



CASE STUDY

2021

Climate-Smart Agriculture

Monitoring Flood Resistant Rice Variety Through Deep Learning Platform



The Client

The client is a German multinational pharmaceutical and life sciences company and one of the largest pharmaceutical companies in the world. The organisation employed around 104,000 people in 2019 with sales of € 43.5 billion. With a presence of over 120 years in India, the client remains

committed to improving lives by advancing nutrition and healthcare solutions for the country's growing population. The client has over 12,000 employees, 7 manufacturing sites, 4 Research & Development (R&D) / Crop Breeding centers across the country.

Project Overview

After the successful implementation of its 'Better Life Farming' initiative in Uttar Pradesh and Jharkhand, the client has expanded the initiative to Bihar, Madhya Pradesh, Odisha, and West Bengal. Better Life Farming aims to provide smallholder farmers with access to modern agri-inputs and farming advisory and enable additional income generation through rural agri-entrepreneurship.

The German chemical and seed company giant plans to launch a flood-resistant rice variety in India before the onset of the monsoon season next year. While the new variety has already been launched in neighboring Bangladesh, the company has applied for the necessary regulatory approval in India.

Project Overview

Three-year field trials for the rice variety had been conducted in West Bengal, Bihar, and Odisha. This flood-resistant rice variety has shown good results in the field trials and together with the successful commercial launch in Bangladesh.

The need of the hour is to focus more on the quality of agricultural produce with higher nutritional value than purely quantity.

In 1995, the client had introduced a hybrid rice brand in India. Today, this hybrid brand has more than 2.5 million acres under cultivation across states, including Uttar Pradesh. To mark the completion of 25 years of this brand in India, the client recently released an impact assessment report in Lucknow in the presence of the company's managing director who said the firm aimed at enhancing the productivity and income of farmers, apart from promoting sustainable agriculture.

According to the report, hybrid rice farmers had reaped a yield advantage of 20-25 percent of rice, while the short duration of some hybrid rice varieties allowed farmers to multi-crop with vegetables and other crops, which added to their overall income and helped them with soil quality.



This basic analysis of the rice variety plots with non-client rice varieties is to understand the farming practices in a better manner to accordingly can adopt sustainable agriculture practices. It will lead to a higher farmer income and increased production.

Cropin's Innovation

CropIn and the client partnered in 2020 to support field operations and manage the relationship with their producers for -



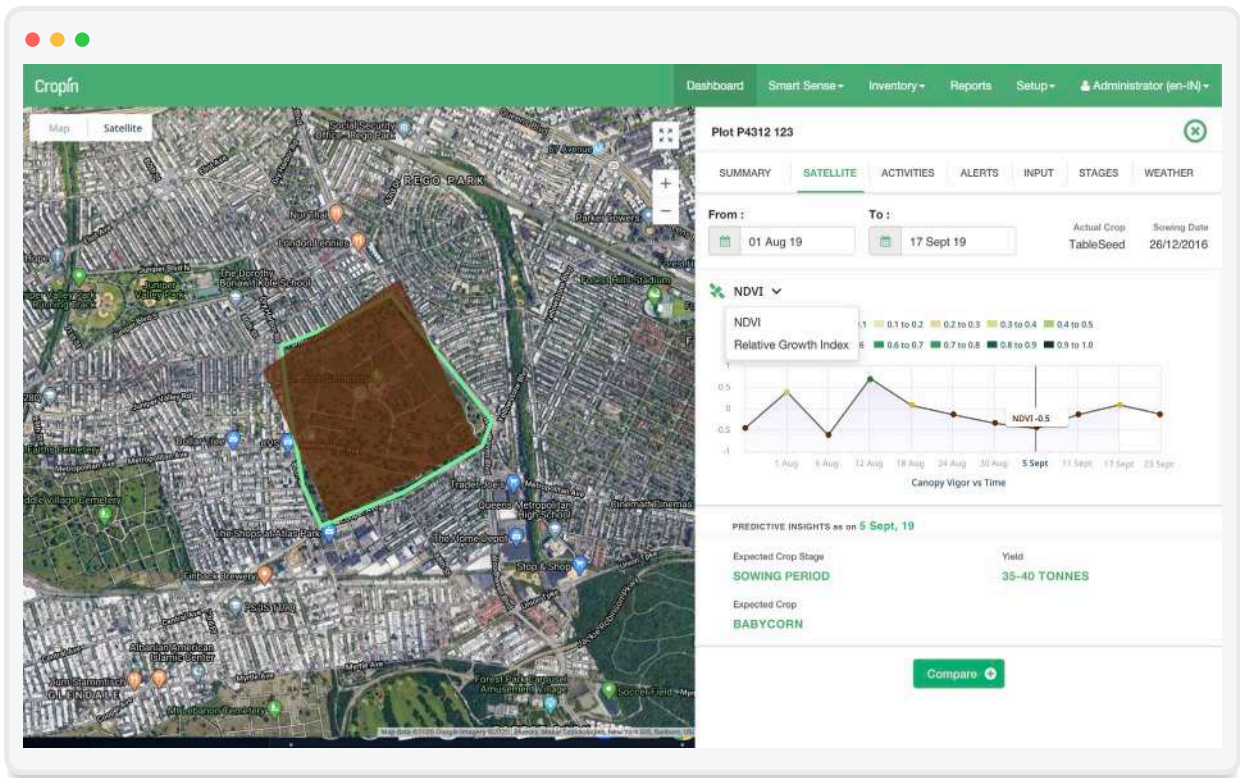
Currently, the client is using Cropin's PlotRisk module which gives the analysis on each plot on the basis of

- 1. NDVI index
- 2. Relative Growth Index

In addition, a dashboard was developed for the client to offer more clarity on the plot level with indices based on the chlorophyll content and water

stress. Also, the client wanted a pest and disease model for better analysis and with more data points to get a clear picture of the crop health in the plots.

PlotRisk is CropIn's state-of-the-art deep-learning platform that utilises high-resolution satellite imagery to identify agricultural fields and define their boundaries by producing a layer of polygon that closely matches the satellite data.



Upscale Plans

The client wants to leverage the Water Stress models for their pan India project to determine the moisture content of the soil and water required by the paddy field either in the artificial mode of irrigation or natural by means of rainfall.

IMPACT



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PlotRisk

& remote sensing
project on irrigation
analysis



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SOLUTION



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TRACEABILITY
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