SECURING CROP INSURANCE

Agriculture is among the most important sectors of the Indian economy. It accounts for 18% of India's gross domestic product (GDP) and employs 58% of the country's workforce. In 2020, when a harsh lockdown stoked a countrywide recession, the agriculture sector was a silver lining and registered positive growth. India's agriculture exports (including marine and plantation products) reported an increase of 17.34 % to $41.25 billion in 2020-21. But this silver lining has a constant threat from extreme weather events led by Climate Change, lack of modern technologies, old farming practices, etc.,

ultimately putting the farmers into economic crisis.

Importance of crop insurance

To protect farmers against the loss of crops due to any natural calamity, extreme weather, or loss of revenue due to fluctuations in price in the agricultural market, crop insurance is essential.

Bajaj Allianz General Insurance is one of the major players in the Indian insurance industry, offering insurance solutions to all kinds of customers for the last 20 years. The company has been offering crop insurance since 2014. It has many prod-

ucts like livestock, poultry, crop, motor, personal accident, and health insurance, which benefit the farmers. "Initially, we were focusing mainly on index-based weather insurance products in which crop loss due to deviation in the weather perils were getting covered. Since 2016, when the Government of India launched the Pradhan Mantri Fasal Bima Yojana (PMFBY), we started offering yield index-based products as well. PMFBY is a comprehensive crop insurance product in which all kinds of risks even before crop sowing (prevented sowing) till 15 days after harvesting (post-harvest) are covered," says **Ashish Agarwal, Head, Agri Business & CSC, Bajaj Allianz General Insurance.**

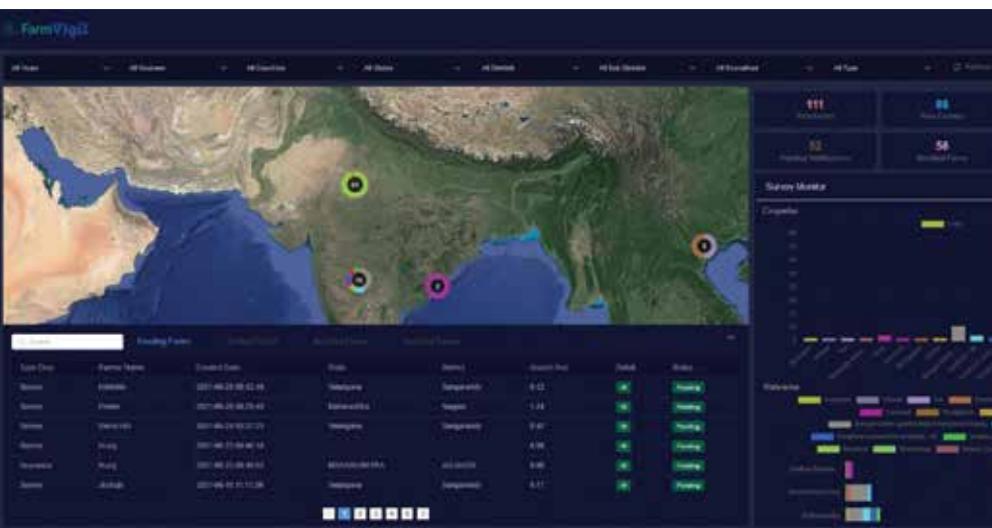*Field survey data is monitored using FarmVigil dashboard*

> *With the help of EOfactory, we are trying to verify and establish a correlation between the field conditions and various indices for loss assessment on an individual field basis. The initial results are quite encouraging and are expected to be very helpful in bringing a scientific approach to crop loss assessment*
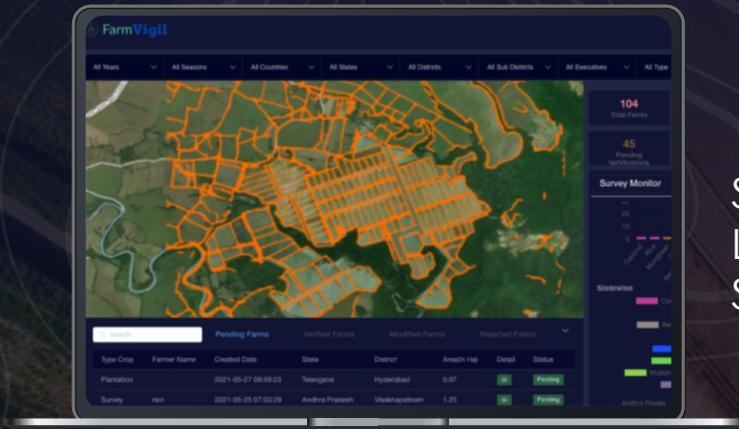
ASHISH AGARWAL

Head, Agri Business & CSC
Bajaj Allianz General Insurance
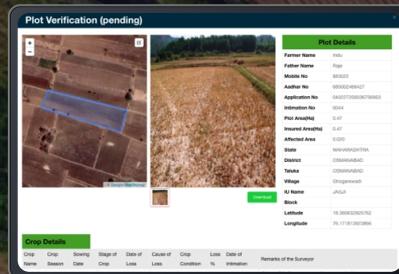
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Agri 4.0

FarmVigil

The New Era
For Agri Insurance

Scientific Evaluation Of Crop
Loss Through Remote
Sensing & Machine Learning

Field mobile application

Extract and geo-tag farm
locations, with photo
verification of field data,
with farmers information

**Survey monitoring
dashboard**

Database management
platform to monitor surveyors
on the field.

Dashboard for crop loss estimation

BI dashboard for crop loss
estimation and damage
assessment. With information such
as crop classification, crop health,
crop condition monitoring and
weather data forecasting for
accurate loss estimation.

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Key Features of FarmVigil Mobile Application
- Works on both android and IOS devices
- Works in both offline and online mode
- Real-time data sync to the dashboard
- Admin can monitor/view/edit/delete the data
- Geo-tagged imagery

FarmVigil mobile application for crop field survey

Challenges in manual surveys

The PMFBY scheme, though lucrative, has a set of challenges. Settlement of claims on an individual basis due to localized calamities is one of the 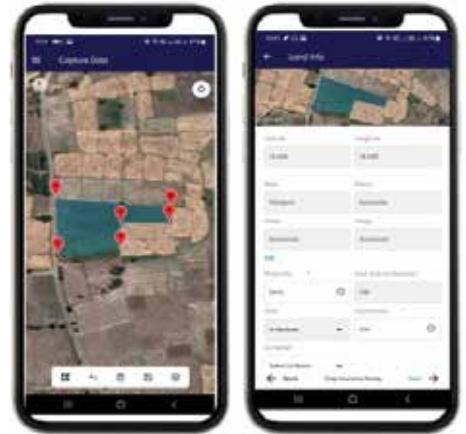most difficult aspects. "Whenever any natural event affects the crop, we start getting claim intimations from a huge number of farmers. Sometimes there are 10,000 intimations from one village. And as per the rule, we need to visit every field for loss assessment," shares Agarwal.

Loss assessment at the field level is a manual process — the surveyor visits the affected field and reports the cause of loss and possible damage on an eye estimation basis. There is always a high possibility of delay and moral hazard in the manual survey process, which causes dissatisfaction amongst the farmers. Also, it isn't easy to verify the accuracy of the survey report submitted by the field surveyors.

EOfactory, a unique solution

Bajaj Allianz General Insurance implemented geospatial technologies to collect up-to-date data for better and faster decisions and overcome difficulties in manual surveying.

EOfactory.ai, an Artificial Intelligence & Machine Learning based platform that utilizes a combination of RADAR and optical images for crop loss estimation and time series visualization for agriculture insurance companies, was fit for purpose. EOfactory's Farmvigil, a comprehensive information platform, collects details of farmers, plots, crops, and their conditions, automatic area measurements, along with geo-tagged field imagery through the mobile app. Its associated Web dashboard provides a synoptic view of all field data, and helps in field staff management, monitoring, and undertaking survey analytics.

Bajaj Allianz General Insurance used Farmvigil for monitoring the field activities in real time. This removed the cumbersome process of coordinating and monitoring the survey activities after weather events. The boundary plotting and customizable dashboard option of the Farmivigil were beneficial for Bajaj Allianz in the identification and mapping of the affected field. The geo-coordinates and field photographs were used for verification of the field details through satellite images.

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> *As a boy, I visited my grandparents in Uttar Pradesh, India every year, and the trip mostly coincided with the harvesting of the wheat crop. I used to wonder if farmers could directly sell their crops to buyers and make a better living. With that vision, we created an agriculture workflow for commodity companies as our starting point and then extended our platform to insurance companies to ensure that farmers can be compensated under various government schemes*
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ABHAY MITTAL
CEO, EOfactory.ai