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A Novel Approach for Agriculture Interventions

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Abstract

The agriculture sector is the backbone of India, even though it faces many challenges. Agricultural interventions are the need of the hour. One of the major interventions introduced by the central government is the Pradhan Mantri Fasal Bima Yojana, under which the central government provides monetary benefits after paying a small insurance premium in case of losses.Each state government has different strategies for implementing the scheme. This paper discusses a novel idea to improve the efficiency of the scheme. For this process, we are using Noaa image data, which is processed by a Raspberry Pi.

Agriculture sector in India

Agriculture is the considered as the primary source of income for more than 60% percent of the Indian economy, even though the sectors GDP contribution has significantly fallen in the recent years. Infrastructure bottleneck is a major factor acting as a hindrance to the growth of Indian agriculture sector, which makes the people to shift towards agriculture allied activities and to other sectors.

Agriculture Intervention in India

The main agricultural intervention by the government was the Pradhan Mantri Fasal Bima Yojana[2]. However, there was disparity among many states in implementing the scheme. A solution for this is the introduction of the NOAA satellite along with the Raspberry Pi module to provide technological support for the scheme

Noaa and Raspberry pi

A NOAA Satellite is a type of operational meteorological satellite operated by the United States that provides data for weather forecasting and monitoring of the Earth's climate system[3]

Methodology

For implementing a Noaa-based system to determine agricultural losses, the first step is the storage of images of agricultural fields. When a farmer pays an insurance premium, the datashould be accurately stored in a centralized database. After a few months, another set of images should be taken using Noaa. These images are then processed with the help of a Raspberry Pi. If the image analysis shows a large difference from predetermined values, it indicates that agricultural loss has occurred[5]. Based on the change in values, the amount of loss can be calculated.

Conclusion

Many states in India has not properly Implemented the Agriculture Intervention schemes, especially PMFBY . The main challenge is technological usage , to solve this issue low cost Noaa based modules can be implemented.

End notes

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4. Zhang, X., et al. (2021). "Remote Sensing for Agricultural Applications: Advances from NOAA and NASA Satellites." Remote Sensing of Environment, 263, 112555