



Newsletter

Gramin Krishi Mausam Sewa

District Agromet Unit

ICAR-Agricultural Technology Application Research Institute Kolkata



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INTRODUCTION

In Gramin Krishi Mausam Sewa (GKMS) scheme, the District AgroMet Unit (DAMU) at Krishi Vigyan Kendras (KVKs) prepare and disseminate sub-district level agromet advisory bulletins after receiving weather forecast from IMD. Automatic Weather Station (AWS) have been installed at KVKs to record agromet observations and generate agrometeorological information for use in studies of crops, pests and diseases, soil, agro-forestry, livestock, horticulture, agricultural physics, soil science etc. Such data helps in study of crop-weather relationship, relationship between crop-weather and pest/disease and develop region/location specific agromet predictive models. As of now a total of 15 DAMU KVKs; seven from West Bengal and eight from Odisha are functioning. These KVKs with DAMU are providing weather forecast bulletins to the farmers since the inception of the Project. Weather forecast bulletins/special bulletins are generated in English and local languages and communicated to the farmers well in advance. Agromet Advisory Bulletins are prepared twice a week and circulated among all the farmers of the district. Several modes of dissemination of advisories are used like email, messages, whatsapp group, social media, through input dealers, block level extension functionaries, through village based Clusters etc. This year in the month of May during a very severe cyclonic storm 'YAAS' over Odisha, West Bengal and neighborhood, the DAMUs prepared Special Bulletins of warnings in regional languages and circulated to the farmers well in advance, such as to complete harvesting of crops, strengthen the macha of vegetables and betel vine, to stay at home along with safety of cattle and livestock in this period, fishermen were advised not to move into north Bay of Bengal. This helped the farmers to a great extent in minimizing the loss during these severe cyclonic storms. KVKs are taking initiatives in popularizing of 'Meghdoot' and 'Damini' mobile Apps for outreach of Agromet Advisories and to help individuals keep updated about thunderstorm/lightening likely to strike in their locations. An online meeting was jointly organized by ICAR and IMD to discuss 'Support from State Agriculture Department for Effective Implementation of Gramin Krishi Mausam Sewa (GKMS) Scheme for the benefit of Farming Community in the Country' on Apr 27, 2021.

KVK Purulia

District Agromet Unit (DAMU) Purulia conducted three Farmers Awareness Programme (FAP) and 'Meghdoot' popularization training on Jan 25, 30 and Mar 17, 2021 at different blocks of the district. In these awareness programmes, the activities of DAMU at KVK Kalyan Purulia were discussed briefly in the beginning. Then details of Agromet Advisory Service (AAS) and its role for management of rabi oilseeds were discussed. Finally, there was one interaction session with the farmers regarding several issues they are facing during the crop cultivation and details of the participants were registered. Total 80 nos. of farmers were present at these FAPs. Farmer's Field Visit was conducted on Jun 23, 2021 at Village-Kalajhore, Block-Kashipur, 5 nos. farmers were visited on the day. Two lectures were delivered by SMS (Agromet) as a Resource Person in DAESI Programme. Six nos. of SMS were sent through mKisan Portal.



Success story

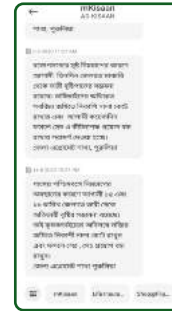
Name of the Farmer: Jatin Kuiri

Address: Vill: Durgu, Block: Jhalda-I, Purulia

Sri Jatin Kuiri has been cultivating different types of vegetables round the year since last 5 years. In most of the times during *Rabi* as well as *Kharif* season he was facing havoc crop damage due to sudden heavy rainfall which causes water stagnation and also reduces the efficacy of applied plant protection chemical. Sometimes due to sudden outbreak of specific pest and diseases associated with the forecasted weather he was also facing severe economic crop losses. But after the intervention of DAMU, he started to follow the Agromet Advisory Bulletin issued bi-weekly by DAMU Purulia and applied the same in his farming practices. Now he is applying the plant protection chemical, irrigation and taking other farming related activities as per the suggestions of DAMU which is helping him minimize the cost of cultivation and is able to increase about 25% of his farming income than previous cycle.



Photos of various Extension activities



KVK Malda

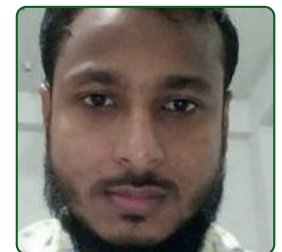
Impact of Medium range/extended range forecast in farming practices

Farmer Name: Babu Khan

Address: Kaliachak - III, Malda

Before Weather Forecast & AAS: A comparison study has been made including statistical method before and after interventions. Initially, before adopting AAS practices Shri. Babu Khan used to hire pumps and labours as and when needed without having prior knowledge of rainfall occurrence there by incurring higher input cost up to Rs. 1180±55.4/irrigation per acre.

After DAMU's intervention: After getting in touch with DAMU, Malda KVK by regularly receiving weather updates and updating himself regarding agro advisories he was able to save nearly 32% money only from irrigation savings while rice cultivation during *boro* season which helped him to gain higher R:C ratio of 1.63.



Impact of long range forecast in farming practices

Farmer Name : Bipul Mondal

Address : Paranpur, Ratua-II, Malda

Before Weather Forecast & AAS : Before the introduction of the GKMS scheme farmers of the district were not much aware about crop contingency planning, optimum sowing window selection, suitable varieties of cereal crops, agronomic management, pest and disease management etc. Gradually with time,

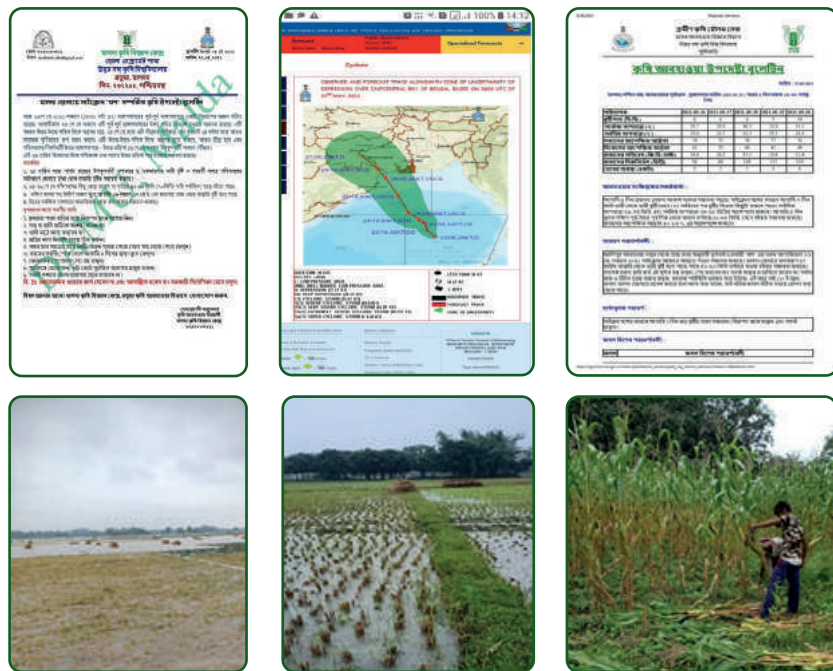


regular perseverance and training programmes the mindset of the farmers have considerably changed and they are having faith in the scientific advisories issued by the scientist of this KVK.

After DAMU's intervention : With gradual interventions and introduction of GKMS scheme and block wise agro-advisory services the farmers have now started adopting crop contingency planning depending upon the amount, onset and gradual advancement of rainfall during monsoon in the district which are delivered to the farmers of the district well in advance (mid of April and end of May). Thus, Mr. Nurul Islam a progressive farmers also adopted so during the year 2020-21 regarding crop contingency planning for choosing suitable crop cultivars, transplanting of rice, harvest etc. which is very much evident from the statistical analysis which have been carried out. After following the scientific advisories and forecast of weather parameters issues by DAMU, Malda KVK his profit significantly increased w.r.t. to previous years.

Cyclone prediction :

With the interventions of DAMU, Malda KVK the havoc loss which would have been created otherwise due to the two major cyclones i.e., Amphan in 2020 and the most recent yaas during 2021 have been averted. With advance forecast of the cyclonic path and its impact over Malda district on agri and allied sectors were communicated to the farming community well in advance (at least 5-6 days before). During the most recent yaas cyclone, the famers were advised to pre-harvest the standing crops specially *Boro* rice, maize and vegetables. Regular updates, special bulletins through social media (facebook, whatsapp, twitter etc.), printing and electronic media, mobile SMSs (mkisan), block and district administrations compelled the farmers to complete the harvesting of standing crops. Around 70% of the losses were possible to avert having monetary benefit of nearly around Rs.95-100 crores over the district. It was predicted by the scientists of DAMU, Malda KVK that very heavy to extremely heavy rainfall may occur due the cyclone which was evident from the fact that Malda district received the highest ever rainfall of around 309.4 mm in a single day and 329.4 mm cumulative rainfall in two days. The farming community as well as the line department officials highly praised the pinpoint accuracy of the prediction and the benefits incurred by the farming community.



Photos of harvesting of Boro Rice and Maize by farmers well in advance before the yaas cyclone.

Scientist-Farmers Interaction: In all, three scientist-farmers interactive sessions were conducted during Jan-Jun 2021 where there were participation from block ATMs, BTMs, field officers of MNC and farmers. More than 15000 additional farmers were included in the database for regular updates on agro-advisories. Further, four new whatsapp groups with participation around 200+ farmers have been initiated. In collaboration with Reliance Foundations SMS, Agromet, Malda KVK has participated in several audio conferences with active participation of farmers from different blocks. Collaborations have been made with RCHSS, a NGO in Gazole block for dissemination and conduction of FAPs around the district of Malda.

KVK North 24 Parganas

District Agromet Unit (DAMU) North 24 Parganas conducted two FAPs at Amdanga and Habra-II blocks of the district. In these programmes, the introductory speech was given by SMS (Agromet) of the KVK. He also addressed the farmers and farm women about the DAMU and Agromet Advisory Bulletin. He also explained the utility of *Meghdoot* mobile app for weather updates and *Damini* mobile app for lightening updates in these blocks. Farmer's contact numbers were also noted for dissemination of Agromet Advisory Bulletins through Whatsapp group and they were advised what to do through contingency crop planning. Around 180 farmers attended the programmes. Several farms were visited during awareness campaigns.



Economic impact of Agromet advisory services:

Impact of Nowcast in farming practices

Farmer Name: Subrata Bala.

Address: Village - Beri, Block - Gaighata, Dist - North 24 Parganas, West Bengal

Before Weather Forecast & AAS: Fertilizers washed away due to the heavy rains after applying in the field.

After DAMU's intervention: He postpones the spraying operation whenever he gets the warning of thunderstorm and rainfall. He also takes shelter and warns other farmers and people about the thunderstorm after getting the forecast.



Impact of Medium range/extended range forecast in farming practices

Farmer Name: Gopal Ghosh

Address: Village - Janaphul, block - Habra-I, Dist - North 24 Parganas, West Bengal

Before Weather Forecast & AAS: Faces irrigation scheduling problems. Rainfall occurred after giving irrigation and crops faces serious damages specially vegetables, oil seeds and pulses. Sometimes because of rainfall, crops damaged at the time of harvesting.

After DAMU's intervention: With the help of medium range forecasting, he withheld the irrigation for Sesame, as there was a rainfall occurrence probability. He also adjusted the application of pesticide according to the weather forecasting.



KVK Jalpaiguri

As per the mandate of the GKMS scheme, DAMU-Jalpaiguri had organized one FAP and three Field Visits during January-June, 2021. Total 43 nos. of practicing farmers were made aware of the scheme and salient activities of DAMU. WhatsApp groups were created during the awareness programme and AAS bulletins are regularly updated in the groups.



KVK Murshidabad

On 24th June, 2021 the District Agromet Unit of Murshidabad KVK organized a Farmers Awareness Programme on 'Extreme Weather Events and its effect on Agriculture'. The programme was organized through online mode due to this current pandemic situation. Total 30 nos. of farmers from Tungi village, Nawda block of the district attended the programme. The main objective of the programme was to emphasize the effects of the extreme weather events and how much it affects the yield of the crops. In this programme, details of different extreme weather events i.e. Drought, Flood, Hail Storm etc. especially the ones that occurs most in this district and how much it effects the Agriculture and allied sectors was elaborately discussed. The techniques to manage these events were also delivered to the farmers. This district is one of the most lightning prone districts of West Bengal, so the usefulness of *Damini* app was discussed in this programme. To popularize the *Meghdoot* app among the farmers, a brief introduction of its application was also presented and the farmers were encouraged to use this application. Till date 122 nos. of farmers downloaded this app.



KVK Cuttack

Awareness programme on 'GKMS and Meghdoot app popularization' was organized by DAMU, KVK Cuttack at Ghasiput village of Banki Dampara block on Jan 20, 2021, Gujarpur Village of Salepur block on Jan 28, 2021 and Banki block on Mar 4, 2021 respectively. Total no. of 170 farmers and farmwomen participated in the programme. SMS (Agromet) and Agromet Observer of the KVK highlighted the importance of block level agro-advisory service, which was implemented by IMD-ICAR joint effort and explained the significance of block level weather forecast on agriculture and way of activity of GKMS.



Awareness programme on 'GKMS and Meghdoot app popularization' was organized by DAMU, KVK Cuttack at KVK Cuttack Campus on Jan 7 & 27, 2021 respectively. Total no. of 70 farmers and farmwomen participated in the programme. SMS (Agromet) and Agromet Observer of the KVK highlighted the importance of block level agro-advisory service, which was implemented by IMD-



ICAR joint effort and explained the significance of block level weather forecast on agriculture and way of activity of GKMS. Dr. Sujata Sethy, OIC, KVK Cuttack Chaired the awareness programme and briefed about the achievements of DAMU, KVK Cuttack and also sensitized the farmers to follow the block level agromet advisory services issued by DAMU, KVK Cuttack.

Advisory Services by DAMU Cuttack

A total of 54 block level Agromet Advisory bulletins and five Special Agromet Advisory bulletins (before cold wave condition in February 2021, Heat Wave in March 2021, Thunderstorm and Lightning in April 2021 & during Very Severe Cyclonic Storm "Yaas" in May 2021) were issued by DAMU Cuttack covering 236 stakeholders and nearly 1587 progressive farmers through 25 WhatsApp groups and emails.

Success Stories

- As per the feedback collected from a farmer named Mr. Ranjan Kumar Das from Nischintakoili block of Cuttack district, he has saved 18q rice by safe storage before thunder shower by following Nowcast warning on 27th March 2021. By this he has saved around Rs.20,000 as per the cost of harvested rice.
- A farmer named Mr. Ratnakar Lenka from Cuttack sadar block of Cuttack district, ph no-9078677204, was benefited by following block level weather forecast based agromet advisory service. He has sown his 2 ac pumpkin in optimum time by shifting the sowing window as there was rainfall forecasted which may have been damaged if that were sown before rainfall. He has saved around Rs.2000-3000 in irrigation @3-4 times in 1.5 ac vegetables field by following block level medium range rainfall forecast. Also, he has preharvested his sweet corn from 8 guntha field before rainfall (last week premonsoon thunder shower) which costs around Rs.20,000.
- A progressive farmer named Mr. Baikuntha Biswal from Badamba block who has preharvested and made safe storage of 80 kg Black gram and 50 kg greengram (of total cost around Rs.10,000) before thunder shower by following the medium range forecast based agromet advisory provided by DAMU Cuttack.
- One highly progressive farmer named Mr. Pradipta Sahoo from Sapanpur village of Salepur block cultivated only Lalat as summer and *kharif* rice in his 32 ac land as per the agromet advisory services provided by DAMU Cuttack. He managed his irrigation as well as fertilizer, pesticide application as per the forecast and also managed his post harvested storage of rice. He not only cultivated rice but also well managed his kitchen garden (Horticultural crops) with his wife.



Installation and commissioning of AWS at KVK Cuttack campus

- Installation and commissioning of AGRO-AWS at KVK Cuttack campus was completed on 10th April 2021 and also started recording of AWS data through mail.
- DAMU, KVK Cuttack has started recording of daily basis rainfall data after installation of an ordinary rain gauge at KVK Campus.



KVK Birbhum

District Agromet Unit (DAMU) Birbhum conducted two FAPs at Daranda, Illambazar and Digha, Sainthia blocks on Jan 09 and 11, 2021 respectively. Introductory speech was given by SMS (Agromet) of the KVK. The Agromet Observer of the KVK also addressed the farmers and farm women about the DAMU followed by SMS (Agromet) who told the farmers about the details and usefulness of Agromet Advisory Bulletin. Farmers' contact numbers were also taken for dissemination of Agromet Advisory Bulletin through Whatsapp group. Popularization of *Meghdoot* app among the farmers and farm women was also looked after in these FAPs. A total of 80 farmers participated in this.



KVK Angul

The SMS (Agromet) DAMU, KVK Angul visited Farmers' Field of village Balagunia, Angul block on Jan 21, 2021 and explained to the farmers about the importance of weather on crop production, animal husbandry & how weather based agro-advisory could be applicable to increase the efficiency of day to day agricultural activities and about the use and popularization of *Meghdoot* app. Installation and commissioning of AWS at the premises of KVK was completed in the presence of Senior Scientist & Head and SMS (Agromet).



KVK Bolangir

On Jan 11, 2021 the SMS (Agromet) of the KVK visited farmers field of Village-Bagbahal, Block-Bangomunda and explained to the farmers how crop based agromet advisories could be applicable to increase the efficiency of day to day agricultural activities such as sowing, irrigation, weeding, pesticide application and harvesting etc. On Feb 10 and Mar 22, 2021 on the occasion of National Horticulture Fair and World Water Day respectively, the emphasis of the farmers interaction with SMS (Agromet) was looked into along with popularization of *Meghdoot* app. Importance of district and block level agromet advisories and how farmers will have better yield by getting the crop weather specific information was promoted under the programmes. Installation and commissioning of AWS at the premises of KVK was completed in the presence of Senior Scientist & Head and SMS (Agromet).



KVK Gajapati

The SMS (Agromet) of DAMU, KVK Gajapati delivered several lectures on the following:

- “Effect of Weather on Disease & Pest of major crops and their management” on Feb 3, 2021 on the occasion of “Integrated Pest & Disease Management” training during Feb 1-5, 2021 under Biotech-KISAN project at KVK, Gajapati, R.Udayagiri.
- “Role of climate on production of Horticultural crops” on Feb 10, 2021 on the occasion of “National Horticulture Fair” at KVK, Gajapati, R.Udayagiri.
- “Weather Induced Insects/Pests/Diseases Occurrence and their management” to 147 nos. of AO, VAW, ATM & KS on the occasion of “Awareness Programme for Para Extension Workers under the scheme Incentive Extensive Campaign on Agriculture (State plan) during Rabi 2020-21” on Feb 23, 2021 at ADO Office, R.Udayagiri, Gajapati.
- “Effect of weather parameters on Mushroom cultivation” to 60 nos. of SHG Women on the occasion of “Training on Mushroom Cultivation” on Mar 10, 2021 at AHO Office, R.Udayagiri, Gajapati.
- “Animal Health Camp” on Mar 28, 2021 at Baghasingsahi, Nuagada, Gajapati.



Installation and commissioning of AWS at KVK Gajapati was completed on 21st April, 2021.

KVK Ganjam-I:

On Jan 7, 2021, SMS (Agromet), KVK Ganjam-1 delivered lecture on “Effect of Climate on Mushroom Production” on the occasion of “Mushroom Production” training during Jan 6-8, 2021 under ARYA project at KVK. District Agromet Unit (DAMU) Ganjam-1 also conducted three FAPs i.e. on Feb 8, 2021 at Tulasipalli village of Bhanjanagar block, on Feb 10, 2021 at KVK campus, Bhanjanagar block and on Mar 16, 2021 at Bellaguntha block. A total of 100 farmers and farm women actively participated in the programme. In the programme, SMS (Agromet) highlighted the importance of GKMS for the services of farmers for the country as a whole. Ganjam comes under the eastern and south eastern coastal zone which is more vulnerable to natural hazards and extreme weather events like cyclone. Under climate change scenario the weather aberrations like prolonged dry spells, incidence of extremely heavy rainfall and erratic distribution of rainfall during monsoon is more affecting the *kharif* crops of the zone. In uplands to address this issue, farmers were advised for cultivation of maize, ragi, green gram, black gram, and arhar instead of rice. To popularize the *Meghdoot* and *Damini* Apps among the farmers, a brief introduction of its application was also discussed. SMS (Home science) also joined the programme and gave a lecture on how climate change is affecting rural families and mushroom cultivation during off season for increasing farm income. The programme was ended with collecting contacts numbers of farmers for block-level farmers WhatsApp group. 52 block level Agromet Advisory bulletins and two Special Agromet Advisory bulletins (during Cyclonic Storm ‘yaas’ in May 2021 and prolonged dry spells condition in July 2021) were issued by the DAMU. Installation and commissioning of AWS at KVK Ganjam-1 was completed on 17th April 2021.



KVK Mayurbhanj-I

The Senior Scientist & Head and Nodal Officer GKMS (DAMU) and SMS (Agromet) of DAMU, KVK Mayurbhanj-1 imparted training on Feb 3, 2021 on “Effect of weather parameters on Mushroom cultivation” to the SHG women farmers and stressed on the importance of weather on crop production, animal husbandry and explain the farmers about the importance of agro-advisory services to increase the efficiency of day to day agricultural activities and about the use and popularization of *Meghdoot* app. The Nodal Officer and SMS (Agromet) of the KVK also participated in the district level agriculture fair at District Agriculture Office, Mayurbhanj on Feb 15, 2021, organized by the Department of Agriculture and Farmers Empowerment, Govt. of Odisha and sensitized the farmers and created awareness about the role of weather related agro advisory services in Agriculture and allied fields and how it could be applicable to increase the efficiency of agricultural activities and about the use and popularization of *Meghdoot* and *Damini* apps. The AWS was installed in the premises of KVK Mayurbhanj-1 under the able supervision of Nodal Officer and in the presence of SMS (Agromet) of DAMU, KVK Mayurbhanj-1 on 27th April 2021 for the collection and analysis of weather parameter data and its use in preparation of Agro Advisories for the district. SMS (Agromet) visited the Agriculture Offices of Govt. of Odisha of blocks Shyamakhunta, Khunta, Gopabandhunagar and Badasahi of Mayurbhanj district on Jun 28, 2021 to impart training on the maintenance and calibration of AWS and the generation and use of AWS data from the server and about the use and popularization of *Meghdoot* app among the Block Agriculture Officers, Assistant Agriculture Officers, Agriculture Overseer and other field functionaries of Department of Agriculture and farmer empowerment, Govt. of Odisha.



KVK Nayagarh

Awareness programmes on plant health were conducted at Chinara village of Nayagarh block, Kotapokhari village of Khandapara block and Ambajhari village of Nuagaon block on Mar 19, 24 and 25, 2021, respectively involving 50 nos. of participants in each programme. Participants were made aware about the plant health, how to maintain the health of plants, disease pest management for different crops. Importance of agro advisory bulletin was also discussed which is being issued biweekly for every block. They were trained about how weather forecast and agro advisories can be useful in performing different cultural practices. Participants' problems related to various disease pest management and plant health were also solved. Everyone was eager to know about the newly issued bulletins. Scientists from KVK, Sugarcane Research Station and DAMU, Nayagarh participated in the above mentioned programmes.



KVK Rayagada

On Mar 22, 2021, a training of farmers and farm women was conducted by the SMS (Agromet) of DAMU, KVK Rayagada on the occasion of World Water Day at KVK campus, Gunupur where it was discussed about the "Importance of water in agriculture and allied sectors". The SMS (Agromet) also briefed about the usefulness of Agromet Advisory Bulletins and the *Meghdoot* App. The instruments like rain gauge and moisture meter were displayed during the training programme. Also, the farmers were introduced to the use of Weather-based Agromet Advisories and its importance in increasing the farm productivity and activities of the farmers that specially focused on rainfall factor. 60 nos. of famers participated in this training programme. A field visit was conducted on May 10, 2021 where the SMS (Agromet) visited the Mango orchard of Gugurpang village, Ramnaguda Block to monitor the fruit fly in Mango and suggested its control measures. Also, awareness among the farmers to utilize the Weather-based Agromet Advisories was conducted. The farmers were advised to specially focus on temperature and humidity factors and its importance in increasing the farm productivity and farming activities. Installation and commissioning of AWS at KVK campus was completed.



KVK Burdwan

The DAMU unit, KVK Burdwan, has started functioning in Purba Bardhaman district from February, 2021. DAMU Burdwan actively participated in Mati Utsav-2021 held at "Mati tirtha - Krishi katha" ground, District Seed Farm, Burdwan, inaugurated by Ms. Mamata Banerjee, Hon'ble Chief Minister of West Bengal from Feb 9-15, 2021, Where, around 35-40 farmers were made aware regarding the "Establishment of Agromet Advisory Service in block levels of Purba Bardhaman district" which will have significant impact in their socio-economic growth in coming days.

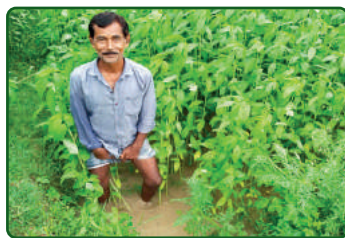
Weather forecast based Agromet Advisory Bulletins (408 nos. i.e. 360 block level bulletins and 48 district level bulletins) were prepared both in English and Regional language (Bengali) by SMS (Agromet) using the 5 days medium range weather forecast issued by IMD as biweekly basis (on every Tuesday and Friday) during 5 months of working period. The prepared bulletins were disseminated through the institute website (KVK Burdwan), Facebook page (approx. 4000 beneficiaries) and Whatsapp group (89 beneficiaries) of

KVK Burdwan, to Principle Nodal officer ATARI-Kolkata, different state department offices (Assistant Director Offices of different blocks of Purba Bardhaman district) via E-mails, and also using Mobile application namely 'Meghdoot', a joint initiative of IMD and ICAR on every Tuesday and Friday to assist the farmers for weather based farm management and improve their day to day farm operations using the real time location specific forecast based Agromet Advisory Bulletins.

Meanwhile, 3 Whatsapp groups of three different blocks (Galsi-2, Ausgram-2, Kalna-1) of Purba Bardhaman district with 151 beneficiaries created and they are receiving the advisory bulletins on regular basis. So far, a total of 10 SMS regarding AAS bulletins were disseminated through Kisan Portal and reached to almost 1.5 lakhs registered farmers of the district. The SMS (Agromet) of DAMU KVK, Burdwan also attended several brainstorming sessions, training programmes, online live webinars and seminars. The DAMU unit has participated in several awareness programmes, observation days like World Water Day, World Environment Day, World Bee day etc. celebrated by KVK Burdwan where SMS Agromet delivered short talk on few current topics like Climate Resilient Agricultural technologies, possible reasons for increasing thunderstorms and lightning activities in recent years etc. Regular field visits were made by DAMU, KVK Burdwan unit around different blocks of Purba Bardhaman district to monitor the coverage of the standing major crops and diagnose pest and disease attack on standing crop and suggested most suitable and affordable control measures to the farmers at the same time. Apart from the AAS bulletins, the DAMU unit has also issued 5 special bulletins addressing the extreme weather events during this time period which was found to be very beneficial in avoiding the weather related risks to crops, livestock and human lives to much extent. A total of around 29 Nowcasts/weather warnings has also been displayed through social media platforms like Facebook and Whatsapp during this period.

Success Story

A farmer named Mr. Bapi Shaikh, Mirjapur, Kalna, Dist- Purba Bardhaman, West Bengal-713405, Ph. No- 9734213386 has cultivated *Kharif* Rice in his 5.5 bigha land during this year which was in 80% maturity stage. Following the advisory bulletins and special bulletins regarding very severe cyclonic storm "Yaas" issued well in advance by DAMU, KVK Burdwan, he immediately harvested and threshed around 3 bigha of rice and the remaining crop was cut, bundled and covered with plastic tarpaulins in safe storage. In this way, he saved almost 14q of rice approximately amounting Rs.4000-6000 per bigha. Timely alert on enhanced rainfall and thunderstorm activity during Jun 11-15, 2021, made him able to harvest the mature sesame crop in his 10 katha land which saves around 70 kg sesame crop from damage amounting Rs.3500-4000. He thanked the SMS (Agromet) for minimizing the crop loss in his field and also inspires many farmers to follow and adopt the AAS bulletins on every Tuesday and Friday every week and keeps good contact with DAMU, KVK Burdwan through different modes of communications like visits, phone calls, whatsapp groups, emails, facebook etc.



Publications

Research Papers

- SBB Behera, R Paikaray, A Baliarsingh, AKB Mohapatra and BS Rath 2021, "Morphological response of green gram under different climate resilient crop management practices" *The Pharma Innovation Journal* 2021; 10(2): 399-403.
- K Singh, R Paikaray, SBB Behera, A Baliarsingh, A Nanda and AKB Mohapatra 2021 Characterization of temporal variability and trends in seasonal and annual rainfall of north central plateau land zone, Odisha *The Pharma Innovation Journal* ; SP-10(2): 85-90.
- Jayashankar Pradhan and Subrat Kumar Mahapatra, 2021. Decision Support System for Agro-technology Transfer. [Article ID: SIMM0018], *SABUJEEMA*, Volume 1- Issue 1-April 2021: 66-67.

Technical Bulletins

- D. Jena, 2020. 'Pre & Post agricultural Farm management during Cyclone'. Published in Odia Newspaper "Sakala" on 25 May, 2021.

- S.K. Saha, SMA. Rahman, F.H. Rahman and Subhasish Pramanik (2021) “Nano fertilizers - A Potential Alternative to Chemical Fertilizers” in “Agriculture & Environment” e-Newsletter (Article ID: AEN-2021-02-06-008).
- S.K. Saha, SMA Rahman, F.H. Rahman and Subhasish Pramanik (2021) “Nara Porano: Poribesh Dushon ebong Somvabyo Protikar” in Krishi Jagran Bengali online Monthly Magazine (Submitted).

Radio/Television Talks

- SMS (Agromet), KVK Purulia, delivered a radio talk on “Soil in different agro-climatic zone of West Bengal” aired on Akashvani Moitree on 17th April, 2021.
- SMS (Agromet), KVK Malda, participated as an expert for a popular television show for “ANNADATA” on Role of Weather on pest and Disease Management of Potato.
- SMS (Agromet), KVK Malda, participated as an expert for a popular television show for “ANNADATA” Improved Package of Practices of Maize under changing climatic scenarios.
- SMS (Agromet), KVK Malda, participated in AIR on “Improved Practices and Management of Hybrid Maize”.
- News bite was given to Uttarbanga Sangbad by SMS (Agromet), KVK Jalpaiguri, on Severe Cyclone “yaas” and broadcasted on 21st May, 2021 at 9 PM to circulate agromet advisory to the farmers.

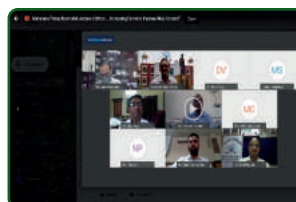
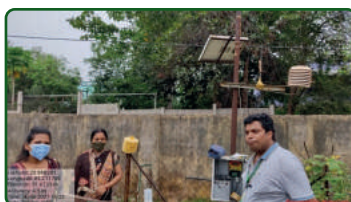
Trainings/HRD programmes attended

- SMS (Agromet), KVK Mayurbhanj-1, attended the Online Training Programme on “Pest Risk Analysis” organized by NIPHM, Govt. of India during Jan 18-22, 2021.
- SMS (Agromet), KVK Jalpaiguri, participated in “Integrated farming with special emphasis to Animal Husbandry practices to augment the income from small farming” organized by WBUAFS, Jan 20-22, 2021.
- SMS (Agromet), KVK Jalpaiguri, took part in “Integrated farming with special emphasis to Aqua culture practices to augment the income from small farming” formulated by WBUAFS during Feb 3-5, 2021.
- SMS (Agromet) and Agromet Ovservers, KVK Burdwan, actively participated and shared views in the online meeting on “Introduction of Financial Module developed in Agromet DSS” on Feb 4, 2021 organized by IMD, New Delhi.
- SMS (Agromet) with Nodal officer of DAMU and Senior Scientist & Head, KVK Burdwan, attended webinar on “Sensitizing Extension Professionals for Successful Livestock Farming Models to develop Atmanirbhar Kisan” on Feb 19-20, 2021 organized by KVK, ICAR-IVRI, Bareilly.
- SMS (Agromet), KVK Jalpaiguri, attended “Integrated farming with special emphasis to Agri-Horticultural practices to augment the income from small farming” organized by WBUAFS during Feb 24-26, 2021.
- SMS (Agromet) and Agromet Ovservers, KVK Burdwan, successfully participated in two days online training programme on “Familiarisation on Preparation and Dissemination of Agromet Advisories at Block level under Gramin Krishi Mausam Seva (GKMS) scheme” for Subject Matter Specialists (Agromet) and Agromet Observers of DAMUs organized by IMD, Pune on Mar 11-12, 2021.
- SMS (Agromet), KVK Burdwan, has actively participated in the IDP-NAHEP sponsored National Webinar on “Digital Soil Science: Opportunities and Challenges” on Apr 12, 2021, organized by Department of Soil Science and Agricultural Chemistry, Rajasthan College of Agriculture, Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan.
- SMS (Agromet), KVK Burdwan, has actively participated in the IDP-NAHEP sponsored International Webinar on “Climate Resilient Agriculture for Food and Health Security” on Apr 16, 2021 organized by Department of Agronomy, Rajasthan College of Agriculture, Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan.
- SMS (Agromet), KVK Burdwan, attended the National Webinar on “Advances in Extension Methodologies for Better Animal Husbandry Practices” on the occasion of “World Veterinary Day” on Apr 24, 2021 organized by Cooch Behar Krishi Vigyan Kendra, Uttar Banga Krishi Viswavidyalaya, Pundibari, Cooch Behar.
- SMS (Agromet), KVK Burdwan, attended online meeting to “Discuss Support from State Agricultural Department for Effective Implementation of Gramin Krishi Mausam Seva (GKMS) Scheme for the benefit of Farming Community in the Country” organized by IMD, New Delhi on Apr 27, 2021.

- SMS (Agromet), KVK Jalpaiguri, participated in webinar on “Efficacy FPO-Extension methods & tools”. The webinar was conducted by Extension Education Institute, AAU during Jun 1-5, 2021.
- SMS (Agromet), KVK Purulia, attended online Awareness Workshop on Lightning and Thunderstorm organized by India Meteorological Department on Jun 28, 2021.
- SMS (Agromet) of KVKs Angul, Gajapati, Ganjam-1, Mayurbhanj-1 and Rayagada along with other scientific staff of other KVKs attained the seven days long training programme on “Basic of Remote Sensing & GIS” organized by GTC Lab, College of Agricultural Engineering & Technology, OUAT, Bhubaneswar.
- SMS (Agromet), KVK Angul attained calibration of rain gauge at Block Agriculture Office, Talcher on Jun 31, 2021.
- SMS (Agromet), KVKs Gajapati and Burdwan, participated in the online workshop of Maharana Pratap Memorial Lecture-2021 on “Increasing Farmers’ Income: Way Forward” on Jun 18, 2021 of Maharana Pratap University of Agriculture and Technology, Udaipur (Rajasthan).

Recognition/Awards

- Mr. Sudipta Thakur (SMS Agromet), KVK Purulia, received the Young Researcher Award by INSc.
- Mr. Debjyoti Majumder (SMS Agromet), KVK Malda, received the International Young Research award by I2OR, Mohali for the year 2020-21.
- Mr. Debjyoti Majumder (SMS Agromet), KVK Malda, received the Young Research Award by InSc, Bengaluru for the year 2020-21.
- Mr. Debjyoti Majumder (SMS Agromet), KVK Malda, received the second prize for E-poster presentation for 8th Annual Convention of the society for fertilizers and Environment, March 20-21, 2021.
- Mr. Jayashankar Pradhan (SMS Agromet), KVK Gajapati, received Best Article award for Agriculture discipline having entitled “Decision Support System for Agro-Technology Transfer” which got published in volume 01 Issue 01 in SABUJEEMA-An International Multidisciplinary e-Magazine.
- Mr. Sanu Kumar Saha (SMS Agromet), KVK Burdwan, participated in National Level Environment Awareness Quiz on the Occasion of “World Environment Day-2021” organized by SABUJEEMA-An International Multidisciplinary e-Magazine and obtained Certificate in recognition of meritorious marks in National Level Quiz.



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