Team no. **61**, Team Name**: Beta Squad**

India is an agrarian economy with ~54.6% of people directly dependent on agriculture as their primary source of livelihood. In recent years, we have extended the adoption of emerging technology to improve our agricultural practices, efforts, crops, and ROI. Indian agriculture has its own challenges like lack of proper infrastructure, lack of knowledge, faith in conventional styles, lack of awareness, and scarcity of farmer capital. Owing to the lack of knowledge, many times, the farmers face difficulties in deciding the right kind of seeds, time to sow, and what is best for the crops.

According to the Economic Survey 2020-21, GDP contribution by the agriculture sector is likely to be 19.9% in 2020-21, increasing from 17.8% in 2019-20. Even during the last two COVID affected years, the agriculture sector exhibited growth of 3.4% in 2020-21, while the entire economy contracted by 7.2%.

We need to look for ways to help farmers minimize their risks, or at least make them more manageable. Implementing artificial intelligence in agriculture on a global scale is one of the most promising opportunities.

Application of AI in boosting agriculture:

- Detection of pests and weeds.
- Agricultural Robotics.
- Precision farming with the help of predictive analytics.
- Crop health assessment through drones.
- Soil monitoring system.
- AI-based price forecasting of crops based on historical data.
- Weather forecast to predict unfavorable weather conditions.

Problem to be addressed:

Agriculture has been hierarchical, at least in India, every farmer wants his/her progeny to acquire a stable, less-risky job. Farming is gradually losing its mainstream status and slowly, we fear that there won't be sufficient agriculture practitioners to satisfy the needs of towns, cities, even states and nations.
We think that agriculture is very experience intensive and needs a lot of understanding of factors affecting a harvest. We think that a tool aiding the new generation of farmers. And harnessing their technical know-how to promote agriculture.

So for the novice farmers and the youth who are willing to contribute to agriculture, it is of utmost importance the availability of knowledge and information about the crops suitable for the plantation, explicit and detailed knowledge about its harvesting and also the type of crop and time to cultivate one should expect. This specific problem can be helped by introduction of AI.

Feature Set:

- Providing analysis about the feasibility of a given crop based on the location of practice.
- Recommendation of the best-suitable crops for provided meteorological and geographical conditions (soil type, rainfall in mm, winds, and seasonal trends).
- Providing soil health index based on the N,P,K indexes of the soil on the land.
- Providing efficient irrigation methods for the given region based on the crop-type.