

## Agriculture 4.0: Empowering farmers with a smart agrotech platform

By Anil Nair

The global pandemic has yielded several opportunities and innovations in agriculture as farmers display enthusiasm for embracing technology. For example, using WhatsApp, they've created a route to market—reaching out directly to consumers, elevating the experience with quality fulfilment and cutting out middlemen to increase



both loyalty and their margins appreciably. This simple digital intervention is but a small example of the change we must usher in to alter a larger reality. Globally, more than a fourth of the labour force is involved in agriculture. Despite much higher productivity, issues relating to viable farming are alive even in advanced nations. Farmers being unable to pay back loans is a reality in developing countries and advanced nations too. Price variances in commodity markets, high input costs, stringent regulations, inclement weather, pest infestation, over-reliance on rain, poor storage, and scale issues are contributors – and lead to demands for mass loan waivers. These concerns may not all be addressable now, but smart agriculture is a good place to start breaking a recurring cycle. Let's discuss a case study from a state in India, focused on rice and shrimp farming. Sensors pick up data relating to soil and water and transmit them to a Smart Agri Platform at a Village Knowledge Centre (VKC). The platform integrates this with weather data from satellites and analytics in a real-time dashboard. Collaboration tools connect all stakeholders —farmers across 15 village councils, VKC reps, startups, industry, and government. A local language web portal serves as a knowledge repository for e-learning, and a [mobile app](#) pushes real-time inputs and pre-emptive alerts. Exhaustive training acclimatizes farmers to this digital transition. This scalable project aims to harness tech to extract insights on crop health, yields, soil vitals, impurities, water use, weather, and disease patterns. Through the VKC, farmers can obtain government policy updates, advisories, market rates, best-practice videos, and avail government provisioned financing. Optimisation and better planning are expected outcomes. In Australia, Agriculture 4.0 projects focus on innovations that promote profitability, safety, and environmental consciousness. An example would be an IoT-enabled

open platform for applications and tech solutions by independent entities, using unlicensed spectrum for free connectivity. This is used for geo-locating livestock and farm implements at large farms, and for detecting heat stress that affects cattle feeding. In Italy, blockchain is now being used to facilitate traceability of wine, milk, and oil. Innovations gaining traction worldwide include using drones to assess levels of irrigation and fertiliser use through image analysis, the precision shooting of seeds into fields, and spraying pesticides to mitigate health hazards. Tractors equipped with IoT and cameras are now deployed for gauging seed placements and for tillage prescriptions to improve output quality. Increasingly, we hear about ubiquitous connectivity, virtual agri-markets, and the use of IoT, big data, and AI for trend analysis, safety, productivity, and prognostic guidance. Cutting input costs presents a big opportunity. Precision in figuring out the right feed levels and leveraging the internet for procurement options at competitive prices can make a big difference to economic viability. Sustainable digital evolution to make farming viable is not a choice. Governments are, therefore, encouraging the use of technology in agriculture. But affordability is still a barrier that governments must address.

Source: [Financial express, September 03, 2020](#) (verbatim reproduced)