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Impact Assessment of Agro advisory Services in North Gujarat Region

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A B S T R A C T

Weather and climate influence the production and productivity of various crops in a given region. If farmers are aware in an advance about real time incoming weather condition, it may effectively prevent the crop failure and achieve high yield. To study the impact assessment of weather based agro-advisory services in north Gujarat region, 100 farmers were randomly selected for feedback questionnaires during the year 2021-22. Results revealed that, dissemination of advisories through Mobile (Whats App, SMS, Phone call) largely adopted by the farmers. Further, about 28 per cent of total responded farmers, rated the information as very good followed by 23 and 22 per cent rated as good and excellent respectively. The study indicated that the farmers highly focused on spraying and irrigation operation while using the agro-advisory bulletins. Further, awareness is need to be created among farmers to maximum utilization of advisory for betterment the production.

***Key words*:** Weather, Agro advisory, Impact assessment, Weather forecast

The success of crop production is mainly depended on weather condition in a particular season. Weather manifests its influence on agricultural operations and farm production through its effects on soil and plant growth. Out of the total annual crop losses, a substantial portion is because of aberrant weather conditions. These losses could be minimized by making adjustment in the field operation with the help of timely and accurate weather forecasting issued from India Meteorological Department, New Delhi. An agriculturally relevant forecast is not only useful for efficient management of farm operations but also leads to precise impact assessment [1].

For providing medium range weather forecast to the farming communities, India Meteorological Department, Ministry of Earth Sciences, New Delhi, implemented a scheme "Gramin Krishi Mausam Sewa (GKMS)" at 130 Agromet field Units in the India. These Agromet Field Units (AMFUs) located in each Agro climatic zones of India in State Agricultural Universities (SAUs), Krishi Vigyan Kendra (KVKs), Indian institute of Technology (IITs) and other research institutes of India to provide district level crop specific advisory bulletins to the farmers. The advisory bulletins are prepared every Tuesday and Friday based in 5-days in coming weather. Agromet advisory bulletins prepared by Nodal Officer and Technical Officer with the consult of experts of different discipline in the advisory panels. The study on assessment of agro-advisory services in India has been done many workers [2-10]. Therefore, to assess the impact of advisory bulletins in North Gujarat, the response or feedback of farmers towards advisory services was undertaken during 2021-22.

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MATERIALS AND METHODS

North Gujarat (Agro climatic Zone IV) lies between latitude 23.0°N to 24.7°N and longitude 68.6°E to 73.9°E. The zone covered six districts viz. Gandhinagar, Mehsana, Sabarkantha, Aravalli, Banaskantha and Patan. The climate of the region is arid to semi-arid. The average annual rainfall of zone ranges between 600 to 875 mm. About 90 percent of the total annual rainfall received from south-west monsoon (June to September) in most of the districts of the zone. The daily highest maximum and lowest minimum temperatures remained around 45.0°C in April-May and 5.0°C in January-February respectively. The weather condition is quite favourable for normal growth and development of the crops. In general, monsoons are warm and moderately humid; winters are fairly cold and dry, while summers are largely hot and dry with gusty wind. The soils are deep sandy loam to loam belonging to Inceptisols, Entisols and Aridsols order. The general topography is plain and most of the area is under cultivation. The principal crops of the zone are pearlmillet, pulses, cotton, castor, tobacco, wheat, sorghum, maize, groundnut, potato, oil seeds, species and condiments, vegetables and horticultural crops.

Agromet Field Unit (AMFU) Dantiwada (Sardarkrushinagar Dantiwada Agricultural University) is

located in the Banaskantha district of Gujarat state (Fig 1). Geographically it is situated at 24.19° N latitude and 72.19° E longitude and altitude of 154.5 m. This unit is functioning potentially to rendering the Agro-advisory Services to the farmers based on medium range weather forecast issued from IMD, New Delhi. The bulletins are prepared in English and Gujarati language and disseminated through Emails, Whats App, M-Kisan, Newspaper, Short Message Services (SMS), Non-Governmental Organizations (NGOs), State Agriculture Department and Web portals etc. The farmers utilize the service to manage their farm practices to increase in crop yield as well as reduced losses due to adverse weather. To assess the impact of agromet advisory services, the feedback questionnaires were collected from 100 randomly selected farmers of the region towards agro advisory bulletins during the year 2021-22. These feedback questionnaires were collected during farmer awareness programme, field visit, farmer meet and through telephonic talk etc.

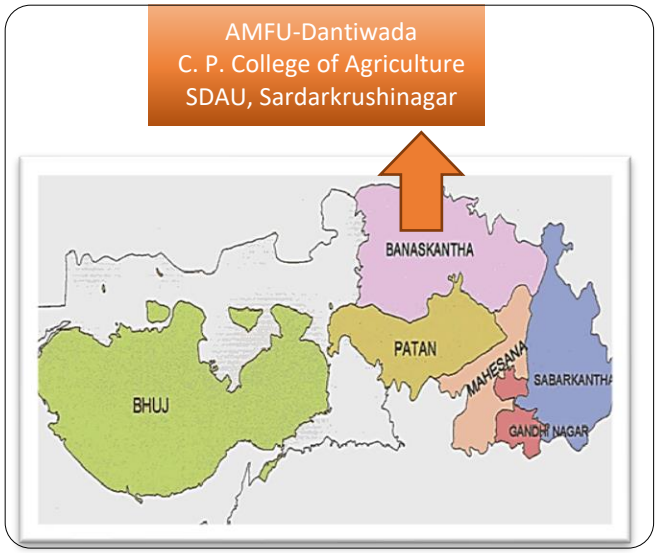

Fig 1 AMFU-Dantiwada

RESULTS AND DISCUSSION

Source of weather information

The feedback questionnaire has been used to formulate and analyze the impact of advisories. The results indicated that 38 per cent of farmers got weather information through Mobile (Whats App, SMS, Phone call) followed by 22 per cent from Krishi Vigyan Kendra (KVK) and 15 per cent via Television and Daily Newspaper each respectively. Remaining 10 per cent of the farmers used their traditional knowledge/experience for imminent weather (Fig 2). Hence, it is clearly indicated that, dissemination of crop advisories through Mobile (Whats App, SMS, Phone call) highly preferred by farming communities as compared to other mass media. Newspapers are available at low cost so farmers can read it in their leisure. At the same time due to arriving of new age media like computers, internet and smart phones, farmers can get updated information anytime from anywhere and this may reduce the usage of print media. Farmers got sufficient information regarding agro advisory from Krishi Vigyan Kendras (KVKs) as they have direct linkage with KVKs.

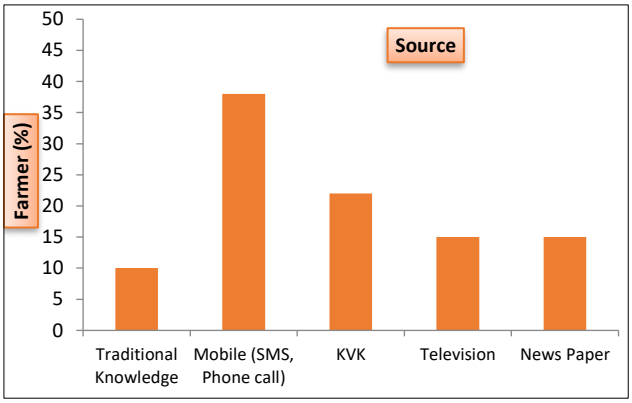

Fig 2 Weather information from different sources of media

Farmer response to AAS bulletins

Most of the respondent were agreed and believed that weather based Agromet Advisory Bulletins are very useful in agricultural planning, decision making and management of farm inputs. Among 100 farmer responses, most of the farmer responded weather plays an important role in their daily farm operation. Timely and accurate weather forecast helps in effective planning of agricultural activities and management of farm resources. It facilitates the farmers to perform or postpone the farming operations like sowing, irrigation, fertilizer and pesticide application according to incoming weather. The feedback response of the farmers revealed that maximum farmers were satisfied about the agro advisory service and frequently used it to manage agricultural operations mainly irrigation and spraying (Table 1). Agromet Advisory bulletins and their rank of evaluation was studied and results revealed that about 28 per cent of total responded farmers (100 Farmers) have rated the information of weather based agro-advisory bulletins as very good and 22 and 23 per cent rated as excellent and good respectively (Fig 3).

Table 1 Feedback questionnaires from the farmers

Types of questions	Farmers Response	
	Frequency	Per cent (%)
Do you receive bi-weekly agromet advisory bulletin?	89	89
Is SMS most suitable media for getting agromet advisory?	87	87
Weather based agro advisory services are useful?	74	74
Agro advisory bulletins are used for farm operations?	72	72
Are you making planning of management of farm resources based on weather forecast?	80	80

CONCLUSION

From the foregoing feedback study of farmers regarding agro advisory, the results may be concluded that, most of the farmers responded to use weather services particularly for irrigation and spraying operations. Maximum no. of farmers received agro-advisory bulletins through SMSs service. It may be revealed that 28 percent farmers evaluated the services as very good followed by 22 percent as excellent. Further, awareness needs to be created among farming communities to more familiarize the services to achieved better crop production under changing climate.

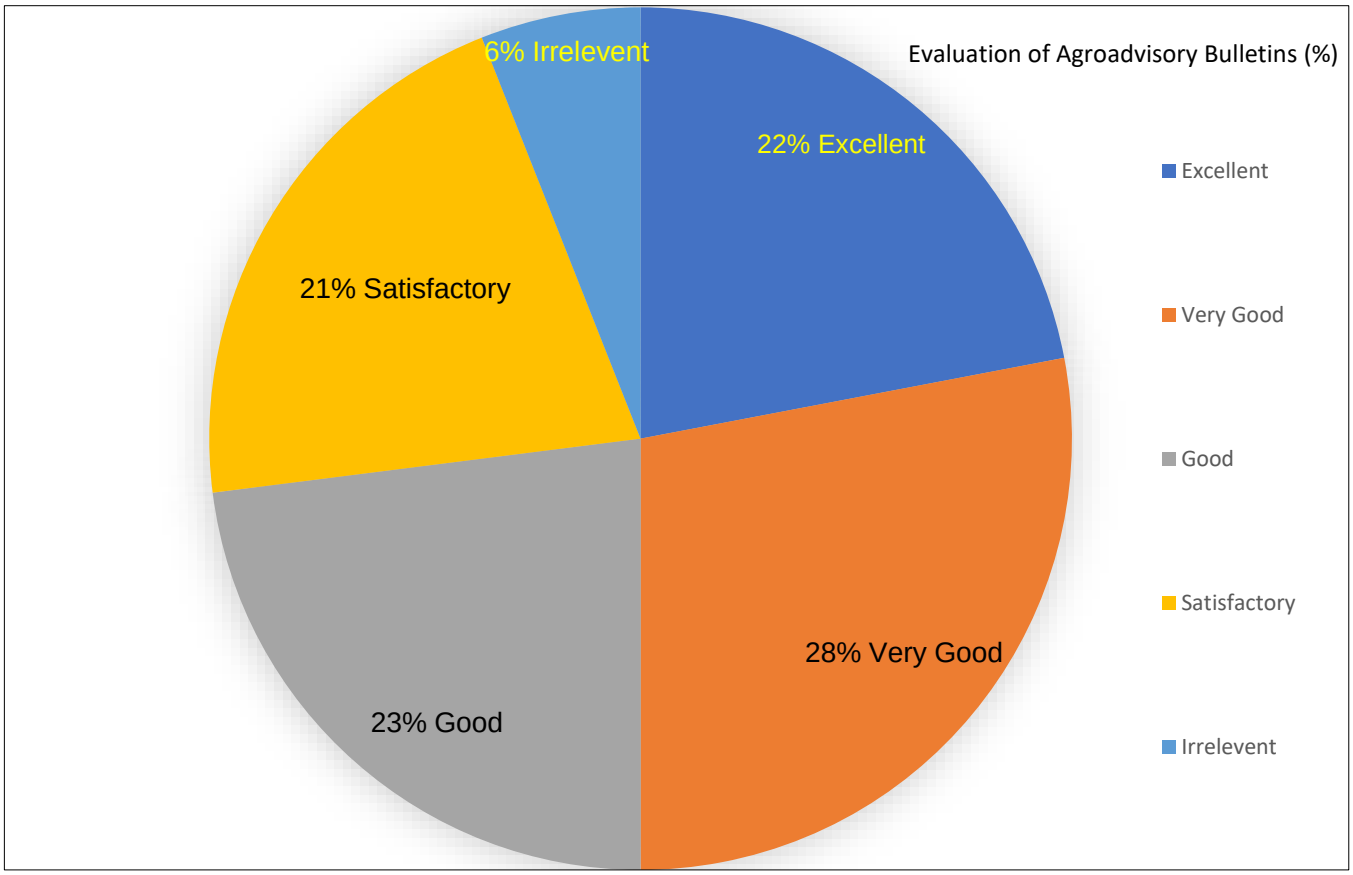

Fig 3 Farmers response to agro-advisory bulletin

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