



BARC

# Newsletter

Towards Building Advance Intelligent System for Agriculture

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## Diplomats Visit the Mango Heartland: Fostering the Sweetness and Flavor of Bangladeshi Mangoes across the Borders

The Government of Bangladesh has adopted *Bangladesh Good Agricultural Practices Policy-2020* with the highest priority on safe food production, by which sustainable economic, social, and environmental development, including safe and healthy food production, will be ensured. Recently, under the Program on Agricultural and Rural Transformation for Nutrition, Entrepreneurship, and Resilience in Bangladesh (PARTNER), Bangladesh GAP standards, in the initial phase, 15 crops (10 vegetables and 5 fruits) have been selected for Good Agricultural Practices (GAP) implementation for the certification process. GAP protocols have been developed for eight crops (mango, jackfruit, guava, brinjal, papaya, bottle gourd, pointed gourd, and green papaya) in FY 2023-24, Bangladesh GAP standards. Bangladesh will ensure safe and quality mango production by following the 'Bangladesh GAP Protocol: Mango' formulated in light of GAP standards. Mango



*Foreign Delegates Visit the Bangladesh GAP Followed Validation of Mango Orchard*

from Bangladesh is in huge demand in the world market as it is very tasty. To familiarize our mangos globally, a visit was paid to GAP followed by mango production at Kendubona, Nachole, ChapaiNawabgonj by the Honorable Ambassadors and Heads of Missions of Australia, Brunei, Russia, the Netherlands, Indonesia, FAO, BIMSTEC, Malaysia, the Philippines, Pakistan, Nepal, Bhutan, Myanmar, Thailand, Singapore, Sri Lanka, and Lybia on June 27, 2024. The visitors were

highly impressed after observing the field-level GAP implementation. This visit is jointly organized by MoA and MoFA with the coordination of BARC, BARI and DAE. It is expected that the export market for mango produced following Bangladesh GAP will be expanded, and the mango export trend will increase to a great extent after this visit by the honorable ambassadors and heads of missions of foreign embassies.

## Training on The Fourth Industrial Revolution (4IR) and Potential Application in the Livestock Sector

Livestock Division, BARC organized a training program on *The Fourth Industrial Revolution (4IR) and Potential Application in the Livestock Sector* (2<sup>nd</sup> Batch) held on

April 28-30, 2024 at BARC. Forty (40) scientists, officers, and teachers from NARS, and other institutes (DLS, BAU, SAU, BSMRAU, ACI, APS, YTC, PKSF, Lal Teer

Livestock Ltd., NIB, and BIRTAN.) were present as participants. The inaugural session was presided over by Dr. Nazmun Nahar Karim, Member Director, Livestock

Division, BARC. The training program was inaugurated by the chief guest, EC, BARC. The welcome remark was delivered by Dr. Mohammad Rafiqul Islam, Chief Scientific Officer, Livestock Division, BARC. Nine resource persons successfully delivered lectures on the Fourth Industrial Revolution (4IR) implementation in agriculture:

Bangladesh's preparedness, Big data application in sustainable livestock and poultry production in Bangladesh, Tracing and traceability in GMP of livestock and poultry industries using block chain and other digital technologies, Internet of Things (IoT) based sensors and their applications in livestock and poultry production, IoT based cattle shed monitoring and transformation of veterinary services through 4IR technologies, IoT, Artificial Intelligence (AI) and



*Pictorial view of the Training*

cloud computing for Climate Smart Livestock and Poultry Production, IoT based Infrastructure design for precision livestock and poultry production, Drone for counting and monitoring livestock in the field and IoT based anaerobic digestion and biogas utilization prediction, Ammonia (NH<sub>3</sub>) and Methane

(CH<sub>4</sub>) emission monitoring systems in livestock industry and Impact-based smart weather advisory services for livestock and poultry industries. After successful completing of the training program, certificates were awarded to the participants.

### **Human Resources Development Workshop**

A daylong workshop was organized by the Agency Program Coordination Unit, BARC under the Program on Agriculture and Rural Transformation for Nutrition, Entrepreneurship, and Resilience in Bangladesh (PARTNER) at BARC on 22 June 2024. Secretary, Ministry of Agriculture graced the session as the chief guest. Executive Chairman, BARC, led the session as chair. The main purpose of the workshop was to offer the PhD Award Letters to the candidates ceremonially. Dr. Moin Us Salam,

Consultant (Human Resources Development), PARTNER, offered a key note speech high lighting the scholar selection effort. Officials from the MoA attended the workshop along with the head of the NARS institutes; senior scientists, awardees, and program coordinator were present in the workshop. Dr. Md. Ashraful Alam, Agency Program Director, BARC part, welcomed the guests and briefed the objectives of the workshop. It is worthy of mention that a ten-member committee comprising

representatives from the MoA was responsible for the scholar selection process. Mr. Mahbubul Alam Patwary, Additional Secretary, MoA, complimented the scientists for being selected and hope for their all-out success.

Mr. Jean Saint Geours, Task Team Leader, PARTNER, World Bank praised the selection process and thanked the members for their sincere efforts. Ms. Gitika Goswami, the IFAD representative for Bangladesh felicitated the awardees, hoped for their success.

### **Training on Orientation on Public Private Partnership in Agriculture**

A day-long training program on *Orientation on Public Private Partnership in Agriculture* was held on May 09, 2024 at the Public Private Partnership (PPP) authority in Agargaon, Dhaka organized by the AERS Division of BARC. The

resource speakers were the officials of the PPP authority. A total of 30 participants attended the training program. The participation covered both the public and the private organization working in the agriculture sector. Dr. Nazmun

Nahar Karim, Member Director (Livestock), BARC was the chief guest in absence of EC, BARC in the training program.

The training aims to enable the participants to understand the

importance of PPP projects in the agriculture sector; explore the prospects and major challenges of PPP project; understand the partnership framework; learn about

the PPP projects development process, and to be able to submit PPP projects in a systematic way. The overall objective of the course is to align all stakeholders with the

goals, processes, and expectations of the partnership and to improve the knowledge and analytical skills of the stakeholders to develop PPP projects in the agriculture sector.

### Workshop on Innovation Showcasing

The workshop on *Innovation Showcasing* took place on June 9, 2024, organized by Computer and GIS Unit, BARC. The workshop was attended by 83 scientists and officers from BARC. The main objective of the workshop was to showcase and discuss the

innovations developed by BARC. Notably, BARC's innovation, an online software-based newspaper clipping system, was showcased. This system, which helps in searching agriculture-related news published in newspapers, brought BARC to gain the 2<sup>nd</sup> place award

among 17 organizations/institutions from the Ministry of Agriculture (MoA). Participants were enthusiastic about the innovation and appreciated its utility in accessing and managing relevant agricultural news.

### Workshop on Smart Bangladesh

The 2<sup>nd</sup> Workshop on *Smart Bangladesh* took place on May 9, 2024 was organized by Computer and GIS Unit, BARC. The workshop was attended by 70 scientists and officers from BARC. The main objective of the workshop was to explore the integration of advanced technologies in agricultural practices to foster sustainable development and

efficiency. The four pillars of Smart Bangladesh, Smart Citizens, Smart Government, Smart Economy, and Smart Society, were emphasized throughout the workshop. Participants engaged in discussions and hands-on sessions focused on digital solutions, data standardization, and the implementation of smart technologies in agriculture. Experts

shared insights on the potential impacts of these technologies on productivity and resource management. The workshop also provided a platform for networking and collaboration among professionals dedicated to advancing smart agricultural initiatives in Bangladesh.

### Communication Skills Development for Professionals

Agricultural Information Centre (AIC), BARC, organized 3 days long training program on *Communication Skills Development for Professionals* on 12-14 May 2024 at BARC. The main objective of the training program was to make the NARS scientists and officers skilled in communication at professional life.

Thirty scientists from NARS institutes attended the training. The inaugural ceremony of the training program was graced by the chief guest Dr. Nazmun Nahar Karim, Member Director, Livestock Division, BARC. The program was chaired by course director Dr. Kabir Uddin Ahmed, Director, AIC. Dr. Susmita Das, Principal



Moments of the Inaugural Session

Documentation Officer, AIC gave the welcome address and highlighted the objectives of the training program as the course coordinator.

The chief guest shared some techniques for effective communication and uttered the

necessities of communication skill for every agricultural scientist.

After successful completion, the training program ended with a closing ceremony. EC, BARC as the chief guest of the closing program distributed the certificates among the participants. Dr. Kabir Uddin

Ahmed, Director, AIC chaired the concluding and certificate giving session and thanked the guests and

the participants. Participants found the program highly valuable, with tailored content and practical

exercises that were directly applicable to their field

### Approval of GAP Protocols

The steering committee meeting at the highest level of GAP convened to discuss the approval of eight GAP protocols for 8 crops: mango, jackfruit, guava, brinjal, papaya, pointed gourd, and green papaya.

This approval took place at the 6th steering committee meeting held on June 22, 2024, at Ministry of Agriculture, targeting partner projects. Additionally, the GAP Certification regulations were

approved for further action. Secretary, MoA is the convener as well as Member Director (Crops) is the member secretary of this committee.

### Workshop on Newspaper Clipping and Report Management

Workshop on *Newspaper Clipping and Report Management* at training building on 09 June 2024 was organized by Computer and GIS Unit, BARC. The workshop was attended by 83 scientists/officers from BARC. The Computer & GIS unit of BARC developed the newspaper clipping and report management application. Link to access of the application of clipping and report management (<http://apps.barc.gov.bd/archive/>). The main objective of this workshop was to teach participants how to obtain agriculture-specific



Moments of the Inaugural Session

news using keyword searches, date-wise searches, and downloads the news from the newspaper clippings. Additionally, the workshop covered report

management, focusing on managing reports sent from various divisions or units to BARC to obtain specific agricultural results.

### Compiling and Editing Techniques for Professionals Publishing

Agricultural Information Center organized 5 days long training program on *Compiling and Editing Techniques for Professionals Publishing* on 02-06 June 2024 at BARC. The training was funded by APCU, PARTNER, BARC.

Twenty-five scientists from NARS institutes attended the training. The inaugural ceremony of the training program was graced by the chief guest Dr. Nazmun Nahar Karim, Member Director, Livestock Division, BARC. The program was chaired by course director Dr. Kabir Uddin Ahmed, Director, AIC. Dr. Susmita Das, Principal



Certificate Giving Ceremony

Documentation Officer, AIC gave the welcome address and highlighted the objectives of the training program as the course

coordinator.

After successful completion, the training program ended with a

closing ceremony. Dr. Kabir Uddin Ahmed, Director, AIC distributed the certificates among the participants and thanked the guests

and the participants. Participants appreciated the course for Professionals Publishing, its practical value and comprehensive

approach. They felt the content was highly relevant and beneficial for their professional development.

## Annual Review Workshop on Socio-economic Research Program (2023-24) and Future Research Program (2024-25) of NARS Institutes

The annual review workshop on *Socio-economic Research Program (2023-24) and Future Research Program (2024-25) of NARS Institutes* held on June 27, 2024 organized by the AERS Division, BARC. Dr. Md. Mosharraf Uddin Molla, Member Director (AERS), BARC, presided over the session. Dr. Md. Abdus Salam, PSO (AERS), BARC made a welcome presentation on the implementation status of the recommendations from last year's workshop, which were expected to be incorporated into the research programs of the respective NARS institutes.

A total of 85 participants, including scientists, professors, agriculture experts, and delegates attended the workshop from different research organizations, universities, and private sectors. The present and



Annual Review Workshop on Socio-Economic Research Programs of NARS Institutes

future research activities were presented by the Head or nominee of the related division of six NARS institutes (BARI, BRRI, BINA, BSRI, BLRI and BFRI) in the technical session. The first technical session was presided over by Dr. A.S.M. Anwarul Huq, Former DG,

BJRI, and the second by Dr. Jahangir Alam Khan, former DG, BLRI. Five expert reviewers reviewed the presented research program critically. Participants of the NARS institutes also presented the implementation status of the previous years.

## Workshop on the National Budget 2024-25: Agriculture Perspective

A workshop on *National Budget 2024-25 Analysis: Agriculture Perspective* was organized at BARC on June 26, 2024. The Resource speaker was Dr. Md. Abdus Salam, Principal Scientific Officer (AERS), BARC. Every Scientist and official affiliated with BARC took part in the workshop. Dr. Nazmun Nahar Karim, Member Director (Livestock), BARC was the chief guest in the workshop.

The resource speaker mentioned that the National Budget 2024-25



Workshop on National Budget 2024-25: Agriculture Perspective

for Bangladesh demonstrates a comprehensive approach to supporting the agriculture sector, with a focus on increasing productivity, ensuring sustainability, and improving

farmers' livelihoods. However, careful implementation and continuous support are necessary to achieve the desired outcomes and address the challenges facing the sector. Prioritization is given to

solidities for essential inputs such as seeds, fertilizer, and pesticides in the increase agricultural output and ensure food security.

### **Workshop on Presentation Skills for Professionals**

Agricultural Information Centre (AIC), BARC, organized a day-long workshop on *Presentation Skills for Professionals* on 29 April 2024. Seventy scientists and officers from BARC attended the workshop. The training commenced with an inaugural ceremony which was graced by Dr. Md. Saifullah, Member Director, Administration and Finance Division. Dr. Susmita

Das, Principal Documentation Officer, AIC gave the welcome speech and highlighted the objectives of the workshop. The inaugural session was followed by a technical session which was conducted by Member Director (A&F), BARC. Resource persons Dr. Saiful Alam Chowdhury, Assistant Professor, University of Dhaka gave lectures on the topic

and its practical application. MD (A&F), BARC chaired the concluding session and thanked the guest and the participants. The course effectively boosted participants' confidence in presenting and significantly improved their ability to deliver impactful and professional presentation.

### **Training program on Conservation and Management of Plant Genetic Resources (PGRs)**

According to the annual work plan, Crops Division, BARC, organized a 3-day training program on Conservation and Management of Plant Genetic Resources (PGRs) on June 9-11 at BARC. A number of 30 participants including scientists, university teachers and officials of the NARS, and other public and private institutions related to PGR, were present as distinguished participants in the conference. The objective of the training program was to enrich participants'

knowledge and understanding of rules and regulations in the conservation and management of PGRs from national and international perspective. The training program was inaugurated by Executive Chairman, BARC as the chief guest. The inaugural session was presided over by Dr. Md. Abdus Salam, Member Director (Crops), BARC. The welcome remark was delivered by Dr. Md. Rezwon Molla, Principal Scientific Officer (Crops), BARC

and also highlighted the importance of the program as course coordinator briefly at the beginning of the inaugural session. Resource persons were from the University of Dhaka (DU), Department of Environment, Department of Patents, Designs and Trademarks, MoI, and Bangladesh Agricultural Research Institute (BARI). Certificates were awarded after the successful completion of the training program.

### **Training Workshop on Project Development and Management**

Planning and Evaluation Division, BARC, organized a five-day training program for the 15<sup>th</sup> batch on *Project Development and Management* on May 19-23, 2024, at BARC. A total of 25 scientists, including officers from NARS and other agricultural organizations were present as participants. The

training program was funded by PARTNER, APCU-BARC. EC, BARC addressed the program as a Chief guest while Dr. Kabir Uddin Ahmed, Member Director, Planning and Evaluation Division, BARC Chaired the program. A total of 24 different topics on Project

Development and Management were presented and discussed. Resource persons conducted lectures and practical sessions on the specific fields. After successfully completing the training program, the participants were awarded certificates.

## National Review Workshop on Achievement and Future Activities of 4IR Action Plan

A day-long national review workshop on *National Review Workshop on the Achievement and Future Activities of 4IR Action Plan* organized by Planning and Evaluation Division, BARC was held on April 22, 2024, at the BARC. Over one hundred participants, including scientists, officers from NARS, and other agencies of MoA participated the

program. Executive Chairman, BARC addressed the workshop as a chief guest, while Dr. Kabir Uddin Ahmed, Member Director of the Planning and Evaluation Division, BARC, chaired the workshop. Dr. Md. Jamal Uddin, principal scientific officer of Crops Division, BARC gave the welcome speech. Focal point of representatives of 17 agencies of MoA presented their

progress and future activities of the 4IR action plan. Prof. Dr. Md. Monjurul Alam, Department of Farm Power and Machinery, Faculty of Agricultural Engineering and Technology, BAU and Prof. Dr. Md. Roshidul Hasan, Computer Science and IT Division, BSMRAU were present as expert members of the technical session.

## Workshop on Smart Aquaculture: Future Prospects and Challenges in Bangladesh

The Fisheries Division of BARC organized a workshop entitled *Smart Aquaculture: Future Prospects and Challenges in Bangladesh* on June 4, 2024, at BARC. The inaugural ceremony of the workshop was graced by the presence of EC, BARC, as the chief guest, and Mr. Md. Zillur Rahman, Additional Director General, Department of Fisheries (DoF), as the special guest. Mr. Ajit Kumar Chakraborty, Member Director, Fisheries Division, BARC, chaired the event.

The workshop was attended by the

participants from BFRI, DoF, Bangladesh Fisheries Development Corporation, university professionals, research students, entrepreneurs, and non-government institutions. Professor Dr. Md. Monirul Islam from the Department of Fisheries, University of Dhaka, chaired the technical session. The keynote presenter, Dr. Tanvir Rahman, professor from the department of Aquaculture, Faculty of Fisheries, Bangladesh Agricultural University, addressed *Smart innovations in aquaculture for smart Bangladesh: Present*

*status, future prospects & challenges*. Additionally, Mr. R. A. Juice, Assistant professor from the department of Agricultural Economics, Faculty of Agricultural Economics and Rural Sociology, Bangladesh Agricultural University, delivered a presentation entitled *Transformation of aquaculture: Building a smart & sustainable market*.

Concluding the workshop, Ajit Kumar Chakraborty, the chairperson, expressed gratitude to all participants and attendees.

## Training Workshop on Cloud Computing Data Analytics and Datacube Technology for Earth Observation Applications

5 days long training course on *cloud computing data analytics and datacube technology for Earth observation applications* was organized by BARC on June 02-06, 2024. The objectives of the training workshop were to empower practical skills in Earth Observation and cloud computing with an introduction to cloud-computing concepts, data and tools for EO including the use of the CSIRO EASI platform for advanced and

scalable data analytics. The objective was also to discuss and co-design a collaborative data/knowledge integration platform that will enable the efficient and scalable use of Earth Observation (EO) to tackle Bangladesh's environmental and socioeconomic challenges. Over the course of the workshop, participants were engaged in a dynamic blend of presentations, hands-on exploration of the Earth Analytics Science and

Innovation (EASI) platform, and brainstorming sessions to achieve the objectives.

11 participants (having experiences of remote sensing and programming language) from BARC, BARI, BRRI and DAE attended the training. Two renowned remote sensing scientists from CSIRO, Australia, delivered lectures on different topics, focusing on earth observation techniques in rice

mapping, water resource management, etc. EC, BARC delivered his valuable speech as chief guest in the inaugural session.

Dr. Nazmun Nahar Karim, MD (Livestock), BARC presided over the inaugural session. In the closing session, Dr. Karim, MD (Livestock)

was present as the chief guest and provided certificates to the trainees, followed by valuable concluding remarks.

### **Training on Postharvest Processing Technology for Food and Nutritional Security**

5 days long training program (1<sup>st</sup> Batch) on *Postharvest Processing Technology for Food and Nutritional Security* organized by the Agricultural Engineering Unit, NRM Division, BARC was held on May 12-16, 2024 at BARC. The objective of the training was to equip participants with advanced postharvest processing techniques through lectures and lab visits to enhance food quality, safety, and nutritional value, including postharvest loss reduction for ensuring food security. Participants engaged in a dynamic blend of presentations, a 2-day long lab visit, and brainstorming sessions to

achieve the training objectives. 25 participants from 15 institutes, namely, BARC, BARI, BRRI, BINA, BSRI, BWMRI, BIRTAN, BADC, DAE, BCSIR, BSFA, RDA, SAU, BSMRAU, and Pran Foods Ltd. attended the training. Renowned scientists and professors experienced in postharvest processing technologies delivered lectures on different topics, focusing on food science and nutrition, postharvest processing circular economy and postharvest losses are reducing techniques and technologies, etc. Participants visited the Postharvest Technology (PHT) and Farm Machinery and

Postharvest Processing Engineering (FMPE) Labs at BARI, the Grain Quality and Nutrition (GQN) and Farm Machinery and Postharvest Technology (FMPHT) Labs at BRRI, and the Central Packing House of DAE as a part of the training program. Dr. Md. Baktear Hossain, Member Director (NRM), BARC inaugurated the training program on May 12, 2024. In the closing session, EC, BARC provided the certificates to the trainees. Dr. Md. Baktear Hossain, Member Director (NRM), BARC presided over the closing ceremony and delivered insightful remarks.

### **Project Closing Workshop on IoT Base Precision Agriculture for Sustainable Crop Production in Bangladesh**

Agricultural Engineering Unit, NRM Division, BARC organized *Project Closing Workshop on Feasibility study of the IoT base precision agriculture for sustainable crop production in Bangladesh* on 25 June, 2024 with the participation of different government and private Universities, etc. The aim of the

project was to develop and test the IoT-based machine learning precision agriculture systems for predicting fertilizer, water and pesticide use at field conditions for improving crop productivity. The project duration was from October 2021 to June 2024.

Dr. Mohammad Rashedul Haque,

co-principal Investigator of the project presented the full progress report of the project on behalf of the coordinator. The workshop was chaired by Dr. Nazmun Nahar Karim, Member Director (Livestock), and coordinator, BARC.

### **Training Program on Genome Editing for Agricultural Research**

A 5-day training program titled genome editing for Agricultural Research was successfully conducted from May 25-29, 2024 at BARC. The program was organized by the Crops Division of BARC and funded by PARTNER (APCU-BARC). The inaugural session, held on May 25, featured a

series of remarks from distinguished guests. Dr. Md. Abdus Salam, Member Director (Crops), BARC, acted as the chairperson. He cordially invited all the participants, delivered the welcome address, and outlined the course. Dr. Md. Mahfuz Alam, PSO (Crops), BARC, was present as the course coordinator.

The chief guest, EC, BARC, provided valuable guidelines and information to the trainers, emphasizing the importance of genome editing for sustainable crop production. His insights were well-received by all attendees.

A total of 25 participants from

NARS institutes, including BARC, BRRI, BARI, BSRI, BWMRI, BINA, BJRI, CDB, and private organizations, attended the program. Over the course of the five

days, participants engaged themselves in 25 classes conducted by resource persons from different universities and research institutes. On June 29, 2024 a closing

ceremony marked the successful completion of the training program by awarding certificates to the participants.

### **Training Program on Climate Adaptation Sustainable Crop Production**

A 3-day training program titled *Climate Adaptation for Sustainable Crop Production* was successfully conducted from June 25-27, 2024, at BARC. The program was organized by the Crops Division of BARC and funded by PARTNER (APCU-BARC).

The inaugural session, held on June 25, featured a series of remarks from distinguished guests. Dr. Shah Md. Monir Hossain, chief scientific officer (crops), BARC, acted as the chairperson. He cordially invited all the participants, delivered the welcome address, and outlined the

course. Dr. Md. Jahirul Islam, PSO (Crops), BARC, acted as the course coordinator. The chief guest, EC, BARC, provided valuable guidelines and information to the trainers, emphasizing the importance of climate adaptation strategies for sustainable crop production. His insights were well-received by all attendees. Dr. Md. Ashraful Alam, APD, PARTNER Program, APCU-BARC, gave remarks as the special guest and provided a brief overview of the PARTNER project.

A total of 25 participants from DAE

and BADC, along with various NARS institutes including BARC, BRRI, BARI, BSRI, BWMRI, BINA, BJRI, and CDB, attended the program. Over the course of the three days, participants engaged themselves in 15 classes conducted by 11 resource persons from different universities and research institutes. The training program concluded on June 27, 2024, with a closing ceremony where certificates were distributed to the participants, marking the successful completion of the program.

### **Training on Genome Editing for Sustainable Development in Agriculture**

Livestock Division, BARC organized training on *Genome editing for Sustainable Development in Agriculture* (1st Batch) from May 19-21, 2024 at BARC, to introduce the genome editing knowledge in agriculture for the NARS scientists and academicians of different universities. In this training program, scientists from BARC, BLRI, BARI, BSRI, BJRI, BINA, LRI, and teachers from BAU, BSMRAU, and SAU were present as participants. In the inaugural

session, Executive Chairman, BARC was present as chief guest, while Dr. Nazmun Nahar Karim, Member Director (Livestock), BARC presided over the session. In the training program, fifteen theoretical training sessions were successfully conducted by different resource persons on Introduction to genome editing, importance, Applications and General Aspects, Standard Operating Procedures for Research and Release of Genome Edited Plants in Bangladesh, Concept, Mechanisms, Methods

and Applications of RNA Editing and RNAi, Zinc Finger Nucleases, Transcription Activator-Like Effector Nucleases, CRISPR-Cas Technology, Microhomology-Mediated End Joining, Transposon-Mediated Genome Editing, Base Editing, Protein-Enabled Gene Editing, Epigenome Editing and Homology-Independent Targeted Integration. After the completion of the training program, certificates were handed over to the participants.

### **Training of Trainers (ToT) on Matured Technologies Developed by BINA**

A three day-long Training of Trainers (ToT) on *Mature Technologies Developed by Bangladesh Institute of Nuclear Agriculture (BINA)*, was organized by Technology Transfer and Monitoring Unit (TTMU) at BARC,

Dhaka, from May 25-27, 2024. The Executive Chairman, BARC was the chief guest, and Dr. Md. Abdus Salam, Member Director (Crops), chaired the inaugural session. 25 Upazila Agriculture Officers and Upazila Extension Officers attended

as trainees. The resource speakers were senior scientists from the Bangladesh Institute of Nuclear Agriculture (BINA), Mymensingh. The objective of the training program was to update the Upazila Agriculture officers and Agriculture

Extension Officer's knowledge regarding agricultural technology generated by BINA, and transfer those to the framers' field. Dr. Suraya Parvin, director, TTMU, gave the welcome address and

highlighted the objectives of the training program as the course director and Md. Anowarul Haque, SSO, BARC, performed as course coordinator of the training course.

Finally, EC, BARC, graced the training program as Chief Guest in the closing ceremony and handed over the certificates to the participants.

### **Training program on Good Livestock Husbandry Practices in Bangladesh**

Livestock Division, BARC organized a 3-days training program on *Good Livestock Husbandry Practices in Bangladesh* on June 24-26, 2024, at BARC. 25 scientists, officers, and teachers from NARS, and other institutes (from BARC, BLRI, SAU, BSMRAU, ACI, BRAC and other private and public organizations) was present as participants. The inaugural session was held under the chairmanship of Dr. Nazmun Nahar Karim, Member Director, Livestock Division, BARC. The training program was inaugurated by the chief guest, EC, BARC. 10

resource persons were successfully conducted lectures on Importance of Good Livestock Husbandry Practices in Bangladesh; Good Livestock Husbandry Practices in Dairy Production, Beef Production, Buffalo Production, Poultry Production, Goat and Sheep Production; Value Addition, Value Chain and Supply Chain Management of Livestock Source Food Marketing; Milk Processing, Preservation, Packaging and Marketing; Meat Processing, Preservation, Packaging and Marketing; Egg Processing, Preservation, Packaging and

Marketing; Slaughterhouse Management, Livestock Slaughter, Examination, Meat Preservation and Transportation; Contamination and Adulteration Issues in Quality and Safety Livestock Source Food Production; Management, Prevention, Treatment and Control of Livestock Diseases; Livestock Welfare and Responsibilities of Farm Owner and Livestock Enterprises in accordance with 'Animal Welfare Act-2019' of Bangladesh. After successfully completing the training program, certificates were awarded to the participants.

### **Training of Trainers (ToT) on Good Agricultural Practices**

As the scheme owner of Bangladesh GAP, BARC has taken the initiative to develop the capacity of field level stakeholders through training. During this quarter, a significant number of training sessions were conducted. Four batches of Training of Trainers (ToT) on Good Agricultural Practices (GAP) for

safe fruits and vegetables production were organized during April 21-25, 2024, May 5-9, 2024, and June 23-27, 2024, respectively, at BARC. A total of 100 officers and scientists from DAE, DAM, BADC, and NARS institutes attended the training. In addition, two batches of staff training were organized at

Mushroom Development Institute, Savar, Dhaka, from May 28-30, 2024. A farmers training on guava and green papaya was conducted at Godagari, Rajshahi, and Atghoria, Pabna, on 15-16 May 2024.

### **The First Meeting of Bangladesh and Japan Joint Agricultural Working Group (JAWG)**

The inaugural meeting of the Bangladesh-Japan Joint Agricultural Working Group (JAWG) took place on May 27, 2024 at BARC. Dr. Md. Mahmudur Rahman, Joint Secretary (Policy, Planning, and Coordination) of the Ministry of Agriculture, led the Bangladesh delegation, while Mr. Ken Sasaji, Deputy

Director-General of Japan's Ministry of Agriculture, Forestry and Fisheries (MAFF), headed the Japanese delegation. The meeting unfolded in a cordial atmosphere, with senior officials from both governments in attendance. The Secretary of Bangladesh's Ministry of Agriculture gave a cordial welcome to everyone. Mr. Ken

Sasaji, the leader of the Japanese delegation, delivered a speech during the opening session.

The Respected Secretary of the Ministry of Agriculture emphasized the importance of the relationship between Bangladesh and Japan in her opening speech. She emphasized Bangladesh's

significant progress in the agriculture sector despite numerous challenges, such as climate change and shrinking agricultural land. The Secretary sought Japanese support in four key areas: agriculture, food

processing and marketing, postharvest management and storage, and irrigation and water management. Additionally, she requested assistance in climate-smart agriculture, digital

technologies, policy decision-making, food safety, supply chain management, and capacity building for research and extension.

## **Training on Forecasting Methods for Agricultural Data Analysis**

A five-day long training program on Forecasting Methods for Agricultural Data Analysis was held on June 09-13, 2024 at BARC organized by the AERS Division. The resource speakers were the professors from Bangladesh Agricultural University, Mymensingh. Twenty-five agricultural economists from NARS institutes (16 participants from BARI, BSRI, BLRI, and BFRI) and agricultural universities (nine participants from Sher-e-Bangla Agricultural University, Bangladesh Sheikh Mujibur

Rahman Agricultural University and Sylhet Agricultural University) attended the training program. The Executive Chairman, BARC was the chief guest at the concluding session and he handed over the certificates to the participants of the training Program.

The training aims to enable the participants to understand the importance of agricultural data forecasting and learn about the fundamentals of forecasting in agricultural research; to develop on understanding of scenario and

pattern analysis of agricultural data; about able to select suitable methods for time series data analysis. The overall objective of the course is to improve the decision-making in agriculture, optimize resource use, and enhance productivity. The scientists themselves applied the method using a data set provided for the purpose. They also developed their skill in the operation of software packages such as STATA, SPSS, Eviews, and R software.

## **Training on GIS and Remote Sensing for smart Agriculture**

The basic GIS and Remote Sensing training program for smart agriculture took place at Computer and GIS Unit lab on June 2 to 6, 2024, organized by the Computer and GIS Unit of BARC. 25 scientists and officers from various agricultural-related institutes and organizations attended the training.

The program emphasized hands-on exercises, specifically focusing on basic map generation using ArcGIS software and the application of remote sensing technologies for precision agriculture. Participants learned how to make tools and analyze satellite imagery using GIS and Remote Sensing. The training

also covered the integration of GIS and remote sensing data to enhance decision-making in agricultural management. The program was funded by the PARTNER program, aiming to promote sustainable agricultural practices.

## **Workshop on Validation of Dataset for Data Standardization and Interoperability for Smart agriculture**

To validate 34 datasets, a two-day long workshop was held at BARC on April 29-30, 2024, with notable attendees including the Hon'ble Secretary of the Coordination and Reform Division and the ICT Division. Discussions covered the current state of data standardization, technical aspects, and future

actions, leading to the validation of the datasets. The workshop emphasized the importance of a unified data standard and data interoperability for the development of the 'Khamari' mobile app, aimed at providing comprehensive agricultural services to farmers. The final validated datasets are to be

published and uploaded to the BNDA website promptly, ensuring proper use and sustainability. The event concluded with a call to expedite the preparation of a policy on data standardization and interoperability.

The BARC Newsletter is published quarterly by Bangladesh Agricultural Research Council (BARC) to provide news and information on agricultural research and development of the NARS and other concerned organizations in Bangladesh.

Any query concerning the Newsletter or its contents, comments and suggestions for our Endeavour would highly be appreciated.

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