

RESEARCH NOTE

Web-AAS: A Web-based Extension Tool for Dissemination of Advisory Bulletins

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ABSTRACT

India Meteorological Department (IMD) has taken a major initiative through its Integrated Agro-Meteorological Advisory Service (IAAS) which integrates weather forecast, climatic and agro-meteorological information to prepare weather based agro-advisories for enhancing farm productivity in India. District level agro-advisory bulletins are being prepared through 130 IAAS located at different place country wide. The IAAS at Directorate of Rapeseed-Mustard Research (DRMR), Bharatpur regularly preparing the agromet advisory bulletins for eastern flood plain zone which includes 5 districts of Rajasthan. Web-AAS, a web based tool has been developed by the DRMR for effective dissemination and archiving these bulletins which allow hassle free access of agromet advisory bulletins to agriculture actors (e.g. farmer, extension officer, student, policy maker, trader, etc) anytime anywhere.

Key words: Agromet; Advisory; Mustard; IMD; IAAS; Web-AAS;

Agricultural production depends upon many factors, weather and climate information play a major role before and during the cropping season and if provided in advance can help farmers apply resources in order to take advantage of favourable conditions and mitigate potential losses in unfavourable ones. The agro meteorological inputs improve agricultural production both in qualitatively and quantitatively. In an environment of increasing weather and climate variability under climate change, farmers are in greater need of agro meteorological information blended with weather sensitive management advisories before the start of cropping season to support adaptation of agricultural practices (Reddy *et al.*, 2014). In India, based on MRF, IMD is operating the scheme “Integrated Agromet Advisory Service (IAAS)” in collaboration with different agricultural organizations / agriculture research institutes to help farming community in carrying out weather-related farm management practices. As a part of this scheme, IAAS centres of IMD are preparing district level agromet bulletins, which contain risk management

steps for crop and livestock management, based on the weather forecast twice in a week (Tuesday and Friday) up to 5 days (Reddy *et al.*, 2014). Weather based Agro-advisory services translate weather and climatic information into farm advisories using existing scientific knowledge. Advisories involve weather sensitive farm operations such as sowing, transplantation of crops, fertilizer application, intensity of rain, pest and disease control, inter-cultural operations and timely harvest of crops.

In this context, about 130 IAAS established country wide, the IAAS at DRMR, Bharatpur is intended to issue agromet advisories based on weather information for 5 districts of eastern flood plain zone of Rajasthan to enhance agriculture production. To improve the process of effective disseminating agromet advisory bulletins, an effort has been made to design, develop and implement the Web-based agromet advisory system, called Web-AAS. The main objective to develop this system is to improve the efficiency of dissemination of agromet bulletins by exploiting potential of information and communication technologies specially web

technology. This enables hassle free access of the advisory bulletins to extension functionary including KVKs, State Agriculture Department, NGOs, etc. working in these districts

METHODOLOGY

The Integrated Agromet Advisory Services (IAAS) located at ICAR-Directorate of Rapeseed-Mustard Research (DRMR), Bharatpur has been serving the farming community of eastern flood plain zone of Rajasthan (Alwar, Bharatpur, Karauli, Swai Madhopur and Dholpur). The major objective of this programme is to advise timely and need-based crop management practices to mitigate adverse situations arises due to climate change and enhance agriculture production in these districts.

Preparation of agromet advisory bulletins: Weather forecast on rainfall, maximum and minimum temperature, wind speed, wind direction, cloud cover, maximum and minimum humidity are being received on every Tuesday and Friday from IMD, New Delhi. Once the forecast was received, an expert committee consisting of scientists (specialists) from different agriculture disciplines meet on both Tuesday and Friday, and prepares the agro advisories in Hindi as well as in English for all 5 districts considering major crops (Vashisth *et al.*, 2013). The weather forecast based agro-advisory bulletin contains a summary of previous weeks' weather, deviation of weather from the normal value, weather forecast information for the next five days, crop management and giving warning to the farmers well in advance, regarding rainfall variation, its amount and other weather variables including pest/disease problems. Thus, farmers can use the bulletins to decide on crop management options, application of nutrients and strategies to overcome other problems.

Dissemination of bulletins to stakeholders: These advisories prepared for 5 districts in both English and Hindi are sent to IMD for preparation of national bulletins and are uploaded on the IMD website (www.imdagrimet.gov.in) for dissemination. IAAS regularly communicate the Bulletins to the farmers on real time basis through telephone/ E-mail/SMS.

Agro-met advisory bulletins are also sent by E-mail to local Hindi newspapers for publication. For effective dissemination these bulletins are uploaded on

Web-AAS website (www.drmr.res.in/Web-AAS) in both Hindi and English. Dissemination of bulletins through Web-AAS has the advantage over the sent through Email, SMS, telephone, etc. Web-AAS is dedicated system and full advisory bulletins can be access anywhere anytime on the basis of 24X7 without any technological dependence. The KVKs/ State Agriculture Dept./NGOs working in said districts are informed about availability of agromet advisory bulletins on Web-AAS for dissemination among farmers and other stakeholders.

RESULTS AND DISCUSSION

The Web-AAS is an interactive user-friendly web based system that provides a set of facilities to store, access bulletins, conveniently and most importantly it saves lots of space, time to keep and manage digital bulletins. Specifically it provides capabilities to add new bulletins, search, browse, and e-mail bulletins easily (Kumar *et al.*, 2008). The bulletins are being uploaded and saved in database with proper nomenclature which includes district name and date of issue.

The system is user-friendly and for easy access of bulletins the system provides the options to select a particular district from dropdown list and also provide the option for current and archive advisory. Selecting the district and advisory status options are shown in fig 1.

If the current advisory option selected, the system will display two bulletins current and just one before

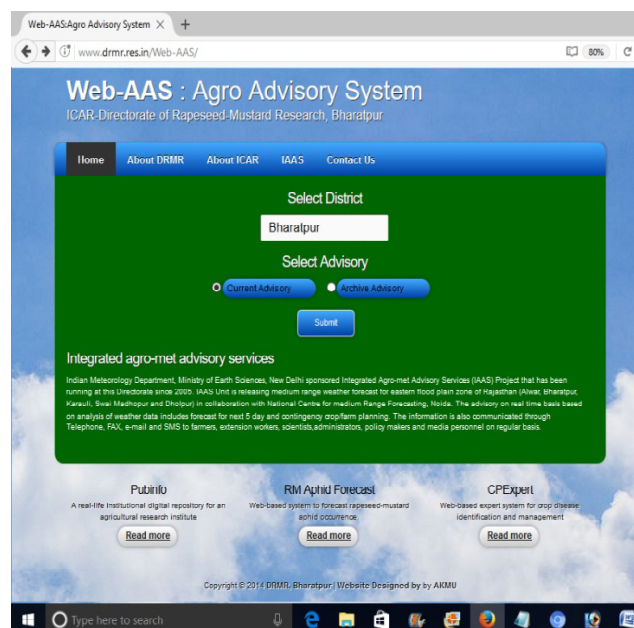


Fig. 1: Accessing the district bulletins

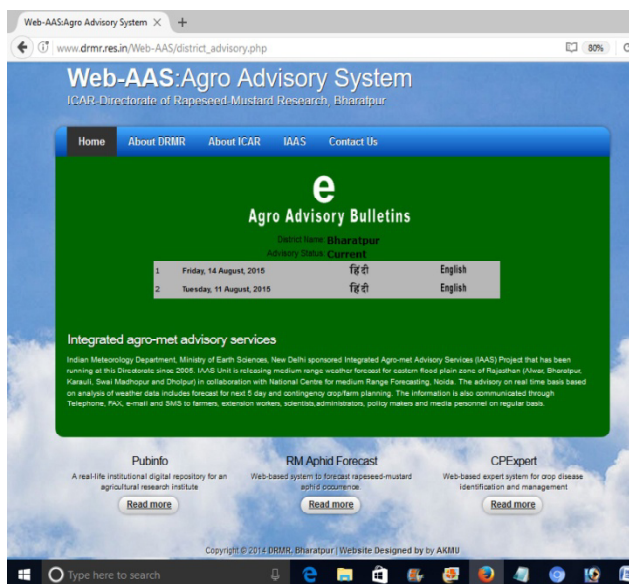


Fig 2: Accessing current bulletin

current issued in both Hindi and English for a district. Figure 2 is the example shows the output of query made for accessing the current advisory bulletins for district of Bharatpur.

Some time archive advisory required for future study and draw inferences, the Web-AAS provides the option for accessing archive bulletins. In similar fashion to current advisory, the archive advisory bulletins displayed if the archive option selected. The system display all bulletins appears just after two current bulletins. User can download the bulletins according their wish by clicking the appropriate option of Hindi or English, the standard format of advisory bulletins prepared for these districts are shown in fig 3. In addition to improve the usefulness of system, some other tools developed by DMR such as CDExpert (Rapeseed-Mustard Disease Expert System), RMaphidForecast

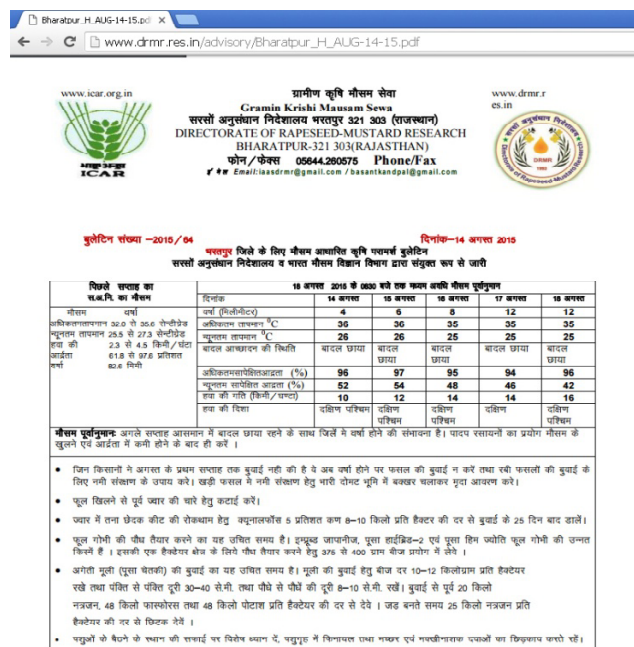


Fig. 3: Agromet Advisory Bulletin Format

(Rapeseed-Mustard Aphid Forecast System), etc. have been linked to the Web-AAS.

CONCLUSION

Web-AAS is web based personalized agro-advisory dissemination system. It aims to improve the performance of Integrated Agromet Advisory Service by easy delivering agromet advisory bulletins to the farmers and other stakeholders using web technology. The user interface provides several means for browsing and searching and archiving of bulletins. The system is being widely used by farmers, KVK Professionals, NGOs, News agencies, etc. for accessing of advisory bulletins.

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