



Improving livelihoods:

How Hologram and Fasal help
farmers earn 20% more per acre

Nearly half of India's people make their living by farming. Most grow a single crop on a family farm, relying on labor-intensive practices while dealing with both extreme rains and droughts. Only 5.2 percent have tractors.

The Indian government's extensive irrigation infrastructure now keeps water flowing during dry seasons, allowing farmers to gain a second growing season and boost productivity. However, this increased productivity is often offset by the growing costs of fertilizers, pesticides, and irrigation. Incomes have not kept up.

As Purvi Mehta, head of agriculture for Asia at the Bill & Melinda Gates Foundation, explains, "[L]arge agricultural reforms in India... have been farm-centric or production-centric and have not necessarily focused on income gain for the farmers."

So how can farmers improve not only productivity, but incomes and livelihoods?

Bringing the Internet of Things to remote farms

Two men who grew up in northern Indian farming families teamed up to solve this challenge by founding Fasal, a precision agriculture startup that brings Internet of Things technology to even the most remote farms, regardless of size.

Fasal's devices use a dozen sensors to measure everything from rainfall and soil moisture to temperature, humidity, and canopy wetness. Algorithms then provide crop-specific recommendations that help farmers dial in their irrigation, optimize fertilizer use, and stay ahead of pests and disease. Farmers who follow these recommendations often discover they have been over-irrigating or applying too much fertilizer, washing away profits. With Fasal recommendations, they can increase their income by up to 20 percent per acre.

“When everything is data-driven, it's not guesswork.”

ANANDA VERMA, CO-FOUNDER, FASAL



However, farms aren't Wi-Fi accessible. And they may be on the fringes of cellular coverage. So Fasal had to find a way to transfer all that IoT sensor data to the cloud for processing and analysis. After all, as Fasal co-founder Ananda Verma says, "If there's no connectivity, there's no IoT."

When Fasal first launched in 2018, the team worked directly with each of India's major telecom providers. But that approach posed several problems.

Multiple carriers, multiple SIMs

The Fasal team juggled different SIM cards for each carrier. When deploying a new customer, they relied on coverage maps that didn't always reflect true signal strength — meaning Fasal couldn't guarantee initial connectivity.

Poor customer experience

If the farmer later realized that the connection was unstable, the technician had to return and try again. As Fasal grew, these service calls became unsustainable. If the issue required assistance from the local carrier, it could take as long as two weeks to resolve. (And in farming, timing is everything.)

Time-consuming configuration

When a new customer signed on, Fasal had to send a technician to the remote part of the field to ensure that the device could connect, sometimes flashing multiple SIM profiles in the process.

Not scalable

The small Fasal team lacked the resources to continue sending technicians to increasingly far-flung farms. With plans to grow, they needed a better solution.



The solution: single-SIM simplicity

Then Fasal discovered Hologram — and found the answer to seamlessly ensuring consistent connectivity.

Hologram developed a Global SIM that can be used with 550+ different carriers covering 196 countries. This Global SIM and IoT connectivity platform are hardware agnostic, so they work with any device — including Fasal's newest Kranti device. With seamless network coverage, devices stay connected no matter how remotely they are deployed.

Thanks to Hologram's global SIM simplicity, Fasal can install the same SIM card in every single device it produces. Meanwhile, Hologram takes on all the work of compatibility, connectivity, and support.

Fasal began by launching a small pilot to install Hologram SIMs into existing devices. They were instantly impressed by Hologram's connectivity — both in reliability and coverage. "Hologram gave us an umbrella of connectivity," Verma says. As they rolled out to 50 farms, Hologram was quick to troubleshoot the occasional challenge. By late 2020, Fasal had deployed more than 1,000 devices with Hologram SIMs, covering 20,000+ acres. They plan to deploy another 5,000 devices during 2021.

**Hologram's global SIM
card serves**

196 countries

550+ carriers

100,000+ happy customers

How Hologram helps Fasal improve its devices

“The Hologram solution solves all our problems with connectivity,” Verma says. But Hologram’s Global SIM also helps Fasal improve its devices.

Easier installation for everyone

With Hologram SIMs, Fasal made its newest Kranti devices truly plug-and-play. Customers install the device in their fields themselves, then simply scan a QR code to initiate the connection. There’s no need for an on-site technician: the SIM card connects to the strongest available provider and begins collecting data.

More insight into what’s connected

Meanwhile, the Fasal team can confirm device connectivity by looking at the Hologram Dashboard. They can see where active devices are deployed and monitor data usage to control costs. Verma says, “The Hologram Dashboard helps us stay aware so we can make decisions.”

Improved customer support

Hologram’s attentive support helps Fasal keep their farmers connected. “We were not getting that kind of support with the Indian telcos,” Verma says. Hologram support is prompt and solution-focused.

Pay-as-you-go data pricing

Before Hologram’s single SIM, Fasal paid data charges for each of its partner carriers — even if it didn’t use all the data it was paying for. Today, the Fasal team pays for only what they use.

Simplified scalability

Fasal can expand beyond India, confident that connectivity will already be solved. The same Hologram SIM that connects anywhere in India also works in the 196 other countries with Hologram coverage.

“Hologram has given us wings to go global.”

ANANDA VERMA, CO-FOUNDER, FASAL





How Fasal helps farmers boost their income

With reliable Hologram connectivity, Fasal aggregates data from each farm's unique micro-climate and precisely tailors recommendations for each farmer's crop.



Cut water usage 50-60%

When Fasal sensors measure soil moisture at the rootzone, 90 percent of customers discover they are over-irrigating. Most can cut water usage by 50-60 percent, with some saving as much as 70 percent. Fasal calculates 500 customers together saved 3 billion liters of water in a single year.



Cut pesticide cost up to 60%

Fasal sensors monitor for signs of pests, alerting farmers to act before crops are overrun. The average Fasal farmer reduces pesticide usage by 18-25 percent, with some as much as 60 percent.



The result? Fasal farmers make more per acre

The average Fasal customer saves about \$1,000 per growing season just on inputs like water.

For a grape farmer whose single acre typically earns \$4,000 to \$6,000 per year, that 15- 25 percent savings matters.

Combine the input savings with the increased yields and prices, and Fasal customers earn on average 20% more per acre.



For example, one chili farmer increased his yield by 11.25 metric tons per hectare, bringing in an additional \$2,200 per season while saving 400,000 liters of water and needing four fewer pesticide sprays.



Increase yield by up to 40%

By combining the optimal amount and timing of water, fertilizer, and pesticides, Fasal's customers increase their yields. Plus, the ideally shaped and sized crops are apt to earn "top quality" designations that bring higher prices.



Cut fertilizer costs by 40%

Fasal farmers are prompted to apply fertilizer at exactly the right time, with recommendations tailored precisely to each crop and microclimate — reducing overall usage.

“We are very thankful that Hologram exists. It has given us a way to scale.”

ANANDA VERMA. CO-FOUNDER. FASAL

A more precise, automated future that helps farmers everywhere

Thanks to Hologram, Fasal can focus on iterating its devices and further improving the customer experience, knowing that connectivity will be reliable.

Better algorithms, better insights

With steady streams of data coming from all types of fields, Fasal is further improving its crop-specific algorithms to account for specific micro-climates. Verma notes, "The more data we have, the more we learn, and we can produce better insights."

That means that every customer, regardless whether they grow tomatoes or chilis or grapes, benefits from precisely targeted recommendations that improve yields.

Growing to new markets

Finally, Fasal is poised to grow into new markets, confident that Hologram connectivity will support its every move — while Fasal helps more farmers boost their productivity and incomes.

Automating more processes

Fasal is using Hologram's APIs to automate more of its processes, such as updating farmers on their connectivity status. That reduces tech support calls while improving customer satisfaction. Fasal is also automating data limits to further control data costs.

Want to try Hologram? Contact us.

We're ready to help you deploy your cellular devices anywhere in the world.

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