



2020-21 ANNUAL REPORT

GRAMIN KRISHI MAUSAM SEWA

ICAR-Agricultural Technology Application Research Institute Kolkata

Bhumi Vihar Complex, Salt Lake,
Kolkata - 700 097

वार्षिक प्रतिवेदन
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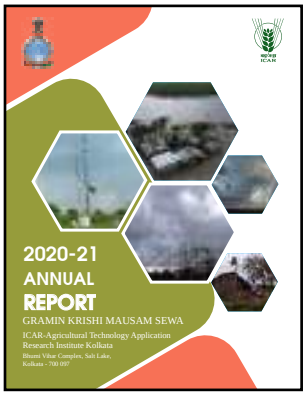

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FOREWORD

Indian agriculture has a large area under rainfed cultivation which is severely affected by the vagaries of monsoon. Even in irrigated areas, railfall plays a crucial role in the yield performance of different commodities. In recent years, the weather forecasting has become more accurate which has been done through a network of District Agromet Units established by IMD in different locations.

Under Gramin Krishi Mausam Sewa (GKMS), IMD jointly with ICAR has expanded the network to cover districts by establishing District Agro-Met Units (DAMUs) at the Krishi Vigyan Kendras (KVKs) . The role of the KVKs is to frame the sub-district/block level agromet advisory bulletins and disseminate to farmers using multi-channel communication mechanism in the country to reach out to farm households.

KVKs with DAMUs are providing weather forecast bulletins to the farmers since the inception of the Project. Weather forecast bulletins/special bulletins are generated in English and vernacular languages and circulated to the farmers well in advance which has tremendously helped the farmers to a great extent in minimizing the loss during the severe cyclonic storms like *'FANI'*, *'AMPHAN'*, *'YAAS'*, etc.

I compliment the Director and Nodal Scientist of ICAR-Agricultural Technology Application Research Institute Kolkata, Directors of Extension Education from various State Agricultural Universities for implementing the scheme and its monitoring and coordinating with different stakeholders involved in this project and bringing out a compilation of the activities.

(A.K. Singh)

New Delhi
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MESSAGE

India is fortunate to have some of the oldest meteorological observatories of the world. The British East India Company established several such stations, for example, those at Calcutta in 1785 and Madras (now Chennai) in 1796 for studying the weather and climate of India. The Asiatic Society of Bengal founded in 1784 at Calcutta, and in 1804 at Bombay (now Mumbai), promoted scientific studies in meteorology in India. Captain Harry Piddington at Calcutta published 40 papers during 1835-1855 in the Journal of the Asiatic Society dealing with tropical storms and coined the word "cyclone", meaning the coil of a snake. In 1842 he published his monumental work on the "Laws of the Storms". In the first half of the 19th century, several observatories began functioning in India under the provincial governments.

India Meteorological Department (IMD) has continuously ventured into new areas of application and service, and steadily built upon its infra-structure in its history of 140 years. It has simultaneously nurtured the growth of meteorology and atmospheric science in India. Today, meteorology in India is poised at the threshold of an exciting future. IMD was established in 1875. It is the National Meteorological Service of the country and the principal government agency in all matters relating to meteorology and allied subjects. At present IMD is under the Ministry of Earth Sciences (MoES).

The prime object of Agricultural Meteorology Division, IMD, Pune is to minimize the impact of adverse weather on crops and to make use of crop-weather relationships to boost agricultural production. The Agricultural Meteorology Division was established at Pune and from its inception the Division supports and participates in multi-disciplinary activities in this field. It is also the centre for research programmes in agricultural meteorology and has field units in various parts of the country. Besides, forecasts and advisories for farmers are issued by IMD's Forecasting Offices located at different State capitals.

Under the Gramin Krishi Mausam Sewa (GKMS) scheme, the IMD proposes to establish District AgroMet Unit (DAMU) in 530 districts, in addition to already operating 130 Agro-

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Meteorological Field Units (AMFUs), in order to meet the said expansion. Among other responsibilities, DAMUs receive weather forecast from IMD to prepare and disseminate sub-district level agromet advisory bulletins. These DAMUs set up in KVKs are providing weather forecast bulletins to the farmers since the inception of the Project. Weather forecast bulletins/special bulletins are generated biweekly in English and vernacular languages and circulated to the farmers of the district well in advance which tremendously help the farmers in mininizing the loss during the severe weather conditions like cyclonic storms like 'FANI', 'AMPHAN', 'YAAS', etc.

I compliment the Director and Nodal Scientist of ICAR-Agricultural Technology Application Research Institute Kolkata, Directors of Extension Education from various State Agricultural Universities for implementing the scheme and its monitoring and coordinating with different stakeholders involved in this project.

I congratulate the Director and Nodal Officer, GKMS Project of ICAR-ATARI Kolkata for bringing out the highlights of year-round activities and achievements of the scheme. I am delighted to note that the compilation covering these activities of DAMU KVKs, may be useful to concerned stakeholders.

K K Singh

(K. K. Singh)

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PREFACE

In Gramin Krishi Mausam Sewa (GKMS) Scheme, India Meteorological Department (IMD) jointly with Indian Council of Agricultural Research (ICAR) proposes to establish a network of District Agro-Met Unit (DAMU) at Krishi Vigyan Kendras (KVKs) in 530 districts of the country. Around 200 DAMUs have already been established under this scheme. These multidisciplinary units or DAMUs are responsible for preparation and dissemination of district and sub-district agro-met advisory bulletins after receiving weather forecast from IMD. DAMU KVKs 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 to 95.4 million farming households. Automatic Weather Station (AWS) have been installed at KVKs to record agro-met observations and generate agro-meteorological information. Using such information, these DAMUs set up in KVKs are providing weather forecast bulletins to the farmers since the inception of the Project. Weather forecast bulletins/special bulletins are generated biweekly in English and vernacular languages and circulated to the farmers of the district well in advance which tremendously help the farmers in minimizing the loss during severe weather conditions like cyclonic storms such as 'FANI', 'AMPHAN', 'YAAS', etc.

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. Besides providing weather forecast bulletins to the farmers, DAMU KVKs organized farmers awareness programmes through which around 3000 number of farmers benefitted. All the SMSs Agromet are conducting OFTs FLDs considering the farmers problem with weather/climatic issues. Several extension programme/field visits/Agri fairs/trainings were organized.

Sincere thanks for guidance and constant support received from IMD and ICAR, New Delhi, Nodal Scientist, technical, administrative and other staff of our ATARI Kolkata, Directors of Extension Education of SAUs and DAMU KVKs of the Zone for their cooperation, coordination and providing information for bringing out the publication.

(S. K. Roy)
Director

Contents

कार्यकारी सारांश

भारत सरकार ने भारत मौसम विज्ञान विभाग (आईएमडी) को देश में ग्रामीण कृषि मौसम सेवा के विकास और मौसम अवलोकन प्रणाली की स्थापना का कार्य सौंपा है। इसके अनुसरण में, आईएमडी ने देश में लगभग 130 कृषि-मौसम विज्ञान क्षेत्र इकाइयों (एएमएफयू) का एक नेटवर्क स्थापित किया है, जो जिला और उप-जिला कृषि सलाहकारों की तैयारी और प्रसार के लिए जिम्मेदार बहु-विषयक इकाइयाँ हैं। ये एएमएफ़यू, राज्य कृषि विश्वविद्यालयों, आईसीएआर केंद्रों और अन्य संस्थानों में स्थित हैं। प्रत्येक एएमएफ़यू अपने अधिकार क्षेत्र के तहत पहचाने गए कृषि-जलवायु क्षेत्रों के संबंधित जिलों के लिए कृषि प्रबंधन हेतु विशिष्ट सलाह उत्पन्न करने के लिए आईएमडी और आईसीएआर द्वारा प्रदान किए गए पारंपरिक / स्वचालित मौसम स्टेशन (एडब्ल्यूएस) से मौसम डेटा सहित प्रासंगिक आउटपुट उत्पादों का उपयोग करता है और इसका प्रसार किसान समुदाय को करता है। ग्रामीण कृषि मौसम सेवा (जीकेएमएस) योजना के तहत, आईएमडी ने उक्त विस्तार को पूरा करने के लिए पहले से ही 130 एएमएफ़यू संचालित करने के अलावा, 530 जिलों में जिला एग्रोमेट यूनिट (डीएएमयू) स्थापित करने का प्रस्ताव रखा है। अन्य जिम्मेदारियों के अलावा, डीएएमयू उप-जिला स्तर के कृषि मौसम सलाहकार बुलेटिन तैयार करने और प्रसारित करने के लिए आईएमडी से मौसम का पूर्वानुमान प्राप्त करेगा। कृषि-मौसम विज्ञान पर अखिल भारतीय समन्वय अनुसंधान परियोजना (एआईसीआरपीएएम) के माध्यम से आईसीएआर देश में एसएयू के साथ स्थित 35 केंद्रों के नेटवर्क के माध्यम से कृषि-मौसम विज्ञान पर अनुसंधान एवं विकास कर रहा है जिससे मौसम आधारित परामर्श में सुधार हो और कृषि समुदाय के लिए सलाहकार बुलेटिन की पहुंच को मजबूत किया जा सके।

ग्रामीण कृषि मौसम सेवा (जीकेएमएस) योजना में, कृषि विज्ञान केंद्रों (केवीके) में जिला कृषि मौसम इकाई (डीएएमयू) आईएमडी से मौसम पूर्वानुमान प्राप्त करने के बाद उप-जिला स्तर के कृषि मौसम सलाहकार बुलेटिन तैयार करती है और इन्हें प्रसारित करती है। कृषि मौसम संबंधी टिप्पणियों को रिकॉर्ड करने और फसलों, कीटों और रोगों, मृदा, कृषि-वानिकी, पशुधन, बागवानी, कृषि भौतिकी, मृदा विज्ञान आदि के अध्ययन में उपयोग के लिए कृषि मौसम विज्ञान संबंधी जानकारी उत्पन्न करने हेतु केवीके में स्वचालित मौसम स्टेशन (एडब्ल्यूएस) स्थापित किए गए हैं। इस प्रकार का डेटा फसल-मौसम संबंध, फसल-मौसम और कीट/रोग के बीच संबंध का अध्ययन करने और क्षेत्र/स्थान विशिष्ट कृषि मौसम पूर्वानुमान मॉडल विकसित करने में मदद करता हैं। अब तक कुल 15 डीएएमयू केवीके; पश्चिम बंगाल से सात और ओडिशा में आठ कार्यरत हैं। डीएएमयू के साथ ये केवीके परियोजना की शुरुआत से ही किसानों को मौसम पूर्वानुमान बुलेटिन प्रदान कर रहे हैं। मौसम पूर्वानुमान बुलेटिन/विशेष बुलेटिन अंग्रेजी और स्थानीय भाषाओं में तैयार किए जाते हैं और इनके बारे में किसानों को पहले ही सूचित कर दिया जाता है। एग्रोमेट एडवाइजरी बुलेटिन सप्ताह में दो बार तैयार किया जाता है और इसे जिले के सभी किसानों के बीच प्रसारित किया जाता है।

परामर्श के प्रसार के कई तरीकों का उपयोग किया जाता है जैसे ईमेल, संदेश, व्हाट्सएप ग्रुप, सोशल मीडिया, इनपुट डीलरों के माध्यम से, ब्लॉक स्तर के विस्तार कार्यकर्ताओं के माध्यम से, गांव आधारित क्लस्टर आदि के माध्यम से। इस वर्ष, मई के महीने में एक बहुत ही भयंकर चक्रवाती तूफान 'यास' के दौरान ओडिशा, पश्चिम बंगाल और आस-पड़ोस में, डीएएमयू ने क्षेत्रीय भाषाओं में चेतावनी के विशेष बुलेटिन तैयार किए और किसानों को अच्छी तरह से पहले ही प्रसारित कर दिया गया, जैसे कि फसलों की कटाई पूरी करना, सब्जियों और सुपारी के मचान को मजबूत करना, साथ ही घर पर रहना। इस अवधि में मवेशियों और पशुओं की सुरक्षा के लिए, मछुआरों को सलाह दी गई थी कि वे बंगाल की उत्तरी खाड़ी में न जाएं। इससे किसानों को इन भयंकर चक्रवाती तूफानों के दौरान नुकसान को कम करने में बहुत हद तक मदद प्राप्त हुई। कृषि मौसम विज्ञान केंद्र एग्रोमेट एडवाइजरी की पहुंच के लिए 'मेघदूत' और 'दामिनी' मोबाइल ऐप को लोकप्रिय बनाने की पहल कर रहे हैं और लोगों को उनके स्थानों पर गरज के साथ बिजली गिरने की संभावना के बारे में अपडेट रखने में मदद करने के लिए पहल कर रहे हैं। 27 अप्रैल, 2021 को 'देश में कृषक समुदाय के लाभ के लिए ग्रामीण कृषि मौसम सेवा (जीकेएमएस) योजना के प्रभावी कार्यान्वयन के लिए राज्य कृषि विभाग से समर्थन' पर चर्चा करने के लिए आईसीएआर और आईएमडी द्वारा संयुक्त रूप से एक ऑनलाइन बैठक आयोजित की गई थी।

ये डीएएमयू, केवीके परियोजना की शुरुआत से ही किसानों को मौसम पूर्वानुमान बुलेटिन प्रदान कर रहे हैं। मौसम पूर्वानुमान बुलेटिन/विशेष बुलेटिन अंग्रेजी और स्थानीय भाषाओं में तैयार किए जाते हैं और किसानों को पहले से ही प्रसारित किए जाते हैं, जिससे किसानों को 'फानी', 'अम्फान', 'यास' आदि जैसे गंभीर चक्रवाती तूफानों के दौरान नुकसान को कम करने में बहुत हद तक मदद प्राप्त होती है।

अब तक कुल 15 डीएएमयू केवीके; पश्चिम बंगाल से सात और ओडिशा से आठ कार्यरत हैं। इनकी संख्या 17 होनी चाहिए थी, परन्तु दो केवीके पुरी और जगतसिंहपुर में अभी भी कामगारों की भर्ती नहीं की गई है।

ये डीएएमयू-केवीके, परियोजना की शुरुआत से ही किसानों को मौसम पूर्वानुमान बुलेटिन/विशेष बुलेटिन प्रदान कर रहे हैं। वे उप-जिला स्तर के कृषि-मौसम सलाहकार बुलेटिन तैयार करने और प्रसारित करने के लिए आईएमडी से मौसम पूर्वानुमान प्राप्त करते हैं। एग्रोमेट एडवाइजरी बुलेटिन सप्ताह में दो बार तैयार किए जाते हैं और जिले के सभी किसानों के बीच ईमेल, संदेश, व्हाट्सएप ग्रुप, सोशल मीडिया जैसे विभिन्न माध्यमों तथा इनपुट डीलरों, ब्लॉक स्तर के विस्तार कार्यकर्ताओं के माध्यम से, ग्राम आधारित समूहों आदि के माध्यम से प्रसारित किए जाते हैं। सभी डीएएमयू द्वारा अब तक साठ किसान जागरूकता कार्यक्रम आयोजित किए गए हैं और इन कार्यक्रमों के माध्यम से लगभग 3000 किसान लाभान्वित हुए हैं।

सभी एसएमएस, एग्रोमेट मौसम/जलवायु मुद्दों के साथ किसानों की समस्या को देखते हुए ओएफटी एफएलडी आयोजित कर रहे हैं। इक्कीस विस्तार कार्यक्रम/क्षेत्र भ्रमण आयोजित किए गए हैं। सत्ताईस कृषि मेलों/प्रशिक्षणों का भी आयोजन किया गया है।

पिछले वर्ष सुपर साइक्लोनिक तूफ़ान 'अम्फान' और इस वर्ष ओडिशा,

पश्चिम बंगाल और आस-पड़ोस के ऊपर बहुत गंभीर चक्रवाती तूफान 'यास', आईएमडी, आरएमसी, कोलकाता द्वारा जारी पूर्वानुमान के अनुसार, डीएएमयू ने अंग्रेजी और क्षेत्रीय भाषाओं में विशेष बुलेटिन तैयार किए और प्रसारित किए। जिले के किसानों को अग्रिम मूंग, मूंगफली, गर्मी की सब्जियां, आम जैसी फसलों की तुरंत कटाई पूरी करने और बोरो चावल की कटाई (अगर पूरी हो गई हो) जैसी चेतावनियां दी गईं, तूफान का मुकाबला करने के लिए सब्जियों और पान की बेल को मजबूत करने, तूफान की अवधि में घर पर रहने के लिए, इस अवधि में मवेशियों और पशुओं की सुरक्षा सुनिश्चित करने के लिए सलाह दी गई, मछुआरों को सलाह दी गई थी कि वे बंगाल की उत्तरी खाड़ी आदि में न जाएं। इससे किसानों को इन गंभीर चक्रवाती तूफानों के दौरान नुकसान को कम करने में बहुत हद तक मदद मिली।

केवीके, एग्रोमेट एडवाइजरी की पहुंच के लिए 'मेघदूत' और 'दामिनी' मोबाइल ऐप को लोकप्रिय बनाने की पहल कर रहे हैं और आरएमसी/एमसी की मदद से व्यक्तियों को आंधी/बिजली के बारे में अपडेट रखने में मदद करने के लिए, व्हाट्सएप ग्रुप का भी उपयोग ग्राम स्तर पर किसानों को मौसम पूर्वानुमान, नाउकास्ट, अलर्ट और चेतावनियों और कृषि से संबंधित सामग्री के त्वरित प्रसार के लिए कर रहे हैं, जिसमें एएमएफयू (नोडल अधिकारी, तकनीकी अधिकारी), डीएएमयू (नोडल अधिकारी, एसएमएस-एग्रोमेट) और संबंधित अधिकारी जैसे डीएओ आदि भी शामिल हैं। वे इस चैनल का प्रभावी ढंग से उपयोग कर रहे हैं ताकि किसानों को जनहानि और अन्य नुकसानों को कम करने के लिए बहुत अधिक प्रभाव वाली मौसम की घटनाओं जैसे गरज और बिजली के बारे में जानकारी प्रदान की जा सके।

डीएएमयू की स्थापना के लिए दूसरे चरण के लिए चुने गए केवीके के अगले वित्तीय वर्ष से शुरू होने की उम्मीद है। उस चरण में पश्चिम बंगाल के आठ केवीके और उनमें से बर्दवान में केवल एक केवीके ने पूर्ण कार्यबल के साथ कार्य करना शुरू कर दिया है।

EXECUTIVE SUMMARY

Government of India has entrusted upon the India Meteorological Department (IMD) the task of establishing weather observing system and development of Gramin Krishi Mausam Sewa in the country. In pursuance hereof, IMD has set up in the country a network of about 130 Agro-Meteorological Field Units (AMFUs) which are multidisciplinary units responsible for preparation and dissemination of district and sub-district agromet advisories. These AMFUs are located at State Agricultural Universities, ICAR Centers and other institutions. Each AMFU utilizes the relevant output products including weather data from conventional/automatic weather station (AWS) provided by IMD and ICAR to generate specific advisories for agSricultural management for the respective districts of Agro-climatic Zones identified under the area of its jurisdiction and disseminate the same to the farming community. Under the Gramin Krishi Mausam Sewa (GKMS) scheme, the IMD proposes to establish District AgroMet Unit (DAMU) in 530 districts, in addition to already operating 130 AMFUs, in order to meet the said expansion. Among other responsibilities, DAMU will receive weather forecast from IMD to prepare and disseminate sub-district level agromet advisory bulletins. ICAR through All India Co-ordinate Research Project on Agro-meteorology (AICRPAM) is pursuing R&D on Agro-meteorology through a network of 35 centres located with SAUs in the country for improvement in weather based advisory and strengthening outreach of advisory bulletin to the farming community.

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.

These DAMU KVKs are providing weather forecast bulletins to the farmers since the inception of the Project. Weather forecast bulletins/special bulletins are generated in English and vernacular languages and circulated to the farmers well in advance which

has tremendously helped the farmers to a great extent in minimizing the loss during the severe cyclonic storms like *'FANI'*, *'AMPHAN'*, *'YAAS'*, etc.

As of now a total of 15 DAMU KVKs; seven from West Bengal and eight from Odisha are functioning. It was supposed to be 17 but in two KVKs Puri and Jagatsinghpur man powers are still not recruited.

These DAMU-KVKs are providing weather forecast bulletins/special bulletins to the farmers since the inception of the Project. They receive weather forecast from IMD to prepare and disseminate sub-district level agro-met advisory bulletins.Agromet Advisory Bulletins are prepared twice a week and circulated among all the farmers of the district through various modes like email, messages, whatsapp group, social media, through input dealers, block level extension functionaries, through village based clusters etc. Sixty Farmers awareness programmes have so far been conducted by all DAMUs and around 3000 number of farmers benefitted through these programmes.

All the SMSs Agromet are conducting OFTs FLDs considering the farmers problem with weather/ climatic issues. Twenty one number of Extension programme/field visits were organized. Twenty seven Agri fairs/trainings have also been organized.

Last year super cyclonic storm *'AMPHAN'* and this year very severe cyclonic storm *'YAAS'* over Odisha, West Bengal and neighborhood, as per the forecast issued by IMD, RMC, Kolkata, the DAMUs prepared Special Bulletins in English and regional languages and circulated to the farmers of the district well in advance. Warnings such as, to complete harvesting of crops like moong, groundnut, summer vegetables, mangoes immediately and to harvest boro rice (if completed), strengthen the macha of vegetables and betel vine to counteract storm, to stay at home during the storm period, make sure the safety of cattle and livestock in this period, fishermen were advised not to venture into north Bay of Bengal etc. 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 with the help of RMC/MCs, DAMUs are also using whatsapp groups consisting of AMFUs (Nodal Officer, Technical Officer), DAMUs (Nodal officer, SMS-Agromet) and concerned officials viz DAOs etc. for quick dissemination of weather forecast, nowcasts, alerts & warnings, and agro-met content to farmers at village level. They are utilizing this channel effectively for sending information on very high impact weather events like thunderstorm and lightening to the farmers to reduce the casualties and other losses.

KVKs which were selected for second phase for establishment of DAMU will be started hopefully from next financial year. In that phase eight KVKs of WB and out those only one KVK at Burdwan they started functioning full-fledged with man powers.

1. Introduction

IMD has set up in the country a network of about 130 Agro-Meteorological Field Units (AMFUs) which are multidisciplinary units responsible for preparation and dissemination of district and sub-district agromet advisories. These AMFUs are located at State Agricultural Universities, ICAR centres and other institutions. Each AMFU utilizes the relevant output products including weather data from conventional/automatic weather station (AWS) provided by IMD and ICAR to generate specific advisories for agricultural management for the respective districts of Agro-climatic Zones identified under the area of its jurisdiction and disseminate the same to the farming community. Under the Gramin Krishi Mausam Sewa (GKMS) scheme, the IMD proposes to establish District AgroMet Unit (DAMU) in 530 districts, in addition to already operating 130 AMFUs, in order to meet the said expansion. Among other responsibilities, DAMU will receive weather forecast from IMD to prepare and disseminate sub-district level agromet advisory bulletins. ICAR through All India Co-ordinate Research Project on Agro-meteorology (AICRPAM) is pursuing R&D on Agro-meteorology through a network of 35 centres located with SAUs in the country for improvement in weather based advisory and strengthening outreach of advisory bulletin to the farming community. The Central Research Institute for Dry Land Agriculture (CRIDA) and the National Innovation on Climate Resilient Agriculture (NICRA) projects of the Indian Council of Agricultural Research (ICAR) aim to enhance resilience of Indian Agriculture to climate change and climate variability through strategic research and technology. It also provides agro advisories to the crop weather outlook, website established by CRIDA and guides the Ministry of Agriculture on contingency planning during the crop season.

Agrometeorology is an important multidisciplinary subject. Hence, ICAR maintains Agromet observatories as well as Automated Weather Stations (AWS) and record Agromet observations at its Institutions, National Research Centres, Project Directorates, Krishi Vigyan Kendras (KVK) etc. to generate agrometeorological information for use in studies of crops, pests and diseases, soil, agro-forestry, livestock, horticulture, Agricultural Physics, Soil Science etc. Such data will help ICAR Institutes to study crop-weather relationship, relationship between crop-weather and pest/disease and develop region/location specific agromet predictive models. Seventeen KVKs, of which seven from West Bengal and ten from Odisha, have been selected under GKMS for setting up DAMU. The names of the district/KVK where Damu have been established are mentioned here under:

West Bengal	Odisha
Purulia	Cuttack
Malda	Angul
North 24 Parganas	Bolangir
Murshidabad	Gajapati
Jalpaiguri	Ganjam-I
Birbhum	Mayurbhanj-I
Burdwan	Nayagarh
	Rayagada
	Jagatsinghpur
	Puri

Out of these, KVKs Jagatsinghpur and Puri have not yet completed the recruitment of man powers under GKMS. Thus, 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.

In the month of May, 2020, WB-KVKs with DAMUs prepared Special Bulletins in English and regional languages as per the forecast issued by IMD, RMC, Kolkata and circulated to the farmers of the district well in advance of the devastating super cyclonic storm '*AMPHAN*'. Special Bulletins of warnings 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 has tremendously helped the farmers to a great extent in minimizing the loss during the severe cyclonic storm. KVKs took 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.

In next phase of GKMS, seven more KVKs of West Bengal have been selected to set up DAMU, which will likely be functioning from the next FY 2022-23.

2. General information about the DAMUs

Sl. No.	Name of DAMU KVK	Name of the Host Institute	Date of start of DAMU	Total no of Blocks in the district	Name of Blocks in the district
1	Purulia	Kalyan, Purulia, West Bengal	14.06.2019	20	Arsha, Bagmundi, Balarampur, Barabazar, Bundwan, Hura, Joypur, Jhalda-I, Jhalda-II, Kashipur, Manbazar-I, Manbazar-II, Neturia, Para, Puncha, Purulia-I, Purulia-II, Raghunathpur-I, Raghunathpur-II, Santuri
2	Malda	Uttar Banga Krishi Viswavidyalaya, Cooch Behar, West Bengal	10.06.2019	15	Ratua I and II, Harishchandrapur I and II, Chanchal I and II, Manikchak, Englishbazaar, Kaliachak I, II and III, Gazole, Habibpur, Old Malda and Bamongola
3	North 24 Parganas	West Bengal University of Animal and Fishery Sciences, Kolkata, West Bengal	19.03.2019	22	Amdanga, Baduria, Bagda, Barasat–I, Barasat–II, Barrackpur–I, Barrackpur–II, Basirhat–I, Basirhat–II, Bongaon, Deganga, Gaighata, Habra–I, Habra–II, Haroa, Hasnabad, Hingalganj, Minakhan, Rajarhat, Sandeshkhali–I, Sandeshkhali–II, Swarupnagar
4	Murshidabad	West Bengal University of Animal and Fishery Sciences, Kolkata, West Bengal	11.03.2019	26	Berhampore, Nabagram, Kandi, Nowda, Burwan, Samserganj,Murshidabad-Jiaganj,Farakka,Jalangi, Bharatpur-I, Bharatpur-II, Raghunathganj-I, Raghunathganj-II, Raninagar-I, Raninagar-II,Bhagawangola-I, Bhogowangola-II, Suti-I, Suti-II, Domkol, Beldanga-I, Beldanga-II, Sagardighi, Hariharpara, Khargram, Lalgola
5	Jalpaiguri	West Bengal University of Animal and Fishery Sciences, Kolkata, West Bengal	14.03.2019	07	Maynaguri, Jalpaiguri Sadar, Dhupguri, Ranjganj, Malbazar, Nagrakata, Matiali
6	Cuttack	ICAR-NRRI, Cuttack, Odisha	01.02.2019	14	Athagad, Badamba, Banki, Banki-dampada, Baranga, Cuttacksadar, Kantapada, Mahanga, Narasinghpur, Niali, Nischintakoili, Salepur, Tangi-choudwar, Tigiria
7	Birbhum	Visva-Bharati, Birbhum, West Bengal	03.08.2020	19	Bolpur-Sriniketan, Nanoor, Labpur, Illambazar, Dubrajpur, Khoyrasol, Rajnagar, Suri-I, Suri-II, Sainthia, Mohammad Bazar, Mayureswar-I, Mayureswar-II, Murarai-I, Murarai-II, Rampurhat-I, Rampurhat-II, Nalhati-I, Nalhati-II

Sl. No.	Name of DAMU KVK	Name of the Host Institute	Date of start of DAMU	Total no of Blocks in the district	Name of Blocks in the district
8	Angul	Odisha University of Agriculture & Technology, Bhubaneswar, Odisha	18.12.2020	08	Angul, Athmallik, Banarpal, Chhendipada, Kaniha, Kishorenagar, Palalahada, Talcher
9	Bolangir	Odisha University of Agriculture &Technology, Bhubaneswar, Odisha	10.11.2020	14	Agalpur, Bolangir, Gudvella, Puintala, Loisinga, Khaprakhol, Muribahal, Saintala, Tureikela, Bangomunda, Belpara, Deogaon, Patnagarh,Titlagarh
10	Gajapati	Odisha University of Agriculture & Technology, Bhubaneswar, Odisha	05.11.2020	07	Gosani, Gumma, Kashinagar, Mohana, Nuagada, R.Udayagiri, Rayagada
11	Ganjam-1	Odisha University of Agriculture &Technology, Bhubaneswar, Odisha	12.11.2020	22	Aska, Beguniapada, Bellaguntha, Bhanjanagar, Buguda, Chhatrapur, Chikiti, Dharakote, Digapahandi, Ganjam, Hinjilicut, Jagannathprasad, Kabisurya Nagar, Khalikote, Kukudakhandi, Patrapur, Polsara, Purusottampur, Rangeilunda, Sankhemundi, Seragad, Surada
12	Mayurbhanj-1	Odisha University of Agriculture & Technology, Bhubaneswar, Odisha	03.11.2020	26	Jashipur, Raruan, Sukruli, Kusumi, Saraskana, Bijatala, Bisoi, Rairangpur, Tiring, Bahalda, Jamda, Bangriposi, Kuliana, Shyamakhunta, Karanjia, Thakurmunda, Kaptipada, Udala, Gopabandhunagar, Baripada, Khunta, Badasahi, Morada, Suliapada, Rasgobindapur, Betnoti
13	Nayagarh	Odisha University of Agriculture & Technology, Bhubaneswar, Odisha	05.11.2020	08	Bhapur, Dasapalla, Gania, Khandapara, Nayagarh, Nuagaon, Odagaon, Ranapur
14	Rayagada	Odisha University of Agriculture & Technology, Bhubaneswar, Odisha	10.11.2020	11	Bissum Cuttack, Chandrapur, Gudari, Gunupur, Kalyan Singhpur, Kasipur, Kolnara, Muniguda, Padmapur, Ramnaguda, Rayagada
15	Burdwan	Central Research Institute for Jute and Allied Fibers, West Bengal, India	03.02.2021	23	Ausgram-I, Ausgram-II, Bhatar, Burdwan-I, Burdwan-II, Galsi-I, Galsi-II, Jamalpur, Kalna-I, Kalna-II, Katwa-I, Katwa-II, Ketugram-I, Ketugram-II, Khandaghosh, Mangolkote, Manteswar, Memari-I, Memari-II, Purbasthali-I, Purbasthali-II, Raina-I, Raina-II

DAMU Purulia

1.1. Staff Position (as on 1st April, 2021)

Sl.No.	Name of the incumbent	Qualification	Pay Scale with present basic	Date of joining
1	Mr. Sudipta Thakur, SMS (Agrometeorology)	M.Sc. in Agricultural Meteorology	Level 10 (Basic 57800)	14.06.2019
2	Mrs. Vipasha Pradhan, Agromet Observer (AO)	M.Sc in Zoology	Level 3 (Basic 22400)	26.09.2019

1.2 Details of Orientation/Review/Expert Panel meeting conducted during the year

Sl. No.	Date	Number of Participants	Salient Recommendations	Action taken
1.	09.07.2019	17	1. Training will be provided to the block level agriculture, horticulture, Water user association and veterinary extensionfunctionaries. 2. Farmer's awareness programme will be conducted in villages of different block and preference will be given for some climatic vulnerableareas. 3. Advisories will be sent to the respective block offices, FIAC (block level ATM A body) from there it will be disseminated to the farmers. 4. Advisories may be disseminated through input dealers also.	1. Training has been given to block level extensionfunctionaries of Agriculture and line department. 2. So far 9 blocks have been covered under the FAP of GKMS. 3. Advisories are being sent regularly to the recommended district and block level offices for its further dissemination to the farming community. 4. Advisories are also being sent to input dealers for its further dissemination.

1.3 Status of Expert Panel group

Sl. No.	Name	Designation	Mobile/Ph no
1.	Swami Sri Vashkarananda Maharaj	Secretary, Kalyan	9735806565
2.	Dr. Asis Bandyopadhyay	DDA Admin, Purulia	
3.	Dr. Manas Kumar Bhattacharjya	Senior Scientist & Head, KVK Kalyan	8798313063
4.	Mr. Sanjib Kumar Bhattacharya	SMS Agroforestry, KVK Kalyan	8250682416
5.	Mr. Anirban Chakraborty	SMS Plant Breeding, KVK Kalyan	9064389813
6.	Dr. Bisweswar Mahato	SMS Soil Science, KVK Kalyan	8250014272
7.	Dr. Chinanshuk Ghosh	SMS Horticulture, KVK Kalyan	9434520606
8.	Dr. Labani Maity	SMS Plant Protection, KVK Kalyan	9163666585
9.	Mr. Dhiman Chandra Mahato	SMS Agril. Engineering, KVK Kalyan	8918298961
10.	Mr. Sudipta Thakur	SMS Meteorology, KVK Kalyan	9007968952

2. District level data on agriculture, livestock and farming situation and Agro climatic data

Sl. no.	Item	Information
2.1	Major Farming system/ enterprise	Very high unbunded upland- Forest/ Orchard/ (Blackgram/ Red gram/ Groundnut/ Niger/ Maize/ Bajra/ Vegetables) – fallow-fallow Bunded Uplands- Kharif Rice-fallow - fallow/ Kharif Rice- Mustard / Vegetables -Fallow Bunded Medium land – Kharif Rice- Fallow / Kharif Rice- Wheat/ Mustard – Fallow Bunded Lowland – Kharif Rice –Fallow-Fallow / Kharif Rice – Summer Rice-Fallow/ Kharif Rice – Gram/ Lentil/ Lathyrus –Fallow
2.2	Agro-climatic Zone	Red & Lateritic Zone
2.3	Agro ecological situation	Purulia District, an integral part of Chotonagpur plateau under the sub humid, sub-tropical red and lateritic agro climatic zone of West Bengal lying between 22.60 and 23.5 0 North Latitude and 85.750 and 86.650 East Longitude, 255 mt. high from mean sea level, has earned the distinction as drought prone area, because of its significant and distinct characteristics among other districts of West Bengal. The topography of the land is highly undulating with steep slopes with 60% of the high land, 30% medium land, and 10% of the land is low lying. Here the climate is extreme in nature and the soils are mostly red and lateritic having poor fertility status and less water holding capacity. The average rainfall of the district varies from 1300 to 1400 mm. but the mostly clubbed during monsoon with occasional long inter spells between two rainy days. Monsoon also generally withdraws earlier, i.e. from mid-September. Soil pits are acidic in nature and varies from 5.5 -6.6. The land holding pattern show 90% of the farming families are marginal and small farmers, mostly owing the high & medium high lands from 1 – 2 ha.
2.4	Soil type	The soils are mostly formed in situ condition by weathering of parent rocks. Only in valley bottom colluvial soils are formed. The parent rock is mainly Granite and Feldspar. Quartz, Muscovite,Mica, etc. also found in different depth. Soils are mostly acidic in nature and pH varies from 5 to 6.5. Mostly 4 types of land situations viz. Tanr/Gora land (High Land), Baid (Medium High Land), Kanali (Medium Land) Bahal (Low Land) found in purulia district.
2.5	Productivity of major 2-3 crops under cereals, pulses, oilseeds, vegetables, fruits and others	Aman Rice 40.6 (Q/ha), Kharif Maize 18.2, Kharif Blackgram 5.6, Brinjal 19.8, Rapesed/Mustard 7.0, Summer Cucurbits 12.3
2.6	Mean yearly temperature, rainfall, humidity of the district	Max. Temperature: 23.8-36.8, Min. Temperature:11.2-23.7, Total rainfall: 1190 mm
2.7	Maximum weather hazards/weather vagaries/extreme weather conditions at your district	Frequent Dry spell, Heat wave

Sl. no.	Item	Information
2.8	Thrust area for agrometeorology	Monsoon Forecast. Due to lack of irrigation facility arrival and withdrawal of South west monsoon as well as the amount of monsoon rainfall determines the success and choice of crop round the year. Extreme weather alert. Occurrence of heat Heat wave frequently limits the crop production Choice of Crop as well as variety as per the land situation. Availability of accurate block level forecast. Long and Medium range weather forecast based crop management
2.9	Blocks under Rainfed situation	All the 20 blocks of Purulia district falls under rainfed situation.
2.10	Blocks under irrigated situation	-
2.11	Normal date of sowing of different crops and present season sowing dates of particular district or block	Crop Normal DOS Present DOS Blackgram 22-28 June 25 June Kharif Rice 15-30 June 27 June Mustard 15-30 Nov. 23 Nov

3. Status of Agro-AWS and surface observatory:

3.1 Date of installation of AWS: --**Only Civil work has been completed. Installation is under process**

3.2 List of instruments presently available in working condition: --**NA**

3.3 Instruments to be replaced/repaired indicating type of defect: --**NA**

3.4 Please provide frequency of observation, exposure conditions of the site etc**. --NA**

3.5 Number of years of data records available: --**20 years of district level database received from RMC Kolkata available in archive.**

3.6 Whether the observatory is periodically inspected, maintained and calibrated by IMD (If yes, please indicate the latest data of inspection by the IMD) - --**NA**

3.7 Status of surface observatory---**NA**

3.8 Status of Manual/ordinary rain gauge at KVK Campus--**Present and data are being recorded on every day**

3.9 Details of soil moisture observations taken, if any (please provide frequency and depths of observation etc.) **– Not yet started due to non-availability of Soil Augur**

4. Details of Agromet Advisory Services

4.1 Date of start of Agromet Advisory Bulletins: **25.06.2019**

4.2 No. of times the weather forecasts received during the year: **The value-added weather forecast is being updated in Agro-DSS portal every day for district aswell as block level. Besides that, block wise weather forecasts were received 104 times from RMC Kolkata during the period under report.**

4.3 Date of receiving the forecasts from MC/RMC-**Every Tuesday and Friday at11 a.m. (one day before in case of holiday)**

4.4 If the time is not suitable then what will be the appropriate time to receive the Value-added forecast-**Usually forecast are being received on time.**

4.5 No. of AAS bulletins prepared and disseminated to the farmers during the year – **2185 Nos. (including District bulletin, Block bulletin and Special bulletin)**

4.6 No. of Special agromet advisory bulletins were prepared and disseminated to the farmers in the year and mention the details:

Sl. No.	Name of the extreme weather event	Date of the event	Date of Issue	Total no of Farmers received through WhatsAppgroup and other media	Total no of Extension officials of the district received
1.	Severe Cyclonic Storm (Amphan)	19.05.2020-21.05.2020	17.05.2021	7542	77

4.7 No. of AAS bulletins were prepared using Agromet-DSS in English and regional languages – **2184 nos. English and 2184 Nos. Regional languages i.e., Bengali(including District bulletin, Block bulletin and Special bulletin)**

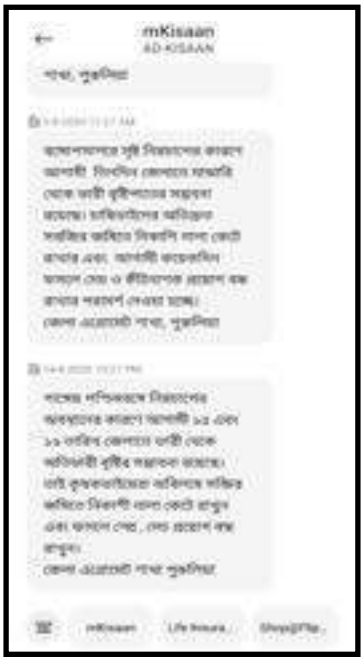
4.8 Status of district crop weather calendar--**NA**

4.9 List the modes of mass communication adopted for AAS dissemination:

Sl No.	Social Media	Description (Provide name of all block wise whtsapp groups and link/name of other social media)	Total beneficiaries
01	Whats app groups		
	a) For Farmers	9	1080
	b) For extension Officials	4	34
02	KVK Website	www.kalyankvk.org	Mass
03	E-mail id(KVK/DAMU)	damupurulia2019@ gmail.com kalyankvkprr@gmail.com	
TOTAL REACH			**1114**

4.10 Details of broadcast on AIR and TV (Name of station broadcast frequency, time slot provided etc.) (Audio tape of the recent broadcast): **NA**

4.12 No. of SMS sent through Kisan Portal and how many farmers were benefitted during the year:-**12 Nos. SMSs, 3492 nos. Farmers**



5. Details of extreme weather events in the year and its impact on Crop/livestock

Sl.no	Name of the Extreme weather event	Date of occurrence	Impact on crop/livestock
1	VS Cyclone (Ampham)	19.05.2020 -20.05.2021	Boro Paddy, Vegetables and Maize crops are mostly affected

6. Farmers Awareness/Training/Meghdoot popularization activities or other outreach programme

6.1 Give list of farmers awareness programmes conducted like Krishi/Kishan Melas, training, participation in national day parades etc. and photograph of Farmer's Awareness Programme (no of Farmer attended).

SI. No	Date	Location (Block/Village)	Farmers attended the Program
1	22.09.2020	Vill-Jahajpur, Block-Purulia-II	40
2	21.11.2020	Vill- Mytalsahar, Block-Raghunathpur-I	30
3	11.12.2020	Vill-Kusumjoria Block- Hura	40
4	25.01.2021	Vill- Rahamda, Block- Hura	25
5	30.01.2021	Vill-Arjunjora, Block-Hura	30
6	17.03.2021	Vill-Jadugora, Block-Bagmundi	25
Total			**190**




7. List of other organizations receiving Agromet advisories:

- District Argil. Office, Block Argil. Office, D.M Office, ADA office, FIAC, ATMA Office, AMFU Kharagpur, CADC, NGO

8. Details of Farmers Awareness Programme (FAP) Conducted during the year (with good quality photographs):

- **FAP-1:**

Venue of the Programme	Vill-Jahajpur, Block-Purulia-II
Date	22.09.2020
Subject	Dissemination of Agromet Advisory Service and Popularization of Meghdoot app
Inputs of the meeting	Importance of Agro advisory bulletin in day-to-day farm operation were discussed at the beginning. Then how to increase the dissemination channel of the advisory and details of Meghdoot app were briefly presented before the participants.
Number of participants	40

- **FAP-2:**

Venue of the Programme	Metal Sahar, Raghunathpur-I block
Date	21.11.2020
Subject	Weather based Management practices of Rabi Pulse and Oilseeds
Inputs of the meeting	In this interaction cum training programme, the activities of newly established DAMU at KVK Kalyan Purulia were discussed in briefly at the beginning. Then importance of weather-based management practices of major rabi pulse and oilseed crops grown in that region 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.
Number of participants	30

◈ **FAP-3:**

Venue of the Programme	Vill-Kusumjoria Block- Hura
Date	11.12.2020
Subject	Farmer's awareness Programme on GKMS
Inputs of the meeting	Various component of AAS and relevance of AAB were discussed in the programme
Number of participants	40

◈ **FAP-4:**

Venue of the Programme	Rahamda, Hura block
Date	25.01.2021
Subject	Farmer's awareness Programme on GKMS
Inputs of the meeting	In this awareness programme, the activities of DAMU at KVK Kalyan Purulia were discussed in briefly at the beginning. Then details of Agromet Advisory service 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.
Number of participants	25
Photos	

◈ **FAP-5:**

Venue of the programme	Arjunjora, Hura block
Date	30.01.2021
Subject	Farmer's awareness Programme on GKMS
Inputs of the meeting	In this awareness programme, the activities of DAMU at KVK Kalyan Purulia were discussed in briefly at the beginning. Then the role of Agromet Advisory service for management of rabi oilseeds were discussed and details of the participants were registered.
Number of participants	30

◈ **FAP-6**

Venue of the programme	Jadugora, Bagmundi block
Date	17.03.2021
Subject	Farmer's awareness Programme on GKMS
Inputs of the meeting	In this interaction cum training programme, the activities of DAMU at KVK Kalyan Purulia were discussed in briefly at the beginning. Then details of Agromet Advisory service 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.
Number of participants	25

9. Economic impact of Agromet advisory services:

9.1 Impact of Nowcast in farming practices

a. Farmer Name: Sumitra Mahato

b. Address: Vill: Jambad, Block:Purulia-II

c. Before Weather Forecast & AAS: Besides growing crop the farmer is also associated with the poultry and cattle farming. During the pre-monsoon period due to frequent thunderstorm activity many of her animals were severely affected as there was no prior warning system for sudden thunderstorm activity over the region.

d. After DAMU's intervention: Loss of animal as well as human life has been reduced significantly after setting up the quick dissemination network of nowcast forewarning system of extreme weather phenomena.

9.2 Impact of Medium range/extended range forecast in farming practices

a. Farmer Name: Jatin Kuiri

b. Address: Vill: Durgu, Block: Jhalda-I

c. Before Weather Forecast & AAS: Mr. JatinKuiri has been cultivating different types of vegetables round the year since last 5 years. In most of the times during 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.

d. After DAMU's intervention: After the intervention of DAMU, he used to follow the Agro Advisory Bulletin and applied the advisories in his farm practices. Now, he is applying the plant protection chemical, Irrigation and take other farm related activity as per the suggested advice which helps him minimizing the cost of cultivation and increase his farm income.

9.3 Impact of long-range forecast in farming practices

a. Farmer Name: Main Ansary

b. Address: Metyal Sahar, Block: Raghunathpur-II

c. Before Weather Forecast & AAS: Aman Paddy is the

major crop of the farmer during kharif season. But due to vagaries of south west monsoon and unavailability of proper quantitative monsoon forecast for the season farmers are facing huge loss due to improper time of Nursery bed preparation, selection of inappropriate cultivars and lacking of sound technical scientific intervention in their farming practices.

d. After DAMU's intervention: Now farmers can select the best suitable cultivar for theirarea of cultivation as per the land situation, moisture availability index, onset and quantitative forecast of monsoon. As a result, farmers are experiencing enhanced yield and were able to minimize the loss due to weather hazards.

9.4. Mobile APP based Agromet advisory services for farmers: **Meghdoot, Damini**

10. Feedback from progressive farmers:

Sl no	Farmer name & Village	Block	Feedback
01	Sumitra Mahato	Purulia-II	There was no Scientific advisory system for Lac grower. This advisory bulletin helps in taking proper management of Lac cultivation process as per the forecasted weather condition.
02	Jatin Kuiri	Jhalda-I	Bi-weekly advisories helps very much in taking appropriate farm operation decisions like spraying chemicals, application of fertilizer, Irrigation scheduling specifically for the vegetable crop.
03	Somnath Banerjee	Purulia-II	He often experiences huge losses due to sudden outbreaks of some specific diseases in Poultry and Goatary, but after getting regular advice on vaccination and proper curative measures against diseases of goat and poultry mortality rate has been reduced drastically which makes his farm more profitable.

11. Publications: One resurch paper in Current Journal of Applied Science & Technology/and one Extension Literature

12. Newspaper Coverage: 14 nos.

13. Review Workshop-Attended Annual Zonal Workshop conducted by ATARI Kolkata on 21st July 2020 through Video Conferencing.

14. Any other important information (Any significant events conducted by DAMU on weather and crop related activities in the district may be given along with photo):

Awareness Programme conducted on the eve of World Soil Day observation regarding the Importance of Climate resilient Agri practices keeping the soil alive.

DAMU Malda

1.1 Staff Position (as on 1st April, 2021)

Sl.No.	Name of the incumbent	Qualification	Pay Scale with present basic	Date of joining
1	Mr. Debjyoti Majumder	M.Sc. Agromet, NET	Level-10 as per 7th CPC, BP-59500	10.06.2019
2	Mr. Amrit Sarkar	B.Sc (Ag.)	Level-3 as per 7th CPC, BP-23100	27.06.2019

1.2 Details of Orientation/Review/Expert Panel meeting conducted during the year

Sl. No.	Date	Number of Participants	Salient Recommendations	Action taken
1.	17.07.2020	6	Formation of whatsapp Group and Real time Weather update dissemination	Till date 18 number of whatsapp groups have been created and real time weather updates are disseminated.
2.	22.12.2020	8	Updation of Farmers list for free SMS service through Mkisan portal	Till date 1.40 lakhs farmers have been added in the portal and been receiving SMS on weekly basis.
3.	07.02.2021	10	Tie up with NGO's and Other private organization	A tie up has been made with Reliance Foundation for disseminating the agroadvisories and weather related updates on regular basis.

1.3 Status of Expert Panel group

Sl. No.	Name	Designation	Mobile/Ph no
1.	Dr. Rakesh Roy	Senior Scientist and Head	9851941455
2.	Mr. Adwaita Mondal	SMS, Fishery Science	8918571019
3.	Mr. Bhabani Das	SMS. Agronomy	9933191027
4.	Dr. Paramita Bhowmik	SMS, Plant Protection	7076707786
5.	Dr. Suddhasuchi Das	SMS, Horticulture	7501770101
6.	Dr. Victor Sarkar	SMS, Extension	8918656463
7.	Dr. Bankim Rudra	Farm Manager	7797872449
8.	Mr. Debjyoti Majumder	SMS, Agrometeorology	8240033811

2. District level data on agriculture, livestock and farming situation and Agro climatic data

Sl. no.	Item	Information
2.1	Major Farming system/enterprise	Rice-Wheat-Jute, Rice-potato-Jute, Maize-Jute-Rice, Mustard-Rice-Jute
2.2	Agro-climatic Zone	Old Alluvial Zones
2.3	Agro ecological situation	Hot and Humid
2.4	Soil type	Sandy loam to clay
2.5	Productivity of major 2-3 crops under cereals, pulses, oilseeds, vegetables, fruits and others	Rice- 3.5 tonnes/ha, Wheat- 3.0 tonnes/ ha, Maize- 10t/ha, Mustard- 3.2 t/ha, Cauliflower- 35t/ha, Brinjal- 25MT, Lentil- 7.0 t/ha

Sl. no.	Item	Information
2.6	Mean yearly temperature, rainfall, humidity of the district	30-32^{0}C, Rainfall- 1437mm, Humidity- 60-70%
2.7	Maximum weather hazards/weather vagaries/extreme weather conditions at your district	Hailstorm, In determinant flooding, cold waves, thunderstorm
2.8	Thrust area for agrometeorology	Water Management, Adjusting optimum sowing window, Precision Farming, Pest Monitoring forecast
2.9	Blocks under Rainfed situation	All blocks except parts of Habibpur and Bamongola, and Harischandrapur –II
2.10	Blocks under irrigated situation	Ratua-I and II, Chanchal-I and II, English Bazaar, Gazole, Manikchak, Kaliachak I, II and III, Old Malda, etc.
2.11	Normal date of sowing of different crops and present season sowing dates of particular district or block	*Kharif* Paddy- 15 July-August 30, Maize-October 15 to November end, Wheat- October End to December 15, Boro Paddy- January 15 to February end, Mustard- October 5 to October end,

3. Status of Agro-AWS and surface observatory:

3.1 Date of installation of AWS: -- Civil Work has been completed but sensors have not been installed till date.

3.2 List of instruments presently available in working condition: -- Manual Raingauge

3.3 Instruments to be replaced/repaired indicating type of defect: --Nil

3.4 Please provide frequency of observation, exposure conditions of the site etc**. -- Nil**

3.5 Number of years of data records available: -- 30 years data as received from RMC, kolkata

3.6 Whether the observatory is periodically inspected, maintained and calibrated by IMD (If yes, please indicate the latest data of inspection by the IMD) - -- Not yet installed and functional.

3.7 Status of surface observatory--- Nil

3.8 Status of Manual/ordinary rain gauge at KVK Campus—Ordinary rain gauge has been installed.

3.9 Details of soil moisture observations taken, if any (please provide frequency and depths of observation etc.) **– Weekly soil Moisture is being recorded at 5, 10, 15,30 and 45 cm depth.**

4. Details of Agromet Advisory Services

4.1 Date of start of Agromet Advisory Bulletins: **11.06.2019**

4.2 No. of times the weather forecasts received during the year: **110**

4.3 Date of receiving the forecasts from MC/RMC-**Every Tuesday and Friday**

4.4 If the time is not suitable then what will be the appropriate time to receive the Value added forecast- Receiving value added forecast by 1 p.m would be helpful to prepare the bulletins for all the districts and disseminate to all the departments and stakeholders.

4.5 No. of AAS bulletins prepared and disseminated to the farmers during the year - **94**

4.6 No. of Special agromet advisory bulletins were prepared and disseminated to the farmers in the year and mention the details: 11 (Special Bulletins were issued during last year at the time of "***Amphan***" cyclone in the month of May for the farmers of Malda districts, Part from these special bulletins were also issued during mid-April and June regarding commencement of South West Monsoon and crop contingency planning. During the month of October due to formation of depression a thunderstorm was predicted which was being disseminated to the farmers regarding it so that they could adjust the date of sowing of *rabi* crops. Recently during the month of December a cold wave along with rainfall was forecasted and the farmers were alerted well in advance in order to mitigate the cold stress in standing crops especially in paddy, Maize and Potato. During the month end of February a heavy shower was expected and the farmers were advised regarding so for harvesting of matured potato well in advance in order to mitigate the crop losses.

Sl. No.	Name of the extreme weather event	Date of the event	Date of Issue	Total no of Farmers received through whats app group and other media	Total no of Extension officials of the district received
1.	Cyclone Amphan	21.05.2020	17.05.2020	1.5 lakhs through whatsapp, facebook and sms	74
2.	Locust Infestation	Mid June	06.06.2020	1.35 lakhs	57
3.	Monsoon	20.06.2020	12.06.2020	1.55 lakhs	74
4.	Heavy Rainfall	10.07.2020	08.07.2020	1.55 lakhs	74
5.	Heavy Rainfall	29.07.2020	26.07.2020	1.60 lakhs	75
6.	Moderate to Heavy Rainfall	22.09.2020	08.09.2020	1.50 lakhs	73
7.	Cold waves	01.02.2021	25.01.2021	1.50	74
8.	Rainfall	25.02.2021	22.02.2021	80,000	37

4.7 No. of AAS bulletins were prepared using Agromet-DSS in English and regional languages -**74**

4.8 Status of district crop weather calendar—Not-available

4.9 List the modes of mass communication adopted for AAS dissemination:

Sl No.	Social Media	Description(Provide name of all block wise whatsapp groups and link/name of other social media)	Total beneficiaries
01	Whatsapp groups		
	a) For Farmers	15	1035
	b) Forextension Officials	2	38
02	Facebook/Twitter/Insta-gram		
	a) MaldaKrishiMausam	Regular updates are conveyed on the Facebook page for mass dissemination regularly with improved technologies	2530
	b) Mausam NewsMalda	Twitter account for real time dissemination	
03	Youtube Channel	MaldaGraminKrishiMausamSewa	536
04	KVK Website	maldakvk.in	32438
05	University/Institute website	https://deeubkv.in	600
06	E-mail id(KVK/DAMU)	maldakvk.ubkv@gmail.com, gkmsmalda@gmail.com	
07	OnlineNewsportal/ news-paper/Electronic media	Uttarbangasambad, Sobor news, AjMalda, Realistic Malda	Approx. 1.8 lakhs
08	NGO (Reliance foundation)	In collaboration with reliance foundation regular dissemination of weather bulletins and agro advisories are disseminated. SMS Agromet has participated in several phone call meetings with farmers of Malda district in collaboration with Reliance foundations.	2000 (approx.)
TOTAL REACH			**2,50,000**

4.10 Details of broadcast on AIR and TV (Name of station broadcast frequency, time slot provided etc.) (Audio tape of the recent broadcast): SMS, Agromet have

4.11 Agromet advisory coverage through newspaper or other media if any— Yes, special bulletins are communicated and published in local and daily newspaper, electronic medias such as uttarbangasambad, realistic maldafacebook page, Sobor news, Ajmalda etc.

4.12 No of SMS sent through Kisan Portal and how many

farmers were benefitted during the year: 48 nos. during last year to almost 1.53 lakhs farmers around the district, line department officials etc.

5. Verification of Block or district level medium range forecast

Season: Pre-monsoon / Monsoon / Post-monsoon / winter

5.1 Quantitative Verification

We send only block level forecast. For verification we need both forecast and observed data, but due to unavailability of instruments/observatories we don't have any observed data of our station. Only we can verify the daily observed rainfall data collected from RMC, Kolkata. The details of rainfall forecast verifications of 11 blocks are given below: -

Blocks	Total no. of days	Successful forecasting (days)	Forecast failure (days)	Accuracy (%)	NF/ NO (days)	F/O (days)	F/NO (days)	NF/O (days)	Total observed rainy days (rf>2.5mm)
Ratua-I	365	263	102	72.1	198	65	94	8	61
Ratua-II	365	262	103	71.8	198	64	96	7	60
Harishchandrapur-I	365	280	85	76.7	186	94	75	10	90
Harishchandrapur-II	365	266	99	72.9	186	80	90	9	87
Chanchal-I	365	279	86	76.4	191	88	90	4	85
Chanchal-II	365	281	84	77.0	191	90	79	5	85
Kaliachak-I	365	267	98	73.2	187	81	94	3	77
Kaliachak-II	365	272	93	74.5	187	85	90	3	70
Kaliachak-III	365	277	88	75.9	193	84	84	4	80
Manikchak	365	264	101	72.3	191	75	97	2	71
Englishbazaar	365	284	81	77.8	194	88	80	3	88
Old Malda	365	261	104	71.5	187	88	83	7	70
Gazole	365	276	89	75.6	188	88	84	5	72
Habibpur	365	280	85	76.7	190	90	79	6	85
Bamongola	365	277	88	75.9	186	91	81	7	88

Rainfall verification for a period of one year (April-2020 to March-2021) for 15 blocks of malda district Where, *NF/NO- No rainfall forecast/No rainfall observed, *F/O- Rainfall forecast and observed,*F/NO- Rainfall forecasted but not observed, *NF/O- No rainfall forecast but observed,
C - Correct, U - Usable and NU-Not usable

5.2 Rainfall Qualitative Verification

SkillScore	Pre Monsoon	Monsoon	Post Monsoon	Winter
Probability of Detection (PoD)	0.801	0.551	0.464	0.007
FalseAlarmRate	0.024	0.041	0.003	0.014
False Alarm Ratio	0.024	0.041	0.003	0.014
Correct Non- Occurrence (C-Non)	NA	NA	NA	NA
Hansen and KuipeerScore(CSI)	0.792	0.456	0.522	0.071
Bias for Occurrence (Bias)	0.881	0.663	0.524	0.635
Percentage correct (Pc)	77.4	71.8	71.0	81.4
Threat Score (TS)	0.794	0.523	0.545	0.004
Heidke skill score (Hss)	0.747	0.587	0.367	0.733

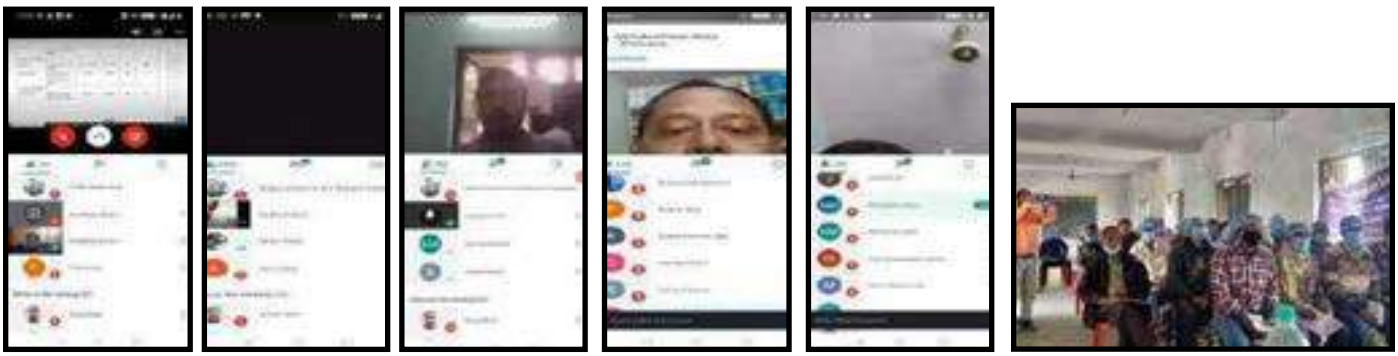
5.3 Details of extreme weather events in the year and its impact on Crop/livestock

Sl. no	Name of the Extreme weather event	Date of occurrence	Impact on crop/livestock
1.	Amphan Cy-clone	21.05.2020	Huge loss for mango farmers due to fruit drops, 20% crop yield loss incase of farmers who were not able to harvest *Boro*paddy, Summer vegetables namely okra, Brinjal were harmed due to untimely rainfall and strong winds. No livestock were harmed due to timely dissemination of the information
2.	Cold wave	1.02.21	Grain formation and silking stages were somewhat hampered in Rabi Maize.
3.	Untimely Rainfall	25.02.21	Losses could be averted due to timely harvested of potato from the fields specially from Gazole, Old Malda and parts of Habipurblocks due to priorinformation.

6. Farmers Awareness/Training/Meghdoot popularization activities or other outreach programme

6.1 Number of farmers awareness programmes conducted like Krishi/Kishan Melas, training, participation in national day parades etc. and photograph of Farmer's Awareness Programme (no of Farmer attended). Due to pandemic situations and non-recipient of funds during the last FY i.e 2020-21 no major FAPs could be conducted. However, a significant number of online trainings programmes were organized by DAMU, Malda KVK, Ratua for farmers and input dealers of Malda KVK regarding importance of Agroadvisory and on various aspects of Agrometeorology. Apart from this online awareness were also made for popularization of Meghdoot applications and other weather based ICT applications.

SI. No	FAP/ Farmers meet /Meghdoot Popularization activities and Other Activities	Date	Location (Block/ Village)	Farmers attended the Program
1	Online Awareness programme on Role of Weather on pest and disease incidences	20.8.2020	All farmers of Malda district	40
2	FAP on biological pest control for Cereal crops	3.10.2020	Farmers of Malda district	42
3	FAP programme on Judicious use of Water under changing climatic scenerios.	11.10.2020	-Do-	38
4	Agrometerorological Interventions on enhancing crop yield.	24.3.2020	-Do-	30
5	Importance of agroadvisory and weather forecast in agri and allied sectors	21.02.21	-Do-	29
6.	FAP on GKMS in association with AMFU-Majhian	09.02.21	Gazole	80
Total: Two hundred fifty nine				**259**



6.2 Capacity building/Seminar conducted

SI. No	Thematic area	Date	No of Courses	No of beneficiaries
1	Agri and allied Sectors	24.6.2020	1 (online)	25
2	Pest Management	5.08.2020	1 (online)	35
Total: Sixty				**60**

7. List of other organizations receiving Agromet advisories:

- Department of Agriculture, Govt. of West Bengal including DDA (Admin.), ADA's, ATMS, BTM's, Fishery Extension officials, KPS etc.
- Animal Resource Department (ARD) - BLO, VO's etc.
- District and Block administration- District Magistrates (DM), BDO's etc.
- Press club of Malda
- NGO's like 16 mile (Kaliachak), RCHSS (Gazole), Bidyanandapur FPO (Chanchal)

8. Details of FAP Conducted during the year (with good quality photographs)

During the FY 20-21 despite of fund constraint and ongoing pandemic situations due to COVID-19 few FAP's was arranged maintaining COVID-19 protocols mainly through online virtual conference platform. All together total 6 (six) nos. of FAP's were conducted out of which 5 were conducted through online mode and one in offline mode in collaboration with AMFU, Majhian. Progressive farmers, extension personnel, fishery farmers, input dealers from different blocks of Malda district participated during the online Awareness campaign under GKMS scheme. The participants were made aware regarding various aspects of Agrometeorology including Role of weather of insect and pest disease management, benefits of weather forecast, Modern agrometeorological interventions for enhancing crop productivity, Water resource management etc. Around, a total 179 no.s of enthusiastic participants took part during the online awareness campaign. On 9th February, 2021 in collaboration with AMFU, Majhian and DAMU, Malda a one day farmers awareness programme was conducted at Gazole on Climate smart Agricultural practices amd role of Agroadvisory at Gazole, Block In presence of Dr. ShubhenduBandopadhyay, Nodal Officer, AMFU, Pundibari, UBKV, Dr. JyotirmoyKarforma, Nodal Officer, Dr. Gopinath Raha, Director MC Patna, ADA-Gazole, Dr. Victor Phani, Asst. professor, UBKV and Mr. Salil Saha, Agrometeorologist, AMFU, Majhian. 80 nos. of Farmers were present during the awareness campaign. Various aspects of weathers and vagaries of nature along with pest and disease management were discussed in a two way interaction communicative way. The farmers were highly motivated regarding climate smart agropractices.

9. Economic impact of Agromet advisory services: (Success stories and case studies may be given).

9.1 Impact of Nowcast in farming practices

a. Farmer Name: Ejabul Seikh

b. Address: Malatipur, Chanchal-I, Malda

c. Before Weather Forecast & AAS: Prior to introduction of the DAMU, Malda Shri. Ejabul Seikh a small farmers was following traditional methods of cultivation practices

without taking into account the scientific practices of crop and weather interactions thus, he was not able to gain a huge profit from his produced crops and vegetables.

d. After DAMU's intervention: With gradual intervention of DAMU's he gradually became aware of the scientific crop cultivation. Nowadays he remains in touch with the KVK scientists for regular weather updates. Receiving now cast alert in his daughter's smart phone he no longer let his one cow and goats loitering around in open spaces. He himself also remains in safe places to avoid lightening and rain which may otherwise may have proved to bedreadful or fatal during earlier days.

9.2 Impact of Medium range /extended range forecast in farming practices

a. Farmer Name: Babu Khan

b. Address: Kaliachak - III, Malda

c. 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 use to hire pumps and labours as and when needed without having prior knowledge of rainfall occurrence there by incurring higher input cost upto Rs. 1150± 85.3/irrigation per acre.

d. After DAMU's intervention: After getting in touch with DAMU, Malda KVK by regularly receiving weather updates and updating himself regarding agroadvisories he was able to save nearly 19% money only from irrigation savings while paddy cultivation during *boro* season which helped him to gain higher R:C ratio of 1.23.

Sl. No.	Villages	Cost of irrigation (Mean±SD)				Saving amount (Mean±SD)		Saving (%)
		Before AAS Interventions		After AAS interventions		AAS		
		Hiring cost (`/irr./ acre)	Own pump set (`/irr. / acre)	Hiring cost (`/irr./ acre)	Own pump set (`/irr./ acre)	Hiring cost (`/ irr./ acre)	Own pump set (`/irr./ acre)	
1.	Harischan-drapur	1150±85.3	750±41.4	900±34.7	650±25.2	215±60.0	150±37.0	19.0
t_{stat}=7.58*								
	R:CRatio	**1.19±0.11**		**1.23±0.09**				

9.3 Impact of long range forecast in farming practices

a. Farmer Name: Nurul Islam

b. Address: Paranpur, Ratua-II, Malda

c. Before Weather Forecast & AAS:

Before the introduce 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 with regular perseverance and training programmes the mindset of the farmers have considerably changed and also they have kept faith in the scientific advisories issues by the scientist of this KVK.

d. After DAMU's intervention:

With gradual interventions and introduction of GKMS scheme and block wise agroadvisory services the farmers have now started adopting crop contingency planning depending upon the amount, onset and gradual advancement and of rainfall Monsoon and in the district which are delivered to the farmers of the district well in advance (Mid-April & end 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 paddy, 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.

Particulars	AAS		Non-AAS		Saving through AAS in Rs. and (%)	
Crops	Paddy/ Wheat	Maize	Paddy/ Wheat	Maize	Paddy/ Wheat	Maize
Irrigation cost (on hiring basis) (`)	2100 ± 389.1	4000 ± 349.4	3000 ± 342.2	6000±310.5	900±157.2 (30.0)	2000 ± 375.8(33.3)
Spraying cost (including insecticide, fungicide and herbicides and labour cost) (`)	1000 ± 133.6	4000 ± 329.2	1400 ± 302.3	5112±853.5	400 ± 70.0 (28.5)	1112 ± 591.3(21.7)
Fertilizer cost (including labour cost) (`)	1300 ± 296.7	1500 ± 237.1	1503 ± 181.8	2145±365.2	203±239.0 (13.5)	645±238.1 (30.0)
Total(`)	**4400 ± 273.1**	**9500 ± 305.2**	**5903 ± 275.4**	**13257 ± 5099.7**	**1503 ± 155.4(25.4)**	**3757±401.7 (28.3)**

9.4 No of videos on AGRO met advisories developed and disseminated

Sl. No.	Details of videos/link	Date of dis-semination	No of farmers sent	Impact of video
01	Farmers feedback video by Amzad Ali of Ratua-1 block under COVID-19 situations in youtube channel (Malda Gramin Krishi Mausam Sewa)	25.08.2020	274	Farmers have started showing interest on weather forecast based agronomic practices and pest management to incur higher return
02	Farmers feedback Video by Shri Rajen Mondal of NICRA adopted village of Manikchak Block in youtube channel (Malda Gramin Krishi Mausam Sewa)	24.08.2020	290	Young farmer Farmers are regular enriching their knowledge on weather based agricultural practices in order to mitigate the various vagaries of weather to cope up with floods and other natural hazards like cold wave, hailstorms etc.
03.	Introduction to Mausam App	07.09.2020	350	Many farmers possessing smart phones have downloaded the apps for getting regular weather and agroadvisories issued by DAMU, Malda KVK.

9.5. Mobile APP based Agromet advisory services for farmers:

At present, to strengthen the dissemination process we aware the farmers about an important app i.e. The Meghdoot app developed by the India Meteorological Department, Indian Institute of Tropical Meteorology and Indian Council of Agricultural Research and aptly named Meghdoot (cloud messenger) which is available on Android and iOS and is simple to use. This app is giving out weather forecast-based agro advisories to farmers in different regions in English as well as other regional languages. Apart from this farmers are also using Malda KVK apps for regular updates on weather and agroadvisories.

10. Feedback from progressive farmers:

Collection of feedback from the farmers on the advisory services is one of the important aspects of our activity. Without farmer's feedback, we can't analyse the accuracy of our advisory. To achieve this objective numbers of villages were surveyed time to time during various programmes like field visit, farmers' awareness programme, Various Field day and during different training programme organized in our institution. A total of 125 numbers of farmers of different blocks of Malda district have been surveyed through personal interview method in order to get the views of farmers regarding the utility of the Agromet-Advisory services provided for their benefit.To obtain the

feedback from the farmers regarding the practical utility of agro-advisory provided to them, 100 farmers from 10 villages had been interviewed with the help of specially designed schedule by personal interview method. The information, views and suggestions from some of the respondent farmers are as given below:

Sl. No.	Farmer name & Village	Block	Feedback
01	Amjad Ali, Bhaluka GP	Ratua-1	Previously some farmers received agromet advisories from Sabour through SMS. As per their opinion both the sources are useful for him but block level advisories are more useful because it gives details information which are not possible through SMS. But still farmers required short messages.
02	Rajen Mondal, NICRA adaptive farmers at Narayanpur village	Manikchak	It is very useful to farmers and helped them in planning of agricultural activities like scheduling of irrigation, spraying operations, fertilizer application etc.
03.	Babu Khan, Dakshin Gouripur	Harischan-drapur-I	Most of the farmers preferred this advisory for irrigation and spraying operation and harvesting of crops as compared to other operations.
04.	Seikhbul, Balupur	Ratua-I	Almost all the farmers appreciated the timely dissemination of Agromet Advisory Bulletin (AAB) and they are regularly getting of weather based service and weather forecast.
05.	Bapi Murmu, Ghaksole	Gazole	As this district is under backward areas of West Bengal, most of farmers don't have smart or android phone. Resource poor farmers are not able to take advantage over it. So, they request for starting of SMS service as soon as possible.
06.	Alomgir Seikh, Seikhpara	Kaliachak-III	Inconsistency in the accuracy of block weather in agromet advisory regarding rainfall was reported. However, weather prediction of other parameters given in advisory match about 70-80 % with the actual condition. Less inconsistency was found in this *rabi* season as compared to previous year.
07.	Md. Azaruddin, Malatipur	Chanchal-I	Some farmers also appreciated the nowcast warning system which helped them in minimizing damaged due to hailstorm/rainfall during *rabi* season but some inconsistency found in this current year.
08.	Purna Mandal, Garail	Gazole	Most of potato farmers from Gazole block appreciated the protective measures of potato given in advisory that helped them to protect their crop from frost injury.
09.	Habibur Rahaman, Pukhuria	Ratua-II	During last*kharif* season, some farmers told that this advisory is not useful for them underno rainfall conditions because they cultivated only paddy crops and totally depends upon rain water.
10.	Babar Ali, Chandmoni	Ratua-I	Most of the farmers told that the advisory on disease and pest management in Mango was very helpful to them.
11.	Ramen Mondal, Pandua	Old Malda	Despite of both positive and negative feedback most of the farmers accepted that they saved 10-20% irrigation cost in *kharif*season and 25-30 % in rabi season.
12.	Sukhen Tudu, Baravita	Habibpur	After overall conversation with farmers we concluded that farmers have started taking interest in accessing information on the management of crops and animal husbandry.

Sl. No.	Farmer name & Village	Block	Feedback
13.	Fatima Bibi Jot Narasingha	English Bazaar	She suggested that it should be channelized through Major mass medias and line department officials which is still lacking due to administrative reasons.

11. Publications:

- Akhter J, Majumder D, Deb, A and Das L (2020). Assessing the performance of multi-sources gridded data to estimate long-term rainfall change over north-central region of India. *Mausam*, 71(2): 225-232.
- Rakesh Roy, Bankim Chandra Rudra, Debjyoti Majumder and Adwaita Mondal. 2020. Perceived Constraints in Mushroom Production Enterprise in West Bengal. Int.J.Curr.Microbiol.App.Sci. 9(04): 1579-1583. doi: https://doi.org/10.20546/ijcmas.2020.904.185
- Role of ICT and ITK's in weather hazards and agricultural Risk Management, Majumder et. al. (2020). Aikinik Publication pp. 115
- Majumder, D., Roy, R., Rahman, F.H. and Rudra, B.C., 2020. Impact Assessment of Block Level Agro Advisories for Saving Input Cost of Farmers under Old Gangetic Plains of West Bengal-A Case Study in Malda. *Current Journal of Applied Science and Technology*, pp.86-96.
- Rakesh Roy, B. D. Kharga, Bankim Chandra Rudra, Adwaita Mondal, Paramita Bhowmik and Debjyoti Majumder. 2020. Knowledge Retaining Abilities of Dairy Farmers: Post-Training Analysis. Int.J.Curr. Microbiol.App.Sci. 9(04): 783-790. doi: https://doi.org/10.20546/ijcmas.2020.904.093
- Rakesh Roy, Bankim Chandra Rudra, Debjyoti Majumder and Adwaita Mondal. 2020. Perceived Constraints in Mushroom Production Enterprise in West Bengal. *Int.J.Curr.Microbiol.App.Sci.* 9(04): 1579-1583. doi: https://doi.org/10.20546/ijcmas.2020.904.185
- Debjyoti Majumder, Rakesh Roy, Paramita Bhowmik, Bankim Chandra Rudra, Adwaita Mondal, Bhabani Das and Samima Sultana. 2020. Impact and Perceived Constraints in Adoption of Climate Resilient Technologies in Flood Prone Areas of West Bengal, India. Int.J.Curr.Microbiol.App.Sci. 9(04): 797-806. doi: https://doi.org/10.20546/ijcmas.2020.904.095.

12. Other Publications

Nature of Extension Activity	No. of activities	Title
Extension/Technical Literature	3	DAMU, Newsletter published by ICAR ATARI, Kolkata. Importance of Meghdoot applications
Other, if any	1	2 TV shows at Annadata by News 18 bangla and one radio talks at AIR on topic Improved package of practice of Maize under changing climatic Scenarios

13. Details of HRD programmes undergone by DAMU personnel:

Sl. No.	Name of programme	Name of course	Name of DAMU personnel and designation	Date and Duration	Organized by
1.	HRD programme	Development and utilization of indices for social Science Research and Social Network Analysis for better extension services	Mr. Debjyoti Majumder, SMS, Agromet and Mr.Amrit Sarkar, Agromet Observer	23 & 25 March,2021	DEE, UBKV
2.	Workshop	Approaches for good finance & office Management	-Do-	March 26-27,2021	DEE, UBKV
3.	HRD programme	Application of Digital Means in Documentation and transfer of agricultural technologies	-Do-	October 8-10,2021	DEE, UBKV
4.	Online MOOCs Programme	Cyclone Management	Debjyoti Majumder, SMS, Agromet	27th July-5th August,2020	MANAGE, Hyderbad
5.	Online Training programme	Advances Agrometeorlogical Techniques for Climate smart agriculture	-Do-	29th June- 3rd July, 2020	CAAST,MPKV, Rahuri
6.	Online WGCapD Webinar Series	Remote Sensing in Crop Monitoring and Assessment	-Do-	19th May-9th June,2020	IIRS, ISRO, Dehradun
7.	Online Training programme	Recent Advances and Instrumentation in Agricultural Meteorology	-Do-	26th May- 2nd June	CAAST,NAHEP, VNMK, Parbhani

14. Awards/Recognition received by the DAMU

Sl. No.	Name of the Award	Year	Conferring Authority	Amount	Purpose
1.	International Young scientist Award	2020-21	Institute of scholars, Bengaluru	Mementos, Certificates	Excellent work in the field of Agrometeorology
2.	Young Researcher Award	2020-21	I2OR, Mohali, Punjab	Mementos, Certificates of Recognition	Contributions in the field of agricultural Science

15. Any other important information (Any significant events conducted by DAMU on weather and crop related activities in the district may be given along with photo):

Mr.Debjyoti Majumder, SMS (Agromet) delivered a lecture on Allindia Radio, Akashbani Kolkata on the topic "UnnotoprothayeVuttachas" and also acted as a resource person in two episodes of ANNADATA, News 18 Bangal on Pest and Disease Management of Potato and Maize package of practices under Weather Variability**.** SMS, Agromet also participated in NICRA awareness campaign for adopting Zero tillage Wheat Cultivation and Importance of Farm mechanization in Todays agriculture. Apart from this Two OFT on Brocoli and Maize has also been conducted. The detailed analysis will be done after second season data. Details of OFT has been furnished below:

Title OFT-I	**Assessment of Mulches and Hydrogel for enhancing the water productivity of Brocolli**
Problem area	Injudicious use of water in vegetable crops (Cole crops)
Production systems	Small and marginal farm households based.
Micro-farming situation	Small and marginal farm households
Technology for testing	Use of different mulching materials to enhance water productivity and Water use efficiency of *Brocolli*
Source of technology	PAU, Ludhiana
Objectives	To increase water productivity and profitability of broccoli cultivation.
Hypothesis	Application of low cost mulching in combination with hydro gel will reduce the water requirement.
Details of Technology assessment	**Farmers' practice:** No Mulch **Tech. Opt I:** Use of Organic Mulching + Hydrogel **Tech. Opt. II:** Use of Polymulch + Hydrogel **Tech. Opt. III:** Use of only hydrogel under tilth condition
Critical inputs	Paddy straw mulch, hydrogel
Unit size	330. sq.metre
No. of replication	21
Cost/unit	Rs. 600/-
Total cost	Rs. 12600/-
Monitoring indicators	Soil Moisture, micro meteorological parameters, yield parameters and economics.
Sources of Technology	PAU, Ludhiana
Title OFT-II	**Adjusting the different dates of sowing for increasing productivity of medium duration Maize cultivar.**
Problem area	Biotic and abiotic stresses drastically impacts the yield of Maize
Production systems	Small and marginal farm households based.
Micro-farming situation	Small and marginal farm households
Technology for testing	Adjusting the date of sowing for maximizing the productivity of Maize
Source of technology	PAU, Ludhiana
Objectives	To maximize the Productivity of Rabi maize.
Hypothesis	Sowing around mid October (15-25 October) will enhance better crop stand and productivity.
Details of Technology assessment	Farmers' practice: late November (Beyond 20th November) Tech. Opt I: Sowing on 10th October Tech. Opt. II: Sowing at 30th October Tech. Opt. III: Sowing at 20th November

Critical inputs	Seeds,
Unit size	1 bigha
No. of replication	21
Cost/unit	Rs. 2500
Total cost	Rs. 10000/-
Monitoring indicators	Plant growth parameters, Yield and economics
Sources of Technology	Directorate of maize Research, Pusa New Delhi




DAMU North 24 Parganas

1.1 Staff Position (as on 1st April, 2021)

Sl.No.	Name of the incumbent	Qualification	Pay Scale with present basic	Date of joining
SMS (Agrometeorology)	Mr. Mrinal Kanti Das	B.Sc. in Agriculture and Msc (Ag) in Agricultural Meteorology from Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, Nadia-741252	Level 10 Basic pay- 56100/-	19/03/2019
Agromet Observer (AO)	Mr. Siddhanta Das	Higher Secondary with Science, BCA and MCA	Level 3 Basic pay- 21700/-	18/03/2019

1.2 Details of Orientation/Review/Expert Panel meeting conducted during the year

Sl. No.	Date	Number of Participants	Salient Recommendations	Action taken
1.	03.02.2020	08	1. More emphasis should be taken for wider dissemination of bulletins 2. WhatsApp group created and the bulletins and specific advisories regarding Weather, agricultural and horticultural crops, fishery and animal husbandry related advisories posted in WA group. 3. Bulletins should be sent through mail to each and every stake holder organization including every line department.	3 WhatsApp group created for North 24 Parganas district and bulletins send separately on Tuesday and Friday of each month and also nowcasting, special bulletins send separately to the each whatsapp group.

1.3 Status of Expert Panel group

Sl. No.	Name	Designation	Mobile/Ph no
1.	Dr. Babulal Tudu.	Senior Scientist and Head and Nodal Officer DAMU, N 24 Pgs KVK	9735130603
2.	Dr. PabitraAdhikary	SMS Agronomy, N 24 Pgs KVK	9547370338
3.	Mr. Anindya Nayak	SMS Fishery Science, N 24 Pgs KVK	9432965367
4.	Dr. Kaushik Pal	SMS Animal Science, N 24 Pgs KVK	9433460806
5.	Dr. Chinmoy Maji	SMS Animal Health, N 24 Pgs KVK	9475202120
6.	Mr. Mrinal Kanti Das	SMS Agrometeorology, N 24 Pgs KVK	9732768156
7.	Mrs. Soma Giri	SMS Horticulture, N 24 Pgs KVK	8017159905
8.	Dr. Soma Banerjee	SMS Agril. Extension, N 24 Pgs KVK	9434807686

2. District level data on agriculture, livestock and farming situation and Agro climatic data

Sl. no.	Item	Information
2.1	Major Farming system/ enterprise	Jute/sesame- Aman paddy -lentil/gram/Vegitables
2.2	Agro-climatic Zone	New Alluvial Zone (16 blocks), Coastal Zone (6 blocks)
2.3	Agro ecological situation	AES –I (Ichamati Basin), AES-II (Gangetic alluvial), AES-III (Costal Alluvial).
2.4	Soil type	Sandy loam, clay and clay loam, Soil depth 4-6 ft with medium to good water holding capacity. Neutral to acidic soil with good fertility.
2.5	Productivity of major 2-3 crops under cereals, pulses, oilseeds, vegetables, fruits and others	Rice -627.3 thuosand tons , Total cereals- 656.2 thousand tons Pulses- 12.4 thousand tons Foodgrains- 635.7 thousand tons Oilseeds- 59.7 thousand tons Fibres- 1231.6 thousand tons Miscellaneous crops- 273.3 thousand tons
2.6	Mean yearly temperature, rainfall, humidity of the district	Total rain fall-1208 mm, Mean Temp. -25 0C, Mean RH-85.34%
2.7	Maximum weather hazards/ weather vagaries/extreme weather conditions at your district	Carrying capacity of the rivers and other channels is on the decrease. This is causing almost regular crop damage in certain pockets through water logging.
2.8	Thrust area for agrometeorology	The deceleration of agricultural growth in the recent times as compared to the ages of green revolution is the upcoming threats due to reckless use of chemical fertilizer and pesticide. Besides carrying capacity of the rivers and other channels is on the decrease. This is causing almost regular crop damage in certain pockets through water logging. As a whole the district is unable to feed its population in terms of cereals and pulses though there is surplus production of vegetables in the district. Problem of soil sanity exist in Sundarban blocks. Therefore diversification of agriculture may be the key factor in the forthcoming years.
2.9	Blocks under Rainfed situation	Hingalganj, Minakhan, Sandeshkhali– I, Sandeshkhali– II.

Sl. no.	Item	Information
2.10	Blocks under irrigated situation	Amdanga, Baduria, Bagda, Barasat– I, Barasat– II, Barrackpur– I, Barrackpur– II, Basirhat– I, Basirhat– II, Bongaon, Deganga, Gaighata, Habra – I, Habra – II, Haroa, Swarupnagar,Hasnabad, Rajarhat.
2.11	Normal date of sowing of different crops and present season sowing dates of particular district or block	Normal date of sowing: Rice – 15th June to 20th August Potato-10th November to 30th November Mustard- 24th November to 16th December Lentil- 16th November to 13th December Black gram-10th February to 25th February Green gram- 15th February to 25th February

3. Status of Agro-AWS and surface observatory:

3.1 Date of installation of AWS : -- Only civil work has been completed, sensors are not yet installed.

3.2 List of instruments presently available in working condition: -- Not applicable

3.3 Instruments to be replaced/repaired indicating type of defect: -- NA

3.4 Please provide frequency of observation, exposure conditions of the site etc. -- NA

3.5 Number of years of data records available: -- NA

3.6 Whether the observatory is periodically inspected, maintained and calibrated by IMD (If yes, please indicate the latest data of inspection by the IMD) - -- NA

3.7 Status of surface observatory-There is no surface observatory in North 24 Parganas Krishi Vigyan Kendra.

3.8 Status of Manual/ordinary rain gauge at KVK Campus--- There is no manual/ordinary raingauge at KVK campus.

3.9 Details of soil moisture observations taken, if any (please provide frequency and depths of observation etc.) – NA

4. Details of Agromet Advisory Services

4.1 Date of start of Agromet Advisory Bulletins: **20.03.2019**

4.2 No. of times the weather forecasts received during the year: **96**

4.3 Date of receiving the forecasts from MC/RMC- **Every Tuesday and Friday of every week in every month.**

4.4 If the time is not suitable then what will be the appropriate time to receive the Value added forecast- **The time is correct.**

4.5 No. of AAS bulletins prepared and disseminated to the farmers during the year – **95**

4.6 No. of Special agromet advisory bulletins were prepared and disseminated to the farmers in the year and mention the details:

Sl. No.	Name of the extreme weather event	Date of the event	Date of Issue	Total no of Farmers received through whtsapp group and other media	Total no of Extension officials of the district received
1.	Super Cyclone "Amphan"	20-21 May, 2020	17.05.2020	21535(through mkisan portal, WA groups, mail, kvk app., mobile/phone etc.)	15

4.7 No. of AAS bulletins were prepared using Agromet-DSS in English and regional languages- **95**

4.8 Status of district crop weather calendar— **Not yet completed.**

4.9 List the modes of mass communication adopted for AAS dissemination:

Sl No.	Social Media	Description(Provide name of all block wise whtsapp groups and link/name of other social media)	Total beneficiaries
01	Whats app groups		
	a)For Farmers	Now only 3 groups created for North 24 Parganas district but next year we will create 22 whats app groups for 22 different blocks. The created 3 groups name are given below- 1. Krishi Abohaoa o poramorso. 2. Abohaoa o Krishi poramorso. 3. Krishi o Abohaoa.	100
	b)For extension Officials	North 24PGS KVK warriors	106
02	Facebook	KVK AshokenagarWbuafs	251
03	KVK Website	KVK app	4726
04	University/Institute website	http://wbuafscl.ac.in	
05	E-mail id(KVK/DAMU)	kvkashoke@gmail.com	
TOTAL REACH			**5183**

4.10 Details of broadcast on AIR and TV (Name of station broadcast frequency, time slot provided etc.) (Audio tape of the recent broadcast):

4.11 Agromet advisory coverage through newspaper or other media if any— **NA**

4.12 No of SMS sent through Kisan Portal and how many farmers were benefitted during the year: **95 no. of SMS has been sent through mkisan portal during the year 2020-2021 and 17853 farmers were benefitted.**

5. Details of extreme weather events in the year and its impact on Crop/livestock

Sl.no	Name of the Extreme weather event	Date of occurrence	Impact on crop/livestock
1	Super Cyclone "Amphan"	20-21 May, 2020	Though it was a super cyclone, several crop damaged on that time. Huge damage occurred in Sundarban areas also.

6. List of other organizations receiving Agromet advisories:

Agromet advisories send every Tuesday and Friday through mail to the following organizations:

- Deputy Director of Agriculture (Administration), North 24 Parganas.
- Assistant director Fisheries, North 24 Parganas.
- ADF Brackish water, North 24 Parganas.
- ADA Hingalganj.
- ADA Baduria.
- ADA Hasnabad.
- ADA Minakhan.
- ADA Sandeshkhali-I.
- ADA Swarupnagar.
- ADA Barasat1.
- The Regional Meteorological Centre, Kolkata.
- GKMS Kalyani, BCKV.

7. Details of Farmers Awareness Programme (FAP) Conducted during the year (with good quality photographs):

FAP report 2020-2021:

SI. No	FAP/ Farmers meet /Meghdoot Popularization activities and Other Activities	Date	Location (Block/Village)	Farmers attended the Program
1	Discussions about Weather forecasting and its impact on daily agricultural operation.	22.09.2020	Online FAP (Farmers of Gobardanga, Bongaon and Gaighata block)	90

SI. No	FAP/ Farmers meet /Meghdoot Popularization activities and Other Activities	Date	Location (Block/Village)	Farmers attended the Program
2	Make awareness among the farmer about the KVK app, Meghdoot app for weather updates and Damini app for Lightening updates in there blocks.	15.10.2020	Online FAP (Farmers of Basirhat-I, Basirhat-II, Barasat-I and Barasat-II block)	120
3	Discussions about Weather forecasting and its impact on daily agricultural operation and make awareness among the farmer about the KVK app, Meghdoot app for weather updates and Damini app for Lightening updates in there blocks.	16.12.2020	Amdanga, Baduria and Bagda	120
4	Farm visit and make awareness among the farmer about the KVK app, Meghdoot app for weather updates and Damini app for Lightening updates in there blocks.	09.02.2021	Habra-I, Habra-II	60
Total				**390**

8. Economic impact of Agromet advisory services:

8.1 Impact of Nowcast in farming practices

a. Farmer Name: Subrata Bala.

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

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

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

8.2 Impact of Medium range/extended range forecast in farming practices

a. Farmer Name: Gopal Ghosh

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

c. 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.

d. After DAMU's intervention: Because 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.

8.3. Mobile APP based Agromet advisory services for farmers:

A mobile app created. The name of this app is "Uttar 24 Pargana Krishi Vigyan Kendro" in Bengali (Local language). Through this mob app farmers can also get the Agromet weather bulletins and weather and crop based agro advisories. Total visitors of this app are 4734. Some screenshots are given below-

9. Feedback from progressive farmers:

Sl no	Farmer name & Village	Block	Feedback
01	Bhola Pal Vill- Ichapur	Gaighata	Forecasting of rain, thunderstorm helps him very much. Besides that he get various information about medicines, new technology, disease etc about fish farming from the Agromet Advisory Bulletins.
02	Gopal Ghosh Vill- Janaphul	Habra-I	Forecasting of rainfall helps him very much. Besides that he get various information about medicines, new technology, disease control etc about various agricultural and horticultural crops from the Agromet Advisory Bulletins.

10. Details of HRD programmes undergone by DAMU personnel:

Sl. No.	Name of programme	Name of course	Name of DAMU personnel and designation	Date and Duration	Organized by
1.	Review meeting cum exposure visit cum HRD Programme.	Integrated farming with special emphasis to Agri. Horticultural Practices to augment the income from small farming.	Mrinal Kanti Das, SMS Agrometeorology	24.02.2021-26.02.2021	DREF, WBUAFS

11. Any other important information (Any significant events conducted by DAMU on weather and crop related activities in the district may be given along with photo):

A special bulletin was given by SMS Agrometeorology on 31 May, 2020 about the occurrence of desert locust and its control.

DAMU Murshidabad

1.1. Staff Position (as on 1st April, 2021)

Sl. No.	Name of the incumbent	Qualification	Pay Scale with present basic	Date of joining
SMS (Agrometeorology)	Mr.Sugnik Das	M.Sc. (Ag.) in Agricultural Meteorology	Pay Scale : 15600-39100, GP-5400 (Present basic: 21630)	26.03.2019
Agromet Observer (AO)	Miss. Soumata Sarkar	B.Sc.(Ag.)	Pay Scale : 5200-20200, GP-2000 (Present basic: 8720)	11.03.2019

1.2 Details of Orientation/Review/Expert Panel meeting conducted during the year

Sl. No.	Date	Number of Participants	Salient Recommendations	Action taken
1.	06.01.2021	5	Increase the number of Whatsapp group to reach more numbers of farmers. R&D programmes (FLD,OFT) should be planned by DAMU Unit.	1.10 nos. of new whatsapp group is created by DAMU. Now total 20 whatsapp groups are available. 2. 1 OFT and 1 FLD is included in the action plan of 2021-2022 by DAMU unit.

1.3 Status of Expert Panel group

Sl. No.	Name	Designation	Mobile/Ph no
1.	Dr. Uttam Roy,	Senior Scientist & Head, Murshidabad KVK	9932104436
2.	Dr. Pradyot Kr. Pathak	SMS (Horticulture), Murshidabad KVK	9433466157

Sl. No.	Name	Designation	Mobile/Ph no
3.	Mr. Abu Taleb	SMS (Soil Science), Murshidabad KVK	7001935968
4.	Dr. Atit Maji	Programme Assistant (Lab. Technician), Murshidabad KVK	9851833433
5.	Mr. Samiran Patra	SMS (Fishery Science), Murshidabad KVK	8250273441
6.	Mr. Ajoy Das	SMS (Agronomy), Dhanyaganga KVK, Sargachi, Murshidabad	7431026191

2. District level data on agriculture, livestock and farming situation and Agro climatic data

<table>
<tr><th>Sl. no.</th><th>Item</th><th>Information</th></tr>
<tr><td>2.1</td><td>Major Farming system/ enterprise</td><td><u>For Upland Situation</u>
Jute-Rice-Wheat/Lentil (Irrigated Condition)
Maize-Rice-Brinjal/Cabbage/Cucumber (Irrigated Condition)
Jute-Rice-Mustard (Rainfed Condition)
Sesame-Kalai-Mustard (Rainfed Condition)
<u>For Lowland Situation</u>
Jute-Rice-Rice(Irrigated Condition)
Jute-Rice-Fallow(Rainfed Condition)</td></tr>
<tr><td>2.2</td><td>Agro-climatic Zone</td><td>1. Old Alluvium
2. Lateriate light
3. New Alluvium</td></tr>
<tr><td>2.3</td><td colspan="2"><table><tr><th>Agro ecological situation</th><th>Characteristics</th></tr><tr><td>Agro ecological situation-I</td><td>Old Alluvial Soil</td></tr><tr><td>Agro ecological situation-II</td><td>Lateriate light Soil</td></tr><tr><td>Agro ecological situation-III</td><td>New Alluvium Soil</td></tr></table></td></tr>
<tr><td>2.4</td><td colspan="2"><table><tr><th>Soil type</th><th>Characteristics</th><th>Area in ha</th></tr><tr><td>Old Alluvial</td><td>Moderate fertile</td><td>76032</td></tr><tr><td>Lateriate light</td><td>Less fertile. Reddish colour undulating topography known as RARH</td><td>200898</td></tr><tr><td>New Alluvial</td><td>Highly fertile, known as BAGRI</td><td>254681</td></tr></table></td></tr>
</table>

<table>
<tr><th>Sl. no.</th><th>Item</th><th>Information</th></tr>
<tr><td>2.5</td><td>Productivity of major 2-3 crops under cereals, pulses, oilseeds, vegetables, fruits and others</td><td>
<table>
<tr><th>Crop</th><th>Area (ha)</th><th>Production (q)</th><th>Productivity (q/ha)</th></tr>
<tr><td>Aus paddy</td><td></td><td></td><td></td></tr>
<tr><td>HYV</td><td>25,527</td><td>99, 3657.1</td><td>38.92</td></tr>
<tr><td>Local</td><td>2,771</td><td>6, 4254.1</td><td>23.18</td></tr>
<tr><td>Aman Paddy</td><td></td><td></td><td></td></tr>
<tr><td>HYV</td><td>1, 99,225</td><td>8031686.1</td><td>40.31</td></tr>
<tr><td>Local</td><td>5832</td><td>131783.85</td><td>22.59</td></tr>
<tr><td>Boro paddy</td><td>112306</td><td>6782955.62</td><td>60.397</td></tr>
<tr><td>Wheat</td><td>95885</td><td>2534858.3</td><td>26.51</td></tr>
<tr><td>Jute</td><td>101555</td><td>1392466 Bales</td><td>13.711bales/ha</td></tr>
<tr><td>Gram</td><td>7260</td><td>71281.25</td><td>9.82</td></tr>
<tr><td>Lentil</td><td>16455</td><td>149909.95</td><td>9.11</td></tr>
<tr><td>Black Kalai</td><td>5507</td><td>38603.5</td><td>6.50</td></tr>
<tr><td>Arhar</td><td>1064</td><td>9990.45</td><td>9.39</td></tr>
<tr><td>Mustard</td><td>88305</td><td>784363.5</td><td>8.88</td></tr>
<tr><td>Linseed</td><td>1050</td><td>7500.05</td><td>7.14</td></tr>
<tr><td>Sunflower</td><td>26</td><td>276</td><td>10.61</td></tr>
</table>
</td></tr>
<tr><td>2.6</td><td>Mean yearly temperature, rainfall, humidity of the district</td><td>
<table>
<tr><th rowspan="2">Month</th><th colspan="2">Temperature (°C)</th><th colspan="2">Humidity (%)</th><th rowspan="2">Rainfall (mm)</th><th rowspan="2">No. of rainy days</th></tr>
<tr><th>Max</th><th>Min.</th><th>Max</th><th>Min.</th></tr>
<tr><td>April'20</td><td>33.8</td><td>24.6</td><td>91</td><td>76</td><td>138.0</td><td>9</td></tr>
<tr><td>May, 20</td><td>39.0</td><td>28.0</td><td>90</td><td>81</td><td>77.0</td><td>5</td></tr>
<tr><td>June, 20</td><td>33.6</td><td>26.4</td><td>90</td><td>72</td><td>146.6</td><td>8</td></tr>
<tr><td>July, 20</td><td>33.0</td><td>26.5</td><td>89</td><td>77</td><td>115.4</td><td>8</td></tr>
<tr><td>August, 20</td><td>32.2</td><td>26.1</td><td>92</td><td>78</td><td>296.7</td><td>15</td></tr>
<tr><td>September, 20</td><td>33.4</td><td>26.5</td><td>91</td><td>76</td><td>216.7</td><td>10</td></tr>
<tr><td>October, 20</td><td>31.0</td><td>23.6</td><td>93</td><td>78</td><td>215.8</td><td>9</td></tr>
<tr><td>November, 20</td><td>28.7</td><td>20.0</td><td>82</td><td>46</td><td>Nil</td><td>Nil</td></tr>
<tr><td>December, 20</td><td>24.5</td><td>13.1</td><td>90</td><td>55</td><td>Nil</td><td>Nil</td></tr>
<tr><td>January, 21</td><td>22.9</td><td>11.8</td><td>91</td><td>63</td><td>Nil</td><td>Nil</td></tr>
<tr><td>February, 21</td><td>25.5</td><td>13.5</td><td>85</td><td>50</td><td>Nil</td><td>Nil</td></tr>
<tr><td>March, 21</td><td>31.0</td><td>19.0</td><td>74</td><td>48</td><td>50.0</td><td>3</td></tr>
</table>
</td></tr>
<tr><td>2.7</td><td>Maximum weather hazards/weather vagaries/extreme weather conditions at your district</td><td>Hail storm during summer month.
Flood during Monsoon Season.</td></tr>
</table>

Sl. no.	Item	Information
2.8	Thrust area for agrometeorology	Dissemination of Weather based advisory should be reached to more number of farmers of this district Apart from Agriculture in Weather based Agro advisory more emphasis should be given to Allied Sectors i.e Animal Husbandry, Fisheries. Agrometeorology based R&D programme should be planned to implement new climate resilient technology to the farming community.
2.9	Blocks under Rainfed situation	Nabagram, Sagardighi, Khargram
2.10	Blocks under irrigated situation	Berhampore,Kandi,Nowda,Burwan,Samserganj,Murshidabad-Jiaganj,Farakka,Jalangi,Bharatpur-I, Bharatpur-II, Raghunathganj-I, Raghunathganj-II, Raninagar-I, Raninagar-II, Bhagawangola-I, Bhogowangola-II,Suti-I,Suti-II,Domkol,Beldanga-I, Beldanga-II, Hariharpara, Lalgola
2.11	Normal date of sowing of different crops and present season sowing dates of particular district or block	Paddy: Kharif-15th June-15th July Wheat: 1st fortnight of November Maize: Rabi- Mid November Pulse: Chickpea: Mid November Lentil: Mid oct- Mid Nov Greengram: Summer: Mid March Oilseed: Mustard: Mid oct-Mid Nov Sesame:1st fortnight of February

3. Status of Agro-AWS and surface observatory:

3.1 Date of installation of AWS: -- Only Civil work has been completed, sensors are yet to be installed.

3.2 List of instruments presently available in working condition: -- NA

3.3 Instruments to be replaced/repaired indicating type of defect: -- NA

3.4 Please provide frequency of observation, exposure conditions of the site etc. **-- NA**

3.5 Number of years of data records available: -- NA

3.6 Whether the observatory is periodically inspected, maintained and calibrated by IMD (If yes, please indicate the latestdata of inspection by the IMD) -- NA

3.7 Status of surface observatory--- Presently there is no surface observatory in Murshidabad KVK

3.8 Status of Manual/ordinary rain gauge at KVK Campus--- No manual raingauge in KVK Campus

3.9 Details of soil moisture observations taken, if any (please provide frequency and depths of observation etc.) – **NA**

4. Details of Agromet Advisory Services

4.1 Date of start of Agromet Advisory Bulletins: 20.08.2019

4.2 No. of times the weather forecasts received during the year: 88

4.3 Date of receiving the forecasts from MC/RMC-**Every week Tuesday and Friday.**

4.4 If the time is not suitable then what will be the appropriate time to receive the Value added forecast-**Every week Tuesday and Friday within 11 am.**

4.5 No. of AAS bulletins prepared and disseminated to the farmers during the year **-88 nos. district AAS bulletin, 1456 nos. block AAS bulletin during 2020-2021.**

4.6 No. of Special agromet advisory bulletins were prepared and disseminated to the farmers in the year and mention the details:

Sl. No.	Name of the extreme weather event	Date of the event	Date of Issue	Total no of Farmers received through whtsapp group and other media	Total no of Extension officials of the district received
1.	Amphan cyclone	20.05.21	17.05.2021	5321 (Through M-Kisan portal & Whatsapp groups)	15

4.7 No. of AAS bulletins were prepared using Agromet-DSS in English and regional languages - 56 nos. district AAS bulletin,1456 nos. block AAS bulletin were prepared using Agromet-DSS in English and regional languages during 2020-2021.

4.8 Status of district crop weather calendar—Not yet comleted.

4.9 List the modes of mass communication adopted for AAS dissemination:

Sl No.	Social Media	Description(Provide name of all block wise whtsapp groups and link/ nameof other social media)	Total beneficiaries
01	Whats app groups		
	a)For Farmers	20 nos. A) Farmers Groups: 1. DAMU-Hossainnagar; 2. DAMU-Dear Mahinagar; 3. DAMU-Beliapukur; 4. DAMU-Charmahimapur; 5. DAMU-Kolan Sonar fosol FC; 6. Krishi Abohaoa- Sagardighi: 7. Krishi Abohaoa-Bhagwangola1: 8. Krishi Abohaoa- Bhagwangola 2: 9. Abohaoa- Raghunathganj 1: 10. Abohaoa- Raghunathganj- 2; 11. RatanpurKrishak Sangha o Onnanno: 12. Krishi Abohaoa-Lalgola: 13. Krishi Abohaoa-Samserganj: 14. Krishi Abohaoa-Raninagar 1: 15. Krishi Abohaoa-Raninagar 2: 16. Krishi Abohaoa-Farakka: 17. Krishi Abohaoa-Suti 1: 18. Krishi Abohaoa-Suti 2: 19. Krishi Abohaoa- Domkol: 20. Krishi Abohaoa-Berhampore: B) Others groups: 1.KVK MSD Farmers Club; 2.RF-WB-MBB-AGRI-1;	608
02	Face book /Twitter/Instagram		
		Krishi Vigyan Kendra Murshidabad (Facebook) https://www.facebook.com/profile.php?id=100012439746246	1730
03	KVK Website	http://www.kvkmurshidabad.org	
04	University/Institute website	http://wbuafscl.ac.in	
05	E-mail id(KVK/ DAMU)	kvkmsd.wbuafs@yahoo.com gkms.kvkmsd@gmail.com (DAMU email id)	
TOTAL REACH			**2338**

4.12 No of SMS sent through Kisan Portal and how many farmers were benefitted during the year: **32** nos. with **4295** nos. farmers each time.

5. Details of extreme weather events in the year and its impact on Crop/livestock

Sl.no	Name of the Extreme weather event	Date of occurrence	Impact on crop/livestock
1.	Heavy Rainfall (Amphan Cyclone)	20.05.21	The farmers of this district received the forecast of the rainfall through AAS bulletin and through mkisan portal and they were advised to harvest their crop (Rice) which attained 80% maturity level. Those who were unable to harvest their crop were advised to arrenge for proper drainage facility to minimize the crop loss.After the assessment it was found that those farmers who followed the Agromet Advisory Service (AAS) bulletin can minimize their crop lossupto 60% which costs Rs. 8200 to Rs.9400 per bigha.

6. Farmers Awareness/Training/Meghdoot popularization activities or other outreach programme

6.1 Give list of farmers awareness programmes conducted like Krishi/Kishan Melas, training, participation in national day parades etc. and photograph of Farmer's Awareness Programme (no of Farmer attended).

SI. No	FAP/ Farmers meet /Meghdoot Popularization activities and Other Activities	Date	Location (Block/Village)	Farmers attended the Program
1	FAP	05.10.20	Dear Mahinagar Village (Online mode)	24
2	FAP	25.11.20	KVK Campus (Bhagwangola 1 block)	30
3	FAP cum on campus training on Climate Change	21.12.20	On KVK Campus	30
Total 3nos.				**84**

7. List of other organizations receiving Agromet advisories:

- All line departments of Murshidabad district
- Farmers Clubs
- Farmers Producers Organizations
- GKMS ATARI Kolkata.
- Agro Meteorological field unit, Kalyani
- All India Radio, Berhampore
- AAS, RMC-Kolkata

8. Details of FAP Conducted during the year:

1. On 5th October, 2020 The DAMU, Murshidabad organized aFarmers' Awareness Programme (FAP) on Climatic hazards and its affect in agricultural operation through online mode.24 nos. of participants from Dear Mahinagar Village, M-J block Jiaganj were attended

this programme. The cause of extreme weather events like drought, flood etc was vividly discussed and its detrimental effects on different agricultural operations was also discussed.

2. The second FAP was conducted on 25.11.2020 at KVK training hall. The topic of discussion was Climate resilient crop production techniques. 30 nos. of farmers from Bhagwangola 1 block were attended the programme. The main objective was to explain how to mitigate the shortcomings in crop production during low rainfall or over rainfall and in similar situation and techniques of climate resilient crop production. In this programme the details of Meghdoot and Damini app was also discussed.

3. On 21st December, 2020 the District Agromet Unit of Murshidabad KVK organized a Training Programme cum Farmers' Awareness Programme on Climate Change and its effect on Agriculture. The programme was organized in the training hall of the KVK. Total 30 nos. of farmers from different blocks of the district

attended the programme. The main objective of the programme was to emphasize the detrimental effects of the global climate change and how much it affects the yield of the crops. In this programme different cause of climate change and how much it is responsible for yield reduction especially in this district was elaborately discussed. To popularize the Meghdoot App among the farmers, a brief introduction of its application was also discussed and the farmers were encouraged to use this application. Till date 107 numbers of farmers downloaded this App.

9. Economic impact of Agromet advisory services:

9.1 Impact of Medium range/extended range forecast in farming practices

a. Farmer Name: Sachin Mondal

b. Address: Vill-Dear Mahinagar, Block-M-J, Murshidabad

c. Before Weather Forecast & AAS: Before DAMU the main problem was in irrigation scheduling and spraying operation. In many cases after applying irrigation or after spraying operation rainfall was occurred and the crop received excess water which is not at all beneficial for crop and in case of spraying the total practice is washed out due to this rainfall as a result we face a huge crop loss.

d. After DAMU's intervention: After the DAMU unit established in Murshidabad KVK we have received Weather bulletin twice in every week and according to the weather forecasted for next five days, we planned the spraying and irrigation operations. Which helps us to reduce the crop loss.

9.2. Mobile APP based Agromet advisory services for farmers:

1. In "**Murshidabad Krishi"** App on every Tuesday and Friday.

2. "**Meghdoot"**App for District Agromet advisory

10. Feedback from progressive farmers:

Sl no	Farmer name & Village	Block	Feedback
01	Chand Mahammad, Akhriganj	M-J Block	The weather update from DAMU unit of Murshidabad KVK helps us in scheduling of irrigation. If there is a possibility of rainfall in next five days of a cropping period, we just stop irrigation practice as excess water is detrimental for crop growth.
02	Abdul Kayum, Hossainnagar	Bhagwangola 1	We are mainly rice grower. Due to the weather bulletin we are able to protect our cops from heavy rainfall at the seed bed as well as in standing crops at the time of harvest also.
03	Shadrul Ola, Sagardighi	Sagardighi	At monsoon season we have received the agro advisory for livestock from DAMU unit of our district. According to their advice we vaccinated our cows to protect them from foot and mouth disease. They also provide us the contact person details regarding this vaccination. Their advice also helps us to protect our poultry birds from fungal diseases during the monsoon season,

11. Review Workshop-

On 21st July,2020 DAMU, Murshidabad KVK attended the 1st Review workshop of Gramin Krishi Mausam Sewa (GKMS) organized by ICAR-ATARI, Kolkata.In this workshop the performance of DAMU Unit in the financial year 2019-20 was assessed and some valuable suggestion was received for the betterment of the unit.

12. Details of HRD programmes undergone by DAMU personnel:

Sl. No.	Name of programme	Name of course	Name of DAMU personnel and designation	Date and Duration	Organized by
1.	HRD	"Integrated farming with special emphasis to Agri-Horticultural practices to augment the income from small farming"	Mr. Sugnik Das(SMS)	24.02.21-26.02.21 (3 days)	WBUAFS
2.	HRD	"Integrated farming with special emphasis to Animal Husbandry practices to augment the income from small farming"	Mr. Sugnik Das (SMS), Miss. Soumata Sarkar (AO)	20.01.21-22.01.21 (3 days)	WBUAFS
3.	HRD	"Integrated farming with special emphasis to Aquaculture practices to augment the income from small farming"	Mr. Sugnik Das (SMS), Miss. Soumata Sarkar (AO)	03.02.21-05.02.21	WBUAFS

DAMU Jalpaiguri

1.1. Staff Position (as on 1st April, 2021)

Sl.No.	Name of the incumbent	Qualification	PayScale with present basic	Date ofjoining
SMS (Agrometeorology)	Mr. Amit Roy	M.Sc(Agrl. Meteorology)	Band pay:15600-39100 Basic pay:21630	14/03/2019
Agromet Observer (AO)	Mr. Naren Roy	B.Sc(Botany)	Band pay:5200-20200 Basic pay:8720	14/03/2019

1.2 Details of Orientation/Review/Expert Panel meeting conducted during the year

Sl. No.	Date	Number of Participants	Salient Recommendations	Action taken
1.	16.09.2020	06	1. Different aspects of winter vegetables have been discussed by S.S.&Head of KVK and SMS(Horticulture). 2. SMS(Fishery) advised to disseminate advisory regarding some fish diseases. 3. SMS(Animal Science) recommended to add different measures for weather dependent diseases in the bulletin.	All the advises from different experts(discipline wise) have been included in the Agromet Advisory Bulletins.
2.	25.04.2020	10	1. Expert semphasized on inclusive Farmers Awareness Programme & field visit blockwise. 2. Suggested to harness the advantages of social media to disseminate timely bulletin as well weather information. 3. Recommended to create WhatsApp group with FPO/FPC/farmers club.	As per the recommendation, few FAP programmes as well as field visits have been organized in a holistic approach. Due to covid-19 it was difficult to cover all the blocks. WhatsApp groups have been created with FPO/FPC/Framers clubs of the district.Weatherupdates as well bulletins are posted in the KVK Facebook regularly.

1.3 Status of Expert Panel group

Sl. No.	Name	Designation	Mobile/Ph no
1.	Dr. Biplab Das	Senior Scientist&Head	9434338456
2.	Dr. Manas Kumar Das	SMS (Animal Science)	7585937617
3.	Dr. Kaushik Das	SMS (Horticulture)	7003944986
4.	Mr. Koushik Paul	SMS (Agronomy)	7797333322
5.	Mr. Indranil Ghosh	SMS (Fishery Sciences)	9830014319
6.	Dr. Arun Kr. Shit	CPCRI-Mohitnagar Principle Scientist,	9434319831

2. District level data on agriculture, livestock and farming situation and Agro climatic data

Sl. no.	Item	Information				
2.1	Major Farming system/enterprise	Jute-Rice-Potato Maize-Rice-Potato Jute-Rice-Vegetable				
2.2	Agro-climatic Zone	Terai-Teesta Alluvial				
2.3	Agro ecological situation	Dooars agroecological situation				
2.4	Soil type	Sandy loam soil				
2.5	Productivity of major 2-3 crops under cereals, pulses, oilseeds, vegetables, fruits and others	Rice: 4.39t/ha Maize: 2.14t/ha Mustard: 0.6t/ha Groundnut: 2.3t/ha Potato: 24t/ha Jute: 13.44bales/ha				
2.6	Mean yearly temperature, rainfall, humidity of the district	Temp		Rainfall (mm)	R1	R2
		Tmax	Tmin			
		29.5	19.58	3366	81.66	75.08
2.7	Maximum weather hazards/weather vagaries/ extreme weather conditions at your district	Pre Kharif	Kharif			Rabi
		Thunder-storm, squall	Very Heavy rainfall			Unseasonal rainfall, low temperature
2.8	Thrust area for agrometeorology	Better dissemination mechanism to approach maximum numbers of farmers with state level intervention. Research work on region specific disease-pest & weather inter action.				
2.9	Blocks under Rainfed situation	Maynaguri, Dhupguri, Nagrakata, Jalpaiguri Sadar,Malbazar				
2.10	Blocks under irrigated situation	Rajganj, Matiali				
2.11	Normal date of sowing of different crops and present season sowing dates of particular district or block: Jalpaiguri District	Aman Paddy	15th July-15th August			
		Jute	15th March to 15th May			
		Potato	Early: 15th October to 15th November Late:15th December to 15th January			
		Maize	Rabi: November-December Pre-Kharif: February -March			

3. Status of Agro-AWS and surface observatory:

3.1 Date of installation of AWS :NA(Civil work completed)

3.2 List of instruments presently available in working condition: NA

3.3 Instruments to be replaced/repaired indicating type of defect: NA

3.4 Please provide frequency of observation, exposure conditions of the site etc:NA

3.5 Number of years of data records available: NA

3.6 Whether the observatory is periodically inspected, maintained and calibrated by IMD (If yes, please indicate the latest data of inspection by the IMD) - NA

3.7 Status of surface observatory: NA

3.8 Status of Manual/ordinary rain gauge at KVK Campus: NA

3.9 Details of soil moisture observations taken, if any (please provide frequency and depths of observation etc.) –NA

4. Details of Agromet Advisory Services

4.1 Date of start of Agromet Advisory Bulletins: 8th April, 2019

4.2 No. of times the weather forecasts received during the year: 250

4.3 Date of receiving the forecasts from MC/RMC - Every day

4.4 If the time is not suitable then what will be the appropriate time to receive the Value-added forecast- 11AM.

4.5 No. of AAS bulletins prepared and disseminated to the farmers during the year : 104

4.6 No. of Special agromet advisory bulletins were prepared and disseminated to the farmers in the year and mention the details : 01

Sl. No.	Name of the extreme weather event	Date of the event	Date of Issue	Total no of Farmers received through whtsappgroup and other media(mkisan)	Total no of Extension officials of the district received
1.	Very severe cyclonic storm "AMPHAN"	20.05.2020	17.05.2020	8300	50

4.7 No. of AAS bulletins were prepared using Agromet-DSS in English and regional languages=:936

4.8 Status of district crop weather calendar: Not Available

4.9 List the modes of mass communication adopted for AAS dissemination:

Sl No.	Social Media	Description (Provide name of all block wise whtsapp groups and link/name of other social media)	Total beneficiaries
01	WhatsApp groups		
	a) For Farmers	1)Agrogati Farmers Company; 2)Ramshai Weather Group; 3)Das Para Farmers Club; 4)Duramari FC(KVK): 5)Gramin Krishi Mausam Sewa: 6)MaynaguriNabaday FPC: 7)Weather (Panchanan FPC): 8)Weather (Ankur FPC): 9)Weather (Ma Durga FPC): 10)Weather (Deepawali FPO): 11)Weather (Kiran Mala FPO): 12)Bagjan FPO (GKMS): 13)DAESI/JALKVK/I: 14)DAESI/JALKVK/II: 15)DAESI/JALKVK/III: 16)DAESI/JALKVK/IV: 17)DAESI/JALKVK/V: 18)DAESI/JALKVK/VI;	480
	b)For extension Officials	1)weather service_Rajganj; 2)weather service_Matiali; 3)weather service_Mal Bazar;	23
02	Face book /Twitter/Instagram		
Facebook		Jalpaigurikvk	1500
03	KVK Website	www.jalpaigurikvk.co.in	

Sl No.	Social Media	Description (Provide name of all block wise whtsapp groups and link/name of other social media)	Total beneficiaries
04	University/Institute website	http://wbuafscl.ac.in	
05	E-mail id(KVK/ DAMU)	jalpaigurikvk@gmail.com	
TOTAL REACH			**2003**

4.11 Agromet advisory coverage through newspaper or other media if any: Local YouTube channel ('Ramshai News") regularly disseminate Agromet weather forecast.

4.12 No of SMS sent through Kisan Portal and how many farmers were benefitted during the year:4 nos.

5. Details of extreme weather events in the year and its impact on Crop/livestock

Sl.no	Name of the Extreme weather event	Date of occurrence	Impact on crop/livestock
1	Unseasonal Heavy Rainfall	27.09.2020	Sprouting in rice crop in Jalpaiguri Sadar block
2	Very Heavy Rainfall	13.03.2020	Inundation of potato field and lodging of standing vegetable.

6. Farmers Awareness/Training/Meghdoot popularization activities or other outreach programme

6.1 Give list of farmers awareness programmes conducted like Krishi/Kishan Melas, training, participation in national day parades etc. and photograph of Farmer's Awareness Programme (no of Farmer attended).

SI. No	FAP/ Farmers meet /Meghdoot Popularization activities and Other Activities	Date	Location (Block/Village)	Farmers attended the Program
1	FAP and Meghdoot Popularization	17.09.2020	Vill-Salbari Block: Dhupguri	60
2	FAP and Meghdoot Popularization	25.09.2020	Vill-Ramshai Block: Maynaguri	20
3	FAP and Meghdoot Popularization	23.12.2020	Vill-Ramshai, Block: Maynaguri	28
4	FAP and Meghdoot Popularization	25.03.2021	Vill-Duramari, Block: Dhupguri	18
5	Farmers meet	03.02.2021	Vill-Daspara Block: Jalpaiguri Sadar	05
6	Farmers meet	28.01.2021	Block: Dhupguri	08
7	Farmers meet	14.01.2021	Vill-Kranti Block: Mal Bazar	04
Total				**143**







7. List of other organizations receiving Agromet advisories:

- DDA(Admin)-Jalpaiguri
- ADA- 7 blocks
- CPCRI-Mohitnagar
- ZARS-Mohitnagar
- District Horticulture Department-Jalpaiguri
- District Forest Officer-Jalpaiguri
- DDM NABARD-Jalpaiguri
- Irrigation Department-Jalpaiguri
- FPO/FPC

8. Economic impact of Agromet advisory services:

8.1 Impact of Medium range/extended range forecast in farming practices

a. Farmer Name: Bhakta Bhowmik

b. Address : Colony**, PO:** Panbari, **PS:** Maynaguri, **Dist:** Jalpaiguri, West Bengal.

c. Before Weather Forecast & AAS: He is a vegetable farmer & grows early vegetable to fetch good return. He used to apply fungicides & pesticides in his vegetable crop sunscientifically & injudiciously. Vegetables are very much weather sensitive especially in case of early vegetables.

d. After DAMU's intervention: Now he makes decision according to weather forecast & apply chemicals only when there is a congenial weather for disease infestation.

8.2 Impact of long-range forecast in farming practices

a. Farmer Name: Dipen Sarkar

b. Address: Vill-Kalamati.**P.O.:** Kajal dighi**, PS:** Maynaguri**, Dist:** Jalpaiguri, WB.

c. Before Weather Forecast &AAS: He is a small tea grower& irrigation is a major concern for the growers. They used to irrigate unnecessarily.

d. After DAMU's intervention:long term weather forecast helps them to schedule irrigation. As tea can withstand certain water stress, now they can wait for a while before making any decision of irrigation scheduling & save some money.

8.3 No of videos on AGRO met advisories developed and disseminated (Please provide details along with photo): 01

Sl No	Details of videos/link	Date of dissemination	No of farmers sent	Impact of video
01	https://youtu.be/bZrbpyEWaxk	04.01.2021	01	Awareness has been created about the project through Farmer-scientist Interaction.

8.4. Mobile APP based Agromet advisory services for farmers: Jalpaiguri KVK APP

9. Feedback from progressive farmers:

Sl no	Farmer name & Village	Block	Feedback
01	Dasarat Das Vill: Daspara	Jalpaiguri Sadar	Agromet advisory bulletin is very much useful for scheduling irrigation in winter vegetables as well as in fungicide application.
02	Sanjib Roy Vill-Khattimari	Dhupguri	Potato is a very weather sensitive crop. Timely application of plant protection chemicals and irrigation are important to get good yield. AAS bulletin fills the information gaps and with guidance from DAMU-Jalpaiguri they could take proper action.
03	Sukumar Choudhury Vill-Ramshai	Maynaguri	Being a Small tea grower, he finds rainfall forecast very much effective for scheduling irrigation and fertilizer application. For each saved irrigation operation, he could save money for cost of fuel and labour.

10. Details of HRD programmes undergone by DAMU personnel:

Sl. No.	Name of programme	Name of course	Name of DAMU personnel and designation	Date and Duration	Organized by
1	HRD	*"Integrated farming with special emphasis to Agri-Horticultural practices to augment the income from small farming"*	Mr.Amit Roy(SMS) Mr.Narenroy(AO)	24.02.2021-26.02.2021	WBUAFS
2	HRD	*"Integrated farming with special emphasis to Animal Husbandry practices to augment the income from small farming"*	Mr.Amit Roy(SMS) Mr.Narenroy(AO)	20.1.2021-22.01.2021	WBUAFS
3	HRD	*"Integrated farming with special emphasis to Aqua culture practices to augment the income from small farming"*	Mr.Narenroy(AO)	03.02.2021-05.02.2021	WBUAFS

DAMU Cuttack

1.1. Staff Position (as on 1st April, 2021)

Designation	Name of the incumbent	Qualification	Pay Scale with present basic	Date of joining
SMS (Agrometeorology)	Mr. Debasish Jena	M.Sc (Agrometeorology)	Level-10(56100)	1st February, 2019
Agromet Observer (AO)	Mr. Satyaranjan Rout	Diploma in Agriculture	Level-3(21700)	1st February, 2019

1.2 Details of Orientation/Review/Expert Panel meeting conducted during the year

Sl. No.	Date	Number of Participants	Salient Recommendations	Action taken
1.	17/12/2020 (Review meeting)	All SMS of KVK, Cuttack and Head, SSD,ICAR-NRRI and Nodal officer of KVK Cuttack	To increase the outreach of DAMU activities and agromet advisory dissemination through social media like Whtsapp and other Apps	Total 23 no of block wise Whtsapp group are formed for effective dissemination

2. District level data on agriculture, livestock and farming situation and Agro climatic data

<table>
<tr><th>Sl. no.</th><th>Item</th><th>Information</th></tr>
<tr><td>2.1</td><td>Major Farming system/ enterprise</td><td>Integrated farming system, Rice cultivation in Kharif season followed by Pulse and vegetable cultivation in fallow lands during Rabi. Protected cultivation of high value vegetables Dairy, Backyard poultry, goat rearing, Pond/canal based /ring well based Irrigation system followed during summer season.</td></tr>
<tr><td>2.2</td><td>Agro-climatic Zone</td><td>1. East and South Eastern CoastalPlain Zone
2. Mid Central Table LandZone</td></tr>
<tr><td>2.3</td><td>Agro ecological situation</td><td>Costal irrigatedalluvium
Rainfedalluvium
Rainfedlaterite.
River valley alluvium mediumrainfall.
Laterite textured mediumrainfall</td></tr>
<tr><td>2.4</td><td>Soil type</td><td>Acidic, lateritic, alluvial, red and mixed red</td></tr>
<tr><td>2.5</td><td>Productivity of major 2-3 crops under cereals, pulses, oilseeds, vegetables, fruits and others</td><td>
<table>
<tr><th>Crop</th><th>Kharif(Kg/ha)</th><th>Rabi(Kg/ha)</th></tr>
<tr><td>Paddy</td><td>1490</td><td>2147</td></tr>
<tr><td>Blackgram</td><td>430</td><td>525</td></tr>
<tr><td>Greengram</td><td>-</td><td>485</td></tr>
<tr><td>Groundnut</td><td>1465</td><td>1786</td></tr>
<tr><td>Sugarcane</td><td>-</td><td>55655</td></tr>
<tr><td>Mango</td><td colspan="2">4.15(t/ha) (Year round)</td></tr>
<tr><td>Banana</td><td colspan="2">13.83(t/ha) (Year round)</td></tr>
<tr><td>Potato</td><td>-</td><td>11798</td></tr>
<tr><td>Onion</td><td>-</td><td>7217</td></tr>
</table>
</td></tr>
<tr><td>2.6</td><td>Mean yearly temperature, rainfall, humidity of the district</td><td>
<table>
<tr><td>Annual Rainfall</td><td>1577 mm</td></tr>
<tr><td>Temperature (Max. & Min.)</td><td>39°C and 1.5°C</td></tr>
<tr><td>Climate</td><td>Hot, humid and sub-humid</td></tr>
</table>
</td></tr>
<tr><td>2.7</td><td>Maximum weather hazards/weather vagaries/extreme weather conditions at your district</td><td>Cyclones, Thunderstorm, Hail storm, Heat and cold wave, Flood</td></tr>
<tr><td>2.8</td><td>Thrust area for agrometeorology</td><td>Major crop loss due to extreme weatherevents.
No weather advisory serviceto farmers.
Water stress and heat wave in winter and pre-monsoonseason.
Water logging and flooding in low lyingarea.
More rice-fallow land due toerratic post monsoonrainfall.
Major incidence of disease andpest due to extreme weatherconditions.
Unavailability of climatesmart technology tofarmers.</td></tr>
<tr><td>2.9</td><td>Blocks under Rainfed situation</td><td>04(Athagad, Badamba, Narasinghpur, Tigiria)</td></tr>
<tr><td>2.10</td><td>Blocks under irrigated situation</td><td>10 (Banki, Banki-dampada, Baranga, Cuttacksadar, Kantapada, Mahanga, Niali, Nischintakoili, Salepur, Tangi-choudwar)</td></tr>
</table>

Sl. no.	Item	Information
2.11	Normal date of sowing of different crops and present season sowing dates of particular district or block	

Sowing window for 5 major field crops (start and end of normal sowing period)	Paddy	Blackgram	Greengram	Groundnut	Sugarcane
Kharif - Rainfed	May - June	June - July	-	June - July	-
Kharif - Irrigated	June - July	June - July	-	June - July	-
Rabi - Rainfed		Dec - Dec	Nov - Dec	Nov - Dec	-
Rabi - Irrigated	Dec - Jan	Jan - Jan	Nov - Nov	Nov - Nov	Dec - Feb

3. Status of Agro-AWS and surface observatory:

3.1 Date of installation of AWS : --**10th April, 2021**

3.2 List of instruments presently available in working condition: -- **All sensors are in working condition**

3.3 Instruments to be replaced/repaired indicating type of defect: --No

3.4 Please provide frequency of observation, exposure conditions of the site etc**. – Weekly Twice**

3.5 Number of years of data records available: --**No data records are available**

3.6 Whether the observatory is periodically inspected, maintained and calibrated by IMD (If yes, please indicate the latest data of inspection by the IMD) --- **10th April, 2021**

3.7 Status of surface observatory---**Still not established**

3.8 Status of Manual/ordinary rain gauge at KVK Campus---**One Manual/ordinary rain gauge was installed by DAMU, KVK Cuttack for daily basis recording of rainfall of that station.**

3.9 Details of soil moisture observations taken, if any (please provide frequency and depths of observation etc.) **– Still No observations are taken by DAMU Cuttack**

4. Details of Agromet Advisory Services

4.1 Date of start of Agromet Advisory Bulletins: **7th July, 2019**

4.2 No. of times the weather forecasts received during the year: **104**

4.3 Date of receiving the forecasts from MC/RMC- **from 4th September, 2019**

4.4 If the time is not suitable then what will be the appropriate time to receive the Value added forecast- **In between 12-1PM is appropriate**

4.5 No. of AAS bulletins prepared and disseminated to the farmers during the year: **104(English) and 74(Odia) bulletins**

4.6 No. of Special agromet advisory bulletins were prepared and disseminated to the farmers in the year and mention the details:

Sl. No.	Name of the extreme weather event	Date of the event	Date of Issue	Total no of Farmers received through whtsapp group and other media	Total no of Extension officials of the district received
1.	Pre monsoon Thundershower	23 April2020	22 April 2020	1214	224
2.	Super cyclone Amphan	19-20 May,2020	17,18 May 2020	1345	230
3.	Heavy rainfall due to LP	20-21 August 2020	19 August 2020	1368	236
4.	Flood and Water logging condition	29-30 August 2020	29 August 2020	1432	236
5.	Cold wave	20-22 December 2020	20 December 2020	1432	236

Sl. No.	Name of the extreme weather event	Date of the event	Date of Issue	Total no of Farmers received through whtsapp group and other media	Total no of Extension officials of the district received
6.	Cold wave	1-2 February, 2021	01 February 2021	1587	236
7	Heat wave	31 March-3April, 2021	30 March 2021	1587	236

4.7 No. of AAS bulletins were prepared using Agromet-DSS in English and regional languages: **104**

4.8 Status of district crop weather calendar—Data regarding crop and disease/pest were provided to AAS unit, IMD but data related to soil and historical weather are not available with us.

4.9 List the modes of mass communication adopted for AAS dissemination:

Sl No.	Social Media	Description(Provide name of all block wise whtsapp groups and link/nameofother socialmedia)	Total beneficiaries
01	Whats app groups		
	a)For Farmers	1.Krushipanipaga Cuttack jilla;	228
		2.Krushipanipaga Cuttack jilla-2;	11
		3.Krushipanipaga Athagad;	55
		4.Krushipanipaga Badamba;	113
		5.Achinababa FPO;	46
		6.Vegetable producer group;	21
		7.Krushipanipaga Banki;	169
		8.Krushipanipaga Banki-Dampada;	63
		9.Krushipanipaga Baranga;	62
		10.Krushipanipaga Cuttacksadr;	59
		11.Krushipanipaga Mahanga;	103
		12.Krushipanipaga Kantapada;	69
		13.Krushipanipaga Narsinghpur;	43
		14.Krushipanipaga Nischintakoili;	73
		15.Krushipanipaga Niali;	84
		16.Krushipanipaga Narsinghpur;	43
		17.Krushipanipaga Salepur;	79
		18.Krushipanipaga Tangi;	160
		19.Krushipanipaga Tigirea;	54
		20. Katikata Farmers group;	73
	b)For extension Officials	1.DAMUExpert panel;	18
		2.DAMUCuttack Dissemination;	79
		3.BTM/ATM@Weather@Agril;	57
		4.CTC#AO/VAW Weather Agril;	58
		5.DAMU CTC OLM;	19
02	Face book /Twitter/Instagram		
	a) Face book	DAMU Cuttack	Mass
	b) Twitter	District Agromet Unit, KVK Cuttack	Mass
03	KVK Website	Krishi Vigyan Kendra Cuttack	Mass

Sl No.	Social Media	Description(Provide name of all block wise whtsapp groups and link/nameofother socialmedia)	Total beneficiaries
04	University/Institute website	National Rice Research Institute Cuttack	Mass
05	E-mail id (KVK/DAMU)	damukvkcuttack@gmail.com	171
TOTAL REACH			**2010**

4.10 Details of broadcast on AIR and TV (Name of station broadcast frequency, time slot provided etc.) (Audio tape of the recent broadcast):

A. Sri D. Jena delivered a radio talk on 'Post cyclone farm management after super cyclone Amphan' broadcasted by AIR Cuttack in Krishi Sansar Programme on 20 May 2020.

B. Sri D. Jena delivered a radio talk on 'Monsoon 2020 Forecast and kharif Planning and Role of DAMUs in KVKs' broadcasted by AIR Cuttack in Krishi Sansar Programme on 12 June 2020.

4.12 No of SMS sent through Kisan Portal and how many farmers were benefitted during the year: One Cyclone warning SMS before 5days of Super cyclone "Amphan" was sent to One lakh Twenty thousand farmers both in English and Regional language.

5. Verification of Block or district level medium range forecast

Season: Pre-monsoon / Monsoon / Post-monsoon / winter

5.1 Quantitative Verification: Quantitative day wise sum of correct & usable % of *nwpmodelr / ff / cagainst observed r/f* for blocks and *value added r/f f/c against observed r/f* for district

	Day 1	Day 2	Day 3	Day 4	Day 5
Athagad	14.3	22.9	22.9	28.6	28.6
Badamba	31.4	25.7	20.0	22.9	17.1
Banki	17.1	31.4	34.3	45.7	22.9
Baranga	22.9	17.1	25.7	25.7	22.9
Cuttack Sadar	34.3	31.4	28.6	25.7	25.7
Kantapad	31.4	25.7	31.4	22.9	22.9
Mahanga	22.9	34.3	14.3	34.3	22.9
Narasinghpur	28.6	31.4	31.4	25.7	17.1
Niali	22.9	28.6	22.9	25.7	22.9
Nischintakoili	31.4	28.6	20.0	34.3	25.7
Salepur	31.4	40.0	28.6	28.6	25.7
Tangi Choudwar	34.3	20.0	31.4	28.6	25.7
Tigiria	17.1	25.7	31.4	34.3	34.3
Cuttack district	28.6	34.3	28.6	17.1	20.0

C - Correct, U - Usable and NU-Not usable

5.2 Rainfall QualitativeVerification

Qualitative verification of South-West Monsoon rainfall (2020)

- Forecast accuracy (ACC) or Ratio score or Hitscore

	Day 1	Day 2	Day 3	Day 4	Day 5
Athagad	0.49	0.40	0.43	0.49	0.46
Badamba	0.66	0.46	0.40	0.49	0.54
Banki	0.46	0.49	0.51	0.57	0.46

	Day 1	Day 2	Day 3	Day 4	Day 5
Baranga	0.43	0.37	0.40	0.46	0.43
Cuttack Sadar	0.60	0.43	0.51	0.43	0.57
Kantapada	0.54	0.40	0.51	0.31	0.49
Mahanga	0.40	0.57	0.43	0.46	0.54
Narasinghpur	0.49	0.54	0.57	0.46	0.49
Niali	0.43	0.46	0.57	0.46	0.49
Nischintakoili	0.46	0.40	0.43	0.34	0.46
Salepur	0.54	0.57	0.43	0.49	0.54
Tangi Choudwar	0.51	0.49	0.60	0.49	0.57
Tigiria	0.49	0.40	0.54	0.51	0.60
Cuttack district	0.80	0.80	0.66	0.69	0.77

◈ Hanssen and Kuipers scores or True skill score (HK score)

	Day 1	Day 2	Day 3	Day 4	Day 5
Athagad	-0.05	0.05	0.02	0.06	0.07
Badamba	0.19	-0.02	0.04	-0.10	0.03
Banki	0.00	0.28	0.14	0.17	0.09
Baranga	0.02	-0.08	0.13	0.01	0.14
Cuttack Sadar	0.23	-0.02	0.20	-0.08	0.20
Kantapada	0.22	-0.08	0.18	-0.29	0.10
Mahanga	-0.16	0.24	0.06	0.01	0.24
Narasinghpur	0.08	0.20	0.16	-0.13	0.03
Niali	0.09	0.18	0.32	0.01	0.20
Nischintakoili	0.11	0.05	0.09	-0.22	0.13
Salepur	0.17	0.19	0.09	-0.02	0.10
Tangi Choudwar	0.14	0.05	0.28	0.02	0.26
Tigiria	-0.14	0.08	0.22	0.07	0.28
Cuttack district	0.00	0.06	0.20	-0.08	-0.07

◈ Heidke skill score(HSS)

	Day 1	Day 2	Day 3	Day 4	Day 5
Athagad	-0.05	0.03	0.01	0.05	0.06
Badamba	0.21	-0.02	0.03	-0.11	0.03
Banki	0.00	0.18	0.11	0.16	0.07
Baranga	0.01	-0.06	0.07	0.01	0.09
Cuttack Sadar	0.22	-0.02	0.16	-0.08	0.18
Kantapada	0.18	-0.07	0.14	-0.19	0.08
Mahanga	-0.16	0.21	0.05	0.01	0.20
Narasinghpur	0.07	0.18	0.15	-0.13	0.03
Niali	0.05	0.12	0.26	0.01	0.14

	Day 1	Day 2	Day 3	Day 4	Day 5
Nischintakoili	0.08	0.03	0.07	-0.16	0.10
Salepur	0.15	0.18	0.07	-0.02	0.10
Tangi Choudwar	0.12	0.05	0.26	0.02	0.23
Tigiria	-0.15	0.05	0.18	0.06	0.26
Cuttack district	0.00	0.08	0.22	-0.10	-0.09

◈ Probability of detection(POD)

	Day 1	Day 2	Day 3	Day 4	Day 5
Athagad	0.78	0.92	0.73	0.69	0.85
Badamba	0.90	0.88	0.80	0.70	0.84
Banki	0.80	1.00	0.73	0.67	0.83
Baranga	0.73	0.75	0.88	0.69	0.90
Cuttack Sadar	0.81	0.79	0.92	0.67	0.87
Kantapada	0.83	0.69	0.83	0.44	0.86
Mahanga	0.63	0.86	0.92	0.69	1.00
Narasinghpur	0.93	1.00	0.82	0.68	0.88
Niali	0.78	0.90	1.00	0.64	0.91
Nischintakoili	0.82	0.78	0.92	0.50	0.92
Salepur	0.87	0.88	0.92	0.59	0.88
Tangi Choudwar	0.86	0.80	0.93	0.67	0.93
Tigiria	0.71	0.91	0.83	0.67	0.93
Cuttack district	1.00	0.96	1.00	0.92	0.93

◈ False alarm Ratio(FAR)

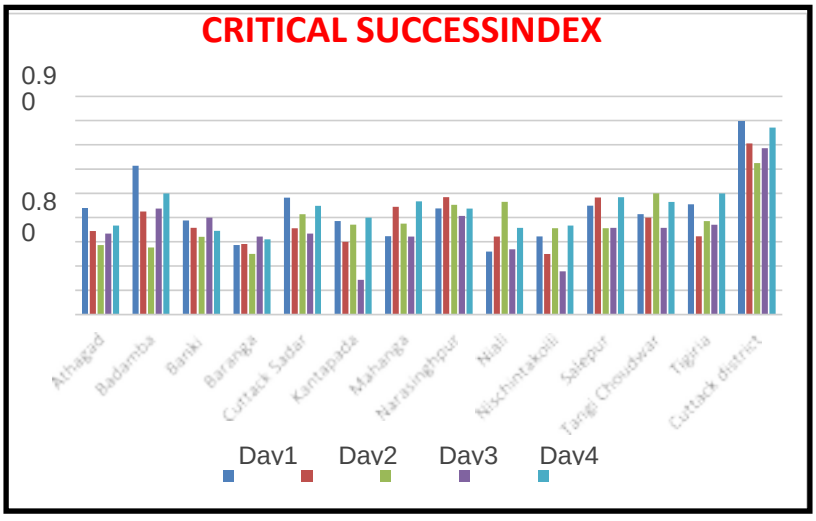
	Day 1	Day 2	Day 3	Day 4	Day 5
Athagad	0.50	0.65	0.68	0.61	0.61
Badamba	0.34	0.55	0.70	0.46	0.45
Banki	0.57	0.64	0.64	0.50	0.63
Baranga	0.68	0.68	0.74	0.63	0.68
Cuttack Sadar	0.46	0.61	0.57	0.60	0.52
Kantapada	0.58	0.65	0.60	0.83	0.57
Mahanga	0.60	0.52	0.61	0.63	0.53
Narasinghpur	0.55	0.52	0.46	0.50	0.53
Niali	0.72	0.67	0.54	0.68	0.63
Nischintakoili	0.65	0.73	0.63	0.78	0.62
Salepur	0.52	0.48	0.63	0.52	0.48
Tangi Choudwar	0.56	0.56	0.48	0.57	0.52
Tigiria	0.44	0.67	0.58	0.55	0.48
Cuttack district	0.20	0.27	0.38	0.27	0.18

◈ Critical success index (CSI)

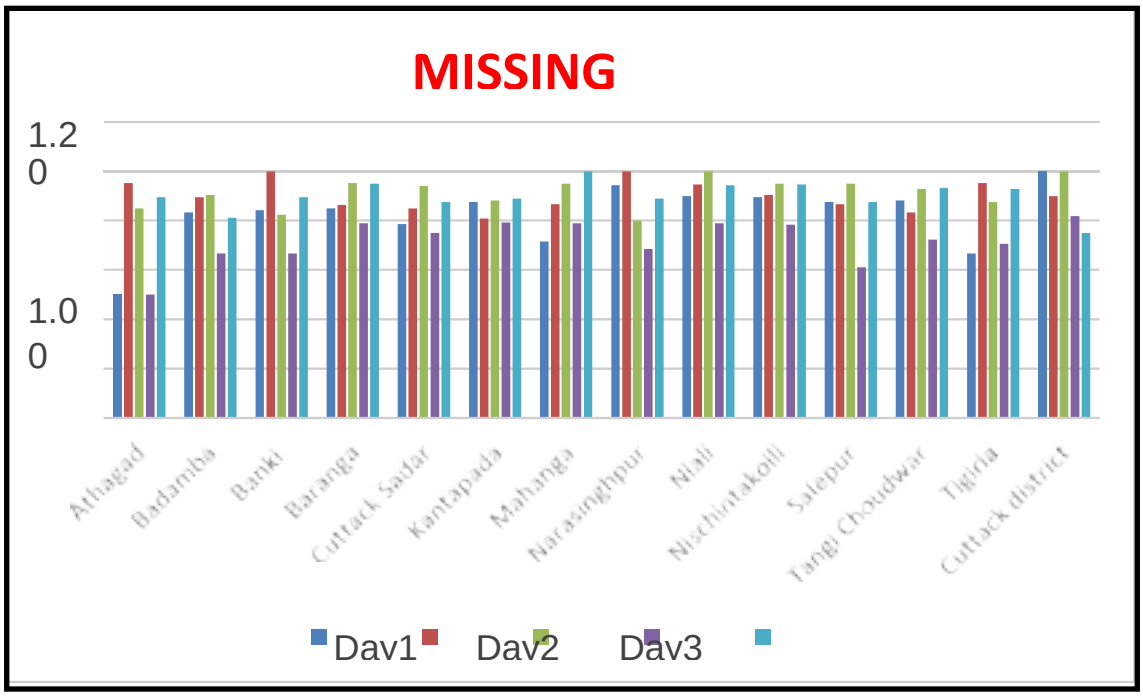
	Day 1	Day 2	Day 3	Day 4	Day 5
Athagad	0.44	0.34	0.29	0.33	0.37
Badamba	0.61	0.42	0.28	0.44	0.50
Banki	0.39	0.36	0.32	0.40	0.34
Baranga	0.29	0.29	0.25	0.32	0.31
Cuttack Sadar	0.48	0.35	0.41	0.33	0.45
Kantapada	0.38	0.30	0.37	0.14	0.40
Mahanga	0.32	0.44	0.38	0.32	0.47
Narasinghpur	0.44	0.48	0.45	0.41	0.44
Niali	0.26	0.32	0.46	0.27	0.36
Nischintakoili	0.32	0.25	0.35	0.18	0.37
Salepur	0.45	0.48	0.35	0.36	0.48
Tangi Choudwar	0.41	0.40	0.50	0.36	0.46
Tigiria	0.45	0.32	0.38	0.37	0.50
Cuttack district	0.80	0.71	0.63	0.69	0.77

◈ Missing Rate (MR)

	Day 1	Day 2	Day 3	Day 4	Day 5
Athagad	0.50	0.95	0.85	0.50	0.89
Badamba	0.83	0.89	0.90	0.67	0.81
Banki	0.84	1.00	0.82	0.67	0.89
Baranga	0.85	0.86	0.95	0.79	0.95
Cuttack Sadar	0.79	0.85	0.94	0.75	0.88
Kantapada	0.88	0.81	0.88	0.79	0.89
Mahanga	0.71	0.87	0.95	0.79	1.00
Narasinghpur	0.94	1.00	0.80	0.68	0.89
Niali	0.90	0.95	1.00	0.79	0.94
Nischintakoili	0.89	0.90	0.95	0.78	0.95



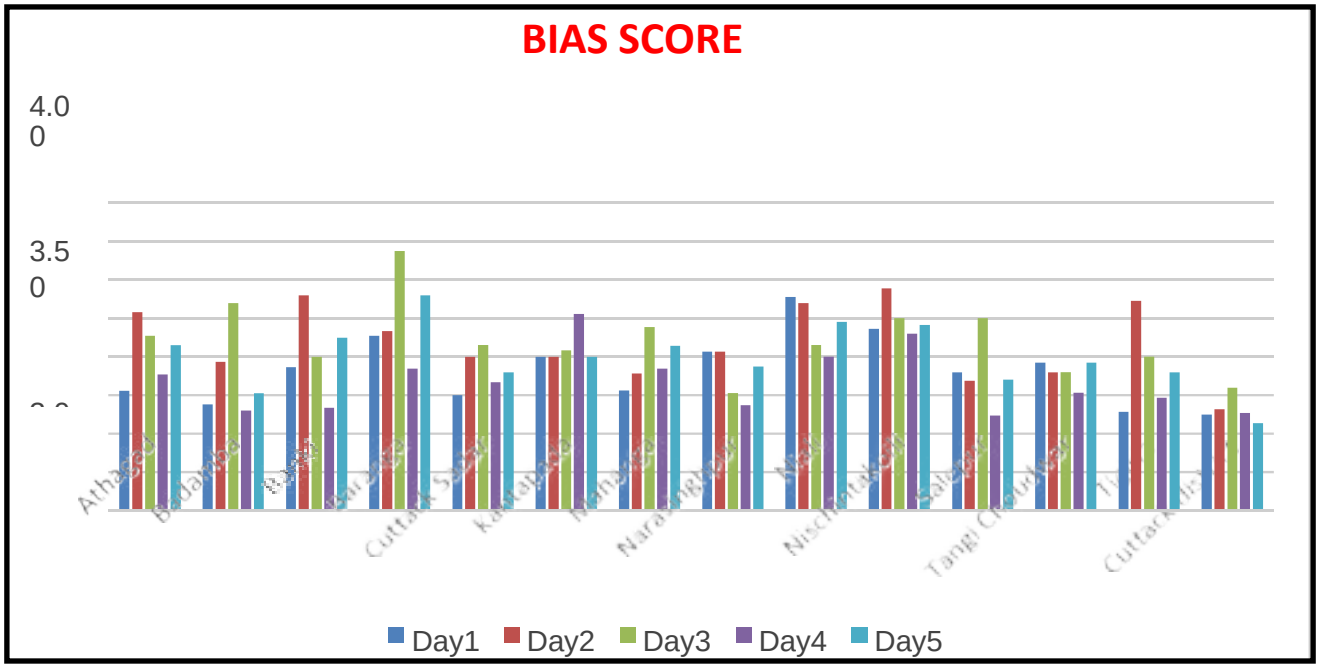
	Day 1	Day 2	Day 3	Day 4	Day 5
Salepur	0.88	0.87	0.95	0.61	0.88
Tangi Choudwar	0.88	0.83	0.93	0.72	0.93
Tigiria	0.67	0.95	0.88	0.71	0.93
Cuttack district	1.00	0.90	1.00	0.82	0.75



◈ BIAS score

	Day 1	Day 2	Day 3	Day 4	Day 5
Athagad	1.56	2.58	2.27	1.77	2.15
Badamba	1.38	1.94	2.70	1.30	1.53
Banki	1.87	2.80	2.00	1.33	2.25
Baranga	2.27	2.33	3.38	1.85	2.80
Cuttack Sadar	1.50	2.00	2.15	1.67	1.80
Kantapada	2.00	2.00	2.08	2.56	2.00
Mahanga	1.56	1.79	2.38	1.85	2.14
Narasinghpur	2.07	2.07	1.53	1.37	1.88
Niali	2.78	2.70	2.15	2.00	2.45
Nischintakoili	2.36	2.89	2.50	2.30	2.42
Salepur	1.80	1.69	2.50	1.24	1.71
Tangi Choudwar	1.93	1.80	1.80	1.53	1.93
Tigiria	1.29	2.73	2.00	1.47	1.80
Cuttack district	1.25	1.32	1.60	1.27	1.14

N:B- All the rainfall forecast data used for blocks were the NWP model outputs and district was value added forecastprovided by MC Bhubaneswar. The realized data for the district was day wise average value of all blocks.



6. Details of extreme weather events in the year and its impact on Crop/livestock

Sl. No.	Name of the Extreme weather event	Date of occurrence	Impact on crop/ livestock
1	Pre monsoon Thundershower	23 April 2020	
2	Super cyclone Amphan	19-20 May, 2020	Minor loss in pulse yield
3	Heavy rainfall due to LP	20-21 August 2020	Minor loss in rice dueto sheath blight and bakane
4	Flood and Water logging condition	29-30 August 2020	Minor loss in rice due to sheath blight andbakane
5	Cold wave	20-22 December, 2020	
6	Cold wave	1-2 February, 2021	
7	Heat wave	31 March-3 April 2021	Minor loss in late sown pulses production due to less pod development in flowering stage and minor loss in rabi groundnut in rainfed area of cuttack due to scanty rainfall andheat wave

7. Farmers Awareness/Training/Meghdoot popularization activities or other outreach programme

7.1 Give list of farmers awareness programmes conducted like Krishi/Kishan Melas, training, participation in national day parades etc. and photograph of Farmer's Awareness Programme (no of Farmer attended).

SI. No.	FAP/Farmers meet / Meghdoot Popularization activities and OtherActivities	Date	Location (Block/Village)	Farmers attended the Program
1	FAP on GKMS	10.12.2020	Gopinathpur, Badamba	50
2	FAP on GKMS	16.12.2020	Dhanaman dal, Kantapada	60
3	FAP on GKMS	20.01.2021	Ghasiput, BankiDamapara	50
4	FAP on GKMS for Krishimitra's	07.01.2021	KVKCampus	30

SI. No.	FAP/Farmers meet / Meghdoot Popularization activities and OtherActivities	Date	Location (Block/Village)	Farmers attended the Program
5	FAP on GKMS	27.01.2021	KVKCampus	40
6	FAP on GKMS	28.01.2021	Gujarpur, Salepur	50
7	FAP on GKMS in collaboration with State Govt department for extensionofficials	04.03.2021	Banki	70
Total				**350**

7.2 Capacity building/Seminar conducted

SI. No.	Thematic area	Date	No of Courses	No of beneficiaries
1	Impact Based Agromet Advisory Service for Village agriculture workers/agri. Overseer of Cuttack district	6th and 7thAugust, 2020	1	65
2	Block Level Weather Forecast Based Agromet Advisory Service System for BTMs and ATMs of ATMA of Cuttack district	26 & 27August, 2020	1	56
3	Weatherresilience agricultural technologiesforfarmers of Cuttack district by of DAMU, KVK Cuttack	11 & 12 November, 2020	1	56
Total				**177**

8. List of other organizations receiving Agromet advisories:

- OUAT
- ICAR-NRRI, Cuttack
- MC-BBSR
- IMD-PUNE
- NCMRWF
- District agriculture, Horticulture, Agricultural engineering and Animal husbandry departments
- AIR CUTTACK
- OLM Officials
- NABARD NGO
- District administration Officials (Collector & Sub-collector)
- MSSRF NGO(VKC)

9. Economic impact of Agromet advisory services:

9.1 Impact of Nowcast in farming practices

a. As per the feedback collected from a farmer of Cuttack district from Nischintakoili block named Mr Ranjan kumar Das has saved 18 qrice by safe storage before thunder shower by following Nowcast warning on 27/03/2021.By this he has saved around 20,000 rupees as per the cost of harvestedRice.

9.2 Impact of Medium range/extended range forecast in farming practices

a. A farmer named Mr. Baidhar Pradhan, Village-Nuabandha, Badamba, Dist-Cuttack, Odisha, ph. no-9938509086 has cultivated 2 acre Groundnut in last year. His input cost in fertilizer, pesticide, irrigation was minimized 3000@ 2times=Rs. 6,000/, 4000@ 3 times = Rs.12000/-, 2000@ 4 times= Rs.8000/- in groundnut respectively due to proactive farm action as per the forecast of rain. Also, 25q groundnut (Rs. 100,000) is pre harvested as per forecast of thunder shower in pre monsoon season.

b. A farmer named Mr. Pramod Kumar Subudhi, Village- Gopinathpur, Badamba, Dist- Cuttack, Odisha, ph. no-9337887069 has cultivated6 acre Sugarcane and 1 acre rice in last year. His input cost in irrigation was minimized@ Rs. 30,000/- due to timely water saving practices based on forecast of rain which was Rs.6000 for 6 ac @5times for sugarcane. Preharvest of 10q rice was done as per forecast ofrain.

c. A farmer named Mr. Sangram Pani, Village- Gopinathpur, Salepur, Dist-Cuttack, Odisha, ph. no-9438097968 has cultivated15-16 Guntha Pradhan rice variety in last year. His input cost in human labourandfertliser was minimized@ Rs.8000/- due to timely human labour operation at transplanting of rice based on forecast of rain in kharif season. He saved his all rice seedlings which may be got damaged if they were transplanted in waterlogged lowland conditions due to heavy rain in August, 2020.

d. A farmer named Ratnakar lenka of Cuttack sadar block of Cuttack district, phno- 9078677204, was benefited by following block level weather forecast based agromet advisory service system. He has sown his 2ac pumpkin in optimum time by shifting the sowing window as there was rainfall forecasted which may be damaged if that were sown before rainfall.He has saved around Rs. 2000-3000 in irrigation @3-4 times in 1.5ac vegetables field by following block level medium range rainfall forecast. Also He has preharvested his sweet corn from 8guntha field before rainfall (last week premonsoon thundershower) which is of worth cost around Rs.20,000 rupees. Hope all farmers of Cuttack may follow the block level weather forecast based agromet advisory service system by IMD and ICAR.

e. Another progressive farmer from Badambablock named Mr Baikuntha Biswal who has preharvested and made safe storage of 80kg Black gram and 50kg greengram (Of total cost around 10,000 rupees) before thundershower by following the mediumrange forecast based agromet advisory provided by DAMU, KVK CUTTACK.

f. One highly progressive farmer named Pradipta sahoo from sapanpur village of Salepur block culitivated only Lalat as summer and kharif rice in his 32ac land as per the agromet advisory services provided by DAMU, KVK CUTTACK. He welly managed his irrigation as well as fertliser, 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.

9.3 No of videos on AGRO met advisories developed and disseminated

Sl No	Details of videos/link	Date of dissemination	Noof farmers sent	Impact of video
01	https://youtu.be/j36tsZ0fppA	January 27, 2021	1766	Large number of farmers started following of block level AgrometAdvisoryService System by DAMU KVK Cuttack.

Sl No	Details of videos/link	Date of dissemination	Noof farmers sent	Impact of video
02	https://youtu.be/2xWoSze-OO-k	October 9,2020	1453	Farmers managed their farm operation (Fertilizer, Pesticide, Irrigation input cost management) in different phase of crop growth.

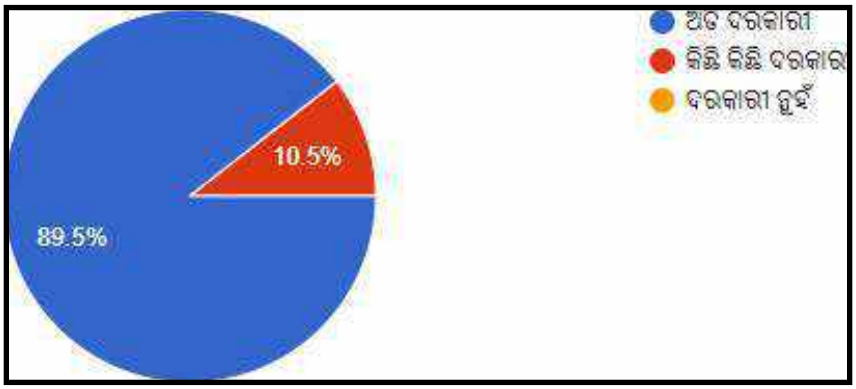
9.4. Mobile APP based Agromet advisory services for farmers:

Meghdoot app is updated in each Tuesday and Friday by AAS division, IMD, Delhi for Cuttack district through linkage with Agro DSS in which the advisory was provided by DAMU KVK Cuttack.

10. Feedback from progressive farmers:

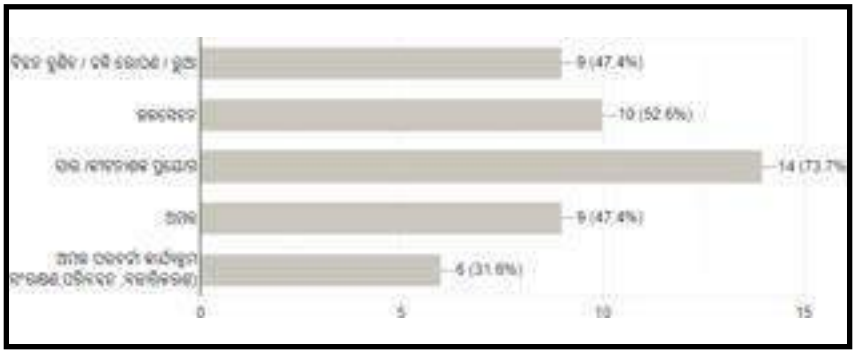
We have sent a Google sheet feedback form (link- https://forms.gle/QsRehqZmUrkKCoB48) in odia language to all the progressive farmers of Cuttack district. Around 123 progressive farmers responded. As per the response some of the Pie charts are given below.

1. How much necessary is the Agromet Advisory bulletin?



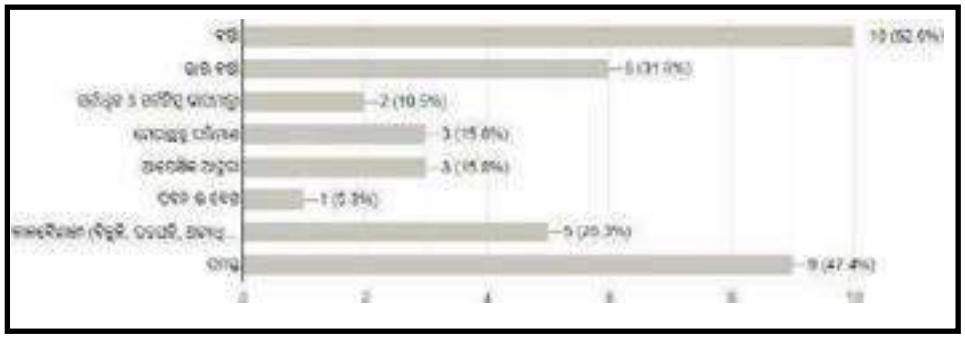
89.5% responded highly necessary and 10.5% responded moderately necessary.

2. Farm operation for which weather forecast/ agromet advisories are used?



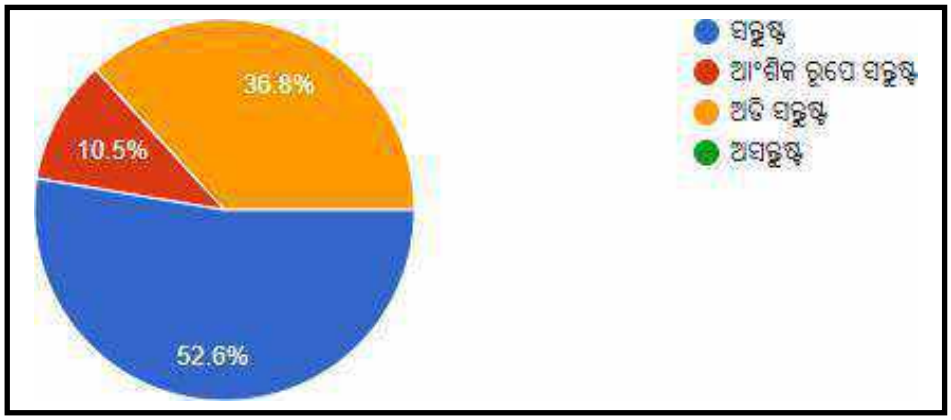
73% of Farmers responded the Agromet Advisory are used for management of Pesticide or Fertilizer followed by Irrigation management (52%).

3. Weather event most important for your farm operation?



52.6% of Farmers responded Rainfall forecast is more important in farm operation followed by all other parameters (47.4% of farmers responded).

4. Your satisfaction by the agromet advisory services?

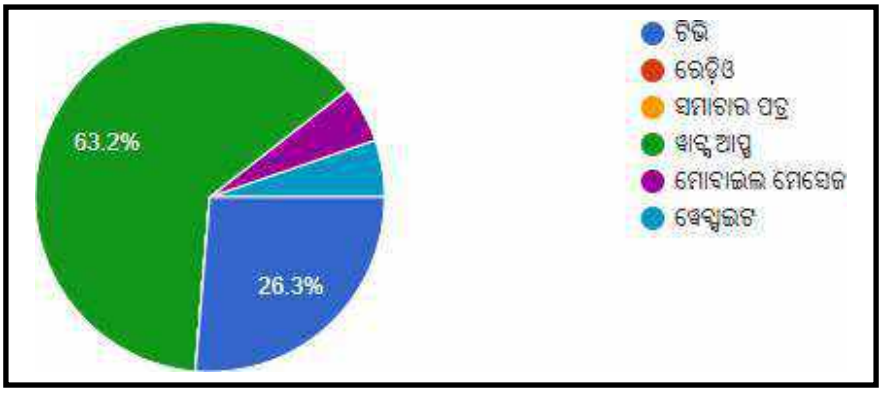


52.6% of Farmers responded Satisfied followed by 36.8% responded Highly satisfied and 10.5% responded Partially Satisfied and no one responded Unsatisfied .

5. Which type of weather forecast is more useful for farm operation?

63.2% of Farmers responded Medium range forecast is more useful in Farm operation followed by 31.6% of farmers responded Now cast.

6. Most suited and preferred medium of weather forecast based agromet advisory?



63.2% of Farmers preferred whats app is the best medium for weather forecast based Agromet Advisory.

Feedback from individual farmers

Sl no	Farmer name	Village & Block	Feedback
01	Chaitanya Muduli (9777108417)	Mangarajpur, Badamba	According to feedback collected from a progressive farmer of Cuttack district the forecast data provided by DAMU, KVK, Cuttack was more accurate in district level which was beneficial for them during different extreme weather conditions but the accuracy of block level forecast was less and it's highly deviated from the realized rainfall during remonsoon season.
02	Dharanidhar Nayak (8895197533)	Sundarda, Niali	The crop loss is minimized during the extreme conditions mainly during thundershower and cyclones and we are able to minimise the disease and pest in crops due to the weather based pest management advisory as well as weare able to make feed and shelter management of our cow and buffalos.
03	Sudhansu Sekhar Nayak (9438651824)	Sankilo, Nischintakoili	Mobile SMS and voice message should be disseminated directly to the farmers as soon as possible as maximum farmers have no smart mobiles.
04	Abinash Balaban-taRay (9090816330)	Mulabasanta, Mahanga	Advisory in 'Meghdoot' should be available block-wise instead of district-wise. I am able to minimise my input cost mainly in irrigation, pesticide/fertliser and also human labour in rabi pulse cultivation.
05	Iswara Chandra Swain (9439373558)	Haritha, Badamba	I am able to cultivate unseasonal vegetables like cauliflower in fluctuated weather conditions by following block level Agromet Advisory bulletins.
06	Asish Ranjan Bhuyan (9937724164)	Laptuan, Mahanga	Installation of one ARG in each block of Cuttack district for recording of realized rainfall of each block under a supervision of one progressive farmer of the specific block.

11. Other Publications

Nature of Extension Activity	No. of activities	Title
Extension/Technical Literature	1000	Weather based disease and pest of rice crop and theirmanagement

12. Review Workshop

A zonal level review workshop was organized by ATARI, Kolkata held on 21 July, 2020 in virtual mode for all DAMUs of Odisha and West Bengal under Zone-V, Kolkata. DAMU, Cuttack presented its salient activities during the reporting period.

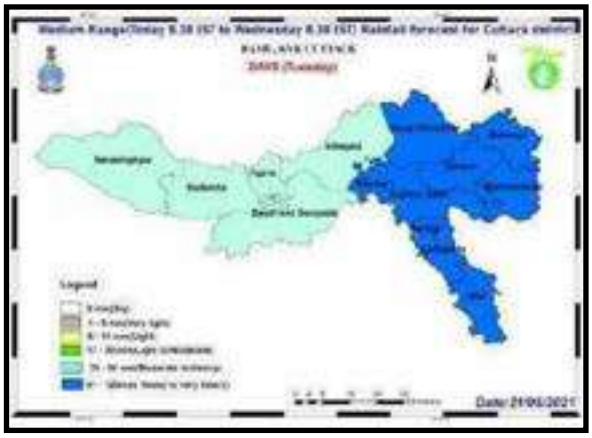
13. Details of HRD programmes undergone by DAMU personnel

Sl. No.	Name of programme	Name of course	Name of DAMU personnel and designation	Date and Duration	Organized by
1	3 month Diploma course	Certificate course on "Indian Monsoon, Weather Forecasting and Agromet Advisory Services"	Sri Debasish Jena	25th October 2020 to 24th January 2021	GBPUA&T Pantnagar
2	Virtual National Symposium	Virtual National Symposium on Weather and Climate Services over Mountainous Regions.	Sri Debasish Jena	14th to 17th December, 2020	Indian Meteorological Society
3	International Webinar	Building Climate Resilienceinin Agriculture through Agrometeorology andother Technological Interventions	Sri Debasish Jena	15 – 17 December, 2020	Dr. Rajendra Prasad Central Agricultural University, Pusa
4	Online Training	Crop Weather Modeling: Tools for Climate Smart Agriculture	Sri Debasish Jena	21-25 December, 2020	CAAST- CSAWM, MPKV Rahuri
5	Online Training	Accounting for Climate Risk in Crop Yield Modeling	Sri Debasish Jena	7th -11th December, 2020	Centre for Agricultural Market Intelligence, AAU, Anand
6	1 Month GIS Training Program	(Geographic Information System)	Sri Debasish Jena	1st October 2020 - 1st November 2020	GIS VISION INDIA
7	International Web Conference	Soil Health Management for Sustainable Crop Productivity	Sri Debasish Jena	7th to 8th September, 2020	Dept. of Soil Science & Agricultural Chemistry, Mandan Bharti Agriculture College, Agwanpur, Saharsa, Bihar
8	A short term 10-days online training course	Familiarization and Data analysis using R-Languag	Sri Debasish Jena	1st-10th June,2020	AAS Division, IMD

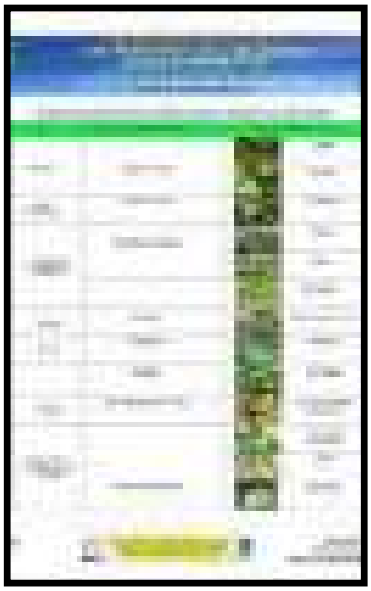
Sl. No.	Name of programme	Name of course	Name of DAMU personnel and designation	Date and Duration	Organized by
9	National webinar	Drone Remote Sensing in Agriculture	Sri Debasish Jena	09.09.2020	Division of Agricultural Physics ICAR-Indian Agricultural ResearchInstitute, New Delhi
10	One-week online training programme	Advanced Agrometeorological Techniques forClimate Smart Agriculture	Sri Debasish Jena	29 June to 03 July 2020	CAAST- CSAWM,MP-KV Rahuri

14. Any other important information (Any significant events conducted by DAMU on weather and crop related activities in the district may be given along with photo):

- DAMU KVK Cuttack has initiated GIS based color coded forecast mapfor easy understanding of Farmers of Cuttack district.



- DAMU KVK Cuttack has started incorporation of crop stage wise disease and pest imagery in Agromet Advisory bulletin for its quality enhancement and for easy understanding of Farmers of Cuttackdistrict.



- DAMU KVK Cuttack has started recording of daily basis rainfall data after installation of an ordinary rain gauge at KVK Campus.

- DAMU KVK Cuttack has started audio agromet advisory dissemination for easy and quick understanding of Farmers of Cuttack district.

Lecture delivered

1. Mr D Jena, SMS (Agromet), DAMU, KVK Cuttack imparted training on "Climate Resilience Agricultural Practices" to DAESI Students on October 21, 2020 at ATMA office,Cuttack.
2. Mr D Jena, SMS (Agromet), DAMU, KVK Cuttack delivered a lecture on "Preparation of agromet advisory bulletin as per weather forecast" in the training programme of newly recruited SMSs (Agromet) of DAMUs, OUAT on 21st November, 2020 which was organized by DEAN Extension, OUAT.

DAMU Birbhum

1.1. Staff Position (as on 1st April, 2021)

Sl.No.	Name of the incumbent	Qualification	Pay Scale with present basic	Date of joining
SMS (Agrometeorology)	Sayak Mahato	M.Sc. (Ag) in Agrometeorology	Pay Level-10, Basic pay-56100/-	13/08/2020
Agromet Observer (AO)	Swapan Bauri	Higher Secondary with Science	Pay Level-3, Basic pay- 21700/-	03/08/2020

1.2 Details of Orientation/Review/Expert Panel meeting conducted during the year

Sl. No.	Date	Number of Participants	Salient Recommendations	Action taken
1.	28.01.2021	10	1. More emphasis should be taken for wider dissemination of bulletins 2. Separate WA group for each block should be created and only the bulletins for specific block should be posted in specific WA group. 3. Bulletins should be sent through mail to each and every stake holder organization including every line department.	The bulletins are disseminated through All India Radio (Santiniketan) Kisan Bani programme everyday 19 WhatsApp group created for 19 blocks of Birbhum district and bulletins send separately on Tuesday and Friday of each month and also nowcasting send separately to the each Whatsapp group. Bulletins are sent regularly to the head of the each organizations including line department.

1.3 Status of Expert Panel group

Sl. No.	Name	Designation	Mobile/ Ph no
1.	Prof. Debasis Bhattacharya	Principal, Palli Siksha Bhavana, and In-charge, RKVK	9434493185
2.	Dr. Subrata Mandal	Senior Scientist and Head (officiating), Nodal Officer DAMU and SMS, Agronomy, RKVK	9434431350
3.	Prof. Buddhadeb Duary	Prof. in Agronomy, Palli Siksha Bhavana	9434326193
4.	Dr. Joydip Mondal	Associate Professor, Horticulture, Palli Siksha Bhavana	7063882307
5.	Mr. Kollol Mukhopadhaya	Fishery Extension Officer, Govt. of West Bengal, Bolpur-Sriniketan block and Nanoor block	6297095002
6.	Sri. Sayak Mahato	SMS Agrometeorology, RKVK	7001764924
7.	Sri. Sourav Mondal	SMS Plant Protection, RKVK	8670246954
8.	Dr. Prabuddha Ray	SMS Agril. Extension, RKVK	9331219396
9.	Dr. Madhuchhanda Khan	SMS Animal Science, RKVK	8159050090
10.	Sri. Palash Ankure	Farm manager, RKVK	7908816433

2. District level data on agriculture, livestock and farming situation and Agro climatic data

Sl. no.	Item	Information
2.1	Major Farming system/ enterprise	Paddy-Paddy-Paddy Paddy-Winter Vegetables-Paddy Paddy-wheat/potato-Summer vegetables
2.2	Agro-climatic Zone	West part of Birbhum- Red and Lateritic Zone East Part of Birbhum- Old Alluvial Zone
2.3	Agro ecological situation	Assam and Bengal plain, Hot sub-humid (moist) to humid (Inclusion of perhumid)ecoregion with alluvium derived soil Eastern plateau (chhotanagpur) Hot sub-humid ecoregion with red and lateritic soils
2.4	Soil type	The predominant soil types are old alluvial and red lateritic with low to medium in organic carbon & phosphate content and medium to high in potash. The soil is acidic in nature with pH range of 5.0 to 6.5.
2.5	Productivity of major 2-3 crops under cereals, pulses, oilseeds, vegetables, fruits and others	Paddy – 5000-6000 kg/ha Potato-31000 kg/ha tuber Mustard-1285 kg/ha Chickpea-1490 kg/ha Lentil- 1342kg/ha Black gram-1220 kg/ha Green gram- 1290 kg/ha
2.6	Mean yearly temperature, rainfall, humidity of the district	During summer- 25.5°C to 41.5°C During winter:12.7°C to 28.3°C Rainfall: 1430 mm
2.7	Maximum weather hazards/ weather vagaries/extreme weather conditions at your district	Heat wave occurred for one or two weeks every year from April to May month. Hail storm during summer month.

Sl. no.	Item	Information
2.8	Thrust area for agrometeorology	Due to high temperature in summer and low water retention capacity of soil, farmers face losses very much. Besides that heat wave some time affects the district in the month of April to May. So if they get the agro meteorological advisory, not only they know the future weather extreme event but also they can schedule their irrigation, pesticide application etc. Thus farmers can minimize the losses.
2.9	Blocks under Rainfed situation	Khoyrasole, and Rajnagar block
2.10	Blocks under irrigated situation	Dubrajpur, Illambazar, Bolpur-Sriniketan, Suri-I, Suri-II, Md. Bazar, Labpur, Nanoor, Sainthia, Mayureswar-I, Mayureswar-II, Rampurhat-I, Rampurhat-II, Nalhati-I, Nalhati-II, Murarai-I and Murarai-II blocks (60% Irrigated)
2.11	Normal date of sowing of different crops and present season sowing dates of particular district or block	Normal date of sowing: Paddy – 22nd June to 5th August Potato-15th November to 30th November Mustard- 24th November to 7th December Chickpea-13th November to 25th November Lentil- 18th November to 2nd December Black gram-15th February to 25th February Green gram- 13th February to 24th February

3. **Status of Agro-AWS and surface observatory:**

3.1 Date of installation of AWS : - Only civil work has been completed, sensors are yet to be installed.

3.2 List of instruments presently available in working condition: -- Not applicable

3.3 Instruments to be replaced/repaired indicating type of defect: --NA

3.4 Please provide frequency of observation, exposure conditions of the site etc**.** --NA

3.5 Number of years of data records available: --NA

3.6 Whether the observatory is periodically inspected, maintained and calibrated by IMD (If yes, please indicate the latest data of inspection by the IMD) ---NA

3.7 Status of surface observatory---Currently there is no surface observatory in RathindraKrishiVigyan Kendra.

3.8 Status of Manual/ordinary rain gauge at KVK Campus--- Currently there is no manual/ordinary raingauge at KVK campus

3.9 Details of soil moisture observations taken, if any (please provide frequency and depths of observation etc.) – NA

4. **Details of Agromet Advisory Services**

4.1 Date of start of Agromet Advisory Bulletins: 18.08.2020

4.2 No. of times the weather forecasts received during the year: 62

4.3 Date of receiving the forecasts from MC/RMC- Every Tuesday and Friday of every week

4.4 If the time is not suitable then what will be the appropriate time to receive the Value added forecast- NA (Value added forecast received through Agro DSS)

4.5 No. of AAS bulletins prepared and disseminated to the farmers during the year - 956

4.6 No. of AAS bulletins were prepared using Agromet-DSS in English and regional languages- 952

4.7 Status of district crop weather calendar— Not yet completed

4.8 List the modes of mass communication adopted for AAS dissemination:

Sl. No.	Social Media	Description(Provide name of all block wise whtsapp groups and link/nameof other social media)	Total beneficiaries
01	Whats app groups		
	a) For Farmers	a) 19 groups created for 19 blocks of Birbhum district 1. Bolpur-sriniketan Block, KVK; 2. Nanoorblock, KVK; 3. LabpurBlock, KVK; 4. Illambazarblock, KVK; 5. Dubrajpur block, KVK; 6. Khoyrasol block, KVK; 7. Rajnagar block, KVK; 8. Suri-I block, KVK; 9. Suri-II block, KVK; 10. Sainthia block, KVK; 11. Md Bazar Block, KVK; 12. Mayureswar-I block, KVK; 13. Mayureswar-II block, KVK; 14. Murari-I block, KVK; 15. Murarai-II Block, KVK; 16. Rampurhat-I block, KVK; 17. Rampurhat-II block, KVK; 18. Nalhati-I Block. KVK; 19. Nalhati-II Block, KVK; b) DAESI groups name; 1. 1st DAESI-2017 2. 2nd DAESI-2019 3. 3rd DAESI-2020 4. 4th DAESI-2020 c) Other groups name 1. IFFCO Farmers Club 2. RF-WB-SURI-AGRI-1	594
	b)For extension Officials	RKVK, Birbhum official	11
02	KVK Website	http://www.rkvk.ac.in	
03	E-mail id (KVK/DAMU)	rathindrakvk@gmail.com	35
TOTAL REACH			**640**

4.9 Details of broadcast on AIR and TV (Name of station broadcast frequency, time slot provided etc.) (Audio tape of the recent broadcast): District level Agromet Advisory Bulletin broadcasted through All India Radio, Santiniketan.

Name of the programme: Kisan Vani, Time: 6:30-7:00 pm

5. Farmers Awareness/Training/Meghdoot popularization activities or other outreach programme

5.1 Give list of farmers awareness programmes conducted like Krishi / Kishan Melas, training, participation in national day parades etc. and photograph of Farmer's Awareness Programme (no of Farmer attended).

SI. No	FAP/ Farmers meet/Meghdoot Popularization activities and Other Activities	Date	Location (Block/Village)	Farmers attended the Program
1	FAP and Meghdoot popularization activities	30.09.2020	Salon, Bolpur - Sriniketan	22
2	FAP and Meghdoot popularization activities	05.10.2020	Rathindra KVK, PSB, Visva-Bharati, Sriniketan	19
3	FAP and Meghdoot popularization activities	09.01.2021	Daranda, Illambazar	35
4	FAP and Meghdoot popularization activities	11.01.2021	Digha, Sainthia Block	45
Total				**121**




6. List of other organizations receiving Agromet advisories:

Agromet advisories (Both District level and Block level) are being send every Tuesday and Friday through mail to the following organizations:

- Deputy Director of Agriculture (Administration), Suri, Birbhum.
- Deputy Director of Horticulture (Administration), Suri, Birbhum.
- Deputy Director of Animal Resource Development, Suri, Birbhum.
- Assistant Director (Fishery), Directorate of Fisheries, Suri, Birbhum.
- Assistant Director of Agriculture (Admin) of 19 blocks of Birbhum district
- DDM NABARD, Suri, Birbhum-731101
- The Regional Meteorological Centre, Kolkata.
- GKMS ATARI Kolkata.
- Agro Meteorological field unit of Kharagpur
- All India Radio, Santiniketan

7. Details of FAP Conducted during the year :

Details of the Farmers Awareness Programme (FAP) conducted during the year is given below:

A) 1st FAP was conducted on 30.9.2020 at Salon Village, Bolpur Sriniketan block

Sl. No.	FAP/ Farmers meet /Meghdoot Popularization activities	Date	Location (Block/ Village)	Approx. No. of Farmers attended the Programme	Topic of Farmers Awareness Programme (FAP)
1	1	30.09.2020	Salon, Bolpur-Sriniketan	22	Introduction to Agromet Advisory Bulletin, District Agromet Unit (DAMU) and Meghdoot app
Events: Introductory speech was given by Sri Sayak Mahato SMS, (Agromeorology), Rathindra Krishi Vigyan Kendra, Palli Siksha Bhavana (Institute of Agriculture), Visva-Bharati, Sriniketan. He also addresses the farmers and farm women about the District Agromet Unit (DAMU) and about Agromet Advisory Bulletin. Farmers contact numbers are also taken for dissemination of Agromet Advisory Bulletin through Whatsapp group.					



B) 2nd FAP was conducted on 05.10.2020 at Salon Village, Rathindra Krishi Vigyan Kenda, PSB, Visva - Bharati, Sriniketan

Sl.No.	FAP/ Farmers meet /Meghdoot Popularization activities	Date	Location (Block/ Village)	Approx. No. of Farmers attended the Programme	Topic of Farmers Awareness Programme (FAP)
2	2	05.10.2020	Rathindra Krishi Vigyan Kenda, PSB, Visva-Bharati, Sriniketan	19	Introduction to Agromet Advisory Bulletin, District Agromet Unit (DAMU) and Meghdoot app
Events: Introductory speech was given by Dr. Subrata Mandal, Senior Scientist & Head and Nodal Officer (DAMU), Rathindra Krishi Vigyan Kendra, Palli Siksha Bhavana (Institute of Agriculture), Visva-Bharati, Sriniketan. He also addresses the farmers and farm women about the District Agromet Unit (DAMU). After that Sri Sayak Mahato, SMS, (Agromeorology), Rathindra Krishi Vigyan Kendra, told the farmers about the details and usefulness of Agromet Advisory Bulletin. Farmers contact numbers are also taken for dissemination of Agromet Advisory Bulletin through Whatsapp group.					



C) 3rd FAP was conducted on 09.01.2021 at Daranda, Illambazar block

Sl. No.	FAP/Farmers meet/Meghdoot Popularization activities	Date	Location (Block/ Village)	Approx. No. of Farmers attended the Programme	Topic of Farmers Awareness Programme(FAP)
3	3	09.01.2021	Daranda, Illambazar	35	Introduction to Agromet Advisory Bulletin, District Agromet Unit (DAMU) and Meghdoot app
Events: Introductory speech was given by Sri Sayak Mahato SMS, (Agromeorology), Rathindra Krishi Vigyan Kendra, Palli Siksha Bhavana (Institute of Agriculture), Visva-Bharati, Sriniketan. He also addresses the farmers and farm women about the District Agromet Unit (DAMU) and about Agromet Advisory Bulletin. Farmers contact numbers are also taken for dissemination of Agromet Advisory Bulletin through Whatsapp group.					



D) 4th FAP was conducted on 11.01.2021 at Digha, Sainthia Block

Sl.No.	FAP/ Farmers meet / Meghdoot Popularization activities	Date	Location (Block/ Village)	Approx. No. of Farmers attended the Programme	Topic of Farmers Awareness Programme (FAP)
4	4	11.01.2021	Digha, Sainthia Block	45	Introduction to Agromet Advisory Bulletin, District Agromet Unit (DAMU) and Meghdoot app
Events: Introductory speech was given by Sri Swapan Bauri, Agromet Observer (DAMU), Rathindra Krishi Vigyan Kendra, Palli Siksha Bhavana (Institute of Agriculture), Visva-Bharati, Sriniketan. He also addresses the farmers and farm women about the District Agromet Unit (DAMU). After that Sri Sayak Mahato SMS, (Agromeorology), Rathindra Krishi Vigyan Kendra, told the farmers about the details and usefulness of Agromet Advisory Bulletin. Farmers contact numbers are also taken for dissemination of Agromet Advisory Bulletin through Whatsapp group.					



8. Economic impact of Agromet advisory services:

8.1 Impact of Nowcast in farming practices

a. Farmer Name: Subhasish Ghosh

b. Address: Village+ P.O. -Digha, Block- Sainthia, Dist- Birbhum, West Bengal

c. Before Weather Forecast & AAS: Insecticide, pesticide, fertilizers washed away due to the heavy rain after spraying in the field.

d. After DAMU's intervention: He postponed the spraying operation whenever he get the warning of thunderstorm. He also take shelter and warned other farmers and people about the thunderstorm.

8.2 Impact of Medium range/extended range forecast in farming practices

a. Farmer Name: Partha Mal

b. Address: Village+ P.O. Daranda, Illambazar block, Birbhum, West Bengal

c. Before Weather Forecast & AAS: Faces irrigation scheduling problems. After giving irrigation, rainfall occurred and crops faces serious damages specially summer vegetables and winter vegetables. Sometimes because of rainfall, crops damaged at the time of harvesting.

d. After DAMU's intervention: Because of medium range forecasting, he with held the irrigation for chick pea, as there was a rainfall occurrence probability. He also adjust the pesticide and insecticide application according to the weather forecasting.

9. Feedback from progressive farmers:

Sl no	Farmer name & Village	Block	Feedback
01	Jiban Mandal Vill- Ramchandrapur	Dubrajpur	Rainfall forecasting helps very much in irrigation scheduling of rice. It also helps him for scheduling his spraying operation.
02	Rupali Karmakar Vill - Alema	Dubrajpur	Forecasting of thunderstorm helps her very much. Besides that she also told that she get various information about medicines, new technology, disease etc. about fisheries from the Agromet Advisory Bulletins.
03	Tapan Ghosh Vill- Bishnubati	Bolpur-Sriniketan	Tapan Ghosh have goatery unit. Previously because of various disease in goat he faced heavy loss. After intervention of DAMU, he get the information about vaccination and various diseases of goat from bulletins. Which helps him prevent the disease spread quickly.
04	Bidyut Mandal Vill-Birupur	Mohammad Bazar	Bidyut Mondal have a large area of orchard cultivation, which included mango, banana, and cashew orchard. Forecasting of extreme weather event alert helps him prevent the foot dropping from the orchards. Because of various information he got from the agromet advisory bulletins from the month of November, this year mango production increases from the previous years.

DAMU Angul

1.1. Staff Position (as on 1st April, 2021)

Sl. No.	Name of the incumbent	Qualification	Pay Scale with present basic	Date of joining
SMS (Agrometeorology)	Ms. Rutuparna Paikaray	Msc. (Agricultural Meteorology)	PB-3, Rs. 15,600-39,100/- Plus RGP Rs. 5,400/-	18th Dec 2020

1.2 Status of Expert Panel group

Sl. No.	Name	Designation	Mobile/Ph no
1.	Mrs. Dhariti Patra	Senior Scientist & Head	6281017723
2.	Mrs. Ipsita Mishra	Scientist (Plant Pathology)	8280050737
3.	Dr. Monalisha Behera	Scientist (Animal Science)	9438208810
4.	Sri Debraj Mohanty	CDAO	06764-230351
5.	Sri Bholasankar Behera	Agriculture District Officer	9438803660

2. District level data on agriculture, livestock and farming situation and Agro climatic data

Sl. no.	Item	Information
2.1	Major Farming system/ enterprise	• Crop+ vegetable+ dairy • Crop+ orchard+ mushroom • Crop+ vegetable+ floriculture+ dairy+ pisciculture • Crop+ poultry+ goatery+ mushroom+ pisciculture • Crop+ orchard+ floriculture+ livestock+ pisciculture • Commercial cultivation of Mango, Litchi and Banana • Commercial cultivation of vegetables i.e. Tomato, Brinjal, Cauliflower & Onion • Nursery raising • Mushroom cultivation • Pisciculture • Poultry • Bee keeping • Cash crop like sugarcane, Groundnut
2.2	Agro-climatic Zone	Mid Central Table Land Zone
2.3	Agro ecological situation	1. Red loam soil with medium rainfall 2. Black soil with low rainfall 3. Black soil with medium rainfall 4. Medium textured red loam soil with low rainfall 5. Black soil low rainfall
2.4	Soil type	• Red Laterite • Black (vertisol) • Lateritic (Oxisol) • Alluvial

Sl. no.	Item	Information
2.5	Productivity of major 2-3 crops under cereals, pulses, oilseeds, vegetables, fruits and others	**Cereals:** Rice-23.23q/ha, Maize-19.18; **Pulses:** Blackgram-4.38 q/ha, Greengram-4.52 q/ha; Pigeonpea: 8.15 q/ha **Oilseeds:** Groundnut-18.41 q/ha; Sesame-4.06 q/ha; Mustard-1.97 q/ha **Vegetables**: Tomato-133.3 q/ha; Brinjal-150.1 q/ha; Chilli-9.89 q/ha **Fruits:** Mango-86.50 q/ha; Litchi-124.5 q/ha; Banana-91.0 q/ha
2.6	Mean yearly temperature, rainfall, humidity of the district	Temp (Max)- 41^{0}C (May), Temp (Min)- 13^{0}C (Dec) Rainfall-840.8 mm Humidity (Max): 84% (July), Humidity (Min): 41% (March)
2.7	Maximum weather hazards/ weather vagaries/extreme weather conditions at your district	Nor'Westers and heat wave- in the month of April, May Cold wave-in the month of Nov and Dec
2.8	Thrust area for agrometeorology	To study the weather variable favouringoccurance of Phytophthora Blight in Sesamum
2.9	Blocks under Rainfed situation	Talcher, Kishorenagar, Kaniha, Palalahada, Athmallik
2.10	Blocks under irrigated situation	Some parts of Angul and Chhendipada, Banarpal block
2.11	Normal date of sowing of different crops and present season sowing dates of particular district or block	Rice (Kharif Rainfed)-2nd week of June-2nd week of July Rice (Kharif irrigated)-1st week of July Sesamum-1st week of Jan-1st week of Feb Grengram-2nd week of Nov-1st week of Jan Blackgram-2nd week of Non-1st week of Dec

3. Status of Agro-AWS and surface observatory:

3.1 Date of installation of AWS : 20th April 2021

3.2 List of instruments presently available in working condition: Temperature and Relative humidity sensors, Sunshine Sensor, Raingauge Sensor, Wind speed and Direction sensor-3 meter and 10 meter, Soil temperature & Moisture 10, 30,70, 100 cm

3.3 Instruments to be replaced/repaired indicating type of defect: NA

3.4 Please provide frequency of observation, exposure conditions of the site etc

3.5 Number of years of data records available: From 20th April 2021

3.6 Whether the observatory is periodically inspected, maintained and calibrated by IMD (If yes, please indicate the latest data of inspection by the IMD) - NA

3.7 Status of surface observatory- NA

3.8 Status of Manual/ordinary rain gauge at KVK Campus---NA

3.9 Details of soil moisture observations taken, if any (please provide frequency and depths of observation etc.) – **NA**

4. Details of Agromet Advisory Services

4.1 Date of start of Agromet Advisory Bulletins: 1.1.2021

4.2 No. of times the weather forecasts received during the year: 26

4.3 Date of receiving the forecasts from MC/RMC-01.01.21

4.4 If the time is not suitable then what will be the appropriate time to receive the Value added forecast-It would be appreciated if provide around Noon

4.5 No. of AAS bulletins prepared and disseminated to the farmers during the year – 26 (up to march 31)

4.6 No. of AAS bulletins were prepared using Agromet-DSS in English and regional languages -260

4.7 Status of district crop weather calendar- Available data have been provided to concerning body for preparation of crop weather calendar

4.8 List the modes of mass communication adopted for AAS dissemination:

Sl No.	Social Media	Description(Provide name of all block wise whtsapp groups and link/name of other social media)	Total beneficiaries
01	Whats app groups for Farmers	1	62
Total Reach			**62**

5. Rainfall Qualitative Verification

Skill Score	Day1
ProbabilityofDetection (PoD)	0.5
False Alarm Rate	0.75
Missing rate	0.75
CorrectNon-Occurrence(C-Non),	0.98
CriticalSuccessIndex(CSI)	0.2
Bias for Occurrence(Bias)	0.07
Percentagecorrect(Pc)	93.33
Trues kill score(Tss) or HK Score	0.45
Heidkeskillscore(Hss)	0.3

6. Details of HRD programmes undergone by DAMU personnel:

Sl. No.	Name of programme	Name of course	Name of DAMU personnel and designation	Date and Duration	Organized by
1	Training programme	Training programme on Basic of RS and GIS	Ms. Rutuparna Paikaray	18-25 March Seven Days	College of Agricultural Engineering, OUAT, Bhubaneswar

DAMU Bolangir

1.1 Staff Position (as on 1stApril, 2021)

Sl.No.	Name of the incumbent	Qualification	PayScale with present basic	Date of joining
SMS (Agrometeorology)	Mrs. Debashree Sarkar	M. Sc. in (Agrometeorology)	GP-5400/- Basic-15600/-	10 November 2020

1.2 Details of Orientation/ Review/ Expert Panel meeting conducted during the year

Sl. No.	Date	Number of Participants	Salient Recommendations	Action taken
1.	18-21st November, 2020	06	Orientation Programme for newly recruited SMSs under DAMU, Odisha	Both District & Block level advisory preparation & dissemination to farmers, Upload Agromet advisory bulletins in Agro DSS & Agrimetportal.
2.	1st December, 2021	05	Dissemination of Agro Advisory Services among the farmers.	Preparation of Agromet-advisory bulletins and effective dissemination of Agro Advisory Services.

Sl. No.	Date	Number of Participants	Salient Recommendations	Action taken
3.	11-12th March 2021	75	Online Familiarization Programme under GKMS.	Both District & Block level advisory preparation & dissemination to farmers, Upload DAAS bulletins in Agro DSS & Agrimet portal.

1.3 Status of Expert Panelgroup

Sl.No.	Name	Designation	Mobile/Ph no
1.	Mr. Ashis Kumar Das	Sr. Scientist and Head	-
2.	Dr. Tapan Kumar Palei	Scientist, Animal Sc.	9438184039
3.	Dr. Sarthak Pattanaik	SMS, Agronomy	9658021306
4.	Dr. Rahul Dev Behera	SMS, Soil Science	7077961051
5.	Mrs. Priyadarsini Jhankar	AHO, Puintala	7008388506
6.	Mr. AmerthLegun	AAO, Muribahal	8249097140
7.	Mrs. Debashree Sarkar	SMS, Agrometeorology	8658107878

2. District level data on agriculture, livestock and farming situation and Agro climatic data

Sl. No.	Item	Information
2.1	Major Farming system/enterprise	Crop (rice/ groundnut/ til- pulse/ oilseeds/vegetebles) - Dairy - Poultry - Piggery-Goatery
2.2	Agro-climatic Zone	West central table land zone
2.3	Agro ecological situation	Plain land, Irrigated Plainland,Rainfed Undulating Plain, Drought Prone Undulating sub-mountaineous tract, Rainfed
2.4	Soil type	Mixed red and yellow, Red and black, Black, Laterite and lateritic
2.5	Productivity of major 2-3 crops under cereals, pulses, oilseeds, vegetables, fruits and others	Rice-3195kg/ha, Maize- 2467kg/ha,Mung-483kg/ha, Black gram-367kg/ha, G.nut-1787 kg/ha, Onion-14390kg/ha, Chillies-831 kg/ha, Sugarcane-72458 kg/ha
2.6	Mean yearly temperature, rainfall, humidity of the district	Rainfall-1289.8 mm, Min Temp-10.7° C , Max. Temp-46.2° C, RH - 21-98%
2.7	Maximum weather hazards/weather vagaries/extreme weather conditions at your district	Drought, flood, Heat wave
2.8	Thrust area for agrometeorology	To transfer the agromet- advisories and awareness to the farmers. To develop crop weather relationship and development of Contingent crop plans. Unavailabilities of Climate smart technologies to farmers. Major incidence of disease pest due to extreme weather conditions.
2.9	Blocks under Rainfed situation	Gudvella, Puintala, Loisinga, Khaprakhol, Muribahal, Saintala, Tureikela, Bangomunda, Belpara, Deogaon, Patnagarh, Titlagarh
2.10	Blocks under irrigated situation	Bolangir, Agalpur

2.11	Normal date of sowing of different crops and present season sowing dates of particular district or block			
Start and end of sowing period	Paddy	Black gram	Greengram	Sesamum
Kharif-Rainfed	1st week June-2nd week July	1st week June-1st week July	1st week June-1st week July	1st week June-2nd week July
Kharif-Irrigated	June 1st week- August 1st week	-	-	-
Rabi-Rainfed	-	October 2nd week-December 3rd week	October 2nd week-December 3rd week	September 3rd week
Rabi-Irrigated	December 2nd week- January 1st week	-	-	-

3.Status of Agro-AWS and surface observatory:

3.1 Date of installation of AWS: 28th April 2021

3.2 List of instruments presently available in working condition: All sensors are in working condition

3.3 Instruments to be replaced/repaired indicating type of defect: No

3.4 Please provide frequency of observation, exposure conditions of the site etc. – Weekly twice

3.5 Number of years of data records available: -- NA

3.6 Whether the observatory is periodically inspected, maintained and calibrated by IMD (If yes, pleaseindicate the latest data of inspection by the IMD) --- 28th April 2021

3.7 Status of surface observatory- Still not established

3.8 Status of Manual/ordinary rain gauge at KVK Campus- NA

3.9 Details of soil moisture observations taken, if any (please provide frequency and depths of observation etc.) – NA

4. Details of Agromet Advisory Services

4.1 Date of start of Agromet Advisory Bulletins: 01 January, 2021

4.2 No. of times the weather forecasts received during the year: 26

4.3 Date of receiving the forecasts from MC/RMC- 01 January, 2021

4.4 If the time is not suitable then what will be the appropriate time to receive the Value added forecast- In between 10.00 AM-12.00 PM

4.5 No. of AAS bulletins prepared and disseminated to the farmers during the year- 26

4.6 List the modes of mass communication adopted for AAS dissemination:

Sl No.	Social Media	Description (Provide name of all block wise whatsappgroups and link / name of other social media)	Total beneficiaries
01	Whats app groups a)For Farmers	Krushipanipagasuchana-1	16
		Krushipanipagasuchana-2	21
		Hort. Puintala farmers	24
02	KVK Website	www.kvkbolangir.org	Mass
03	University/Institute website	www.ouat.nic.in	
04	E-mail id(KVK/DAMU)	damubolangir@gmail.com	
TOTAL REACH			61

4.7 No of SMS sent through Kisan Portal and how many farmers were benefitted during the year: 10 (15100 Farmers)

5. Verification of Block or district level medium rangeforecast Season: Winter (January-February)

5.1 QuantitativeVerification

Weather	Bolangir		
	C	U	NU
Rainfall	94.9	0	5.08
Max.Temp	55.93	27.12	16.95
Min.Temp	33.9	32.2	33.9

(C - Correct, U - Usable and NU-Not usable Rainfall QualitativeVerification)

5.2 Rainfall QuantitativeVerification

Skill Score	Bolangir
Probability of Detection (PoD)	1
False Alarm Rate	0.67
Missing rate	1
Correct Non- occurrence (C-Non)	0.98
Critical Success Index (CSI)	0.33
Bias for Occurrence (Bias)	0.05
Percentage correct (Pc)	96.61
True skill score (Tss) or HK Score	0.97
Heidke skill score (Hss)	0.49

6. Farmers Awareness/Training/Meghdoot popularization activities or other outreach programme

Given list of farmers awareness programmes conducted like Krishi/Kishan Melas, training, participation in national day parades etc. and photograph of Farmers Awareness Programme (no. of Farmers attended).

SI. No.	FAP/Farmers meet/ Meghdoot Popularization activities and Other Activities	Date	Location (Block / Village)	Farmers attended the Program
1	Agricultural Education Day	3rd December 2020	KVK, Bolangir	25
2	World Soil Day	5th December 2020	KVK, Bolangir	60
3	Interaction of Hon'ble PM with farmer sunder PM-KISAN SAMMAN NIDHI (Telecast)	25th December 2020	KVK, Bolangir	50
4	National Horticultural Fair	10th February 2021	KVK, Bolangir	60
5	World Water Day	22nd March 2021	KVK, Bolangir	35
Total				**230**





7. List of other organizations receiving Agrometadvisories:

- OUAT, BhubaneswarMC
- Bhubaneswar
- IMD, Pune
- GKMS, Kolkata
- District Agriculture Department
- District Horticulture Department

8. Mobile APP based Agromet advisory services for farmers:

Meghdoot app is updated on each Tuesday and Friday by AAS Division, IMD, New Delhi for Bolangir district through linkage with AgroDSS in which the advisory was provided by DAMU, KVK Bolangir.

9. Feedback from progressive farmers:

Sl. No.	Farmer name &Village	Block	Feedback
01	Sumanta Patra Village-Buramunda	Loisinga	Weather forecast and agromet advisory is more important and necessary.
02	Rajlal Chandan Village-Bagbahal	Bangomunda	Mobile SMS should be disseminated directly to the farmers as soon as maximum farmers have no smartphones and there is no network in maximum villages.

DAMU Gajapati

1.1. Staff Position (as on 1st April, 2021)

Sl.No.	Name of the incumbent	Qualification	Pay Scale with present basic	Date of joining
SMS (Agrometeorology)	Mr. Jayashankar Pradhan	M.Sc. Ag (Agricultural Meteorology)	PB-3, Rs. 15,600-39,100/- Plus RGP Rs. 5,400/-	05th November, 2020

1.2 Details of Orientation/Review/Expert Panel meeting conducted during the year

Sl. No.	Date	Number of Participants	Salient Recommendations	Action taken
1.	18-21st November, 2020	06	Orientation Programme for newly recruited SMSs under DAMU, Odisha	Both District & Block level advisory preparation & dissemination to farmers, Upload DAAS bulletins in Agro DSS & Agrimet portal.
2.	01st January, 2021	Senior Scientist & Head cum Nodal Officer, all Scientist and SMS of KVK, Gajapati (05)	Dissemination of Agro Advisory Services among the farmers and increase the outreach of DAMU activities.	Total 07 nos. of Whatsapp group are formed for the effective dissemination of Agro Advisory Services.
3.	11-12th March 2021	75	Online Familiarization Programme under GKMS.	Both District & Block level advisory preparation & dissemination to farmers, Upload DAAS bulletins in AgroDSS & Agrimet portal.

1.3 Status of Expert Panel group

Sl. No.	Name	Designation	Mobile/Ph no
1.	Dr. Sangram Paramaguru	Senior Scientist & Head cum Nodal Officer, DAMU, KVK, Gajapati	9437492769
2.	Mr. Dwarika Mohan Das	Subject Matter Specialist (Ag. Engg.)	9078393293
3.	Mr. Sanjib Kumar Mandi	Subject Matter Specialist (Agronomy)	9679309801
4.	Mr. Jayashankar Pradhan	Subject Matter Specialist (Agrometeorology)	9438285742
5.	Mr. Rama Chandra Nayak	ADO, R.Udayagiri	9937314744
6.	Mr. Mahendra Prasad Das	AHO, Nuagada	8458074267
7.	Dr. S.K. Reddy	AVO, Nuagada	8018210779
8.	Mr. Santosh Paramanik	AAE, PD, Watershed, Gajapati	8093576116

2. District level data on agriculture, livestock and farming situation and Agro climatic data

Sl. no.	Item	Information
2.1	Major Farming system/enterprise	Rice-fallow, Rice-Paira Green gram / Black gram, Maize –fallow, Ragi-Fallow
2.2	Agro-climatic Zone	North Eastern Ghat Zone
2.3	Agro ecological situation	AES-I - Red loam soil, Low rainfall, moderate elevation (300-500 m) Moderate irrigation AES-II-Black forest& red loam soil, Moderate rainfall, high irrigation AES-III-Laterite soil, moderate rauinfall, high irrigation
2.4	Soil type	Red Loamy soils, Laterite Soils, Black soils
2.5	Productivity of major 2-3 crops under cereals, pulses, oilseeds, vegetables, fruits and others	Rice-40 q/ha, Maize-35 q/ha, Ragi-12 q/ha, Greengram-08 q/ha, Blackgram-6 q/ha, Arhar-15 q/ha, Groundnut -16 q/ha, Sesame-8q/ha Brinjal-152 q/ha, Cauliflower-145.6 q/ha, Chilli-10 q/ha
2.6	Mean yearly temperature, rainfall, humidity of the district	Max Temp -39^0 C Minimim Temp-10^0 C Rainfall-1423 mm, Relative Humidity-78-85%

Sl. no.	Item	Information
2.7	Maximum weather hazards/ weather vagaries/extreme weather conditions at your district	Drought, Unusual rains, Floods, Heat wave / Cold wave/Frost/ Hailstorm /Cyclone
2.8	Thrust area for agrometeorology	No weather advisory services to farmers. Major incidence of disease pest due to extreme weather conditions. Water stress during winter & summer season. Major crop loss due to unavailability of water. Unavailability of climate smart technologies adopted by farmers.
2.9	Blocks under Rainfed situation	Gumma, Mohana, Nuagada, R.Udayagiri, Rayagada
2.10	Blocks under irrigated situation	Parts of all blocks under irrigated situation.
2.11	Normal date of sowing of different crops and present season sowing dates of particular district or block	Rice- Kharif- Rainfed -2nd week of June-4th week of July Kharif- Irrigated -2nd week of June-4th week of July Rabi-Irrigated- 1st week of December-1st week of January Ragi- Kharif- Rainfed -2ndweek of June-3rdweek of July Rabi-Irrigated- 1st week of October- 2nd week of November Maize- Kharif- Rainfed -4th week of May-4th week of June Blackgram / Greengram- Kharif- Rainfed -1st week of July-2nd week of August Rabi- Rainfed - 1st week of November-3rd week of December Groundnut/Sunflower- Kharif- Rainfed -2nd week of June-2nd week of July Rabi- Irrigated - 1st week of November-4th week of December

3. Status of Agro-AWS and surface observatory:

3.1 Date of installation of AWS : --21st April, 2021

3.2 List of instruments presently available in working condition: -- All sensors are in working condition

3.3 Instruments to be replaced/repaired indicating type of defect: --Nil

3.4 Please provide frequency of observation, exposure conditions of the site etc. – Weakly twice

3.5 Number of years of data records available: --Nil

3.6 Whether the observatory is periodically inspected, maintained and calibrated by IMD (If yes, please indicate the latest data of inspection by the IMD) ---NA

3.7 Status of surface observatory---Still not established

3.8 Status of Manual/ordinary rain gauge at KVK Campus---NA

3.9 Details of soil moisture observations taken, if any (please provide frequency and depths of observation etc.) – NA

4. Details of Agromet Advisory Services

4.1 Date of start of Agromet Advisory Bulletins: 1st January, 2021

4.2 No. of times the weather forecasts received during the year: 26

4.3 Date of receiving the forecasts from MC/RMC-1st January, 2021

4.4 If the time is not suitable then what will be the appropriate time to receive the Value added forecast- In between 11.00 AM-12.00 PM

4.5 No. of AAS bulletins prepared and disseminated to the farmers during the year: 26

4.6 No. of AAS bulletins were prepared using Agromet-DSS in English and regional languages: 234

4.7 Status of district crop weather calendar—Data related to historical weather data, soil, crop and disease/pest are not available with us.

4.8 List the modes of mass communication adopted for AAS dissemination:

Sl No.	Social Media	Description (Provide name of all block wise WhatsApp groups and link/name of other social media)		Total beneficiaries
01	WhatsApp groups a)For Farmers	Gosani	Gajapati KVK	50
		Gosani	Gosani-KVK, Gajapati	09
		Gumma	Gumma-KVK, Gajapati	06
		Kashinagar	Kashinagar-KVK, Gajapati	11
		Mohona	Mohona-KVK, Gajapati	26
		Nuagada	Nuagada-KVK, Gajapati	19
		R.Udayagiri	R.Udayagiri-KVK, Gajapati	20
02	KVK Website	www.kvkgajapati.org		Mass
03	University/Institute website	www.ouat.nic.in		Mass
04	Email id (KVK/DAMU)	damugajapati@gmail.com		
TOTAL REACH				**141+**

4.9 No of SMS sent through Kisan Portal and how many farmers were benefitted during the year:73 (14225 Farmers)

5. Verification of Block or district level medium range forecast

Season: Winter (January-February)

5.1 Quantitative Verification

Weather	Gajapati		
	C	U	NU
Rainfall	94.92	0	5.08
Max. Temp	37.29	33.9	28.81
Min. Temp	84.75	11.86	3.39

C - Correct, U - Usable and NU-Not usable

5.2 Rainfall Qualitative Verification

Skill Score	Gajapati
Probability of Detection (PoD)	0.50
False Alarm Rate	0.67
Correct Non-Occurrence (C-Non),	0.98
Critical Success Index (CSI)	0.25
Bias for Occurrence (Bias)	0.05
Percentage correct (Pc)	94.92
True skill score (Tss) or HK Score	0.46
Heidkeskill score (Hss)	0.37

6. Farmers Awareness/Training/Meghdoot popularization activities or other outreach programme

6.1 Give list of farmers awareness programmes conducted like Krishi/KishanMelas, training, participation in national day parades etc. and photograph of Farmer's Awareness Programme (no of Farmer attended).

SI. No.	FAP/ Farmers meet/ Meghdoot Popularization activities and Other Activities	Date	Location (Block/ Village)	Farmers attended the Program
1	Mushroom Grower	14-18 December, 2020	KVK, R. Udayagiri	20
2	National Horticulture Fair	10 February, 2021	KVK, R. Udayagiri	50
3	Effect of weather parameters on Mushroom cultivation (SHG Women)	10 March, 2021	AHO office, R.Udayagiri	60
4	Animal Health Camp	28 March, 2021	Baghasinghsahi	25
Total				**155**




7. List of other organizations receiving Agromet advisories:

- OUAT, Bhubaneswar
- MC, Bhubaneswar
- IMD, Pune
- GKMS, Kolkata
- RRTTS, G.Udayagiri, Kandhamal
- District Agriculture Department
- District Horticulture Department

8. Economic impact of Agromet advisory services:

8.1 Impact of Nowcast in farming practices

01. Sri Sumanta Nayak

Name of the Farmer	Sri SumantaNayak
Father / Husband's name	S/o-Kamil Nayak
Gender	Male
Marital status	Married
Place of birth	Adava
Postal address	AT/PO-Adava
Phone no	9556169033
Adhaar no	76344862540
Formal / informal education	Under matric
Farmers status: Small/ Marginal/Large	Marginal
Resources owned by the farmers	
Land (ha) Water bodies with irrigation capacity Animal resource including fish Farm machinery Area under (ha) Field crop Hort-crop Agro-forestry Diary / poultry / fisheries / Duckaries /Piggeries Nos. of bee hives Ponds	1 (ha) Well No animal resource No Yes, Sprayer No Mushroom, Cashew No No No No
New technologies developed	No
New technologies adopted in farming	Cultivation of mushroom by using different substrate, Use of different sterilisation process for mushroom cultivation, IPM for Tea Mosquito Bug in Cashew.
Technologies modified in farming	No
Knowledge of crop husbandry practices i.e, cultural practices like fertilizer application, weed and insect pest management	Knowledge about IPM

Environmental awareness and relevance practices such as aware of factors such as soil erosion, soil and water management practices	Soil erosion control by plantation of cashew
Activity wise income , C:B ratio &Gross & Net Income (Net Annual income rupees per hector)	
Field crop Hort-crop Livestock Fisheries Any other	No Rs. 48,300/- No No No
What improvement have been effected for productivity & sustainability-enhancement	Using different sterilising process for increasing productivity, Adopting IPM method, Regular disinfection of mushroom unit
Farmer's role in his or her community: The farmers must contribute towards the growth of the community in which he/she lives. Share knowledge with other farmers in the community.	Leadership Quality ,Active participation ,Good communication skills, Gathering of farmers ,dissemination of new technologies ,Organize different training programmes on mushroom and IPM of cashew.
Any Innovation included in the system of production & management & effect	Using different sterilising process for increasing productivity, Adopting IPM method
Exposure visit to other district/ state	KVK FARM
Recognition received at the Block / District / State level	Yes , For mushroom cultivation by Deputy Director of Horticulture
Extend & publicity of his / her contribution / success stories	YES, Training to new farmers on mushroom and IPM of cashew.
Record Keeping: Winner farmers should have adequate knowledge in farm record keeping evaluating the success or failure of the enterprises	Yes
Attachment with KVK and other allied sectors	Yes
Any other relevant information	No

02. Miss Sanghamitra Pradhan

Name of the Farmer	Miss Sanghamitra Pradhan
Father / Husband's name	D/O-Jayarampradhan
Gender	Female
Marital status	Unmarried
Place of birth	Sinising
Postal address	AT/PO-Chheligada,pin-761016

Phone	9178722552
Adhaar	406613091222
Formal / informal education	Matriculation
Farmers status: Small/ Marginal/Large	Marginal
Resources owned by the farmers	
Land (ha) Water bodies with irrigation capacity Animal resource including fish Farm machinery Area under (ha) Field crop Hort-crop Agro-forestry Diary / poultry / fisheries / Duckaries /Piggeries Nos. of bee hives Ponds	1 (ha) No No Yes, Sprayer No Rice, maize Mushroom No Yes (poultry) No No
New technologies developed	No
New technologies adopted in farming	Cultivation of mushroom by using different substrate, Use of different sterilisation process for mushroom cultivation,
Technologies modified in farming	No
Knowledge of crop husbandry practices i.e, cultural practices like fertilizer application, weed and insect pest management	Knowledge about IPM
Environmental awareness and relevance practices such as aware of factors such as soil erosion, soil and water management practices	NO
Activity wise income , C:B ratio & Gross & Net Income	
Field crop Hort-crop Livestock Fisheries Any other	Rs. 32,800/- Rs. 21,900/- Poultry No No
What improvement have been effected for productivity & sustainability-enhancement	Leadership Quality, Active participation, Good communication skills, Gathering of farmers.
Farmer's role in his or her community: The farmers must contribute towards the growth of the community in which he/she lives. Share knowledge with other farmers in the community.	Using different sterilising process for increasing productivity, Adopting IPM method
Any Innovation included in the system of production & management & effect	No
Exposure visit to other district/ state	KVK FARM
Recognition received at the Block / District / State level	No
Extend & publicity of his / her contribution / success stories	YES
Record Keeping: Winner farmers should have adequate knowledge in farm record keeping evaluating the success or failure of the enterprises	Yes

Attachment with KVK and other allied sectors	Yes
Any other relevant information	No

8.2. Mobile APP based Agromet advisory services for farmers: Meghdoot app is updated on each Tuesday and Friday by AAS Division, IMD, New Delhi for Gajapati district through linkage with AgroDSS in which the advisory was provided by DAMU, KVK, Gajapati.

9. Feedback from progressive farmers:

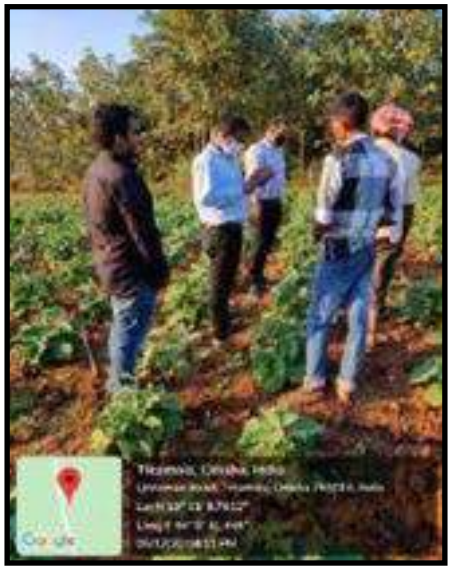
Sl. No.	Farmer name & Village	Block	Feedback
01	Sri Sumanta Nayak, Adava	Mohana	Highly necessary, rainfall forecast is more important, Mobile SMS should be disseminated directly to the farmers as soon as possible as maximum farmers have no smartphones and there is no network in maximum villages.
02	Miss Sanghamitra Pradhan, Sinising	R. Udayagiri	She is able to cultivate unseasonal vegetables, mushroom in fluctuated weather conditions by following block level AAS.

10. Details of HRD programmes undergone by DAMU personnel:

Name of course	Name of DAMU personnel and designation	Date and Duration	Organized by
Training Programme on Basic of RS and GIS	Mr. Jayashankar Pradhan	18th-25th March, 2021 (7 days)	College of Agricultural Engineering & Technology, OUAT, Bhubaneswar

11. Any other important information (Any significant events conducted by DAMU on weather and crop related activities in the district may be given along with photo):

1. Mr. Jayashankar Pradhan, SMS (Agro-meteorology), DAMU, KVK, Gajapati delivered a lecture on "Weather Induced Insects/Pests/Diseases Occurrence and their management" to VAW, HEW on 23rd February, 2021 at ADO Office, R.Udayagiri.
2. Visit to farmer's field of Mr. Sunil Mandal, Tikamala, R.Udayagiri.



DAMU Ganjam-1

1.1. Staff Position (as on 1st April, 2021)

Sl. No.	Name of the incumbent	Qualification	Pay Scale with present basic	Date of joining
1	Swati Swayamprabha Pradhan, SMS (Agrometeorology)	MSc. (Ag)	15600-39100+ GP 5400	12-11-2021

1.2 Status of Expert Panel group

Sl.No.	Name	Designation	Mobile/ Ph no
1	Duryodhana Patanga	Chief District Agriculture Officer	9437579780
2	Sarat Chandra Behera	Deputy Director of Horticulture	9437132770
3	Dr. Debaraj Behera	Chief District Veterinary Officer	9938504081
4	Siba Prasad Bhoi	Deputy Director of fishery	9439507330
5	Dr. Swagatika Sahu	Sr. Scientist & Head	9658091561
6	Sri Prasanta Kumar panda	Scientist (Plant Protection)	9439144376
7	Sri Bishnupada Giri	Scientist (Horticulture)	9937131964
8	Dr. Siddharth Ranabijuli	Scientist(Animal Science)	9438485419
9	Dr. Santosh Kumar Samantaray	Scientist (Agril. Extension)	9439917670
10	Mrs. Anita Patro	Scientist (Home Science)	9439326251
11	Sri Satyabrata Mangaraj	Scientist (Agronomy)	7809624050
12	Swati Swayamprabha Pradhan	SMS (Agrometerology)	7978467320

2. District level data on agriculture, livestock and farming situation and Agro climatic data

Sl. no.	Item	Information
2.1	Major Farming system/enterprise	Rice-Greengram, Rice-Blackgram, Rice-Vegetable, Vegetable-Vegetable,Rice-Fallow, Rice- Maize- Groundnut, Rice- maize
2.2	Agro-climatic Zone	East and South Eastern Coastal Plain Zone, North Eastern Ghat Zone
2.3	Agro ecological situation	Rainfed Red and Laterite, Black, medium rainfall and irrigated, Alluvial, low rainfall and irrigated
2.4	Soil type	Alluvial, red, saline, black soils
2.5	Productivity of major 2-3 crops under cereals, pulses, oilseeds, vegetables, fruits and others	Given below in table
2.6	Mean yearly temperature, rainfall, humidity of the district	Rainfall-1276 mm, T Max -34.2, T Min- 16.4, RH Max-87, RH Min-86
2.7	Maximum weather hazards/weather vagaries/extreme weather conditions at your district	Cyclone, Flood, Heat Wave, Drought, Sea water inundation
2.8	Thrust area for agrometeorology	Cyclone, Flood, Heat Wave, Drought
2.9	Blocks under Rainfed situation	Polosara, Beguniapada, Kabisuryanagar, Kukudakhandi, Hinjilikatu, Patrapur, Chikiti, Sanakhemundi

Sl. no.	Item	Information
2.10	Blocks under irrigated situation	Chhatrapur, Ganjam, Bhanjanagar, Belaguntha, Aska, Dharakote, Sheragada, Jagannath Prasad, Buguda, Surada, Digapahandi, Rangeilunda, Purushottampur, Khalikote
2.11	Normal date of sowing of different crops and present season sowing dates of particular district or block	Given below in Tables 1 and 2

Table-1

Sl. No.	Blocks	Major crops
1	Surada	Rice, Maize, Pigeonpea, Greengram, Blackgram, Sesamum, Groundnut, Vegetable,
2	Aska	Rice, Sugarcane, Blackgram, Greengram, Groundnut, Sesamum, vegetable
3	Jagannathprasad	Rice, Pigeonpea, Greengram, Blackgram, Sesamum, Ground nut, Vegetable
4	Kabisuryanagar	Rice, Blackgram, Green gram, Groundnut
5	Belaguntha	Rice, Greengram, Blackgram, Sesamum, Vegetable
6	Sheragada	Yam, Maize, Rice, lemon
7	Bhanjanagar	Rice, Greengram, Blackgram, Sesamum, Vegetable
8	Kukudakhandi	Rice, Blackgram, Green gram, Groundnut, Mustard
9	Hinjilikatu	Rice, Blackgram, Green gram, Groundnut, Vegetable, Horse gram
10	Ganjam,	Rice, Blackgram, Green gram, Groundnut, vegetable
11	Khalikote	Rice, Blackgram, Green gram, Groundnut
12	Polosara	Rice, Greengram, Blackgram, Ground nut, Niger, Yam
13	Rangailunda	Rice, Blackgram, Vegeatable
14	Beguniapada	Rice, Maize, Pigeonpea, Greengram, Blackgram, Sesamum, Ground nut, Vegetable
15	Chhatrapur	Rice, Green gram, Groundnut, sesame, vegetable
16	Patrapur	Vegetable, Rice, Green gram, Groundnut, sesame
17	Purusottampur	Rice, Pigeonpea, Greengram, Blackgram, Sesamum, Ground nut, Vegetable
18	Dharakote	Rice, Sugarcane, Maize, Finger millets, Sunflower, Sesame, Ground nut, Cotton
19	Sanakhemundi	Rice, Blackgram, Green gram, Maize, Niger
20	Buguda	Rice, Blackgram, Green gram, Groundnut
21	Digapahandi	Rice, Blackgram, Green gram, Groundnut
22	Chikiti	Maize, Rice, Blackgram, Green gram

Table-2

CROP	SEASON	SOWING	HARVESTING	PRODUCTIVITY (kg ha^{-1})
Rice (Hybrid)	Kharif	June 3rd week-July 3rd week	Nov 3rd week- Dec 2nd week	2800
	Rabi	Dec 4th week- Jan 1st week	April 4th week- May 2nd week	886
	Summer/ Zaid	Feb 1st week-End of Feb	June 1st week- End of June	3235

CROP	SEASON	SOWING	HARVESTING	PRODUCTIVITY (kg ha^{-1})
Maize	Kharif	May 4th week-July 2nd week	Sept 3rd week-Oct 1st week	2356
	Rabi	Sept 4th week-Oct 1st week	Jan 2nd week- Jan 3rd week	3914
	Summer/ zaid	Jan 1st week- Jan 3rd week	April 1st week- April 4th week	
Ragi	Kharif	June 2nd week- June 4th week	Sept 4th week- Oct 1st week	895
Pulses				
Arhar	Kharif	June 2nd week- July 1st week	Jan 2nd week- Feb 1st week	934
Urad	Kharif	July 3rd week-Aug 4th week	Oct 2nd week- Nov 2nd week	466
	Pre-Rabi	Sept 1st week- Sept 2nd week	Nov 4th week- Dec 1st week	
	Rabi	Oct 4th week-Nov 1st week	Jan 3rd week- Jan 4th week	468
Kulthi	Kharif	Sept 2nd week- Sept 4th week	Nov 3rd week- Nov 4th week	378
Gram	Rabi	Nov 1st week- Nov 4th week	Feb 1st week-Feb 2nd week	812
Moong	Kharif	June 1st week- June 2nd week	Aug 2nd week- Aug 3rd week	455
	Rabi	Nov 3rd week- Dec 1st week	Feb 2nd week – Feb 4th week	521
	Summer	Jan 2nd week- Jan 3rd week	March 3rd week-March 4th week	
Oilseeds				
Ground nut	Kharif	June 1st week- June 4th week	Sept 4th week-Oct 3rd week	1250
	Rabi	Dec		1928
Til	Kharif	Aug 1st week-Aug 4th week	Oct 2nd week- Nov 2nd week	
	Summer	Feb to March	May	
Mustard	Rabi	Sept 4th week-Oct 2nd week	Dec 2nd week-Dec 4th week	465
Sunflower	Kharif	June 2nd week-July 1st week	Aug 4th week- Sept 1st week	1115
	Rabi	Nov 3rd week- Dec 1st week	Feb 3rd week- March 1st week	
Niger	Kharif	July 4th week-Aug 3rd week	Nov 4th week- Dec 2nd week	406
Sugarcane	Autumn	Oct 3rd week-Oct 4th week	July 1st week-July 2nd week	72450
	Spring	Feb 4th week- March 2nd week	Jan 4th week- Feb 2nd week	
Cotton	Kharif	June 1st week- June 4th week	Dec 3rd week- Jan 3rd week	180

3. Status of Agro-AWS and surface observatory:

3.1 Date of installation of AWS : --17.04.2021

3.2 List of instruments presently available in working condition: AWS (Rain gauge, Solar panel, Sunshine sensor, Wind speed and direction sensor at 3m and 10 m) Soil thermometer and Soil moisture sensor

3.3 Instruments to be replaced/repaired indicating type of defect: Nil

3.4 Please provide frequency of observation, exposure conditions of the site etc. Bi weekly

3.5 Number of years of data records available:

3.6 Whether the observatory is periodically inspected, maintained and calibrated by IMD (If yes, please indicate the latest data of inspection by the IMD) -

3.7 Status of surface observatory- No

3.8 Status of Manual/ordinary rain gauge at KVK Campus-- Not in working condition

3.9 Details of soil moisture observations taken, if any (please provide frequency and depths of observation etc.) –

4. Details of Agromet Advisory Services

4.1 Date of start of Agromet Advisory Bulletins: 01.12.2020

4.2 No. of times the weather forecasts received during the year: every Tuesday and Friday

4.3 Date of receiving the forecasts from MC/RMC- Every Tuesday and Friday

4.4 If the time is not suitable then what will be the appropriate time to receive the Value added forecast- with in 12 PM

4.5 No. of AAS bulletins prepared and disseminated to the farmers during the year – every Tuesday and Friday

In English – 35* 23 = 805

In Odia - 35* 23 = 805

4.6 No. of AAS bulletins were prepared using Agromet - DSS in English and regional languages

In English – 35* 23 = 805

In Odia - 35* 23 = 805

4.7 Status of district crop weather calendar--Nil

4.8 List the modes of mass communication adopted for AAS dissemination:

Sl No.	Social Media	Description (Provide name of all block wise whtsapp groups and link/name of other social media)	Total beneficiaries
01	Whats app groups For Farmers	Belaguntha, Bhanjanagar Kabisuryanagar, Seragada, Surada	107
	For extension Officials	Khetra Vigyan KVK, Bhanjanagar Resilience Odisha, (surada, Bhanjanagar, Rageilunda)	334
02	Face book /Twitter/Instagram		
Face book- Damuganjam		Ganjam	34
TOTAL REACH			**475**

4.9 No of SMS sent through Kisan Portal and how many farmers were benefitted during the year: 2 nos.

5. Farmers Awareness/Training/Meghdoot popularization activities or other outreach programme

5.1 Give list of farmers awareness programmes conducted like Krishi/Kishan Melas, training, participation in national day parades etc. and photograph of Farmer's Awareness Programme (no of Farmer attended).

SI. No.	FAP/ Farmers meet /Meghdoot Popularization activities and Other Activities	Date	Location (Block/Village)	Farmers attended the Program
1	FAP	08.02.21	Tulasipalli, Bhanjanagar	30
2	FAP	10.02.21	Benakunda, Bhanjanagar	20
3	FAP	16.03.21	Bellaguntha	50
Total				**100**

6. List of other organizations receiving Agromet advisories:

- IMD, Pune
- Regional station IMD, Bhubaneswar
- Ouat, Bhubaneswar

7. Details of FAP Conducted during the year (with good quality photographs):

SI. No	FAP	Date	Location (Block/Village)	Farmers attended the Program
1	FAP	08.02.21	Tulasipalli, Bhanjanagar	30
2	FAP	10.02.21	Benakunda, Bhanjanagar	20
3	FAP	16.03.21	Bellaguntha	50
Total				**100**






8. Details of HRD programmes undergone by DAMU personnel:

Sl. No.	Name of programme	Name of course	Name of DAMU personnel and designation	Date and Duration	Organized by
1	Training on Basic Applications of RS & GIS inAgriculture and Allied Fields	Basic Applications of RS & GIS inAgriculture and Allied Fields	Swati Swayamprabha Pradhan, SMS (Agromet)	18-03-21 to 25-03-21	Geospatial Technology Centre (In front of Central Laboratory), OUAT
2	Online/ Offline training programme on Preparation and Dissemination of Agromet Advisories at Block level under GKMS	Preparation and Dissemination of Agromet Advisories at Block level under GKMS	Swati Swayamprabha Pradhan, SMS (Agromet)	18-11-20 to 21-11-20	Dean Extension Education, OUAT, JDE, DDE

DAMU Mayurbhanj-1

1.1. Staff Position (as on 1st April, 2021)

Sl.No.	Name of thein cumbent	Qualification	Pay Scale with present basic	Date of joining
1.	Mr. Jyotiprakash Mishra, SMS (Agrometeorology)	M.Sc.Ag. (Agronomy)	PB-3, Rs. 15,600-39,100/- Plus RGP Rs. 5,400/-	03rd November, 2020

1.2 Details of Orientation/Review/Expert Panel meeting conducted during the year

Sl.No.	Date	Number of Participants	Salient Recommendations	Action taken
1.	18-21 November, 2020	06	Orientation Programme for newly recruited SMSs under DAMU, Odisha	Both District & Block level advisory preparation & dissemination to farmers, Upload DAAS bulletins in AgroDSS & Agrimet portal.
2.	01st January, 2021	05	Dissemination of Agro Advisory Services among the farmers and increase the outreach of DAMU activities.	Total 07 nos. of Whatsapp group are formed for the effective dissemination of Agro Advisory Services.
3.	11-12 March, 2021	75	Online Familiarization Programme under GKMS.	Both District & Block level advisory preparation & dissemination to farmers, Upload DAAS bulletins in AgroDSS & Agrimet portal.

1.3 Status of Expert Panel group

Sl.No.	Name	Designation	Mobile/Ph no
1.	Dr. SanghamitraPattanaik	Senior Scientist & Head cum Nodal Officer, DAMU, KVK, Mayurbhanj-1	9437147934
2.	Mr. Jyotiprakash Mishra	Subject Matter Specialist (Agrometeorology)	8895919918
3.	Dr. Biswa Ranjan Samantaray	Scientist (Fishery Sciences)	9437091065
4.	Mrs. Jhunilata Bhuyan	Scientist (Home Science)	9437470001
5.	Dr. Plabita Ray	Subject Matter Specialist (Agronomy)	8658775425
6.	Mr. Debashis Jayapuria	Subject Matter Specialist (Agricultural Extension)	9337892822
7.	Mr. Sanjay Kumar Mohanty	CDAO, Mayurbhanj	9348320893
8.	Mr. Nilamadhaba Dash	AAO, Head quarter, CDAO Office, Mayurbhanj	8895802259

2. District level data on agriculture, livestock and farming situation and Agro climatic data

Sl. No.	Item	Information
2.1	Major Farming system/enterprise	Rice-fallow, Rice-Paira Green gram/ Black gram, Maize –fallow, Ragi-Fallow, Rice-Vegetables
2.2	Agro-climatic Zone	North central plateau Characteristic: Hot and moist, sub humid Rain fall: Normal

Sl. No.	Item	Information
2.3	Agro ecological situation	AES I Characteristics: Low Rainfall, Low Elevation Blocks (Five) : Tiring, Rirangpur, Rasgovindpur, Bahalda,Shuliapada AESII Characteristics : Low Elevation, Medium Rainfall Blocks (Fifteen): Baripada, Badasahi, Shamakhunta, Khunta, GB Nagar, Betonati, Muruda, Kuliana, Bangiriposi, Udala, Saraskana, Kusumi, Bishoi, Bijatala, Jamda AESIII Characteristics: Low Elevation, High Rainfall Blocks (One): Kaptipada AESIV Characteristics: Medium Elevation, Medium Rainfall Blocks (Five): Karanjia, Sukruli, Jashipur, Raruan, Thakurmunda
2.4	Soil type	Broad Soil group: Laterite, Red & Yellow, Mixed Red &Black
2.5	Productivity of major 2-3 crops under cereals, pulses, oilseeds, vegetables, fruits and others	Rice-40 q/ha, Maize-35 q/ha, Ragi-12 q/ha, Greengram-08 q/ha, Blackgram-6 q/ha, Arhar-15 q/ha, Groundnut -16 q/ha, Sesame-8q/ha Brinjal-152 q/ha, Cauliflower-145.6 q/ha, Chilli-10 q/ha
2.6	Mean yearly temperature, rainfall, humidity of the district	Mean Annual Rain fall (mm.): 1534 mm Mean max. temp. (Summer): 36.6 0C Mean min. temp. (Winter): 11.1 0C Relative Humidity-78-85%
2.7	Maximum weather hazards/ weather vagaries/extreme weather conditions at your district	Drought, Unusual rains, Floods, Heat wave/Cold wave/Frost/ Hailstorm /Cyclone
2.8	Thrust area for agrometeorology	No weather advisory services to farmers. Major incidence of disease pest due to extreme weather conditions. Water stress during winter & summer season. Major crop loss due to unavailability of water. Unavailability of climate smart technologies adopted by farmers.
2.9	Blocks under Rainfed situation	Jashipur, Raruan, Sukruli, Kusumi, Saraskana, Bijatala, Bisoi, Rairangpur, Tiring, Bahalda, Jamda, Bangriposi, Kuliana, Shyamakhunta, Karanjia, Thakurmunda, Kaptipada, Udala, Gopabandhunagar, Baripada, Khunta, Badasahi, Morada, Suliapada, Rasgobindapur, Betnoti.
2.10	Blocks under irrigated situation	Parts of all blocks under irrigated situation.
2.11	Normal date of sowing of different crops and present season sowing dates of particular district or block	Rice- Kharif- Rainfed -2nd week of June-4th week of July Kharif- Irrigated -2nd week of June-4th week of July Rabi-Irrigated- 1st week of December-1st week of January Ragi- Kharif- Rainfed -2ndweek of June-3rdweek of July Rabi-Irrigated- 1st week of October- 2nd week of November Maize- Kharif- Rainfed -4th week of May-4th week of June Blackgram / Greengram- Kharif- Rainfed -1st week of July-2nd week of August Rabi- Rainfed - 1st week of November-3rd week of December Groundnut/Sunflower- Kharif- Rainfed -2nd week of June-2nd week of July Rabi- Irrigated - 1st week of November-4th week of December

3. Status of Agro-AWS and surface observatory:

3.1 Date of installation of AWS : --27th April, 2021

3.2 List of instruments presently available in working condition: -- All sensors are in working condition

3.3 Instruments to be replaced/repaired indicating type of defect: --Nil

3.4 Please provide frequency of observation, exposure conditions of the site etc. – Weekly twice

3.5 Number of years of data records available: --Nil

3.6 Whether the observatory is periodically inspected, maintained and calibrated by IMD (If yes, please indicate the latest data of inspection by the IMD) ---NA

3.7 Status of surface observatory---Still not established

3.8 Status of Manual/ordinary rain gauge at KVK Campus---NA

3.9 Details of soil moisture observations taken, if any (please provide frequency and depths of observation etc.) – NA

4. Details of Agromet Advisory Services

4.1 Date of start of Agromet Advisory Bulletins:1st January, 2021

4.2 No. of times the weather forecasts received during the year: 26

4.3 Date of receiving the forecasts from MC/RMC-1st January, 2021

4.4 If the time is not suitable then what will be the appropriate time to receive the Value added forecast- In between 11.00 AM-12.00 PM

4.5 No. of AAS bulletins prepared and disseminated to the farmers during the year: 26

4.6 No. of AAS bulletins were prepared using Agromet-DSS in English and regional languages: 816

4.7 Status of district crop weather calendar—Data related to historical weather data, soil, crop and disease/pest are not available with us.

4.8 List the modes of mass communication adopted for AAS dissemination:

Sl. No.	Social Media	Description (Provide name of all block wise WhatsApp groups and link/name of other social media)		Total beneficiaries
01	WhatsApp groups a)For Farmers	Badasahi	Udyan Krushi, Badasahi	208
		Shyamakhunta	KVK, Mayurbhanj-1	11
		Baripada	Mayurbhanj-1 KVK	23
		Baripada	Agriculture Family	59
02	KVK Website	www.kvkmayurbhanj.org		Mass
03	University/Institute website	www.ouat.nic.in		Mass
04	E-mail id(KVK/DAMU)	damumayurbhanj1@gmail.com		
TOTAL REACH				**301**

4.9 No of SMS sent through Kisan Portal and how many farmers were benefitted during the year: **81(16891 Farmers)**

5. Verification of Block or district level medium range forecast

Season: Winter (January-February)

5.1 Quantitative Verification

Weather	Mayurbhanj		
	C	U	NU
Rainfall	94.92	0	5.08
Max. Temp	37.29	33.9	28.81
Min. Temp	84.75	11.86	3.39

C - Correct, U - Usable and NU-Not usable

5.2 Rainfall Qualitative Verification

Skill Score	Mayurbhanj
Probability of Detection (PoD)	0.5
False Alarm Rate	0.67
Correct Non-Occurrence (C-Non),	0.98
Critical Success Index (CSI)	0.25
Bias for Occurrence (Bias)	0.05
Percentage correct (Pc)	94.92
True skill score (Tss) or HK Score	0.46
Heidke skill score (Hss)	0.37

6. Farmers Awareness/Training/Meghdoot popularization activities or other outreach programme

6.1 Give list of farmers awareness programmes conducted like Krishi/KishanMelas, training, participation in national day parades etc. and photograph of Farmer's Awareness Programme (no. of Farmer attended).

SI. No	FAP/ Farmers meet/Meghdoot Popularization activities and Other Activities	Date	Location (Block/Village)	Farmers attended the Program
1	Women in Agriculture Day	4th December, 2020	KVK, Mayurbhanj-1	30
2	World Soil Day	5thDecember, 2020	District Agriculture Office, Mayurbhanj	60
3	Effect of weather parameters on Mushroom cultivation (SHG Women)	3rd February, 2021	KVK Mayurbhanj-1	30
4	Agriculture Education Day	3rd December 2020	Gundihudi	25
5	District Agriculture Fair	15 February 2021	CDAO Officer, Mayurbhanj	100
Total				**245**





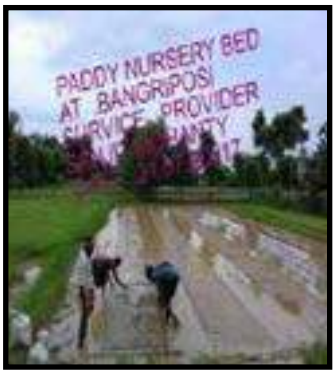
7. List of other organizations receiving Agromet advisories:

- OUAT, Bhubaneswar
- MC, Bhubaneswar
- IMD, Pune
- GKMS, Kolkata
- RRTTS, Keonjhar
- District Agriculture Department, Mayurbhanj
- District Horticulture Department, Mayurbhanj

8. Economic impact of Agromet advisory services:

8.1 Impact of Nowcast in farming practices

1. Sri Sanjit Mohanty



Name of the Farmer	Sri Sumanta Nayak
Father / Husband's name	S/o-S. Mohanty
Gender	Male
Marital status	Married
Place of birth	Kansapal
Postal address	At: Kansapal, Po- Chandapur, Via-Bangriposi, Block: Bangriposi
Phone no	9437461661, 907814668
Adhaar no	
Formal / informal education	Matric
Farmers status: Small/ Marginal/Large	Large
Resources owned by the farmers Land (ha) Water bodies with irrigation capacity Animal resource including fish Farm machinery Area under (ha) Field crop Hort-crop Agro-forestry Diary / poultry / fisheries / Duckaries /Piggeries Nos. of bee hives Ponds	 20 (ha) Well No animal resource Yes, Sprayer Yes Rice, Maize, Groundnut Mushroom, Cashew No Poultry No No
New technologies developed	No
New technologies adopted in farming	Cultivation of mushroom by using different substrate, Use of different sterilisation process for mushroom cultivation, IPM for Tea Mosquito Bug in Cashew.

Technologies modified in farming	No
Knowledge of crop husbandry practices i.e, cultural practices like fertilizer application, weed and insect pest management	Knowledge about IPM
Environmental awareness and relevance practices such as aware of factors such as soil erosion, soil and water management practices	Soil erosion control by plantation of cashew
Activity wise income , C:B ratio &Gross & Net Income (Net Annual income rupees per hector) Field crop Hort-crop Livestock Fisheries Any other	Rs. 2,00,000 Rs. 50,000/- Rs. 1,50,000/- No Rs. 6,00,000/-(Machine Hiring)
What improvement have been effected for productivity & sustainability-enhancement	Using different sterilising process for increasing productivity, Adopting IPM method, Regular disinfection of mushroom unit
Farmer's role in his or her community: The farmers must contribute towards the growth of the community in which he/she lives. Share knowledge with other farmers in the community.	Leadership Quality, Active participation, Good communication skills, Gathering of farmers, dissemination of new technologies , Organize different training programmes on mushroom and IPM of cashew.
Any Innovation included in the system of production &management & effect	Using different sterilising process for increasing productivity, Adopting IPM method
Exposure visit to other district/ state	KVK FARM
Recognition received at the Block / District / State level	Yes , For mushroom cultivation by Deputy Director of Horticulture
Extend & publicity of his / her contribution / success stories	YES, Training to new farmers on mushroom and IPM of cashew.
Record Keeping: Winner farmers should have adequate knowledge in farm record keeping evaluating the success or failure of the enterprises	Yes
Attachment with KVK and other allied sectors	Yes
Any other relevant information	No

2. Mrs. Lipsa Mohanty

Name of the Farmer	Mrs. Lipsa Mohanty
Father / Husband's name	W/O-Sanjit Mohanty
Gender	Female

Marital status	Married
Place of birth	Kansapal
Postal address	At: Kansapal, Po- Chandapur, Via-Bangriposi, Block: Bangriposi
Phone	8280252761
Adhaar	
Formal / informal education	Matriculation
Farmers status: Small/ Marginal/Large	Marginal
Resources owned by the farmers Land (ha) Water bodies with irrigation capacity Animal resource including fish Farm machinery Area under (ha) Field crop Hort-crop Agro-forestry Diary / poultry / fisheries / Duckaries /Piggeries Nos. of bee hives Ponds	 1 (ha) No No Yes, Sprayer No Rice, maize Mushroom Poultry Yes (poultry) No No
New technologies developed	No
New technologies adopted in farming	Cultivation of mushroom by using different substrate, Use of different sterilisation process for mushroom cultivation,
Technologies modified in farming	No
Knowledge of crop husbandry practices i.e, cultural practices like fertilizer application, weed and insect pest management	Knowledge about IPM
Environmental awareness and relevance practices such as aware of factors such as soil erosion, soil and water management practices	NO
Activity wise income , C:B ratio & Gross & Net Income Field crop Hort-crop Livestock Fisheries Any other	 Rs. 1,00,000/- Rs. 30,000/- PoultryRs. 2,00,000/- No No
What improvement have been effected for productivity & sustainability-enhancement	Leadership Quality, Active participation, Good communication skills, Gathering of farmers.
Farmer's role in his or her community: The farmers must contribute towards the growth of the community in which he/she lives. Share knowledge with other farmers in the community.	Using different sterilising process for increasing productivity, Adopting IPM method
Any Innovation included in the system of production & management & effect	No
Exposure visit to other district/ state	KVK FARM
Recognition received at the Block / District / State level	No

Extend & publicity of his / her contribution / success stories	YES
Record Keeping: Winner farmers should have adequate knowledge in farm record keeping evaluating the success or failure of the enterprises	Yes
Attachment with KVK and other allied sectors	Yes
Any other relevant information	No

8.2. Mobile APP based Agromet advisory services for farmers: Meghdoot app is updated on each Tuesday and Friday by AAS Division, IMD, New Delhi for Mayurbhanj district through linkage with AgroDSS in which the advisory was provided by DAMU, KVK, Mayurbhanj.

9. Feedback from progressive farmers:

Sl. No.	Farmer name & Village	Block	Feedback
01	**Sri Sanjit Mohanty,** Kansapal	Bangriposi	Highly necessary, rainfall forecast is more important, Mobile SMS should be disseminated directly to the farmers as soon as possible as maximum farmers have no smartphones and there is no network in maximum villages.
02	**Mrs. Lipsa Mohanty,** Kansapal	Bangriposi	She is able to cultivate unseasonal vegetables, poultry in fluctuated weather conditions by following block level AAS.

10. Details of HRD programmes undergone by DAMU personnel:

Sl. No.	Name of programme	Name of course	Name of DAMU personnel and designation	Date and Duration	Organized by
1.	Training Programme	Training Programme on Basic of RS and GIS	Mr. Jyotiprakash Mishra	18th-25th March, 2021 (7 days)	College of Agricultural Engineering & Technology, OUAT, Bhubaneswar
2.	Training Programme	Pest Risk Analysis	Mr. Jyotiprakash Mishra	18.01.2021-22.01.2021	NIPHM, Govt. of India

DAMU Nayagarh

1.1. Staff Position (as on 1st April, 2021)

Sl. No.	Name of the incumbent	Qualification	Pay Scale with present basic	Date of joining
1	Mrs. Snigdha Pattanayak SMS (Agrometeorology)	M.Sc. (Agrometeorology)	GP-5400/- Basic- 15600-39100/-	05.11.2020

1.2 Details of Orientation/Review/Expert Panel meeting conducted during the year

Sl.No.	Date	Number of Participants	Salient Recommendations	Action taken
1.	18.11.2020 to 21.11.2020	06	Orientation programme for newly recruited SMSs under DAMU in Odisha	After the orientation training the activities like Awareness programme, Advisory Bulletiein, Mkisan etc. started by DAMU, KVK, Nayagarh

1.3 Status of Expert Panel group

Sl.No.	Name	Designation	Mobile/Ph no
1.	Dr. Anil Kumar Swain	Senior Scientist and Head, KVK, OUAT, Nayagarh	9439024040
2	Mr. Pramod Ku Prusti	Scientist (PP), KVK, OUAT, Nayagarh	7008170684
3	Dr. (Mrs.) Bijaya Laxmi Rout	Scientist (Home Science), KVK, OUAT, Nayagarh	9337997347
4	Dr. (Mrs.) Lata Malik	Scientist (Soil Sc.), KVK, OUAT, Nayagarh	8917307529
5	Mr. Tribijayi Badjena	Scientist (Ag. Extension), KVK, OUAT, Nayagarh	7978429892
6	Er. (Mrs.) Suchismita Dwivedy	Scientist (Ag. Eng.), KVK, OUAT, Nayagarh	8763821161
7	Mrs. Snigdha Pattanayak	SMS (Agrometeorology), DAMU, KVK, OUAT, Nayagarh	8249641791
8	Mr. Bijaya Ku Pradhan	Chief District Agriculture Officer, Dept. of Agriculture, Nayagarh	9437124105
9	Mrs. Litty Pattanaik	Block Agriculture Officer, PP, Dept. of Agriculture, Nayagarh	9437162544
10	Mr. P.K. Panda	Asst. Horticulture Officer, Dept. of Horticulture, Nayagarh	9438734704

2. District level data on agriculture, livestock and farming situation and Agro climatic data

Sl. no.	Item	Information
2.1	Major Farming system/enterprise	Rice – Green gram
2.2	Agro - Climatic Zone	East and South Eastern Coastal Plain Zone
2.3	Agro Ecological situation	Rainfed Laterite
2.4	Soil type	Mixed red, alluvial
2.5	Productivity of major 2-3 crops under cereals, pulses, oilseeds, vegetables, fruits and others	Paddy-45q/ha, Greengram-4.68q/ha, sugarcane-69.95ton/ha
2.6	Mean yearly temperature, Rainfall, Humidity of the district	1354mm, 38°C, 87%
2.7	Maximum weather hazards/weather vagaries/extreme weather conditions at your district	Excessive heat and high temperature
2.8	Thrust area for agrometeorology	Lack of availabilityof meteorological data among the farmers which affects their intercultural operations and cultural practices.
2.9	Blocks under Rainfed situation	Bhapur, Dasapalla, Gania, Khandapara, Nayagarh, Nuagaon, Odagaon, Ranapur
2.10	Blocks under irrigated situation	-
2.11	Normal date of sowing of different crops and present season sowing dates of particular district or block	Kharif (Paddy)- June to September Rabi (Pulses and Sugarcane)- October to January

3. Status of Agro-AWS and surface observatory:

3.1 Date of installation of AWS: -- 13.02.2021

3.2 List of instruments presently available in working condition: -- Sensors have not yet been installed; only civil work has been completed

3.3 Instruments to be replaced/repaired indicating type of defect: -- NA

3.4 Please provide frequency of observation, exposure conditions of the site etc. --NA

3.5 Number of years of data records available: -- Not recorded yet

3.6 Whether the observatory is periodically inspected, maintained and calibrated by IMD (If yes, please indicate the latest data of inspection by the IMD) - -- Sensors have not been installed

3.7 Status of surface observatory--- Not yet installed

3.8 Status of Manual/ordinary rain gauge at KVK Campus---NA

3.9 Details of soil moisture observations taken, if any (please provide frequency and depths of observation etc.) – No

4. Details of Agromet Advisory Services

4.1 Date of start of Agromet Advisory Bulletins: 01.01.2021

4.2 No. of times the weather forecasts received during the year:26

4.3 Date of receiving the forecasts from MC/RMC- Every Tuesday and Friday

4.4 If the time is not suitable then what will be the appropriate time to receive the Value added forecast- Within 12 noon

4.5 No. of AAS bulletins prepared and disseminated to the farmers during the year: 26

4.6 No. of AAS bulletins were prepared using Agromet-DSS in English and regional languages: 260 (district + 9 blocks)

4.7 List the modes of mass communication adopted for AAS dissemination:

Sl. No.	Social Media	Description (Provide name of all block wise whtsapp groups and link/ name of other social media)	Total beneficiaries
01	Whatsapp groups For Farmers	Advisory group-Nayagarh Advisory group-Nuagaon	16 38
	For extension Officials	DAMU, KVK, Nayagarh	21
TOTAL REACH			**75**

4.8 No of SMS sent through Kisan Portal and how many farmers were benefitted during the year: 06 (98925 farmers)

5. Farmers Awareness/Training/Meghdoot popularization activities or other outreach programme

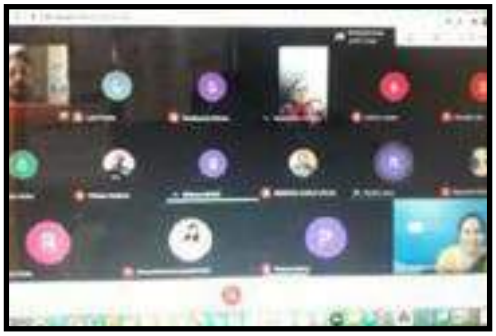
5.1 Give list of farmer's awareness programmes conducted like Krishi/Kishan Melas, training, participation in national day parades etc. and photograph of Farmer's Awareness Programme (no. of Farmer attended).

SI. No.	FAP/ Farmers meet/ Meghdoot Popularization activities and Other Activities	Date	Location (Block/Village)	Farmers attended the Program
1	Farmers Awareness Programme	19.03.2021	Nayagarh/ Chinara	50
2	Farmers Awareness Programme	24.03.2021	Khandapara/ Kotapokhari	50
3	Farmers Awareness Programme	25.03.2021	Nuagaon/ Ambajhari	50
Total				**150**



5.2 Capacity building/Seminar conducted

SI. No	Thematic area	Date	No of Courses	No of beneficiaries
1	Agricultural Education Day (Online Mode)	03.12.2020	01	30
2	National Science Day (Online Mode)	28.02.2021	01	30
Total				**60**



6. List of other organizations receiving Agromet advisories:

- Agriculture Department
- Horticulture Department
- Fishery Department
- Departmental officials of all blocks

7. Details of FAP Conducted during the year:

(a) Awareness program on plant health was conducted at Chinara village of Nayagarh block on dt.19.03.2021 involving 50 nos. of participants. Participants were made aware about the importance of agro advisory bulletin issued for every block biweekly. They were also trained about the importance of plant health and disease pest management for different crops.

(b) Awareness program on plant health and mushroom cultivation was conducted at Kotapokhari village of Khandapara block on dt. 24.03.2021 involving 50 nos. of participants. Participants were made aware about the plant health, how to maintain the health of plants, disease pest management for different crops and also the importance of mushroom cultivation as it is directly related to weather parameters. Need of agro advisory bulletin for the farming community was also discussed.

(c) Awareness programme on plant health and mushroom cultivation was conducted at Ambajhari village of Nuagaon block on dt. 25.03.2021 involving 50 nos. of participants. Importance of plant health along with mushroom cultivation was discussed with the participants. Participants also aroused questions on management of disease pest in different crops. They were made aware on usage of agro advisory bulletins issued for their block.

8. Feedback from progressive farmers:

Sl.No.	Farmer name & Village	Block	Feedback
01	Gayadhara Behera, Chinara village	Nayagarh	Faced difficulty for intercultural operations in crop fields as forecasted weather data were unavailable but now using agro advisory for their field operations.
02	Subhashree Sahoo, Kotapokhari village	Khandapara	Agro advisory is now helpful in mushroom production and spraying of insecticides in crop fields

9. Details of HRD programmes undergone by DAMU personnel:

Sl. No.	Name of programme	Name of course	Name of DAMU personnel and designation	Date and Duration	Organized by
1.	Training programme	Basic Applications of RS & GIS in Agriculture and allied fields	Snigdha Pattanayak (SMS, Agrometeorology)	08-16 March 2021 (8 days)	College of Agricultural Engineering & Technology, OUAT, Bhubaneswar

DAMU Rayagada

1.1 Staff Position (as on 1st April,2021)

Sl. No.	Name of the incumbent	Qualification	Pay Scale with present basic	Date of joining
1.	Hemadri Bag, SMS (Agrometeorology)	M.Sc.(Agrometeorology and Physics)	GP-5400.00/- Basic:- 15,600.00	10.11.2020

1.2 Details of Orientation/Review/Expert Panel meeting conducted during theyear

Sl. No.	Date	Number of Participants	Salient Recommendations	Action taken
1.	18-21 November, 2020	06	Orientation Programme for newly recruited SMSs under DAMU, Odisha	Both District & Block level advisory preparation & dissemination to farmers, Upload Agromet advisory bulletins in Agro DSS & Agrimet portal.
2.	1st December, 2021	06	Dissemination of Agro Advisory Services amongt he farmers.	Preparation of Agromet-advisory bulletins and effective dissemination of Agro Advisory Services.
3.	11-12th March, 2021	75	Online Familiarization Programme under GKMS.	Both District & Block level advisory preparation &dissemination to farmers, Upload DAAS bulletins in Agro DSS & Agrimet portal.

1.3 Status of Expert Panel group

Sl. No.	Name	Designation	Mobile/Ph no
1.	Binod Kumar Jena	Senior Scientist & Head cum Nodal Officer	9439487631
2.	Hemadri Bag	SMS (Agromet)	7894070544

Sl. No.	Name	Designation	Mobile/Ph no
3	Binod Behera	SMS (Ag. Extension)	7749927750
4.	RajibTudu	SMS (Plant Protection)	9933536220
5.	Amit Majhi	SMS (Ag.Engineering)	9778037427

2. District level data on agriculture, livestock and farming situation and Agro climatic data

Sl. no.	Item	Information	
2.1	Major Farming system/enterprise	Village : Gadiakhala–Rice – vegetable based farming System Village : Bijayapur–Rice- Maize- Chilli Village : Korma–Vegetable based farming System Village : Kalma-Cotton based farming System Village : Varsingh-Cotton - Vegetable based farming System	
2.2	Agro-climatic Zone	North Eastern Ghat Zone(Characteristics:- Climate is hot, moist and sub humid, Mean annual rainfall is 1597, Mean max.temperature is 37.00C and mean mimimum temperature is 10.4^{0}C. Soil group is brown forest, lateritic, alluvial, red, mixed red and black)	
2.3	Agro ecological situation	Red loam soil, Moderate rainfall, High elevation Rainfed (Soil type is ultisol and rainfall – 1100-1300 mm) Red loam soil, Low rainfall, moderate elevation, Moderate irrigation (Soil type is ultisol and rainfall – 900-1100 mm)	
2.4	Soil type	Brown forest ,lateritic, alluvial, red,mixed red and black (Characteristics:- The soils are strongly to moderately acidic with low to medium organic status and poor water retentive capacity, deficient in N,P, Ca, Mg, and low cation exchange capacity ,water soluble phosphates fixed and becomes non available to crop plant)	
2.5	Productivity of major 2- 3 crops under cereals, pulses, oilseeds, vegetables, fruits andothers	Cereals Crop Rice Maize Ragi	Productivity (kg/ha) 1895.00 3731.00 774.00
		Pulses Crop Green gram Black gram Arhar	Productivity (kg/ha) 390.00 381.00 1085.00
		Oilseeds Crop Groundnut Sesamum Niger	Productivity(kg/ha) 1391.00 377.00 331.00
		Vegetables Crop Onion Brinjal Tomato Potato	Productivity (kg/ha) 11140.00 6049.00 13243.00 17420.00
		FruitCrop Mango Guava Citrus	Productivity(kg/ha) 3620.00 6912.00 7960.00
		Others Crop Turmeric Sugarcane	Productivity(kg/ha) 64583.00 6639.00

Sl. no.	Item	Information	
2.6	Mean yearly temperature, rain-fall, humidity of the district	Mean Yearly Temperature:- 25.5 ^{0}C Mean Yearly Rainfall:- 127.25 mm Mean Yearly Humidity:- 68.5 %	
2.7	Maximum weatherhazards/ weathervagaries/extreme weather conditions at your district	Drought & Wind	
2.8	Thrust area for Agrometeorology	Extension of crop weather relationships studiesto vegetable crops, horti-culture and floriculture Development of weather based expert systemsand weather indices for cropinsurance To analysis of past data for developingforewarning systems andDSS	
2.9	Blocks under Rainfed situation	Gudari, Chandrapur, Kasipur, Kolnara, Muniguda,1.80 (Lakh ha)	
2.10	Blocks under irrigated situation	B.Cuttack, Gunpur, K.Singpur, Padmapur, Ramanaguda and Rayagada 0.69 (Lakh ha)	
2.11	Normal date of sowing of dif-ferent crops and present season sowing dates of particular district or block	Crop	DOS
		Paddy (kharif)	Jun 15- july 15
		Paddy (Rabi)	Jan
		Maize	Aug- Sept
		Ragi	Sept – Oct
		Green gram	Sept – Oct
		Black gram	Sept – Oct
		Arhar	Aug
		Groundnut	Jan-Feb
		Sesamum	Aug – Sept
		Niger	Oct –Nov
		Onion	Dec- Jan
		Brinjal	Aug Sept, Dec-Jan
		Tomato	Sept- Oct, Dec-Jan
		Mango	July –Aug
		Guava	July –Aug
		Citrus	July –Aug

Source: Odisha Agricultural Statistic, 2013-14

3. Status of Agro-AWS and surfaceobservatory:

3.1 Date of installation of AWS: --19.04.2021

3.2 List of instruments presently available in working condition:--

1. Air Temperature Sensor;
2. Relative Humidity Sensor;
3. Sunshine Sensor;
4. Rainguage Sensor:
5. Wind speed and direction sensor (3m):
6. Wind speed and direction sensor (10m):

7. Soil temperature & moisture sensor (10 cm):
8. Soil temperature & moisture sensor (30 cm):
9. Soil temperature & moisture sensor (70 cm):
10. Soil temperature & moisture sensor (100 cm):

3.3 Instruments to be replaced/repaired indicating type of defect: --NA

3.4 Please provide frequency of observation, exposure conditions of the site etc.– Weekly twice

3.5 Number of years of data records available: -- AWS has been installed veryrecently in Rayagada district,

3.6 Whether the observatory is periodically inspected, maintained and calibrated by IMD (If yes, please indicate the latest data of inspection by the IMD) - -- AWS has been installed very recently in Rayagadadistrict(19.04.2021)

3.7 Status of surface observatory--- Not Yetestablished

3.8 Status of Manual/ordinary rain gauge at KVK Campus---NA

3.9 Details of soil moisture observations taken, if any (please provide frequencyand depths of observation etc.) –NA

4. Details of Agromet Advisory Services:

4.1 Date of start of Agromet Advisory Bulletins: 01.01.2021

4.2 No. of times the weather forecasts received during the year:26

4.3 Date of receiving the forecasts from MC/RMC- Every Tuesday and Friday (From 1st January2021)

4.4 If the time is not suitable then what will be the appropriate time to receive the Value added forecast- Between 12.00 PM – 1PM

4.5 No. of AAS bulletins prepared and disseminated to the farmers during the year:-26nos. of Special agromet advisory bulletins were prepared and disseminated to the farmers in the year and mention thedetails

4.6 No. of AAS bulletins were prepared using Agromet-DSS in English and regional languages: 416 nos.

4.7 List the modes of mass communication adopted for AAS dissemination:

Sl. No.	Social Media	Description (Provide name of all block wise WhatsApp groups and link/name of othersocial media)	Total beneficiaries
01	WhatsApp groups a)For Farmers	KVK Rayagada, Gunupur 1; KVK Rayagada, Gunupur 2; KVK Rayagada, Gunupur 3; (Bissum cuttack, Chandrapur, Kolnara Rayagada Kalyansinghpur, Kasipur, Muniguda Gudari, Gunupur, Padmapur, Ramnaguda);	72
	b)For extension Officials	Administrator CDAO range AAOs and BAOs	87
02	KVK Website	www.kvkrayagada.org	Mass
03	E-mail id (KVK/DAMU)	damurayagada@gmail.com	Mass
TOTAL REACH			**159**

4.8 No of SMS sent through Kisan Portal and how many farmers were benefitted during the year: **12 (33,200 Farmers)**

5. Verification of Block or district level medium range forecast:

Season: Winter

5.1 Quantitative Verification

Weather	Rayagada		
	C	U	NU
Rainfall	91.53	0.00	8.47
Max.Temp	64.41	20.34	15.25
Min.Temp	42.37	16.95	40.68

C - Correct, U - Usable and NU - Not usable

5.2 Rainfall Qualitative Verification

Skill Score	Rayagada
Probability of Detection (PoD)	0.5
False Alarm Rate	0.75
Missing rate	0.75
Correct Non-occurrence (C-Non)	0.98
Critical Success Index (CSI)	0.2
Bias for Occurrence (Bias)	0.07
Percentage correct (Pc)	93.22
True skill score(Tss) Or HK Score	0.45
Heidke skill score (Hss)	0.3

6. Farmers Awareness/Training/Meghdoot popularization activities or other outreach programme:

Give list of farmer awareness programmes conducted like Krishi/Kishan Melas, training, participation in national day parades etc. and photograph of Farmer's Awareness Programme (no. of Farmer attended)

SI. No.	FAP/ Farmers meet/Meghdoot Popularization activities and Other Activities	Date	Location (Block/ Village)	Farmers attended the Programme
1	Agricultural Education Day	3rd December, 2020	KVK, Rayagada	36
2	World Soil Day	5th December, 2020	KVK, Rayagada	39
3	World Water Day	22nd March, 2021	KVK, Rayagada	60
4	Interaction of Hon'ble PM with farmer under PM- Kisan SAMMAN NIDHI (Telecast)	25th December, 2020	KVK, Rayagada	47




7. List of other organizations receiving Agromet advisories:

- Agricultural Department
- Horticultural Department
- Fishery Department
- Departmental officials of all blocks
- OUAT
- MC-BBSR
- IMD, PUNE

8. Mobile APP based Agromet advisory services for farmers:

Meghdoot app is updated on each Tuesday and Friday by AAS Division, IMD, New Delhi for Rayagada district through linkage with AgroDSS in which the advisory was provided by DAMU, KVK, Rayagada.

9. Feedback from progressivefarmers:

Sl. No.	Farmer name & Village	Block	Feedback
01	Balaram Gomanga (Ghanatri)	Padmapur	Mobile SMS should be disseminated directly to the farmers as soon as maximum farmers have no smart phones and there is no network in maximum villages
02	Rajendra (Pradhaniguda)	Gunupur	Able to plan appropriate time for sparying of Pesticides/ Herbicides, can minimize the post harvest losses

10. Details of HRD programmes undergone by DAMU personnel:

Sl. No.	Name of programme	Name of course	Name of DAMU personnel and designation	Date and Duration	Organized by
1.	Training Programme	Basic application of RS and GIS in agriculture and allied fields	Hemadri Bag (SMS Agrometeorology)	18th - 25th March, 2021 (7 days)	College of Agricultural Engineering and Technology, OUAT, Bhubaneswar

DAMU Burdwan

1.1. Staff Position (as on 1st April, 2021)

Sl.No.	Name of theincumbent	Qualification	PayScale with present basic	Date of joining
SMS (Agrometeorology)	Sanu Kumar Saha	B.Sc.in Agriculture and M.Sc. in Agricultural Meteorology	Level 10 (56100-177500) Basic: 56100	03.02.2021
Agromet Observer (AO)	Subhasish Pramanik	B.Sc. inAgriculture	Level 3 (21700-69100) Basic: 21700	04.02.2021

1.2 Status of Expert Panel group

Sl. No.	Name	Designation	Mobile/Ph no
1.	Dr. Sk. Md. Azizur Rahman	Senior Scientist & Head and also the Nodal Officer of DAMU, KVK Burdwan	9435378886
2.	Dr. Dipankar Ghorai	SMS Agriculture, KVK Burdwan	9433122515

Sl. No.	Name	Designation	Mobile/Ph no
3.	Dr. Subrata Sarkar	SMS Horticulture, KVK Burdwan	9433982508

2. District level data on agriculture, livestock and farming situation and Agro climatic data

Sl. No.	Item	Information
2.1	Major Farming system/enterprise	Rice production system Dairy –poultry production system Poultry Goatery Duckery Fishery Rice – potato-fodder- livestock production system Rice –vegetable-Rice production system Jute-rice production system Fish-duck-banana production system
2.2	Agro-climatic Zone	New Alluvium Average annual rainfall 1300-1600 mm, Soil type- sandy loam, clay and clay loam, Soil depth 4-6 ft with medium to good water holding capacity, Neutral to acidic soil with good fertility. 2. Old Alluvium Average annual rainfall 1300-1500 mm, Soil type- sandy loam and clay loam Soil depth 4-6 ft with medium to good water holding capacity Neutral to acidic soil with good fertility
2.3	Agro ecological situation	Agro ecological sub region 12.3 under the AES 12.0 (Eastern Plateau) II. Moist and sub humid ecosystem with alluvial soil with LGP of 180-200 days covering the blocks of Burdwan (N), Burdwan (S), Kalna & Katwa, Maincrops paddy, mustard, sesame, potato, jute, vegetables etc. The area covers 517532 ha
2.4	Soil type	1.Gangetic alluvial – 206423 ha Soil order is entisols. Sandy loam to clay loam, fine in texture, slightly acidic to neutral in reaction. Rich in potash and medium to rich in available plant nutrients. 2. Vindhya alluvial – 311000 ha Soil order is entisol Sandy loam to clay loam, fine to moderate coarse in texture, acidic to neutral in reaction.
2.5	Productivity of major 2-3 crops under cereals, pulses, oilseeds, vegetables, fruits and others	Aman paddy – 32.73 Boro paddy – 26.95 Wheat – 21.99 Pulses – 8.80 Oilseeds – 10.01 Jute & other fibres ** - 18.7 lakh bales Potato – 212.49
2.6	Mean yearly temperature, rainfall, humidity of the district	Mean yearly temperature: Max – 31, Min – 18 Relative humidity: 76 Total rainfall: 1136 mm

Sl. No.	Item	Information
2.7	Maximum weather hazards/ weather vagaries/extreme weather conditions at your district	Extreme Rainfall in a very short period of time and associated floods due to release of water from several bunds and barrages of rivers surrounding the district. Sometimes hailstorm accompanied with "Kalbaisakhis" cause massive damage to agricultural crops, fruits and particularly vegetables resulting severe economic loss to the farming community.
2.8	Thrust area for agrometeorology	Farmers faces drastic yield loss due to untimely rainfall and increased intensity of rains in the recent past. Hence, weather information well in advance may help in deciding their day to day farm operations quite effectively with minimal resource use. Another aspect is the scheduling of irrigation at critical crop growth stages which may be decided following the biweekly agromet advisory bulletins and it may play crucial role in increasing the water use efficiency in the coming time. At the same time, real time weather information can reduce crop, livestock damage to many extent from extreme weather events like flooding, severe heat wave and also may save lives of many farmers from increased lightning and thunderstorm activity in the district.
2.9	Blocks under Rainfed situation	Nil
2.10	Blocks under irrigated situation	All blocks of Purba Bardhaman district comes under irrigated situation
2.11	Normal date of sowing of different crops and present season sowing dates of particular district or block	Normal date of sowing: Rice – 1st July to 30 July Jute- March 15 to April 15 Potato- 15th October to 30th November Mustard- 1st November to 30th November Lentil- 15th November to 15th December Sesame-15th February to 30th March Groundnut- Pre-Kharif- March, Kharif- August

3. Status of Agro-AWS and surface observatory:

3.1 Date of installation of AWS: Not installed yet

3.2 List of instruments presently available in working condition: -- NA

3.3 Instruments to be replaced/repaired indicating type of defect: -- NA

3.4 Please provide frequency of observation, exposure conditions of the site etc. -- NA

3.5 Number of years of data records available: -- NA

3.6 Whether the observatory is periodically inspected, maintained and calibrated by IMD (If yes, please indicate the latest data of inspection by the IMD) - -- NA

3.7 Status of surface observatory--- There is no surface observatory in KrishiVigyan Kendra, Burdwan.

3.8 Status of Manual/ordinary rain gauge at KVK Campus--- There is no manual/ordinary raingauge at KVK campus.

3.9 Details of soil moisture observations taken, if any (please provide frequency and depths of observation etc.) – NA

4. Details of Agromet Advisory Services

4.1 Date of start of Agromet Advisory Bulletins: 16.03.2021

4.2 No. of times the weather forecasts received during the year: 96

4.3 Date of receiving the forecasts from MC/RMC- Biweekly on every Tuesday and Friday of in each month.

4.4 If the time is not suitable then what will be the appropriate time to receive the Value added forecast- The time is ok.

4.5 No. of AAS bulletins prepared and disseminated to the farmers during the year: 20

4.6 No. of AAS bulletins were prepared using Agromet-DSS in English and regional languages: 20

4.7 Status of district crop weather calendar—Not yet completed.

4.8 List the modes of mass communication adopted for AAS dissemination:

Sl No.	Social Media	Description(Provide name of all block wise whtsapp groups and link/nameof other social media)	Total beneficiaries
01	Whats app groups a)For Farmers	KVK-Burdwan	89
02	Face book /Twitter/Instagram		
Facebook		Krishi Vigyan Kendra Burdwan	
03	KVK Website	www.kvkcrijaf.org.in	
04	University/Institute website	www.crijaf.icar.gov.in	
05	E-mail id (KVK/DAMU)	kvkburdwan@gmail.com	
TOTAL REACH			**89**

5. List of other organizations receiving Agromet advisories:

- IMD Pune
- IMD New Delhi
- ICAR-ATARI Kolkata
- Regional Meteorological Centre Kolkata
- GKMS, Kalyani, Bidhan Chandra Krishi Viswavidyalaya
- ICAR-CRIJAF,
- State line departments of Agriculture
- ADA offices of different blocks of Purba Bardhaman district.

6. Review Workshop-

- Actively participated and shared views in the online meeting "Introduction of Financial Module developed in Agromet DSS" on 04.02.2021 organized by IMD, New Delhi.
- SMS (Agromet) with Nodal officer for DAMU and Senior Scientist & Head, KVK Burdwan attended online live Webinar on "Sensitizing Extension Professionals for Successful Livestock Farming Models to develop Aatmnirbhar Kisan" on 19th and 20th February, organized by KVK, ICAR-IVRI, Bareilly.
- Participated in National Science Day at KVK Burdwan on 28.02.2021 and delivered a short lecture on the "Introduction of Agromet Advisory Services in Block Levels through GKMS- A joint initiative of ICAR and IMD".
- Assisted and participated actively in organizing International Women's Day at KVK Burdwan Campus on 08.03.2021.
- 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 11-12 March, 2021.
- Assisted in organizing World Water Day at KVK on 22.03.2021 and delivered a relevant talk on this occasion regarding "Climate Variability and its impact on the present and future water resources".

3. Annual Zonal Workshop of GKMS Scheme (DAMU) of ICAR - ATARI Kolkata

The ICAR-Agricultural Technology Application Research Institute Kolkata organized First Annual Zonal Review Workshop of Gramin Krishi Mausam Sewa (GKMS) consisting of the 24 KVKs in the states of Odisha and West Bengal on 21 July 2020 through Online Video conferencing. The Programme was inaugurated by the welcome address by Dr. S. K. Roy, Director, ATARI Kolkata with gracious presence of Dr. P. K. Agarwal, VC, OAUT, Bhubaneswar, Dr. C. Chattopadhyay, VC, UBKV, Coochbehar, Dr. C. Guha, VC. WBUAFS, Kolkata, Dr. Randhir Singh, ADG (Ag Ext), ICAR, New Delhi, Dr. K. K. Singh, Head, AAS, IMD, New Delhi, Dr. S. Bandopadhyay, DDGM, RMC, Kolkata,Dr. G. Debnath, Head Meteorology Div. Kolkata Airport. Directors of Extension Education of SAUs of Odisha and West Bengal, Heads and SMSs of all the 24 KVKs were also present.

Dr. F. H Rahman, Principal Nodal Officer, GKMS summarized the year round activities and progress of the DAMU unit of different KVKs and briefly discussed salient activities and achievements of the of the GKMS scheme.

Dr. K. K. Singh, Head, IMD, New Delhi primarily focussed on some pitfalls in content generation and the need for expertise in translating forecast to advisory knowledge.

Dr. Gokul Debnath, Head Meteorology Div. Kolkata Airport stressed upon the importance of the scheme in agriculture production with present climate change scenario.

Dr. Randhir Singh briefly discussed the importance of the Agromet advisory service and how it can help in adopting different challenges of the farmers to reduce the losses.

Dr. P. K. Agarwal, VC, OAUT shared his views regarding the importance timely dissemination of agromet advisory service and how it reduced several lives and crop losses for farmers especially in cyclone prone areas like Orissa.

Dr. C. Chattopadhyay, VC, UBKV, Coochbehar made his valuable suggestions regarding strengthening mechanism of dissemination system so that more number of farmers could be reached.

Dr. C. Guha, VC, WBUAFS, Kolkata, congratulated the scientists of KVK's for doing excellent work particularly during the time of cyclone AMPHAN due to which huge losses to property and lives could be averted.

The inaugural session was followed by a technical session were respective scientists from already established DAMU unit presented their salient achievements. The technical Session was chaired by Dr. K. K. Singh, IMD Delhi, Dr. S Bandopadhyay, RMC, Kolkata and co-chaired by Dr. Kripan Ghosh, IMD, Pune. A two way interactive sessions was ended with remarks from all the panellists, Chairmen and Co-chairman.

A technical bulletin GKMS Newsletter was released in presence of all the delegates.

Finally, the web workshop was concluded by vote of thanks proposed Dr. F.H Rahman, Principal Scientist and Nodal Officer, GKMS of ATARI Kolkata.

4. Newspaper Coverage


বজ্রপাতে মৃত্যু ঠেকাতে প্রচার


তৈরি হচ্ছে পুরুলিয়াও
অ্যাম্বুল্যান্স


পঙ্গপালে ভয়, জারি সতর্কতা


কৃষিপণ্য বিক্রেতাদের জন্য ডিপ্লোমা কোর্স

বহরমপুর, ১৮ জানুয়ারি : বহরমপুর কৃষিবিজ্ঞান কেন্দ্রে কৃষিপণ্য বিক্রেতাদের চতুর্থ পর্যায়ের ডিপ্লোমা কোর্সের সূচনা হল। সোমবার এই শিবিরে জেলার বিভিন্ন প্রান্ত থেকে আগত ৪০ জন কৃষিপণ্য বিক্রেতা অংশগ্রহণ করেন। এই অনুষ্ঠানে উপস্থিত ছিলেন উত্তরবঙ্গ কৃষি বিশ্ববিদ্যালয়ের ডেপুটি ডিরেক্টর এক্সটেনশন এডুকেশন ডঃ সৈকত মুখার্জি, কৃষি আধিকারিক ডঃ রাকেশ রায়, মৎস্য আধিকারিক অদ্বৈত মণ্ডল, প্রশিক্ষণের কোঅর্ডিনেটর দেবজ্যোতি মজুমদার প্রমুখ।

কৃষিবিজ্ঞান কেন্দ্রের আধিকারিক ডঃ রাকেশ রায় জানান, রাজ্য কৃষি প্রশিক্ষণ সমিতি কেন্দ্র নবদ্বীপ, কলকাতা ও কৃষিবিজ্ঞান কেন্দ্রের যৌথ উদ্যোগে প্রশিক্ষণ শিবির আয়োজিত হল। এখানে কৃষিজাত পণ্য বিক্রেতাদের এক বছর প্রশিক্ষণ দিতে হবে। যার মধ্যে ৪০ দিন ক্লাস হবে ও ৪ দিন বিভিন্ন ফিল্ড ভিজিট হবে। সপ্তাহে প্রতি মঙ্গলবার ক্লাস চলবে।

কৃষি আধিকারিক দেবাশিস ঘোষ জানান, এই কোর্সের পর বিক্রেতারা নিজ নিজ এলাকায় চাষিদের বিভিন্ন সমস্যার সমাধান করতে পারবেন। এই কোর্স করার পর বিক্রেতারা প্রাপ্ত সার্টিফিকেট লাইসেন্স রেনু করার জন্য ব্যবহার করতে পারবেন।

আঞ্চলিক কৃষি গবেষণা কেন্দ্রের আধিকারিক ডঃ তপোময় ধর জানান, এই কোর্স করার পর বিক্রেতারা চাষিদের কাছে তাঁদের প্রয়োজনীয় সঠিক কৃষিজাত পণ্য পৌঁছে দিতে পারবেন। প্রশিক্ষণের কোর্স ডিরেক্টর দেবজ্যোতি মজুমদার প্রশিক্ষণপ্রাপ্তদের কী কী করণীয়, তা খুঁটিনাটি ভাবে বুঝিয়ে দেন।

– প্রবক্ত নিউজ সার্ভিস

রিলায়েন্স ফাউন্ডেশন (Reliance Foundation) এবং রতুয়া কৃষি বিজ্ঞান কেন্দ্রের উদ্যোগে মালদা জেলার আম চাষীদের নিয়ে সংঘটিত অডিও কনফারেন্স

5. Budget Utilization During 2020-21

(Fig. in Rupees)

Sl. No	Name of DAMU KVK	Opening balance as on 01.04.2020	Amount Remitted during the year 2020-2021	Expenditure during the year 2020-2021	Closing balance as on 31.03.2021
1	Purulia	4,93,807	7,10,000	9,97,983	2,05,824
2	Malda	4,70,691	7,10,000	11,71,881	8810
3	North 24 Parganas	1,19,056	7,10,000	11,85,957	-3,56,901
4	Murshidabad	4,27,259	7,10,000	11,43,304	-6,045
5	Jalpaiguri	1,74,299	7,10,000	11,55,696	-2,71,397
6	Cuttack	1,80,182	7,10,000	9,58,655	-68,473
7	Birbhum	4,28,448	7,10,000	9,62,756	1,75,692
8	Angul	4,80,000	0	2,98,017	1,81,983
9	Bolangir	4,80,000	0	2,90,402	1,89,598
10	Gajapati	4,80,000	0	2,23,618	2,56,382
11	Ganjam-1	4,80,000	0	3,31,686	1,48,314
12	Mayurbhanj-1	4,80,000	0	3,81,204	98,796
13	Nayagarh	4,80,000	0	3,82,820	97,180
14	Rayagada	4,80,000	0	2,76,278	2,03,722
15	Burdwan	0	1,20,000	96,098	23,902
	Total	**56,53,742**	**50,90,000**	**98,56,355**	**8,87,387**

6. Contact Details

6.1 Contact details of ICAR-ATARI Kolkata

Designation	Name	Address	Telephone no. & Fax / Mob.	Email-id
Director	Dr. S. K. Roy	Bhumi Vihar Complex, Sector- III, Salt Lake, Kolkata, West Bengal 700097	033 23352355/ 8902443733	atarikolkata@gmail.com / skr12kolkata@gmail.com
Principal Scientist & Nodal Officer	Dr. F. H. Rahman		8240233329/ 9432955117	gkmskolkata@gmail.com / fhrahmancal@gmail.com

6.2 Contact details of KVK Officials

Name of DAMU KVK	Designation	Name	Address	Telephone no. & Fax / Mob.	Email-id
Purulia	Head of KVK/ S.S &Head	Dr. M. K. Bhattacharjya	Krishi Vigyan Kendra Kalyan, P.O- Vivekanandanagar, Dist.- Purulia, Pin- 723147 W.B.	8798313063	kalyankvkprr@gmail.com
	SMS (Agrometeorology)	Mr. Sudipta Thakur	Krishi Vigyan Kendra Kalyan, P.O- Vivekananda Nagar, Dist.- Purulia, Pin- 723147 W.B.	9007968952	damupurulia2019@gmail.com
	Agromet Observer (AO)	Ms. Vipasha Pradhan	Krishi Vigyan Kendra Kalyan, P.O- Vivekanandanagar, Dist.- Purulia, Pin- 723147 W.B.	9679912003	damupurulia2019@gmail.com
Malda	Senior Scientist & Head	Dr. Rakesh Roy	Malda Krishi Vigyan Kendra, Ratua, PO-Ratua, Pin-732205, W.B.	9851941455	maldakvk.ubkv@gmail.com
	SMS (Agrometeorology)	Dr. Debjyoti Majumder	Malda Krishi Vigyan Kendra, Ratua, PO-Ratua, Pin-732205, W.B.	8240033811	maldakvk.ubkv@gmail.com majumder.debjyoti@gmail.com
	Agromet Observer (AO)	Mr. Amrit Sarkar	Malda Krishi Vigyan Kendra, Ratua, PO-Ratua, Pin-732205, W.B.	7384623327	amritsarkar1192@gmail.com

Name of DAMU KVK	Designation	Name	Address	Telephone no. & Fax / Mob.	Email-id
North 24 Parganas	Head of KVK/ S.S & Head	Dr. Babulal Tudu.	North 24 ParganasKrishiVigyan Kendra 821/1, Ashokenagar, P.O.-Haripur, North 24 Parganas, W.B.-743223	09735130603	kvkashoke@gmail.com
	SMS (Agrometeorology)	Mr. Mrinal Kanti Das	Vill.&P.O.-Gholepukuria, P.S.-Nandigram, Purba Medinipur - 721650	9732768156	mrinalagromet1994@gmail.com
	Agromet Observer (AO)	Mr. Siddhanta Das	Vill. & P.O.-Nimpith Ashram, P.S.-Jaynagar, South 24 Parganas-743338	9547139421	bcasiddhanta93@gmail.com
Murshidabad	Head of KVK/ S.S & Head	Dr. Uttam Roy	Murshidabad Krishi Vigyan Kendra Digha (Milebasa), Bhogowangola-I, Dist- Murshdabad (W.B.) Pin-742135	9932104436	roy16uttam@gmail.com
	SMS (Agrometeorology)	Mr. Sugnik Das	3/F/1, Nairanjana Appartment, J.C.Ghosh Lane Kolkata-700036	9593018191	sugnikdas.kvkmsd@gmail.com
	Agromet Observer (AO)	Miss. Soumata Sarkar	Vill-Pakuria, P.O-Chaltia, Berhampore, Dist-Murshidabad. Pin-742101	7908699053	pujayou02@gmail.com
Jalpaiguri	Head of KVK/ S.S & Head	Dr. Biplab Das	Jalpaiguri Krishi Vigyan Kendra, WBUAFS, P.O. – Ramshai, Dist. – Jalpaiguri, W.B. -735 219	9434338456 8158045564	biplabdas72@gmail.com
	SMS (Agrometeorology)	Mr. Amit Roy	-Do-	9038406646	amit.bckv.roy@gmail.com
	Agromet Observer (AO)	Mr. Naren Roy	-Do-	8250730598	Narenroy02@gmail.com
Cuttack	Head of KVK/ S.S & Head	Dr. Sujata Sethy	KVK Cuttack, Santhapur, Odisha	8895795870/ 9602595870	sujata.sethy@gmail.com
	SMS (Agrometeorology)	Mr. Debasish Jena	KVK Cuttack, Santhapur, Odisha	9861445080/ 7008453427	debasish.jena55@gmail.com

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Annexure-I

GKMS (DAMU) PROJECT SITES

West Bengal and Odisha

● Districts where GKMS (DAMU) Project Sites exist

NOTES

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