

Original Research Article

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Impact of ICT Tools in Dissemination of Agromet Advisory Services (AAS) among Farmers in Ballari District, Karnataka

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ABSTRACT

Weather and climate are the important features in deciding nation's food security. Extreme weather events like heavy rains, cyclone, and drought etc cause considerable loss in crop production every year. India Meteorological Department (IMD) and Indian Council of Agricultural Research (ICAR) collectively started District Agromet Unit (DAMU) under Gramin Krishi Mausam Seva (GKMS) project at Krishi Vigyan Kendras (KVKs) to minimize the farm losses. DAMU started working at ICAR-Krishi Vigyan Kendra, Ballari during November 2019. Various ICT modes were utilized to disseminate the block level weather based agro advisories on every Tuesday and Friday. The impact of DAMU activities was analyzed by conducting a feedback survey through google form by randomly selecting 100 beneficiaries belonging to Ballari district. The majority of the farmers who responded belonged to age group of 40 years (16.2%), followed by 42 years (8.1%). About 54.1% of the farmers said that these weather-based agro advisories were useful in all the seasons of crop cultivation. The farmers under rainfed farming system were benefitted more (48.6%) compared to the other farming system. About 71.1% of the farmers continuously received the bi-weekly (every Tuesday and Friday) forecast and Agromet Advisory Bulletins (AAB) and about 28.9% of farmers did not receive the same. Whatsapp is the major and convenient ICT source to receive the advisory (72.3%). About 32.5% of the farmers said that the advisories were more useful during sowing/transplanting and 78.3% of farmers opined that the rainfall event was most important for their farm operations. 89.2% of the farmers tell that they are highly satisfied with these Agromet Advisory Services (AAS). The best suitable timing to receive the forecast and advisories is the morning hours (7-9 AM) as expressed by 32.5% farmers. The farmers (20.5%) said that an average of more than 40 % of production lost during the crop season was due to bad weather. Majority of the maize growers (53%) followed by sorghum farmers (42.2%) were more benefitted from these advisories. And 16.2% of them responded that they saved Rs.10,000 of their production cost because of timely weather forecast disseminated by KVK, Ballari.

Keywords

Crop cultivars, temperature, rainfall, wind speed, relative humidity and hail

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Introduction

Weather plays an important role in agrarian country like India. The success and failure of crop production is highly dependent on weather parameters like temperature, rainfall, wind speed, relative humidity and hail. If accurate weather forecast is available, the farmer could plan in

advance on crop cultivars, time of fertilizer application, weed management, pest and disease management and make necessary arrangements accordingly to reduce the risk of failure (Rathore and Maini, 2008). In India weather services to the farmers was started by India Meteorological Department (IMD) in 1945 and later Agromet Advisory Services (AAS) started in 1976 (Manjusha

et al., 2019), to avoid crop failure due to aberrant weather condition. Central and State government is concentrating more on weather based agro advisory schemes to enhance the farmers livelihood. Agro-meteorological information *viz.*, weather forecast, soil status information along with agro-advisory (Prasad *et al.*, 2020) is real input for efficient farm management.

India Meteorological Department (IMD) Implements the Gramin Krishi Mausam Sewa (GKMS) programme at 130 centers at all states at the district level. Such Agromet Field Units (AMFUs) are established by the State Agricultural/Animal Husbandry Universities, Krishi Vigyan Kendra (KVKs), Colleges or Research stations (Venkatasubramanian *et al.*, 2014). Each AMFU is led by the university scientist as technical officer to prepare weather based agro advisory at district level. To provide block level advisory to farmers, India Meteorological Department (IMD) and Indian Council of Agricultural Research (ICAR) collectively started District Agromet Unit (DAMU) under Gramin Krishi Mausam Seva (GKMS) project at Krishi Vigyan Kendras (KVKs). Every Tuesday and Friday advisory bulletins are being prepared by Krishi Vigyan Kendra for block level in DSS software by Subject Matter Specialist with the help of KVK scientists for major crops of the district. The bulletin is in English and regional language and disseminated through various ICT modes. The farmers utilize the services to decide and follow the timely cultivation practices which in turn facilitated

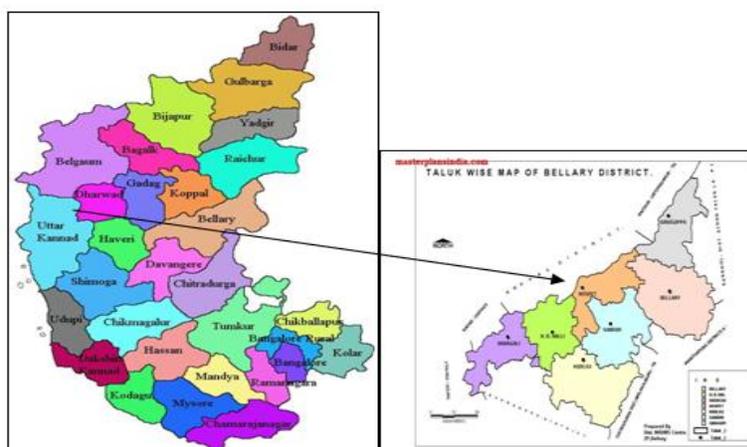
to obtain increase in crop yield as well as reduced losses due to bad weather. In this study it is proposed to analyse the impact of various ICT tools which are used for dissemination of Agromet Advisory Services (AAS) among farmers in Ballari district.

Materials and Methods

Study area

Ballari district is located at Northern dry zone. The geographical position of this district is North Latitude between 15° 30' and 15°50' and East longitude between 75° 40' and 77° 11' and with an area of 8,447 Sq. Km. Ballari district comprises of 8 blocks namely Ballari, Hoovina Hadagali, H. B. Halli, Harapanahalli, Hospete, Kudligi, Sanduru, Siruguppa. Scheme on District Level AgroMet Units (DAMU) for weather based Advisory services has been established at KVK, Ballari for weather forecasting and appropriate advisory service to farmers based on weather forecast. 132 AAS bulletins were prepared and disseminated to the farmers during 2020-2021. Eight Farmers awareness programmes on Megdhooth-Mobile APP based Agromet advisory services for farmers have been provided to 682 farmers. The impact of DAMU activities was analyzed by conducting a feedback survey through google form in regional language by randomly selecting 100 beneficiaries belonging to Ballari district.

Fig.1 Block map



Results and Discussion

Base line data/information collected from farmers through google form

The majority of the farmers who responded belonged to the age group of 40 years (16.2%), followed by 42 years (8.1%). About 54.1% of the farmers said that these weather-based agro

advisories were useful in all the seasons of crop cultivation. The farmers under rainfed farming system were benefitted more (48.6%) compared to the other farming system. About 70.3% of the farmers continuously received the bi-weekly (every Tuesday and Friday) forecast and Agromet Advisory Bulletins (AAB) and about 29.7% of farmers did not receive the same.

Fig.2 Result of weather forecast and weather-based advisories collected through google form

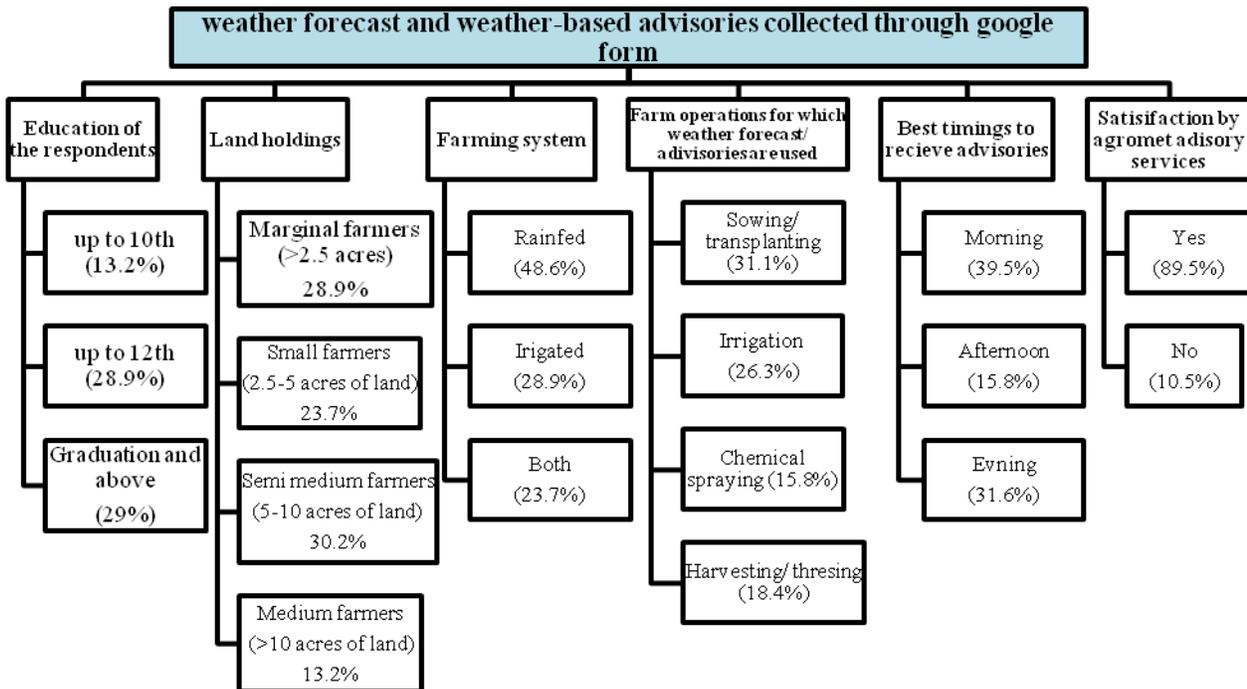


Fig.3 Source of ICT tool received by the farmers

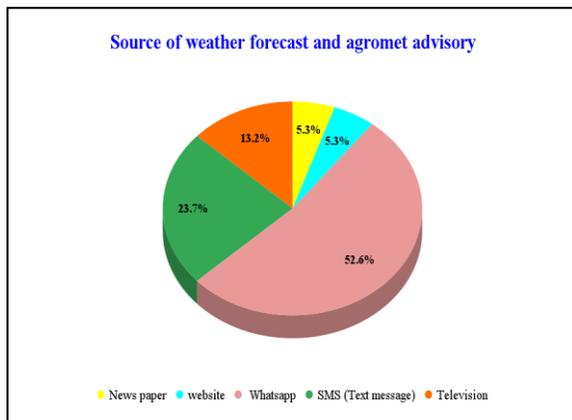
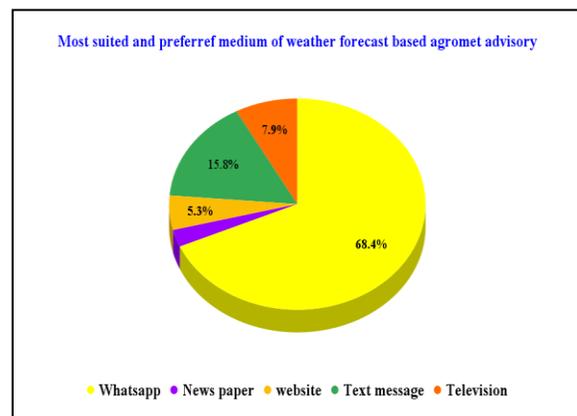


Fig.4 Convenient ICT source for receiving advisories as opined by farmers



Source of Weather Information

Mass Media have separate section for agricultural information's /programmes like Vellan Kalam of DD national and some newspapers have separate page for farming community to discuss important topics related to agricultural, disseminate new technologies, market rate for crops (Baran, 2004) weather information etc., Hence mass media like Television, Radio, Agro based Apps, m-Kisan portals, Internet are being effectively utilized by government agencies to disseminate innovative technologies to cover larger audience (Okereke, 1981). In this regard the survey results indicated that, 52.6% of the farmers get weather information through Whatsapp followed by 23.7% through SMS (Text messages), 13.2% via Television, 5.3% each through Newspaper and Websites (Fig.3). Hence it is clearly indicate that Whatsapp is the major and convenient ICT source to receive the advisory compared to other ICT sources. Newspapers are available at low cost so farmers can read it in their leisure (Zaria and Omenesa, 1992). At the same time due to arrival of new age media like computers, internet and smart phones, farmers can get updated information by every second from anywhere and this may reduce the usage of newspaper and radio. 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 (Prasad *et al.*, 2020) which will be performed or postponed. In this context it is revealed from survey that, about 31.1% of the farmers said that the advisories were more useful during sowing/transplanting compared to irrigation, chemical spraying and harvesting / threshing (Fig.2). Majority of the farmer's *viz.*, 75.7% opined that the rainfall event was most important for their farm operations. About 89.2% of the farmers told that they are highly satisfied with these Agromet Advisory Services (AAS). The best suitable timing to receive the forecast and advisories is the morning hours (7-9 AM) as expressed by 40.5% farmers. The farmers (18.9%) said that an average of 10-20% of production lost during the crop season was due to

bad weather. Majority of the sorghum growers (43.2%) followed by maize farmers (40.5%) were more benefitted from these advisories and 16.2% of them responded that they saved Rs.10,000 of their production cost because of timely weather forecast disseminated by KVK, Ballari.

Whatsapp was found to be major ICT tool in dissemination of weather based agro advisories. Educated farmers have knowledge on Whatsapp and other ICT tools therefore they are well aware with the advisory forecasted bi-weekly. So, focus on illiterate farmers is needed in disseminating weather advisories through audio-visual formats in regional language to take up timely agricultural operations. Presently DAMU scheme operating at KVK, Ballari provides weather based agro advisory services twice in a week to farmers for various crop stages. Farmers depend more on weather forecasting during fertilizer application and irrigation. However, farmers need weather advisories starting from selection of crop/varieties till post-harvest processing in order to achieve better productivity and good income. Farmers are also expecting to extend the dissemination of advisory services up to panchayat level.

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