Journal of Agroecology and Natural Resource Management
Print ISSN: 2394-0786, Online ISSN: 2394-0794, Volume 1, Number 3; November-January, 2014 pp. 127-129

http://www.krishisanskriti.org/janrm.html

Usefulness of Agro Advisory Services (AAS) Regarding Climate Change in Selected Villages of AICRPAM-NICRA Project for Marathwada Region

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Abstract: *Present review study was conducted during in year of 2013-14. Main aim of review study to know effectiveness and usefulness of Agro Advisory Services (AAS) regarding Climate Change in selected Villages of AICRPAM-NICRA Project for Marathwada Region. Study concluded that, Agro Advisory Services (AAS) an effective communication media for transfer of technology regarding climate changes information. Agro Advisory Services (AAS) provides basic, timely and accurately pre-information of different climate and weather conditions of different crops. Agro Advisory Services (AAS) helpful to farmers for increase interest, knowledge, adoption and impact of climate changes on agricultural practices.*

Keywords: *Agro advisory services, Climate change, Communication media, Weather.*

1. INTRODUCTION

Requirements for Agrometeorological Services need to be looked through making best use of weather as natural resource and avoiding its inclemency. The task of an agrometeorological is to apply every relevant meteorological skill to help the farmer make the most efficient use of this physical environment with the prime aim of improving agricultural production, both in quantity and quality. In order to play an efficient role for the improvement of the agricultural production, the agrometeorological service assesses the user's needs and strives to meet them.

National Initiative on Climate Resilient Agriculture (NICRA) is a network project of the Indian Council of Agricultural Research (ICAR) launched in February, 2011.The project aims to enhance resilience of Indian agriculture to climate change and climate vulnerability through strategic research and technology demonstration. The research on adaptation and mitigation covers crops, livestock, fisheries and natural resource management. The project consists of four components viz. Strategic Research, Technology, Demonstration, Capacity Building and Sponsored/Competitive Grants. Main

2. OBJECTIVES OF AICRPAM-NICRA HAS,

1) To enhance the resilience of Indian agriculture covering crops, livestock and fisheries to climatic variability and climate change through development and application of improved production and risk management technologies.
2) To demonstrate site specific technology packages on farmers' fields for adapting to current climate risks.
3) To enhance the capacity of scientists and other stakeholders in climate resilient agricultural research and its application.

Main activity of AICRPAM-NICRA has Weather based Agro-advisories, contingency plans and identification of best management practices through network of AICRPDA and AICRPAM centers.

Objective

It is observed that there is not much attention in the country and state on the aspects of knowledge of Weather Forecasting and Agrometeorological Advisory Bulletin of weather condition. Hence keeping in view these facts the present review research study was undertaken**,**

3) To study the content of Weather based Agrometeorological Advisory Bulletin (AAB), its impact and farmers feedback.

3. RESEARCH METHODOLOGY:

Collection of data has given Medium Range Weather Forecast (MRWF) issued by IMD, Pune and daily weather data recorded at Meteorological Observatory, KVK, Aurangabadfor last year i.e. 2013-2014 was collected.The study of agro-advisory bulletins issues by IAAS unit, VNMKV Parbhani collected for last year (2013-2014).Selection of farmer and preparation of questionnaire has thirty progressive farmers selected from selected AICRPAM-NICRA villages from

Aurangabad district and a questionnaire as suggested by NCMRWF was circulated to them.

4. RESULT AND DISCUSSION:

Content of weather based Agro-meteorological Advisory Bulletin (AAB), its impact and famer feedback:

5. CONTENT OF WEATHER BASED AGROMETEOROLOGICAL ADVISORY BULLETIN (AAB):

The content of weather based Agrometeorological Advisory Bulletin (AAB) studied by using last year Agro-Advisory Bulletins.After study the total number of AAB available from the Integrated Agromet-Advisory Services (IAAS) unit Parbhani observed that following disciplines are covered annually AAB.In the year 2013 number of AAB available and containing advice are 40 from the Agromet crop like cotton covered in 45% of AAB and soybean in 42.5% of AAB also the other crops like jowar, bajara, maize, seasamum, gram, tur, safflower, sunflower are covered.The horticultural crops, like vegetable crops cluster bean, green gram, cowpea, mainly covered in up to 77.5% of AAB and from fruit crops citrus and banana in 47.5% and 62.5%, respectively. 65% of AAB animal and 7.5% covers poultry disciplines.However, 2014 only size AAB get available. All the disciplines covered like cotton, jowar for agronomic crops, chilli, tomato, brinjal, and fenugreek, citrus for horticultural crops in 100% of available AAB. In 2013 from available 32 AAB 100% bulletins covers observed maximum and minimum temperature, wind speed and wind direction 90.48% bulletins covers observed rainfall. Also 96.6% bulletins covers forecasted, maximum and minimum temperature, relative humidity, wind speed and wind direction. In 2014 the available AAB 91.2% bulletins covers observed maximum and minimum temperature, wind speed cloud cover and forecasted wind speed and wind direction and 62.4% observed rainfall 48% bulletins contains forecasted maximum and minimum temperature 9.6% and 81.6% bulletin covers forecasted rainfall and local inputs respectively.

Impact of Agrometeorological Advisory Bulletin (AAB):

By the study of last year AAB and annual reports of integrated Agro-Advisory Services (AAS) the following events of economic gain or loss formulated. Usefulness of AAB enumerating selected cases when advisories were helpful or otherwise. The forecast of parameter other than wind directions match satisfactorily with actual observations and thus the advisories were quite effect in crop management. Specific instances of benefit/loses due to AAS with cultural practices, sowing, spraying, pesticides, irrigation, fertilizer application and labour saving etc. modified as per advisories.

Table 1: Economic impact of the IAAS (2013-2014)

Sr. No.	Forecasted Weather event Date	Crop culturaloperationsrecommended inAdvisory	Economic Gain/Loss
1.	Prediction of no rainfall during 13 - 17 and prediction of rainfall 19-20 June 2013	Farmers advised for timely preparatory tillage for sowing of kharif crops	Gain: Timely preparatory tillage was done by farmers for better crop production.
2.	Prediction of rainfall during 14-18 July, 2013.	Advised sowing of kharif crop.	Loss: No sufficient rainfall received during this period as per the prediction and therefore, losses of labour and other management charges were observed.
3.	Prediction of no rainfall during 28 July, 2013. to 4 Aug. and prediction of rainfall 19-20 June 2013	Advised do not apply the fertilizer and make arrangement for protective irrigation wherever possible.	Gain: Rainfall was not recorded during this period and which was helped to farmers for increasing crop yield & reduction losses of fertilizer and labour cost.
4.	Temperature prediction (light hot wave) during 18-22 April 2013.	Advised to protect banana and citrus orchard from the hot wave by adaptation of management practices.	Gain : The final yield of crop and quality was found economical to farmers.
5.	No rainfall prediction during 18-22 June 2014.	Farmers advised for timely sowing of kharif crops wherever, sowing rains received.	Gain: Timely sown kharif crops yielded better production.
8.	Rainfall prediction during 13-17 Sept.2014	Advised to drain out stagnated water from Cotton and Arhar crop fields.	Gain: 59.0 mm rainfall recorded during 13-16 September 2008, which create water logging condition.
9.	Rainfall prediction during 20-24 Sept.2014	Farmers were advised to cultivate land across the slope while preparation of land for rabi crops.	Gain: 85.5 mm rainfall recorded up to the end of September 2008 and thereafter, only 30.0 mm rains recorded in the month of October.

(Source: Annual Progress Report of IAAS unit, Parbhani (2013-2014).

Form the above Table it is formulated that the forecasted information through the AAB is economically useful to farmer for avoiding the losses of crop yield due to abnormal weather conditions.

Farmer feedback:

In all 30 progressive farmers from selected AICRPAM-NICRA villages under KrishiVidhyan Kendra (KVK) of Aurangabad district were selected. To have farmer views about the utility of these advisories issued by University Experts, a questionnaire as suggested by NCMRWF was circulated to them.In general the result or the formation of questionnaire collection as follows.

Table 2: Types of Crops Grown by the Farmer in Different Seasons

Kharif Season	Rabi Season	Summer Season	Other Crops
Sorghum	Sorghum	Sunflower	Sugarcane
Cotton	Wheat	Groundnut	Banana
Groundnut	Gram		Papaya
Bajara	Safflower		Watermelon
Soybean			Chilli
Mung			Mango
Arhar			
Seasamm			
Black gram			
Maize			
Sorghum fodder crop			

From the above Table-02 formulated that 76.66% farmers got forecast from that about 53.33%. It shows that more expose of TV, universities, news paper to the farmer than the radio, magazine and other mass media.About 66.66% of farmer aware that the forecast published in news papers, TV, magazines is forecasted through this IAAS unit Parbhani. As per the farmers view the grades to forecast in AAB was given from that the 23.33% farmer gives satisfactory and normal grades 16.66% good, 13.33% better, 10.005 best grades given by farmers.

All the 30 selected progressive farmers responded about IAAS unit and AAB positively. The rating in respect of plant protection, fertilizer application, management under adverse weather conditions and sowing time operations were estimated and found quite encouraging. Majority of the farmers rated highest utilities of advisories in relation to plant protection followed by advice made for management of crops under aberrant weather conditions.The overall utility of the advisories rated by the respondents were quite encouraging.

The above mention result and discussion with line of Anonymous, (2009), Indira Devi, P. and Prasad Rao (2008), Kushwaha, *et al* (2008), Shaha, G *et al* (2006) *etc*.

6. SUMMARY AND CONCLUSION:

The present study summarized and concluded that, Agromet Advisory Services (AAS) has effective communication media for transfer of technology for climate change as well as forecasted information through the AAB is economically useful to farmer for avoiding the losses of crop yield due to abnormal weather conditions.

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