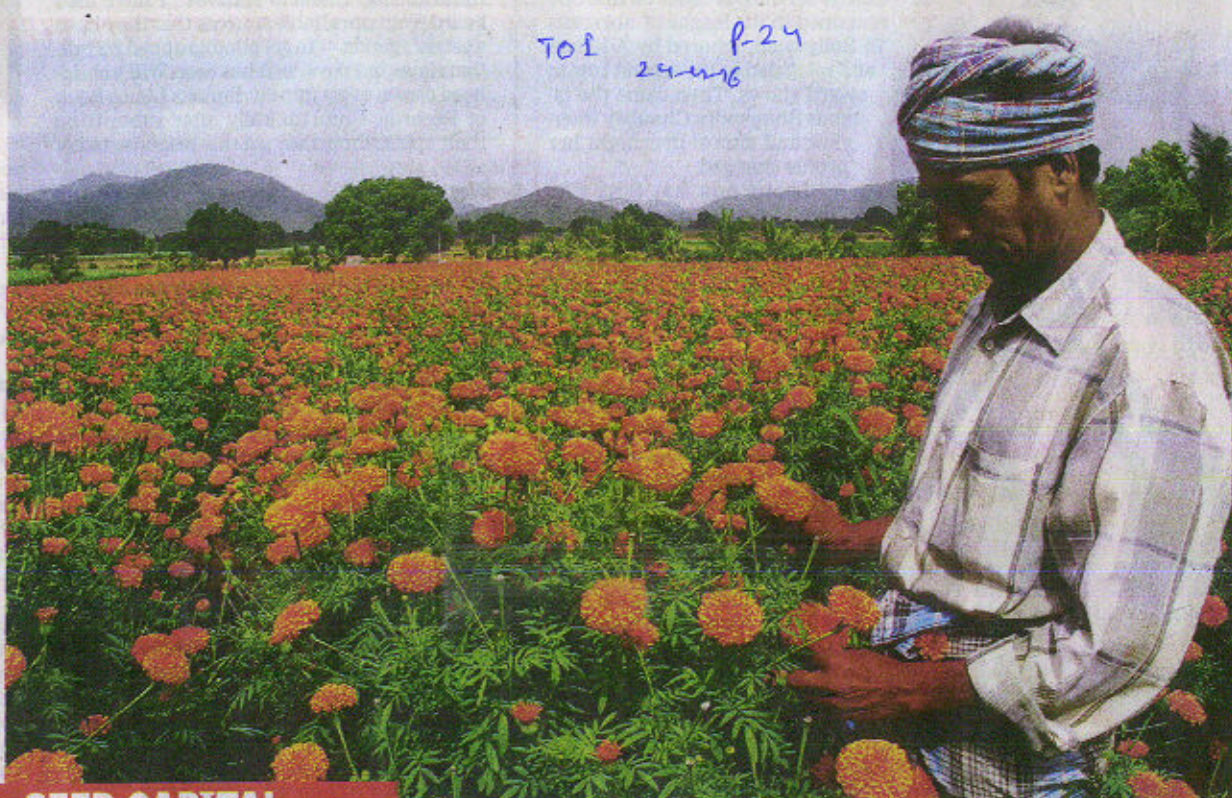
That's when one of the founders pointed to the problems in dairy management, including that milk stored in regular containers become non-consumable after a few hours. His uncle was an organic dairy farmer in Tiptur, a town 150km north west of Bengaluru, and had trouble managing his cattle and the supply chain. They liked the idea so Mukundan, now 41, and the team spent the next eight months at the dairy farm and also visited farms in Uttar Pradesh, Madhya Pradesh, Punjab and Odisha. Their company, Stellapps, used their learnings to develop automated dairy solutions, and now works with milk cooperative societies such as Aavin, Milma and Tirumala. Its products are in 250 farms and are used by three lakh dairy farmers.

Agriculture in India is a \$370 billion sector, but there is little application of technology to improve productivity and lift millions out of poverty. Now, a clutch of entrepreneurs is looking out of their city offices to the countryside to change this.

Bengaluru-based Flybird Agri Innovations places sensors in the soil to detect moisture content and control irrigation. It's installed sensors in 45 villages in Karnataka to help farmers in the drought-hit state optimize irrigation. The company is supported by Chennai-based Villgro, a social impact fund backed by Dell Foundation.

Most companies faced resistance when they first set up their equipment. "Our work exposed the malpractices of middlemen," says Mukundan, who is now recruiting sales people in Delhi and Gujarat. The company is looking to expand to allied sectors such as fisheries where perishabil-

Why agri startups are BLOSSOMING



SEED CAPITAL

FUNDING AND DEALS FOR AGRICULTURE STARTUPS IN INDIA

Year	Number of deals	Amount (\$M)
2016	7	133
2015	20	56
2014	21	123
2013	16	59

ity is high. Despite the need for technological intervention, there's not much funding coming to startups in this sector. Funding for Indian agriculture startups declined to \$56 million in 2015 from \$123 million the year before, according to data from Tracxn, a startup activity tracking platform. In 2015, also a drought year, just 20 agriculture-related startups raised money, but \$6 billion was invested overall in tech startups that year. Agriculture

startups attracted less than 1% of the total. "The agri funds in the country are mostly early stage investors, and the startups struggle to raise subsequent rounds of funding, thus prolonging their scale up," says Hemendra Mathur, an investor in agri businesses and former managing director of SEAF India Investment Advisory.

While overall inflation has been under control, food inflation is growing at 7%, indicating a mismatch of supply and demand. India imported corn after 16 years, and it has turned from an exporter to an importer of soya. "The inflation translates into an additional ₹70,000 crore opportunity. The propensity for consumption is also going up. Droughts are an opportunity to develop various seeds and processes that help reduce water consumption without affecting productivity," says Mathur.

Investors tend to view agriculture as a risky proposition. "Most investors don't understand agriculture. The strong government intervention in the

sector along with the vagaries of nature accentuate the business risks associated with startups in the space," says Srikrishna Ramamoorthy, partner at Unitus Seed Fund, an India-focused fund supported by Gates Foundation that invests in social impact enterprises. It has invested in agri startup Villfarm and is looking for more opportunities. Ramamoorthy says most small farmers are not willing to try technology, and even the large farmers find the equipment too expensive.

"Very often, it is not whether the technology is available. The problem is whether there are India-specific solutions," says Mark Kahn, founding partner of Omnivore Partners, an agriculture technology focused fund. It is backed by diversified agri-business firm Godrej Agrovet, SIDBI and SBI among other financial institutions. It has invested in Stellapps and Ecozen, a micro cold storage facility that works on solar power and can be installed even in small farms.

In a country where more than half of

the population still survives on agriculture, fruit and vegetables worth \$2 billion are wasted because of lack of supply chain management and cold storage facilities. "The big cold storage products of the west are not affordable for many Indians," says Kahn. He has investments in 11 agriculture startups, including Skymet, which analyses weather patterns and predicts risk in agriculture for every season.

Kahn was earlier head of business strategy and mergers and acquisitions at Godrej Agrovet and found that most agri-technology startups struggle to raise funding. He convinced Godrej to anchor a fund to support more firms and thus Omnivore was founded in 2011 with a corpus of Rs 260 crore.

The same year also saw the establishment of the SONG Fund by Thomas Hyland, a US citizen who came to India and travelled around the country in trains for a year. He then went on to do a management degree from ISB, Hyderabad, and established Song, backed by US billionaire George Soros, Omidyar Network and Google Capital. "For a country of India's size, there are not enough startups that focus on technologies that addresses the lower middle class and bottom-of-pyramid solutions," says Hyland, who has since started a second fund Aspada.

These funds work with the startups for several months before committing to investments. Hyland, for instance, worked with Pune-based SV Agri for eight months before investing. SV works with potato farmers in Maharashtra and Gujarat to improve productivity by providing better seeds, as well as working on supply chain and processing. It supplies potatoes to ITC, Marico and Pepsico for chips. "Not many big companies or startups want to do backward integration when it comes to agriculture because they don't want to get their hands dirty," says Hemant Gaur, founder of SV Agri.

Rohtash Mal, a former CEO of tractor firm Escorts, has established EM3, which provides farm machinery vehicles on demand. "Only 10% of the country's farmers can afford farm machinery and ours is a pay-per-use model. We wanted to reach 90% of the farmers," says Mal, who has 15 centres in MP, Bihar and eastern UP. The price is based on the farmhold area measured using satellites. Each centre sends machinery to a 20km radius and Mal says 95% of his customers come back.

"Government policies treat agriculture as a poverty alleviation method rather than a means to enhance productivity and raise incomes, and this keeps entrepreneurs out," says Mal.

Mathur says that funds like Omnivore, Villgro and Aspada give him hope, and entrepreneurs are trying to start agri businesses. "The slowdown in e-commerce and the entrepreneurial energy will spur a new wave in rural and agricultural innovation," he says.

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