Improving livelihoods with agritech

Fertilizer Focus speak with Krishna Kumar, Founder & CEO of Cropin about the development of a new industry cloud platform for agriculture – Cropin Cloud

Fertilizer Focus (FF): Could you give some background about Cropin as a company?

Krishna Kumar (KK): Cropin is a B2B deep tech company and a pioneer in the agritech space, which was founded in 2010. This was when, the term agritech did not exist. We started with a single-minded focus on helping the farmers to improve their livelihood. It was when farmers in India were struggling to make ends meet and farmer distress was a big concern. We were the first technology company worldwide to build a comprehensive digital SOP for the agriculture industry.

Technology adoption over the past few decades in the agriculture sector has been abysmally low compared with other industries. The solutions built elsewhere and retrofitted for agriculture use cases were not addressing the real problem statements of this industry. That's

where Cropin started innovating and solving the complex challenges in agriculture from the field-up. Cropin has been a key player in driving the digitization of agriculture across global markets in the last decade. Today we have deployed our solutions in six continents, and in over 92 countries. Cropin has built the world's most extensive farming data insights, spearheading a global 'ag-intelligence' movement with a knowledge graph of 500+ crops and 10000+ crop varieties. With its AI enabled Intelligence Platform tailor-made for the Agri ecosystem, Cropin has already computed 0.2 billion acres of farmland in 12 countries.

FF: What was the thinking behind developing this industry cloud for agriculture – Cropin Cloud?

KK: The agri-food ecosystem is under tremendous stress. Soaring food prices, fertilizer shortages, and supply chain disruptions are all adding fuel

to the looming food crisis. Moreover, Climate change in the form of draught, heatwaves, and floods across the world is limiting the grower's ability to increase food production.

Many countries worldwide are facing the threat of growing food insecurity. To succeed, along with other socio-economic measures, we need innovative & intelligent solutions for food, feed and fibre, for which we need to act swiftly and responsibly. It is necessary to make significant technology investments to maintain current yields and increase production and food quality.

Let's take the example of the fertilizer sector. We know the current crisis and the industry doesn't have an immediate solution to address the shortage. In the short term, one can leverage technology to manage the optimal usage of fertilizer depending on the crops, climatic zones, and soil type. This will help us to mitigate the

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risks of fertilizer shortage to some extent. A core challenge that plagues this sector is the lack of visibility across the food value chain from cultivation to harvesting to supply-chain until the product reaches the end consumer. Today, with the Cropin Cloud, it is possible to solve this. Technology can help the sector to manage such shortages, take timely corrective actions and optimize resources being deployed within the sector.

Today's agriculture industry does not have access to a unified, coherent platform that can enable and help build a wide variety of solutions. Cropin Cloud has been designed and engineered as one integrated cloud composed of common but complex building blocks. It helps cut time to value for technology investments significantly reduces the barrier to innovation across the agriculture ecosystem and brings together capabilities that can solve significant challenges. This platform will provide a complete set of agriculture-specific capabilities and accelerate business transformation and growth for agribusinesses including fertilizer companies.

FF: Could you explain what the new platform offers? And how it works?

KK: Cropin Cloud brings together globally field-tested tech and intelligent solutions to help agribusinesses manage risk and solve for predictable growth. It is a multi-tenant, secure, scalable, flexible, intelligent cloud platform enabling agri-businesses, development agencies, governments, and allied industries to accelerate digital

(left) Cropin Leadership team; *(above)* Cropin Founders - Kunal Prasad, COO and Krishna Kumar, CEO

transformation across their business value chain. It is an integrated platform of applications for digitization, clean and contextual data pipelines for enhanced decision-making based on data analytics, and globally proven crop-specific, crop and geography-agnostic machine learning models.

FF: Where will this new technology be applied?

KK: Cropin Cloud enables various stakeholders in the agri-ecosystem to leverage digitization and predictive intelligence to make effective decisions that increase farming efficiency, scale productivity, manage risk and environmental changes and enhance sustainability. The platform benefits farmers, farming companies, agri-input providers, food processing companies, retailers, financial service providers, governments, and development agencies across the world. It is crop-agnostic, sector-agnostic, and geography-agnostic, so its benefits are immediately available to the entire spectrum of agriculture data needs.

Governments and organizations can choose from multiple solutions available within Cropin

Cloud. For example, Cropin Grow is an application available to digitize an organization's farming operations, such as farm monitoring and guidance, efficient farmer engagement, managing post-harvest supply chain, farm-to-fork traceability, enabling compliance, and meeting consumer needs. Customers can also leverage the Cropin Data Hub APIs to share and structure IoT and other farm mechanization data. Cropin Cloud then enables the customers to leverage this data to derive field insights and remote intelligence together and make better data-driven decisions.

The other component is The Cropin Intelligence platform which combines structured field data from the Data Hub, the IoT and mechanization data from the field, and remote sensing satellite and weather data of the respective fields/region. These together power the 22 AI/ML models to provide predictive agri-intelligence-based decision-making.

FF: Who do you expect will be the main users of the technology?

KK: Our key customer segments are agribusinesses, such as farming companies, fertilizer manufacturers,

and food processing companies, among other industry stakeholders and development agencies, international organizations and governments worldwide.

FF: How is the technology different from existing ag-tech platforms?

KK: Cropin is the first purpose-built industry cloud for Agriculture. We do not have direct competition in this space. There are point solution providers that focus on specific regions or specific problem statements. Cropin Cloud offers a complete set of agriculture-specific capabilities to accelerate digital transformation across the food system.

Chopin's proprietary knowledge was created from digitizing trillions of farm pixel datasets. No private entity, government, or industry body has the kind of agriculture data and intelligence we have globally. With the launch of the planet's first industry cloud for agriculture, we are reinforcing our leadership position in the agritech segment.

FF: What advantages will it have for users?

KK: The technology combines the power of a diverse set of advanced technologies, agronomy knowledge, data science, and artificial intelligence. It helps to address a host of real-world agricultural problems and deliver value to every stakeholder in the agri-food value chain. Some of the key use cases are:

- Improve operational efficiency with the help of a unified platform for scouting, agronomy, and all farm and field data collection globally
- Breakdown siloes across divisions, functions, regions, and growers by democratizing access to data for faster and better decision-making
- Accelerate innovation and new product development by enabling researchers and data scientists to use ML-ready data pipelines
- Accelerate digital transformation while giving the power of choice to customer organizations based on where they are in their transformation journey

Figure 1. The impact of Cropin Cloud
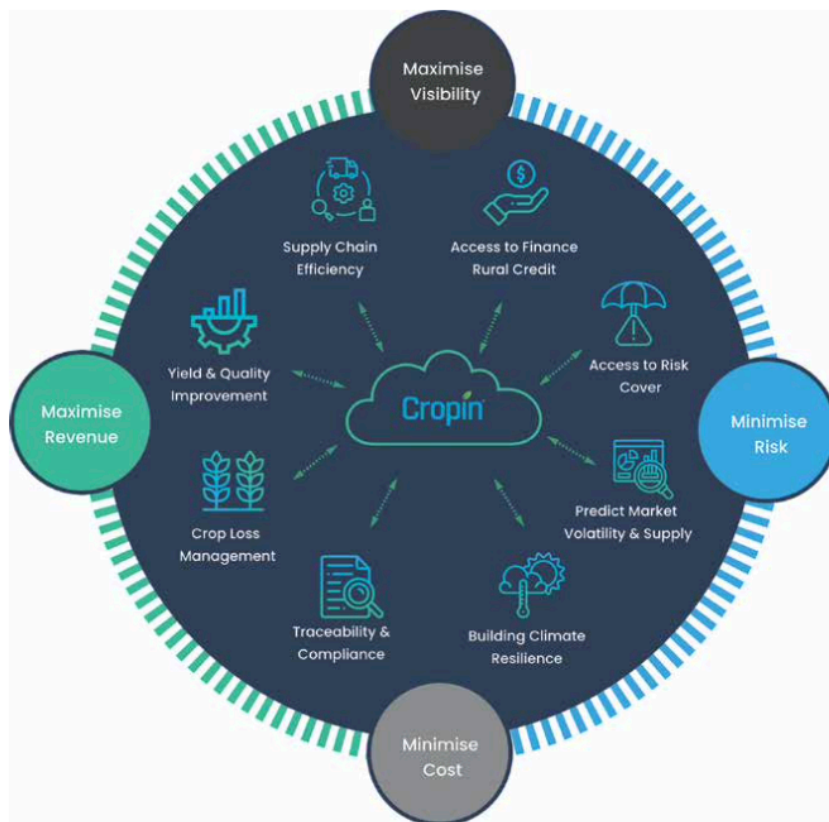
- Optimize technology investments and effort in stitching together multiple-point technology solutions

FF: When will the platform be launched?

KK: Cropin Cloud is formally launched and available for private preview for our customers. We are working with a few existing customers currently and expect to start the mass adoption in early 2023.

FF: Are there any examples of the success of the technology?

KK: Cropin has successfully digitized over 16 million acres of farmland and transformed the lives of over seven million farmers so far. We have worked with 250 customers and our solutions are deployed in 92 countries. While Cropin Cloud in its current set-up is new and the first of its kind in the industry, the platform is a culmination of our 12+ years of experience and expertise in enabling the global

agriculture ecosystem with technology and data.

Our success stories include our work with Unilever in Indonesia to support coconut farmers to increase their yields, powering the world's largest crop insurance programs in association with Government of India, monitoring food production, and understanding socio-political situations on food security for policymakers in Nigeria, boosting Africa's extension service coverage by tapping into digital technologies in partnership with Alliance For A Green Revolution (AGRA), driving quality hazelnut farming and transparent farm monitoring process for Loacker in Italy, helping Myanmar's leading Agrochemical Corporation, AWBA, to provide sustainable, high-quality solutions and services to Myanmar's farmers, and a hundred other customer success stories across various parts of the world. ∎