Importance of Weather Forecasting in Agriculture

Chakane S. R. and Shinde S. A.

Assistant Professor, Sadguru College of Agriculture, Mirajgaon,, (M.S.)

SUMMARY

Forecasting is the application of science and technology to predict the conditions of the atmosphere for a given location and time. The weather informally, and officially since the nineteenth century. Weather forecasting, which used to be done by hand and was focused mostly on variations in barometric pressure, existing weather patterns, and sky state or cloud cover, is now done using computer-based models that account for a variety of atmospheric variables. Weather predictions are created by gathering objective data about the actual condition of the atmosphere at a certain location and using meteorology to predict how the weather will behave in the future. Human feedback is also required to choose the best possible forecast model on which to base the forecast.

INTRODUCTION

Weather forecasting means the prediction of the weather through the application of the principles of physics, supplemented by a variety of statistical and empirical techniques. In addition to predictions of atmospheric phenomena themselves, weather forecasting includes predictions of changes on the Earth's surface climate. These changes are caused by atmospheric conditions like snow and ice cover, storm tides, and floods. The basis for weather prediction started with the theories of the ancient Greek philosophers and continued with Renaissance scientists. It was followed by the scientific revolution of the 17th and 18th centuries. The theoretical models of 20th-and 21st-century atmospheric scientists and meteorologists helped for the betterment in applications. The so-called synoptic weather map came to be the principal tool of 19th-century meteorologists. This is used today in weather stations and on television weather reports all over the world.

Weather forecasting services
Weather forecasting and agriculture

The conditions of growth development and yield of different crops depend upon a chain of factors factors which in hall seed soil health cultural and agronomic practices nutrient management Agro techniques whether and farmer among the different factors that influence crop production whether plays a decisive role. It can be understand that the proper weather forecasting minimizes the crop loss to a greater extent. It is also understood that the Indian food grain production is expected on the basis of estimates drawn by the government of India provided that monsoon behaviour is normal. One of the British says that Indian agriculture is a gamble of monsoon still it holds a technical advancement in the field of Indian food grain production as on the good monsoon yields good crop.
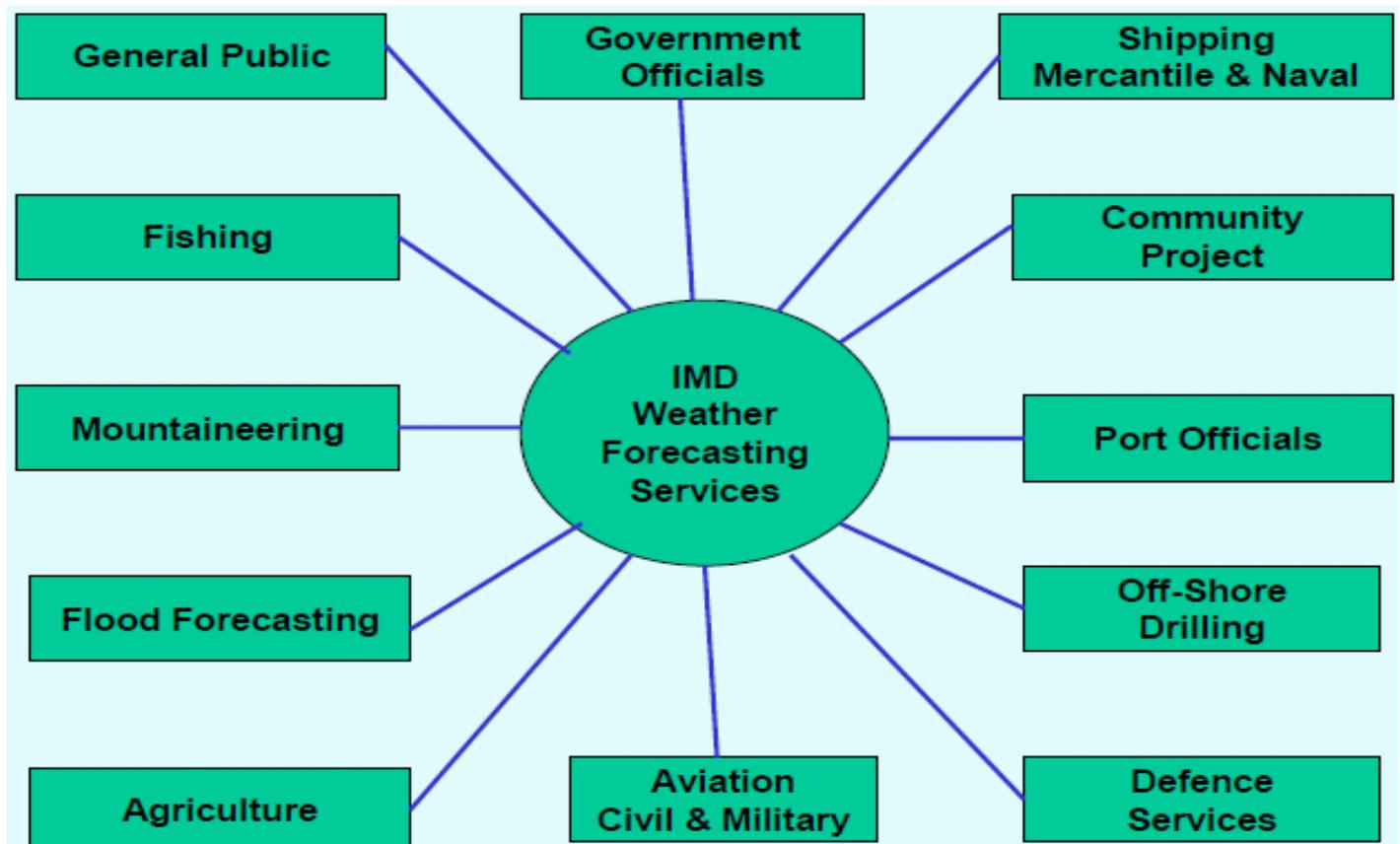
Types of weather forecasting
Short Range Forecasting:

This forecasting will last 1-2 days. The weather has an immense influence on human daily patterns, the production of food, and personal comfort zones. Forecasting plays an important role in planning current and future activities. So, there are other aspects that may have a huge impact on the forecasting outcome. However, accurate forecasting is very crucial. Forecasting is an important tool for various analyses. ECMWF is the most precise global model. ECMWF performs way better than the GFS.

Medium Range Forecasting:

This kind of forecasting lasts 3-4 days to 2 weeks. Medium-term forecasts are made for small strategic resolutions in correlation with the nature of the business. They are very important in the area of business budgeting and development and it is from this forecast that company budgets are decided. inaccurate forecasting can have serious impacts on the rest of the organization, the organization will be forced to be with the unsold stock and will have to overspend on production again. A huge amount of money has to be paid to banks and creditors, and stock may have to be sold at a very less price. Organizations can go bankrupt due to insufficient attention on medium-term sales forecasting. The time period for a medium-term forecast is usually one year.

Fig: Dissemination of weather forecast

Long-Range Forecasts:

This forecasting is for times longer than four weeks. Long-term forecasts are for mainly major upcoming strategic decisions to be taken within an organization and for the organization, They focus very much on how to use resources in an optimum manner. They deal with basic items rather than specific items. And therefore, organizations are concerned more with general ongoing trends, following these trends, regular attempts to predict revenue-generating sales over periods greater than two years. In some strategies, For huge industries, accurate predictions might be needed for a decade or more to tackle the changes. The disadvantage of such forecasts is that they cannot be more than unclear. Prediction planners blame the forecast when things go wrong totally opposite what was predicted and forecasting hence receives criticism from all who are impacted.

Methods Used to Find the Weather Forecasting
Synoptic Method:

A systematic study of recent weather forecasts from a wide area is used in this method of weather forecasting. Present weather conditions are linked to comparable scenarios in the past, and predictions are based on the premise that the current scenario would behave similarly to the analogous situation in the past.

Statistical Method:

Regression equations or other advanced relationships are formed between various weather elements and the subsequent climate in this method of weather forecasting. Predictions or weather criteria are usually chosen based on a potential physical interaction with the predictions.

Numerical Weather Prediction Techniques:

Numerical weather prediction definition states that it forecasts weather using statistical models of the atmosphere and oceans dependent on current weather conditions. The action of the atmosphere is expressed in this system by a series of equations based on physical laws governing airflow, air pressure, and other data. The method has been shown to be optimal for medium-term forecasts.

Importance of weather forecasting in Agriculture

- Weather forecasts provide valuable guidance for future planning, economic benefit as well as safety of life and property. Let us learn about the importance of weather forecast.
- Weather satellites encircling the earth provide useful information through pictures of clouds, storms, and other weather phenomena. All this helps the meteorologists to forecast the weather fairly accurately.
- Every mode of transportation whether on land, over water, or in the air is sensitive to changes in weather. Sailing, shipping, fishing, off-shore drilling, and deep-sea mining operations are highly dependent on weather. Similarly, airplanes which fly in the air are dependent on weather phenomena. So, an accurate forecast of weather is essential for ocean navigation, fishing activity, and aviation schedules.
- Weather forecast plays an important role in saving men and materials by predicting the occurrence of natural calamities like cyclonic storms, tsunamis, hurricanes, and heavy rainfall.
- Agriculture, especially in India, is dependent on weather conditions. Rainfall, temperature, and humidity guide the cropping pattern and cropping seasons of a place.
- Weather forecasts help the farmers to prepare themselves and their land for any changes caused by weather conditions.
- Many important events like military operations, geographical expeditions, social events, and important sports events are organized on the basis of weather forecasts.

CONCLUSION

From the above information it is concluded that this information is very useful to the farmers of country as in India there is huge loss of agricultural production take place due to the natural calamities like drought, flood and other climatic changes currently. So this is small step taken for the farmers for transferring the knowledge of weather forecasting to the farmers. We hope that it will be really useful to the farmers in the management of his farm and doing all the cultural practices timely due to the information about the weather forecasting.

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