ANALYSIS ON RICE CROP GROWTH IN INDIA

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Agriculture condition in India

Agriculture in India represents an important sector contributing to about 17% of the Indian GDP. As per 2018 reports, agriculture employed around 50% of the Indian workforce

Farmers who are looked upon as the backbone of the Indian economy, are still found to worry about their crops, profits, sales, debts and various other problems throughout their lives

The Project

This project aims to provide solutions and a business model to solve the issues seen in the cultivation of the rice crop in the farming community

Farmers around the country are beginning to adopt precision agriculture and agriculture technology through machines and equipment that use data analytics, Internet of Things and robotics to optimize the inputs and enhance the yields

Precision agriculture can help predicting the climatic conditions and also estimate the potential losses

Characterising Data

Data Collection - Collecting the data from the different sources using technologies like image processing and smart remote sensing.

Data Wrangling or cleaning - Cleaning the data and preparing it for further analysis.

Data analytics and modelling - Prototyping and preparing a basic model after analysis on the data.

Engineering - Data management, storage and maintenance.

Governance - Governance and working of the project to make it deliverable.

Operationalisation - Presenting the model to the company for value realisation.

Data Sources

- Data can be collected via image processing, using devices like farm machinery and drone imagery. We can use the new available technologies to increase the input in crop production.
- Information regarding crop field from sensors inserted into the field. This will store data like water level inside soil and fertilizer percentage absorbed in the soil .
- The chlorophyll percentage in a crop can also be determined using a chlorophyll meter.

Data Sources

- Climatic conditions can be monitored using tools like weather stations that measure the different variables like temperature, humidity, wind speed, rainfall,etc. Rice is a crop that requires varying temperature for the proper growth. How and when changes in temperature could cause changes in the growth rate is hence an important concern.

Data Analysis

Using the data analysis techniques like image processing, linear regression and influence diagrams we can analyse and visualise the data to predict the best suitable conditions in 6 which we can grow rice in the agricultural fields.

The data collected from weather stations give us an estimate of when to sow, grow, fertilize and harvest the crop.

We can derive relationships between the Year of growth, Temperature condition, Soil Moisture content, Humidity level and various other factors.

THANK YOU!