

## Agro-met Advisory Services For Farmers Of The Country Up-To Block/Village Level

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Weather is one of the most important factors affecting the agricultural production. The increase in climatic variability and associated extreme weather episodes such as erratic rainfall distribution, abrupt change in day and night temperatures during crop season and sudden outbreaks in pest disease population, especially in developing countries, are throwing challenges to sustaining production levels of different crops. One strategy that farmers can adopt to sustain or increase crop yields in the face of a highly variable climate is to manipulate the crop environment through improved management strategies for adaptation. Agriculture is one of the most important sectors for India. Proper planning for this sector requires relevant and reliable information in timely manner. Information on crop, its stages and the week by week weather during the crop season is essential for proper management of agriculture crops. Thus, farm operations planned in conjunction with weather information are very likely to curtail the costs of inputs and various field operations. Farmers were not well aware about weather forecasting and their utilization in daily based agricultural operations at block level. Nowadays, with the advancement of observational network and forecasting technology, Agromet Advisory Service (AAS) network is being extended to sub-district/block level by establishing District Agro-Met Units (DAMUs) in the premises of Krishi Vigyan Kendra (KVKs) of ICAR through ATARI's during 2019 and 2020 as per MOU signed between ICAR and IMD, New Delhi. As the number of advisories will increase to ~6500 (sub-district /block level) from present 660 (district level), there is urgent need of automation of advisories preparation. During the year, India Metrological Department (IMD) provided funds for functioning of Gramin Krishi Mausam Seva (GKMS) under Atmospheric & Climate Research Modeling Observing & Services (ACROSS) scheme of IMD, New Delhi to establish District Agro Metrological Unit under Gramin Krishi Mausam Sewa in several Krishi Vigyan Kendra's of India.

The established DAMU will frame the sub-district/ block level agromet advisory bulletins and disseminate to farmers using multi-channel communication mechanism in the country to reach out farming household. Agromet Advisory Bulletin (AAB) is a comprehensive guide for farmers which provides information on forecast weather for next five days, planting, sowing, stage-wise pest disease infestation information and preventive measures and also harvesting periods of locally adapted crops in a specific agro-ecological zone. At present, ~40 million farmers are receiving SMS of Agromet Advisories in the country through mKisan portal of Ministry of Agriculture and Farmers Welfare.

#### **OBJECTIVES:**

1. To improvise the existing District Level Agromet Advisory Services (AAS) to deliver crop and location specific AAS to farmers at Block level
2. To establish appropriate dissemination and support system for weather-based crop advisories
3. Preparation of Agrometeorological Advisories Bulletins (AAB) on the basis of medium range weather forecast received from respective Meteorological Centre (MC) and current crop situation in consultation with agricultural scientists' disciplines to deliver crop and location specific AAS to farmers at block level
4. Dissemination of weather forecast and weather based agromet advisory bulletins through SMS by mKisan portal, personnel contacts, electronic media and print media especially on the warning of extreme weather events throughout the crop life cycle (operations from pre-sowing period to post-harvest) and extend to allied areas like Apiculture, Livestock, Poultry, Sericulture, Pig and Fish farming
5. Training to extension workers as well as farmers along with climate awareness programmes at village level and to reduce the farm losses and input cost through weather based agro-advisory

On the basis of framework of Gramin Krishi Mausam Sewa (GKMS) scheme and its objectives to be in operation at District Agro-Met Units (DAMU), the DAMU unit is also in operational at ICAR-Central Institute of Temperate Horticulture; Krishi Vigyan Kendra, Baramulla under ATARI, Zone-I, PAU, Ludhiana since March 2020. The launching session

of DAMU was organised at block Kunzer on 17 September 2020. It was launched by Shri Navin Choudhary, IAS, Principal Secretary, Agriculture and Livestock Division, J&K as District Agromet Unit, Baramulla. The chief guest also explained his views on scheme and its benefits for the farmers of Baramulla district.

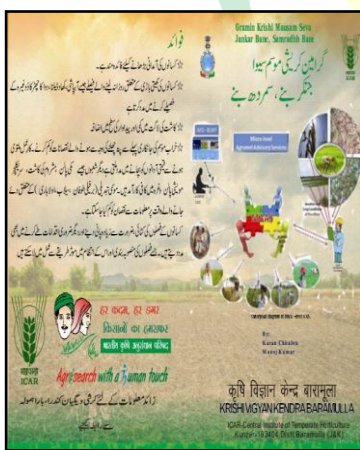


#### **Launching session of District Agro-met Unit at ICAR-KVK, Baramulla**

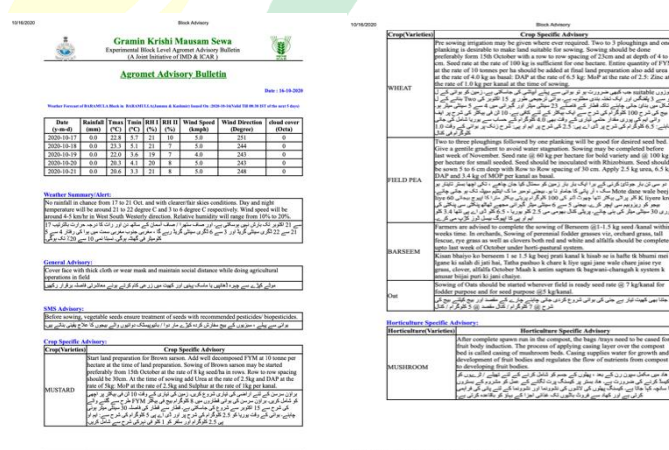
The working in GKMS scheme as DAMU for the farmers of Baramulla district, the agromet advisory service bulletins are prepared biweekly (Tuesday and Friday) for 26 blocks (Baramulla, Boniyar, Chandil Wangam, Hardaboora, Khaipora, Kunzer, Malpora, Nadihal, Narwah, Pattan, Singhpora, Sopore, Tangmarag, Uri, Wagoora, Wailoo, Zaingeer, Sherebad Khore, Sangrama, Parampeela, Bijhama, Noorkhah, Rafiabab, Kandi Rafiabab, Rohama and Tujjar Sharief) and shared through whatsapp groups (26). The advisories are also in dissemination in English as well Regional (Kashmiri or Urdu language). The short sms advisories also shared on nowcast basis of weather conditions through m-kisan portal, whatsapp, email, print media and radio. The agro advisories are shared based on the viewing and giving consideration to local weather conditions in advance and with relating the need based essential agricultural advice is in practice. As above mentioned objective advisories are prepared on basis of recommendation taken on every Tuesday and Friday from relevant experts/scientists for effective and faithful use of advisories by farmers of the district. As per GKMS scheme and its execution the DAMUs are meant for providing advanced weather based agro advisories to farmers of the district at block level, to effective reach of the advisories to ultimately every corners of the district and on basis of the blocks pertaining weather conditions in before of 5 days. Advisories for each block are prepared based keeping in records on forecasted weather data of a particular block, soil, topography, crops sown,



ruling varieties, other agro-enterprises available, local practices used in farming, irrigated or unirrigated areas and water availability. So that the agromet advisories can help better the farmers of the particular block, to decide its next operation as per future weather conditions. The DAMU Baramulla unit shares the agro advisories on both at district level and block level on major crops sown in the district and blocks as per crop season like Kharif (Maize, Rice) and Rabi Crops (Wheat, Mustard, Oats, Peas), Horticulture crops (Apple, Walnut, Pear, Cheery, Plum, Apricot) Vegetables (Cole crops, Radish, Carrot), Livestock (Sheep, Goat, Cow) Poultry, Agro-forestry, Sericulture, Mushroom cultivation, Fisheries, Apiculture and Saffron production. The general advisories as common is also shared in relation with forecasted weather block wise on maintaining of water drainage channels in field during rains, discontinuing field works during an extreme events if in chances to occur. The major guidelines and suggestions are also shared with farmers during Snowfall in the block/district to protect the crops from the infestation in before. It is also in maintenance to and regular notice of an extreme events (Thunderstorms, Lightning, Snowfall, Fog, Frost) if any occurred in the district or block or village and its impact on local peoples and on field crops. So, that in future the suggestions for protection from such events in an area in the particular month can be given to reduce loss of impacts on livelihoods.




Leaflet to aware farmers about the scheme/service



Agromet Advisory Bulletin issuing for farmers of the district

The farmers awareness programmes (FAPs) are in practice by DAMU at block level to popularize the workings of DAMU unit for benefits and welfare of farmers of the district. The awareness programmes are also explored among farmers to increase the popularization and installation of Meghdoot, Damini, and Mausam Apps launched by IMD & ICAR and also its

benefits and procedure of use instructed so that the farmers of the district can get himself the information on current and future weather conditions, about any local extreme event (thunderstorm, snowfall) may in chance to occur and farmers can get update always about future weather phenomenon through the apps use.

Gowhar Ali: Owned an Integrated Farming Unit	
	
Mr Gowhar Ali, Block- Kunzer, District-Baramulla, J&K Mobile No. 9797131268	
Profile	<input type="checkbox"/> Mr Gowhar Ali, started unit in 2007 with 1.5 lakhs initial investment <input type="checkbox"/> At present, gradually increased the number of mushroom trays from 23 to 500, in Poultry from 500 to 2000 chicks and 5 sheep to 60 sheep <input type="checkbox"/> Eams about . 4 lakhs, from mushroom, 3 lakhs from poultry, 2.5 lakhs from sheep and 50 thousand from vegetables, per annum <input type="checkbox"/> He received trainings from Dept. of Agriculture and from KVK, Baramulla for better managing the FS unit <input type="checkbox"/> He received very prestigious awards from the Dept. of Agri. J&K and DO Kisan for his outstanding works with small land holdings <input type="checkbox"/> An agromet advisory services in dissemination by DAMU, KVK Baramulla biweekly (weather conditions with technical agro advisory) <input type="checkbox"/> Mr Gowhar follows our advisory services regularly and benefitted with technical information guided by KVK <input type="checkbox"/> He also shared his experiences and effectiveness of advisories with us and shared his benefitted responses in terms of cost and benefits on proper guidance through agromet advisories <input type="checkbox"/> On regular following technical information he was able to decrease his invested costs and increased its benefits for two subsequent years (2019 & 2020) than averagely before . as, increased from 4 to 5 lakhs in Mushroom, 3 to 3.5 lakhs in Poultry, from 2.5 to 2.75 lakhs in Sheep husbandry and 50 to 60 thousand in vegetable selling <input type="checkbox"/> His benefitted experiences is also shared at IMD-GKMS youtube portal
Age	: 25 years
Education	: Matric
Landholding	: 1 Kanal 3 Marra
Farming experience	: 14 years
Crops	: Vegetables, Mushroom
Livestock	: Poultry, Sheep, Herbandry
Social recognition	: Proprietor, Gainsang Mash rovan, Poultry, Sheep Herbandry

### Success story of farmer: Gowhar Ali Lone

Top popularization of agri based weather apps and workings of district agromet unit for the farmers of district Baramulla, the online interaction programme was also organised on 15 July 2020; the farmers of Sopore and Kunzer blocks attended the programme and very well appreciated the GKMS scheme and its objectives at block level, and also commented as it is an initiative launched to empower or boosting the farming economy through reducing the crop weather losses in the district. The farmers of Kunzer, Wagoora, Malpora and Tangmarag blocks also shared their experiences and comments on effectiveness of agromet advisories helping them in saving expenditure costs and able to retain more profit than earlier. District Agromet Unit, Baramulla is receiving feedbacks from farmers weekly on use of advisories and the suggestions to improve our crop based suggestions with respect to weather forecasting issued by India Meteorological Department, New Delhi. The success stories on use of advisories and benefits receiving is observed and recorded by the farmers of Malpora, Tangmarag and Kunzer on Crop production (Maize, Rice, Apple, and Mushroom), Poultry, Fisheries, Sheep and Goat Husbandry. The success stories and workings of DAMU is also shared at YouTube channel of IMD-GKMS and IISF-2020 (India International Science Festival-2020) in poster presentation forms.

The current season crops sown and its sowing dates in particular blocks are collected from the Extension Department (State Level), to help or suggest the farmers for sowing operations and

if initiation of monsoon delayed, the farmers are suggested to go for contingency crop planning for that particular region.



**FAPs at Sopore, Hardabooora & Sangrama blocks of Baramulla district**

The seed availability and varietal information are also shared of line departments in AAS bulletins. The extension department officers at state, district, block and panchayat/gramin level were also awared about the GKMS scheme and its operationalising district agromet unit (DAMU) at ICAR-KVK Baramulla, the officers and sarpanch/panch's are joined through KVK-GKMS whatsapp groups and biweekly advisories are also shared with the extension departments to more sharing of the resources to the farmers of their areas, for more increasing the strengths of farmers with technical advisories. Since, in winters due to westerly disturbances (October to February) the extreme cold waves and rains/snowfall is in prevalence as per climatic conditions of Kashmir for 40 days from 21 December to 31 January the local people of Kashmir defines it as 'Chillai Kalan'. The perceptions of farmers of the district on 'Chillai Kalan' and the local measures they use to protect their livelihoods, farming fields, major rabi crops and horticulture crop based trees (Apple, Walnut, Apricot, Almond, Cherry, Pear, Plum, Peach etc.) is being to be recorded and it is in practice, so that the local/traditional practices (ITKs) can be noticed keeping 10 base active farmers from each block of the district to gather the information.

Likewise, the overall working efforts of all District Agromet Units (DAMUs) are regularly in practice in a country, and shows that, the weather forecast issued by India Meteorological Department and the biweekly dissemination of Agromet Advisory Bulletins *i.e.*, based on predicted and observed weather is very useful for the farming community in improving the agricultural activity and saving the expenditure costs. The DAMUs reveals and works with an ultimate goal, so that, the farmers must receive more benefits on following of weather and crop based advisories in their agricultural operations. At present DAMU, Baramulla issued



more than 2000 advisories through SMS and Whatsapp mode and benefitting 1000 farmers of district and being continuing its practices for the welfare of the farming community of the district upto block and village level.

