

Space data fuels India's farming innovation drive

[Nivedita Bhattacharjee](#) May 17, 2024 4:10 AM GMT+2 Updated a year ago

BENGALURU, May 17 (Reuters) - Lokeswara Reddy, an Indian farmer with two decades of experience, has seen his crops flourish after lean years, thanks to earth-observation satellites.

Shifting climate patterns, high input costs, a scarcity of labour and erratic weather began to disrupt his earnings about 10 years ago, said Reddy, 52, currently a contract farmer with global giant Syngenta.

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Satellite data, gathered and crunched by Indian startup Cropin and provided to him by Syngenta, now gives him optimal sowing times, weather warnings, and better use of irrigation and pesticides, he said.

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Reddy said that over the last decade he has increased his net profit to 20,000 rupees (\$240) per acre on corn at his farm in the southern Indian state of Andhra Pradesh, up from 5,000 - 10,000 rupees.

"We are on a surer footing when it comes to agricultural practices; (using satellite data) safeguards us from climate change, pest and disease, problems with irrigation scheduling," he said.

The Indian government, which just [relaxed foreign investment](#) rules for the space sector, is leaning heavily into the use of satellite data to solve problems on the ground, with agriculture a key focus.

Reuters spoke to 11 experts and farmers, six startups in the industry and three NGOs who said space technology and big data were primed to help Indian agriculture reach new heights.

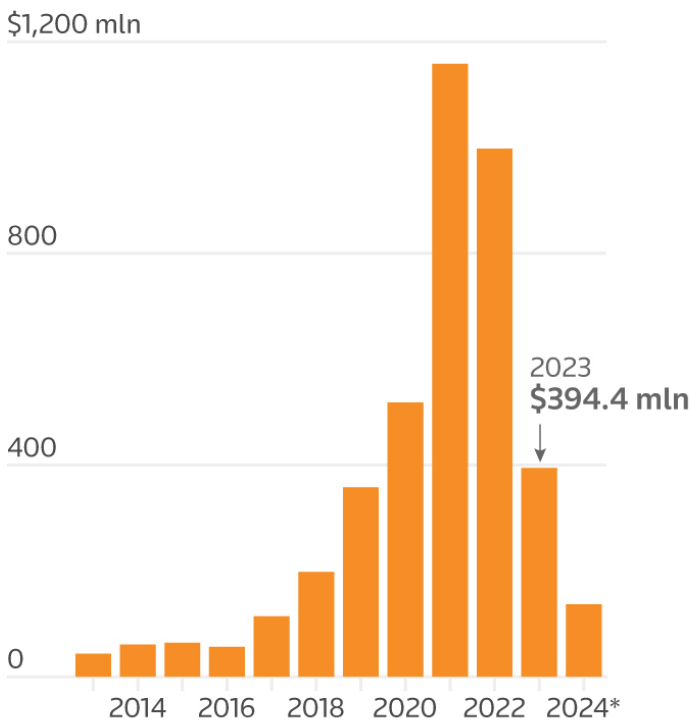
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"India's path to leadership in the new space race lies in utilizing the power of data, and applications within the agricultural sector offer immense potential," said Pawan Goenka, chairman of the Indian National Space Promotion and Authorization Centre, the country's space regulatory body.

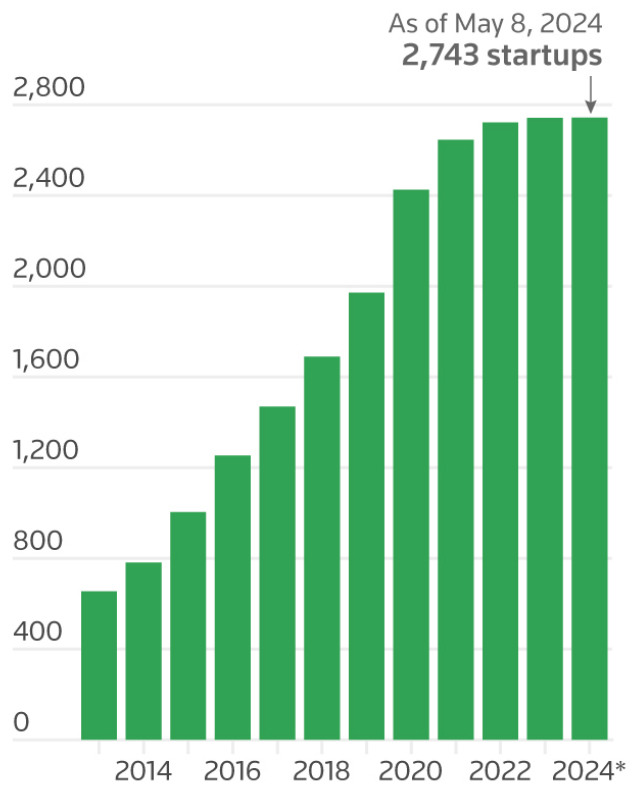
Agri tech boom in India

The number of agri tech startups have risen.

TOTAL FUNDING



ACTIVE COMPANIES



*2024 data as of May 8, 2024

Source: Tracxn

Pasit Kongkunakornkul • May 13, 2024 | REUTERS

The bar charts on the lefthand and righthand sides shows the total funding of agri tech startups in India and the number of active agri tech startup companies in India from 2013 to 2024, respectively.

Market Research Future, an India-based data analysis firm, says the global space agriculture market will be worth \$11.51 billion by 2032, up from \$4.99 billion in 2023. Although China holds the largest market share, the sector is growing faster in India than anywhere else in the Asia-Pacific region, it said.

Cropin, founded in 2010 and backed by both Google and the Gates Foundation, recently signed a deal with Amazon Web Services to crunch satellite data to solve for global food insecurity.

Cropin's partnership with farmers, the World Bank and the government of India in 244 villages digitised more than 30,000 farm plots, covering 77 crop varieties across climate-zones, a company project analysis in 2019 showed.

The study showed 92% of the farmers involved increased their average yield by 30% and their farm revenue by nearly 37%. The company got similar results in Africa.

AGRITECH PUSH

Cropin and others are tapping into a burgeoning sector. The use of satellite data for crop insurance and horticulture has a market potential of about \$1.35 billion over the next 5 years, Deloitte said in a report.

Baring Private Equity-backed SatSure, another Indian startup, crunches earth observation data to inform loan analysis. Chief Executive Officer Prateep Basu said there are about 70 million active farmer bank accounts in the country, representing roughly 38% of the total pool. That makes up about \$200 billion of all lenders' loan books, he said.

India has 2,743 agricultural tech startups, many of which incorporate satellite data or other space technology. Funding hit a high of \$1.3 billion in 2021; companies gathered \$394.4 million in 2023 and \$136.7 million so

far in 2024.

But there are barriers to large-scale adoption of space technology in agriculture.

The average landholding size for farmers in India is just 1.08 hectares. That fragmentation, coupled with poverty and low levels of literacy, pose challenges for tech adoption, industry experts said.

"Agriculture has never been a tech-forward sector and often farmers want to rely on traditional practices, or the wisdom of their forefathers," said Raghunath Reddy, a Syngenta manager.

In India, McKinsey says agricultural technology has the potential to grow farmers' incomes by 25% to 35%.

Indian Finance Minister Nirmala Sitharaman, in her 2023 budget speech, announced a 703 million rupee (\$8.42 million) accelerator fund to boost agritech startups. In March 2023, the government said the fund was supporting 1,138 such companies.

For farmers like Reddy, agriculture tech has meant better living standards - over the past few years he has bought a car and bought a new house in town.

"This increase in earnings also means better education for my son, who has plans to be a software engineer abroad, in the U.S. or London. At the end of the day, we want a better future for our kids," Reddy said.

(\$1 = 83.4680 Indian rupees)

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Nivedita writes about the business of space, space-startups and other related developing technologies that have the potential to impact the journey of humankind. Previously, she has covered the U.S apparel industry, the Indian tech-startup boom and other market and industry defining stories in her 14 years with Reuters. When not chasing her own stories, she is a desk editor.