



Impact of Agromet Advisory Services of DAMU Project in Mahabubabad District, Telangana, India

**D. Ushasri ^{a*}, S. Malathi ^a, A. Ramulamma ^a,
N. Kishore Kumar ^a, E. Rambabu ^a,
B. Kranthi Kumar ^a and M. Chittibabu ^a**

^a PJTSAU – Krishi Vigyan Kendra, Malyal, Mahabubabad, Telangana- 506 102, India.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/IJECC/2022/v12i121540

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/94163>

Original Research Article

Received: 05/10/2022

Accepted: 08/12/2022

Published: 27/12/2022

ABSTRACT

Agrometeorological Advisory Services (AAS) are being offered by India Meteorological Department (IMD), Ministry of Earth Sciences (MoES) under Gramin Krishi Mausam Sewa (GKMS) scheme as a step towards providing weather information-based crop or livestock management strategies and operations dedicated to enhancing crop production and food security. The Government of India has entrusted IMD the task of establishing weather observing system and development of GKMS in the country. In pursuance, IMD has set up a network of District Agro-Meteorology Unit (DAMU) in 530 districts in the country. The DAMU project was started at PJTSAU- Mahabubabad, Krishi Vigyan Kendra, Malyal during 2019 with operational districts of Mahabubabad, Warangal (Rural), Jangaon, Jayashankar Bhupalapalli with an aim to disseminate weather based agro advisory bulletins to locations. The present study was conducted to determine the impact of DAMU project and importance of ICT Tools in dissemination of AAS among farmers by conducting a feedback survey

*Corresponding author: E-mail: ushanama95@gmail.com;

through Google form in Telugu language by randomly selecting 200 beneficiaries belonging to Mahabubabad district. The study revealed that *WhatsApp* is the most convenient and widely used medium for weather information followed by personal visit to the Krishi Vigyan Kendra, (*i.e.*, Location of observatory). It was observed that majority of the farmers *i.e.*, 74.6 per cent get weather information through *WhatsApp*, using these bulletins, 64.5% respondents could save Rupees 2,500-5000 while 35.5% respondents could save Rupees 5000-20,000 in a season by either preponing or postponing the agriculture operations based on weather.

Keywords: *Agromet Advisory Services (AAS); District Agro-Meteorology Unit (DAMU); Gramin Krishi Mausam Seva (GKMS); impact.*

1. INTRODUCTION

Agriculture is the main occupation of farming community in India. Transfer of technology plays a major role in disseminating the research outcome to the farming community. Information and communication technologies (ICTs) that can be used to interlink information technology devices with communication technologies. These can be used to collect, store and share the information among people by using multiple devices and multiple media. Since weather plays a major role in crop growth and production risk in agricultural operations, which can be minimized by providing timely advisories for farm operations and disseminated well in advance of the impending weather" (Rathore and Parvinder, 2008).

Agro Advisory Services (AAS) are meant for providing basic, accurate pre-information of different climate, weather conditions of different crops and are very helpful to farmers to increase interest, knowledge, adoption and impact of climate change on agricultural practices. India Meteorological Department (IMD), Ministry of Earth Sciences (MoES) under GKMS scheme as a step towards contribution to weather information based crop or livestock management strategies and operations dedicated to enhancing crop production and food security, is rendering AASs, Importance of AASs was also reported in UP and Ladak [1,2].

IMD started to implement block level AASs by establishing 530 District Agromet Units (DAMUs) phase wise under GKMS in the premises of Krishi Vigyan Kendras (KVK,s) in collaboration with ICAR making AASs more crop and location-specific to address variations in weather within the district. Implementation of block level AASs are more effective due to high resolution forecast with appropriate agromet advisories for the farmers of specific blocks. Similar study was observed by Venkatasubramanian et al. and Manjusha et al. [3,4]. The present study was

conducted with an objective to analyse the impact of ICT tools in dissemination of Agromet Advisory Services (AAS) among registered farmers of Mahabubabad district of Telangana, State of India through DAMU.

2. MATERIALS AND METHODS

2.1 Study Area

Mahabubabad district (17⁰ 35'55.101" N Latitude and 80⁰0'19.733" E Longitude) with Mahabubabad as headquarter was carved out of erstwhile Warangal district, Telangana. The district shares boundaries with six districts *i.e.*, Bhadradi Kothagudem, Khammam, Suryapet, Jangaon, Warangal and Mulugu and comprises of two revenue divisions- Mahabubabad and Thorrur with 16 mandals (Fig. 1). The impact of DAMU project was analyzed by conducting a feedback survey through google (Fig. 2) form having 15 questions with multiple-choice options in regional language (Telugu), by randomly selecting 200 beneficiaries belonging to Mahabubabad district. Among the respondents, 80% farmers are educated, and they are using *WhatsApp* in their smart phones for weather advisories (Tuesday, Friday) and 20% respondents are illiterate, they regularly visit KVK and involve during farmers group discussions in their respective villages.

3. RESULTS AND DISCUSSION

Impact of AASs issued under DAMU project was studied by selecting a sample of 200 farmers through a google form designed for the purpose [Fig. 2 (a and b)]. Among the respondents, majority *i.e.*, 45.5% of the farmers are marginal farmers followed by 41.0% of small farmers, 11.5% of semi-medium farmers and 2.0% of medium farmers. 63% and 36% of respondents were found to follow rain-fed and irrigated farming systems respectively, while 1% of the respondents followed both rain-fed and irrigated farming systems.

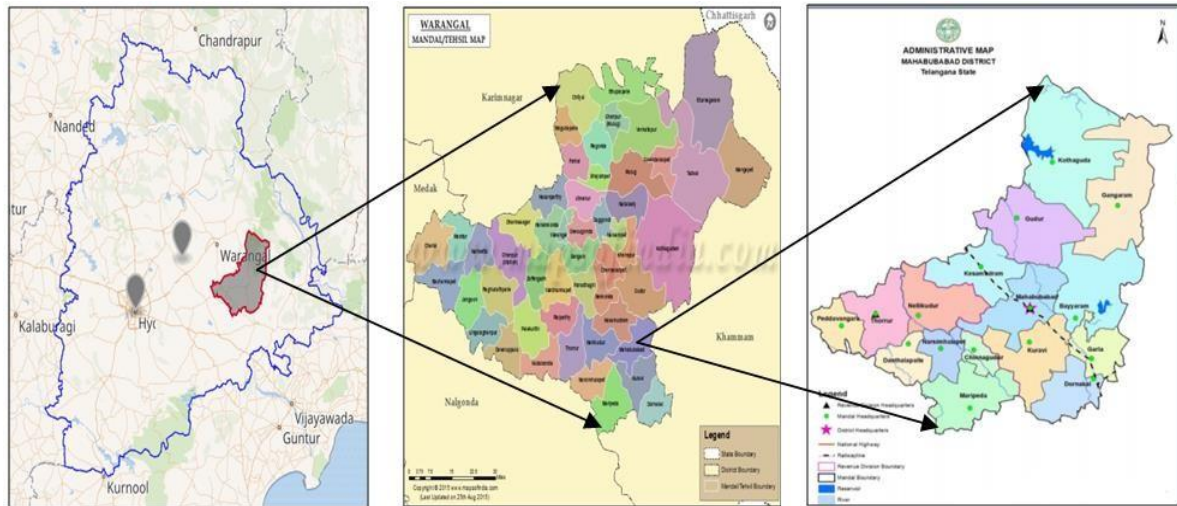


Fig. 1. Study area: Mahabubabad district, Telangana

It was found that majority of the respondent's *i.e.* 83.3%, found 'rainfall' as the most important weather event for their farm operations while 10% of respondents found heavy rainfall as most important weather event. Utility of the Agro advisories was also reported in other parts of the country [5,6]. 6.7% of respondents found other weather events like temperature, humidity, wind,

etc. as the most important weather event. It is also observed that 34% of the respondents were found to use weather forecast/ advisories for harvesting or threshing purposes, followed by 30% of them for sowing or transplanting purposes and 18% for chemical spraying purposes, 9% for irrigation purposes.

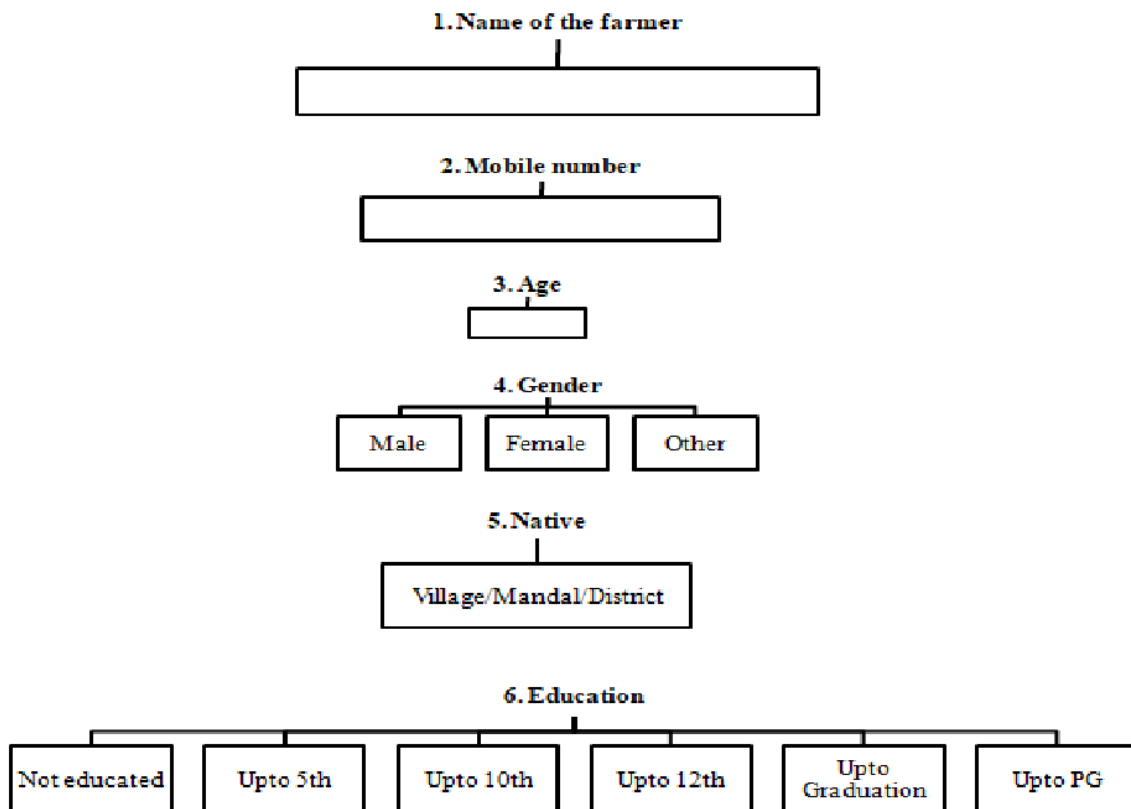


Fig. 2(a). Schematic diagram of google form designed for impact analysis

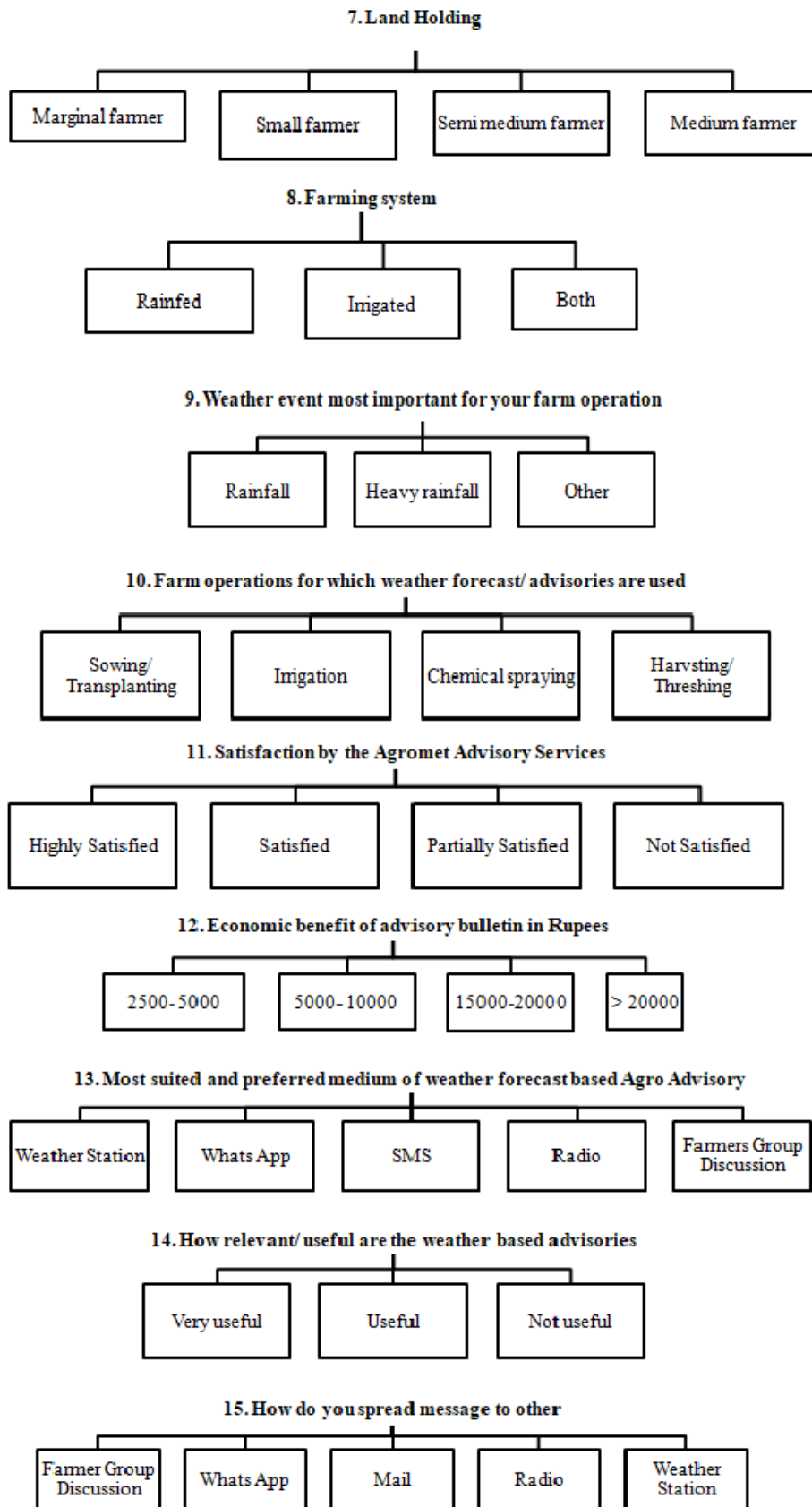


Fig. 2(b). Schematic diagram of google form designed for impact analysis

Rating of the satisfaction perceived by the use of AASs indicated that i.e., 47.6% farmers found AASs as “highly satisfied” followed by 37.3%, 12.7% and 2.4% as “satisfied”, “partially satisfied” and “not satisfied” respectively. When farmers were questioned on the impact of these AASs on the extent of minimizing crop losses, 64.5% respondents could save an amount of Rupees 2,500-5000, while 35.5% respondents could save Rupees 5000-20,000 through these bulletins in a season (Fig. 3).

3.1 Preference of Mode of Technology Dissemination

Mass media play key role in day-to-day life. It also plays a major role in dissemination of various agricultural technologies from Lab to land (farmers field). The success of agricultural development programmes largely depend on the nature and extent of use of mass media in mobilization of people for the programme. Similar study was done at Maharashtra and Karnataka [7,8]. The key function of mass media is to communicate various messages through television, radio, internet, magazines, newspapers, WhatsApp, agro-based apps, etc. The present study was conducted to assess the importance of tools of mass media in disseminating of weather information through

AAS. It was observed that majority of the farmers i.e., 74.6 per cent get weather information through WhatsApp, followed by 17.4 per cent through visit to KVK / weather station and the remaining from other media like T.V, newspaper, SMS (Text messages), radio, website. WhatsApp was found to be the most widely used ICT tool for weather-based advisories. Similar results were reported in the impact of ICT tools conducted in Ballari, Karnataka [9]. Moreover, 84.4 per cent of DAMU farmers found WhatsApp to be the most preferred and convenient tool for weather advisories. Very less number of farmers uses T.V, newspaper, SMS (Text messages), radio, website and others to know whether bulletins. The reason for using WhatsApp and weather station most widely may be due to their convenience to use, ease of accepting as per choice of time and, location (Fig. 4). 85.5 per cent, of the respondents found AAS bulletins ‘very useful’ while 14.5 per cent of respondents found it ‘useful’ (Fig. 5). “The timing and accuracy of weather forecast helps in effective planning of agricultural activities. This may facilitate the farmers to determine the farming operations like sowing, irrigation, fertilizer and pesticide application. Similar results were reported in the impact study conducted in Tiruvallur, Tamil Nadu [10] which will be performed or postponed.”

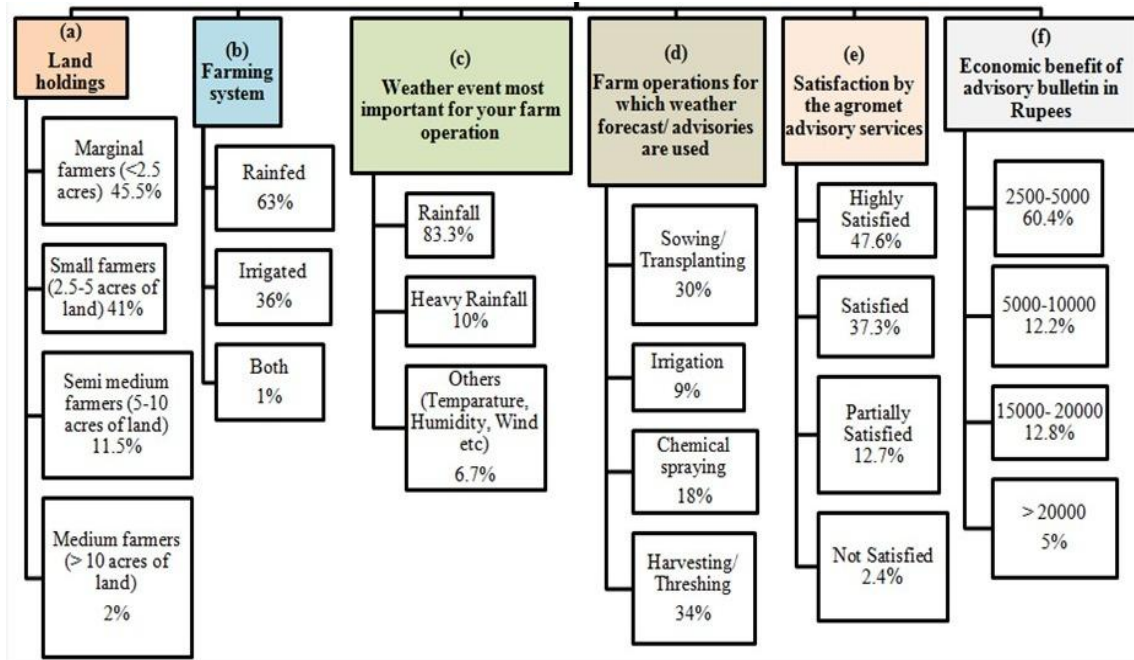


Fig. 3. Schematic representation of the impact of AAS

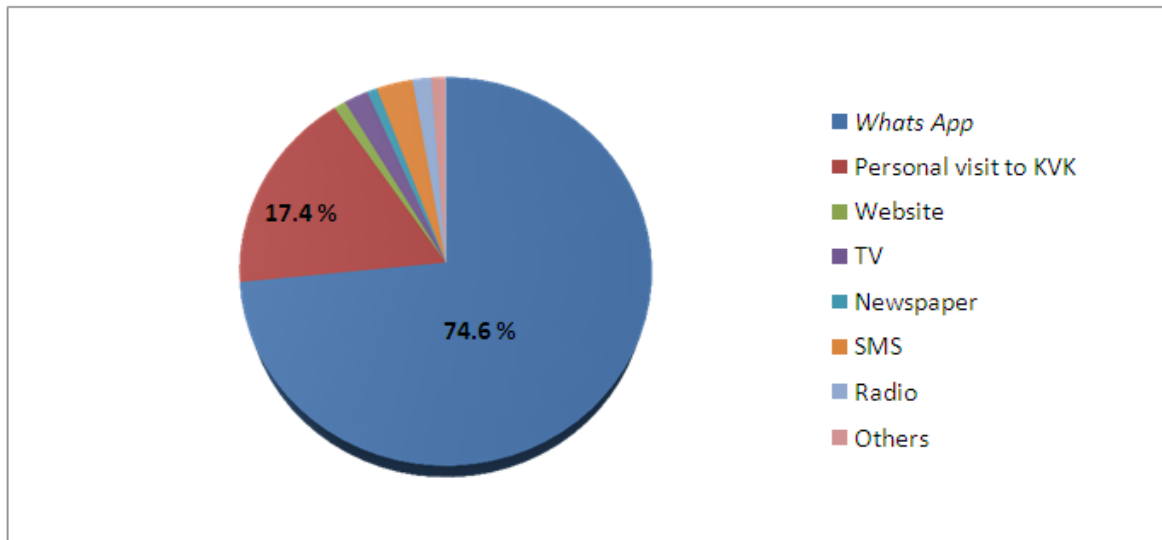


Fig. 4. Preferences for mode of technology dissemination

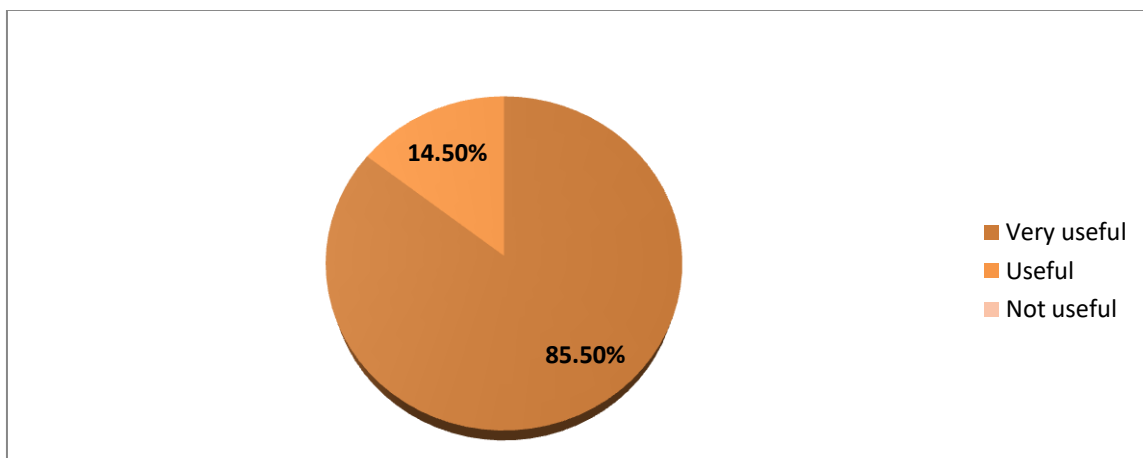


Fig. 5. Perception on Utility of AAS Bulletins

4. CONCLUSION

From the present study, it can be concluded that the weather based Agro advisories given under DAMU project has helped farmers in their day-to-day farm activities in either taking up timely farm operations or postponing certain operations at times of unfavorable weather conditions. Majority of the respondents showed "Satisfaction" at the services offered under DAMU project. However, ways and means to disseminate such weather advisories to reach illiterate farmers also needs to be focused.

ACKNOWLEDGEMENTS

The authors are thankful to the Director General Jayashankar Telangana State

Agricultural University, Hyderabad for providing of Meteorology, India Meteorological Department; Director, ICAR-ATARI-Zone-X, Hyderabad and Director of Extension, Professor facilities to KVK, Malyal to conduct the present study.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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