**Technology Assessment Using Satellite Big Data Analytics for India’s Agri-Insurance Sector**

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**Introduction:**

In this paper, Authors tried to implement the use of Satellite generated big data for analyzing the agricultural landscape in India. They performed an experimentation for this approach in the Northern part of India.

The main issue in India is that the agriculture sector is not getting developed even though there are capable farmers in India. Due to the injustice happening to them from getting their crop yield damaged by the environment or due to some other factors and they get less compensation for the damage, we can see many of the farmers committing suicide every year. This issue was addressed by the authors in this paper.

According to the Authors, the main issue in this sector is the lack of data maintained by the insurance coverage companies for dealing with the farmer loss recovery compensations. It is due to this reason farmers were facing financial problems to continue farming with proper supplies.

This issue was properly addressed by the authors as they tried to solve this problem from the initial level itself. This approach involves using a decision-making data analytics approach for the insurance companies regarding the compensation or the exemption of money return to some extent for the farmers.

This issue definitely needs to be addressed because of the political drama and injustice occur in this process of crop cultivation in every year and many thousands of farmers who were unable to clear that debt commit suicide.

**Technical Contributions:**

So, for this experimentation the researchers decided to conduct Crop Cutting Experimentation (CCE) in one particular area of a state in North India. Now the land is taken, and the method of agriculture is set up and observed for yield of the crop.

Now the yield of the crop land is determined by the average yield value and for all the areas of this experimentation, the average yield is calculated. This average yield is then compared with the Threshold yield value.

The threshold yield value is determined by taking the average value of the yield from the past seven years multiplied by indemnity level (70% or 80% or 90%). The indemnity value is given by the state to the insurance companies for that particular crop.

Now the Claim value can be calculated for the situation as,

Claim = ((Threshold – Avg yield)/Threshold) \* Sum of amount

This is the general methodology and the process followed by government and this process can be conducted across all other lands. Now the main drawback in this followed approach was that there was bias or insufficient data collected by the collecting team from CCE’s. It is due to this problem the farmers are suffering from the past.

The authors developed and improvised this approach by using satellite imaging systems instead of collecting data manually from collection team. The Satellite generated data gave all actual details of the crop land and also with the help of decision-making analytical approach they can determine if the farmer is eligible for the claim or not.

This data from satellites can even be used to predict upcoming natural calamities due to the climatic changes for the farmers and also the government. By initializing this approach, the farming industry can be made successful and there will not be any problems due to biasing.

**Improvisations:**

However, this approach can do a good job for farmers but there are some complications in dealing with satellite data.

Satellite data can become complex to be analyzed in the first place without any help from other kind of sources for reference. Insurance companies need to develop necessary skills for their employees to deal with satellite data effectively.

Satellite data might also lack some aspects of resolution in capturing the data and as well as sometimes the data can be inaccurate due to bad weather conditions like coverage of clouds completely by blocking the sky. These can bring gaps in collecting the data.

It is always important to take reference from ground level when dealing with satellite data as it may not make any sense in some situations and also satellite data usage can be very costly. It should be the responsibility of the government and also leading private companies in India to tie up and handle this problem.

It is also very important to store this collected information from the satellites in a well-maintained database either on premises or in the cloud. It is better to keep well educated students as employees in maintaining these cloud platforms as it also improves unemployment issues in India. The government should stop using the data acquired from CCE’s for election purposes to target certain people.