Rural Development and Food Security Forum 2019
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TECHNOLOGY AND INNOVATION MARKETPLACE

Profiles of technologies showcased by exhibitors during the RDFS Forum

How Technologies Like AI are Transforming Farms Globally

Harnessing artificial intelligence (AI)-driven insights to practice sustainable and productive farming and contribute toward achieving food security.

Overview

CropIn is a deep learning platform for the agri-ecosystem that utilizes climate-smart, advanced satellite imagery and extensive historical and real-time data to garner insights on land composition, along with detailed weather and climate forecasts to help food growers and businesses track, monitor, and evaluate every aspect of cultivation.
CropIn's services include the following:

(i) Farmer/plot lending risk assessment. Leading-edge technologies and ground-truth data help in risk mitigations, well-informed lending decision-making, and portfolio expansion.

(ii) Sourcing and procurement planning. This enables farmers to detect crops, estimate acreage, monitor crop health, forecast the yield to strengthen their supply chain.

(iii) Smart sampling points for crop-cutting experiments. CropIn's accurate ground-truth data allows optimization of crop cutting experiments using smart, scientific sampling points to make yield prediction more accurate, and process insurance disbursement with more efficiency.

Figure 1. Accessible technology. CropIn provides real-time satellite monitored dashboard view, leveraging ground-truth data and delivering actionable insights.

Link to ADB Agriculture and Natural Resources Subsectors

- Agriculture research and application

Link to ADB Sectors and Themes

- Agriculture and natural resources
- Information and communications technology

Link to Sustainable Development Goals

- Goal 2: Zero Hunger
- Goal 9: Goal 9: Industry, Innovation and Infrastructure

Resources

- World Bank: How is technology an enabler of financial inclusion?
- Cropin: Agriculture 4.0: How Technology is Helping Build Farms of the Future?

(iv) Agri-Market intelligence. With Cropin, clients can get deep, actionable insights on crops and farm plots at a regional level to optimize costs and business operations, and strengthen market linkages across the agri-ecosystem.

(v) Water monitoring and conservation. Clients can leverage the AI-powered platform to promote sustainable use of water by assessing parameters including regional weather, precipitation, and water stress.

Summary

Empowering Economies of the Agro-Ecosystem

Organizations such as CropIn Technology are propelling agri-tech innovations to drive digitization in agribusinesses worldwide. CropIn leverage alternative agri-data, such as those derived from satellite monitoring, artificial intelligence, and big data analytics, to make business operations easier for financial institutions (Figure 2).

Figure 2. Future-ready farming. CropIn enables farmers to be future-ready with the power of technology and remote sensing.

CropIn's SmartRisk™ is a unique agri-AI/machine learning (ML) solution that combines multiple sources of data including the platform's global agri-ground intelligence, weather, and satellite imagery. The platform establishes the performance of every pixel at the regional level (farm/postcode/state/country)—both historical and present—to deliver regional and plot-level insights at a fraction of the traditional cost and effort. The platform allows users to identify crops, detect crop health, forecast yield, and obtain farmer-level plot and crop performance reports, helping key stakeholders in the banking, financial services, and insurance (BFSI) sector to hedge risks and take informed business decisions.

Potential Benefits for Stakeholders

The potential benefits of using a smart agri-tech platform for the BFSI sector are (i) loan portfolio can increase by up to 25%, (ii) ability to make data-driven decisions that result in up to 30% reduction in non-performing assets (NPA), (iii) risk mitigation at the right time that results in improved yield, and (iv) significant reduction of manual labor costs such as field scouting and achievement of accurate results in 98% less time.

Technology, with these above benefits, can ensure that more smallholder and marginalized farmers have access to financial aid, despite not being able to provide the institution with collaterals or other forms of assurance. The service providers are also able to mitigate risks very early on, by analyzing the historical performance of the farm plot in the last 3 years and assessing the possibility of a good harvest at the end of the current season. The credit could also go a long way in improving the farmer's harvest, by providing the farmer the resources to invest in better quality seeds or upgrade the farm machinery. This, in turn, brings home better returns for the farmer and ensures faster loan repayment. In the long term, this improves the farming community's livelihood and, as an extension, the productivity of the agri-sector.

Keywords: artificial intelligence, agri-intelligence, deep learning ag-platform

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