# Training Completion Report

## Training on Disaster Management in Agriculture

**Duration: 27 to 31 October 2019**


National Agriculture Training Academy (NATA)
Gazipur-1701

# Training on Disaster Management in Agriculture

**Duration: 27 to 31 October 2019**

## Course Management


**Course Director** : Dr. Md. Abu Sayeed Miah
Director General (Incharge) &
Director Training
NATA, Gazipur

**Course Coordinator: Dr.** Md. Abdul Mazed
Deputy Director
NATA, Gazipur
Cell: 01814849190

**Asst. Course Coordinator**
Mahmuda Huq
Senior Assistant Director
(Genetics and Plant Breeding)
NATA, Gazipur
Cell: 01718425311

**Asst. Course Coordinator**
Shamima Akter
Senior Assistant Director
( Environment & Agro forestry)
NATA, Gazipur
Cell: 0177417316

# Contents

# 1. Introduction

Bangladesh is a disaster risk hotspot, ranked fifth in the top 15 countries with highestrisks(World Disaster Report 2012, page-9: World Risk Index).A low-lying country with more than 230 waterways, Bangladesh is one of the most disaster-prone nations in the world. The country is well within the tropics and is the largest delta in the world formed by the mighty rivers namely the Ganges, the Brahamaputra and the Meghna. Bangladesh has special geographical feature.Bangladesh becomes the worst victim of natural calamities causing colossal loss of lives and properties. Major disasters that occur in Bangladesh are: tropical cyclone, tidal bore, flood, tornado, river bank erosion, earthquake etc. Disasters are increasing, and their impacts on people have become more conspicuous in recent years. In this respect, Bangladesh is known for its innovations in disaster risk reduction at the national, local, and community levels. Bangladesh is prone to floods and cyclones, and the risk of other disasters such as drought, earthquakes, and tornados is increasing. The impacts are becoming more visible at the local level, with greater impacts on poor and vulnerable communities.

Bangladesh is one of the most vulnerable countries to climate change in the world and will become even more susceptible in future (Islam et al. 2011).Floods, cyclones, storm surges and droughts are expected to become more frequent and severe in the coming years. The effects of climate change on agriculture and other sectors are already evident. The agricultural sector is most likely to face significant yield reduction in future due to climate variability (Islam *et al.* 2011). Natural disasters have number of adverse effects on human security. The most obvious immediate negative effect relates to destruction of life and property. There are also implications for livelihood and employment of people in the affected areas, and for the immediate viability of cultivation and other economic activities in the affected areas.Natural disasters disrupt the nation's food supply and decimate the livelihoods of the many Bangladeshis who work in agriculture.

It is an accepted fact that occurrence of the natural disasters cannot be prevented altogether but their adverse impact can be reduced substantially by undertaking various preparedness and mitigation measures. When disaster strikes, the best protection knows what to do. The impact of disaster can only be combated effectively if we have a rational and objective understanding of them. The adverse impacts of all the natural hazards affecting socio-economic condition need to be reduced for sustainable development.

## Course Objectives

Upon completion of the course on disaster management in agriculture participants will be able to:

(i) To understand the key concept and principles of disaster management with special reference of Bangladesh;

(ii) To know about regulatory and institutional framework of disaster management;

(iii) To co-ordinate and monitor the climate changed disaster management programs in order to rationalize resource utilization and ensure effective adaptations in crop agriculture;

(iv)To reduce Bangladeshis' vulnerability to disasters in the identified areas of concern (geographical or sectoral);

(v) To put in place appropriate measures that minimizes the negative effects of climate change and disaster;

(vi) To develop skills on Constraints/challenges for agricultural development;

(vii) To design and implement disaster management activities.

## Duration of the Course

Duration of the course is 5 days starting from 27 October and ends 31 October 2019.

## Prerequisites of the course:

- To attend in the training class in time;
- To be present at least 99% of the classes otherwise certificate may not be awarded;
- Maintain the norms in dormitory and cafeteria;
- Absent from any session is not allowed without prior permission from the course coordinator even in case of emergency;
- Enthusiastic to learn and share ideas in training session; and
- Cell phone must be kept in silent mode.

# 2. Course Content

**Working Day-01**

| Topics | Method |
|---|---|
| ICT for Disaster Management | L,D |
| GIS and Remote sensing in disaster Management | L,D |
| Meteorology and weather forecasting for agriculture | L,D |
| Implication of agro-meteorology for agriculture disaster management | L,D |
| Basic concept on disaster, hazard, vulnerability, risk and climate change | L,D |

**Working Day-02**

| Topics | Method |
|---|---|
| Present Disaster scenario of Bangladesh | L, D |
| Projection of climate change and disaster challenges in Bangladesh | L, D |
| Inter-relation between environment, population and development | L, D |

| | |
|---|---|
| Updated technologies of BRRI in relation to disaster management | L, D |
| Updated technologies of BRRI for Char and Haor Areas | L, D |

**Working Day-03**

| Topics | Method |
|---|---|
| Updated technologies of BARI in relation to disaster management | L, D |
| Updated technologies of BARI for Char and Haor Areas | L, D |
| Loss Assessment After Disaster | L, D |
| Disaster Management System in Bangladesh | L, D |
| Impact of climate change on agriculture in Bangladesh | L, D |

**Working Day-04**

| Topics | Method |
|---|---|
| Salinity Intrusion and Agricultural Adaptations in Coastal Areas of Bangladesh | L, D |
| Adaptation Strategies for Disaster and Climate Risks Management in Agriculture | L, D |
| Make an agriculture rehabilitation plan of your working area (eg. Flood, drought, salinity) | L, D, E & P |
| Group presentation and discussion (eg. Flood, drought, salinity) | L, D, E & P |
| Sustainable Development Goal (SDGs) | L, D |

**Working Day-05**

| Topics | Method |
|---|---|
| National Policy, Planning and Act on Disaster Management | L, D |
| Bangladesh Disaster Management Planning and Future Perspective | L, D |
| Climate Services in Agriculture to Mitigate Disaster Risk | L, D |
| Flood, flash flood and water logging and their impacts on agriculture | L, D |
| Global Warming and Drought Effect on agriculture and crop production | L, D |
| Agriculture rehabilitation program planning after disaster | L, D |

**L= Lecture, D=Discussion, E= Exercise, P= Presentation**

## 3.Training Methods & Materials:

Following method were followed and materials were used in the training session-
Method: Lecture/Open discussion/ Group work/Paired sharing/Question and Answer, Review
Materials: Slides, Computer, Multimedia Projector, White board, Marker, Duster, Internet, Sound system

**4.Sports & Recreation:**

There is a playground, a tennis court and a volley ball court in NATA campus. So the participants can avail the opportunity to play sports in that areas.There is also a recreation room with color T.V in the dormitory. The daily newspapers are also available in the recreation room for the participants.

**5. Concluding Session**

Course is evaluated by the participants individually both providing open-ended and close-ended interview schedule at the end of the training.

**6.Course evaluation by the participants**

The summary of the course evaluation of the participants are mentioned below:

i. The course contents is sufficient;
ii. Duration of the course is not satisfactory;
iii. Management of the training course is satisfactory;
iv. Selection of the resource speaker is good;
v. Resource speaker from different related organization should be included;
vi. Field trip should be arranged for practical learning;
vii. Course duration should increase;
viii. Topic related experts should be involved in the session and please avoid heavy profile person.
ix. Speaker selection should be more specific according to topic specialist;
x. Tea break should be at 10.45am-11.00am;
xi. Practical session should be included in this course;
xii. Management team was very cordial and helpful;
xiii. A tour to agro meterology center;
**xiv. Some token/gift as recognition after completion of course (1st position holder);**
xv. Ice breaking session is necessary;
xvi. *Salat* room for women;
xvii. Training honorarium should be increased up to 1000/-.;
xviii. Training oriented video should be used in lecture presentation;
xix. Limited tea and lunch break time;
xx. Introduction to different apps should be included;
xxi. Internet facilities should be increased further;
xxii. Continues class without break.

**7. Feedback from the participants**

This training will certainly help them to strengthening to enhance the capacity of them to meet the challenges of climate change and mainstream them as part of development in agriculture sector. It will also help them to develop disaster resilient cropping systems. The topics were very contemporary and need based for them. The resource persons were topic renowned relevant experts, knowledgeable, and having practical experiences in this field. There was an ample

scope to get introduced and exchanged ideas between the officers of different organizations under the Ministry of Agriculture. The time management of that training was definitely excellent. Participants selection should be homogenous and those who were working in adverse climatic region (e.g., Drought prone, salinity, flash flood etc.) They requested to arrange a refresher's course for them. In fact, the cooperation and management system of training by Course Coordinator, Assistant Course Coordinators and the NATA authority were praiseworthy. In a nutshell, the training was incredibly fruitful for them.

**8. Speech by the Course Coordinator**

We, as a nation, are most vulnerable to disaster due to climate change and consequently adaptation is our priority. Floods, tropical cyclones, storm surges and drought are likely to become more frequent and severe in the coming years. a large number of poor people are to live in vulnerable areas in Bangladesh. Disaster and climate change is not an external issue – rather, it must be internalized by all sectors. Human induced and technological disasters are getting more dominance in the landscape of disaster management. The training on disaster management was selected on the basis of training need assessment from the officers of the different organizations under the Ministry of Agriculture. We tried our level best to make the training program successful. Furthermore, we looked upon the different discipline related issues for smooth running of that training program. We expected that this program would certainly develop their knowledge and skill and made them more confident as well which would accelerate their performance in mitigation and adaptation on disaster management in their own fields.

**9. Speech by the Chief Guest**

In terms of climate, Bangladesh is characterized by high temperatures, heavy rainfall, high humidity, and fairly marked seasonal variations. Agriculture is one of the most sensitive sectors to climate change, particularly changes in temperature, rainfall patterns, and increased likelihood of extreme events such as droughts and floods. This training course was very essential in the mitigation and adaptation on disaster and climate change related adverse impacts on crop agriculture. To meet up the demand of technology transfer in a good learning environment and achieving a success in disaster management, the knowledge on disaster management is inevitable. The participants could apply the acquired knowledge and skill in their respective areas competently.

**10. Speech by the Chairperson**

Bangladesh has a Participatory Disaster Management Programme (PDMP) with a focus on disaster management and prevention, and also adaptation to climate change. The focus is on 'soft' measures to reduce the impacts of disasters, with an emphasis on preparedness, such as: awareness raising of practical ways to reduce disaster risks and losses, to strengthen national capacity for disaster management; enhance knowledge and skills of personnel in handling disasters; establishing disaster action plans in the most disaster prone areas. This training was need based training. To build up teaching capacity of the officers under the Ministry of Agriculture, this training can play a vital role. From such consideration, this training course was organized.

## 11. Distribution of Certificate

The certificates were distributed among the participants after successfully completion of the training. Director General (In-charge) was present as chief guest.

## 12. List of the participants

Thirty One participants from 12 different organizations under ministry of Agriculture were the participants of this course.

| SL. | Name | Designation |
|---|---|---|
| 1. | Md. Faridul Hassan | District Seed Certification Officer, Seed Certification Agency, Sirajganj |
| 2. | Md. Hasan Warisul Kabir | District Seed Certification Officer, Seed Certification Agency, Gopalganj |
| 3. | Mohammad Rakibul Hasan Sarker | Cotton Development Officer, Cotton Development Board, Kushtia Zone, Kushtia |
| 4. | HafizurRahaman | Scientific Officer, WMMD ivision, Bangladesh Rice Research Institute |
| 5. | Md. Abul Hossain | Farm Manager, GRS Division, BRRI, Gazipur |
| 6. | Md. Mahabubur Rahman | Senior Scientific Officer, Soil Resource Development Institute, Regional Laboratory, Govt., Cumilla |
| 7. | Md. Jainal Abedin | Senior Scientific Officer, Soil Resource Development Institute, Regional Laboratory, Daulatpur, Khulna |
| 8. | Md.Ahasan Habib | Scientific Officer, Bangladesh Sugarcrop Research Institute, Ishurdi, Pabna |
| 9. | Dipok Kumar Saha | Agriculture Extension Officer, Upazila Agriculture Office, Sadar, Meherpur |
| 10. | Pijush Roy | Agriculture Extension Officer, Upazila Agriculture Office, Kashiani, Gopalganj |
| 11. | Abu Jafor Mohammad Moin Uddin | Upazila Agriculture Officer, Kutubdia, Cox's Bazar |
| 12. | Md. Anisuzzaman | Upazila Agriculture Officer, Upazila Agriculture Office, Nasirnagar, Brahmanbaria |
| 13. | Md.Shariaj Biswas | Agriculture Extension Officer, Upazila Agriculture Office, Tahirpur, Sunamganj |
| 14. | Md. Al-Amin | Agriculture Extension Officer, Upazila Agriculture Office, Banaripara, Barishal |
| 15. | Ratan Chandra Barman | Agriculture Extension Officer, Upazila Agriculture Office, Gurudaspur, Natore |
| 16. | Md.AtiqulHaq | Additional Deputy Director (Horticulture), Department of Agriculture Extension, Habiganj |
| 17. | Md. Abdullah Al-Mamun | Agriculture Extension Officer, Upazila Agriculture Office, Bheramara, Kushtia |
| 18. | Iffat Kibria Al Nayeem | Agriculture Extension Officer, Upazila Agriculture Office, Baliadangi, Thakurgaon |

| SL. | Name | Designation |
|---|---|---|
| 19. | Susmita Ray | Agriculture Extension Officer, Upazila Agriculture Office, Rangpur Sadar, Rangpur |
| 20. | Waliul Islam | Agriculture Extension Officer, Upazila Agriculture Office, Mongla, Bagerhat |
| 21. | Md. Hasan Ali | Upazila Agriculture Officer, Upazila Agriculture Office, Badalgachi, Naogaon |
| 22. | Gazi Nazmul Hasan | Scientific Officer, Bangladesh Agricultural Research Institute, Bhola |
| 23. | Md. Mostafizur Rahman | Assistant Engineer, Godagari, Zone-2, BMDA |
| 24. | Alomgir Md. Ruhul Islam | Assistant Engineer, Nilphamari Zone, BMDA |
| 25. | S. M.MahbubulAlam | Scientific Officer, Regional Station, BWMRI,Shyampur,Rajshahi |
| 26. | Md. Shahidullah Kaisher | Assistant Director, Contract Growers Zone, BADC, Dinajpur |
| 27. | Md.Asafuzzaman | Assistant Engineer, Minor Irrigation Zone, BADC, Ullapara, Sirajganj |
| 28. | Md. Rashidul Hasan Anik | Scientific Officer, BARI,Gopalganj, |
| 29. | Sadia Tasmin | Senior Scientific Officer, Department of Horticulture, BINA, Mymensingh |
| 30. | Dr. Md.MahbubulAlamTarafder | Senior Scientific Officer, Soil Science Department, BINA, Mymensingh |
| 31. | Abida Sultana | Scientific Officer, Bangladesh Jute Research Institute, Manikganj |

## 13. List of Resource Personnel

| Sl No. | Name of the speakers | Designation and Address | Mobile NO. |
|---|---|---|---|
| 01 | Dr. Mazharul Aziz | PD, Agro Meterological information systems Development Project , DAE, Khamaebari | 01712119259 azizdae@gmail.com |
| 02 | Dr. Farida Perveen | ADD, Planning Project Implementation and ICT Wing, DAE,Khamaebari | 0171240156 perveengis@gmail.com |
| 03 | Dr. Md. Humayun Kabir | Professor, Department of Geography and Environment, Dhaka University | 01717711024 mh_kabir@yahoo.com |
| 04 | Dr. Md. Abu Wali Raghib Hassan | Director, DAE, Khamarbari, Dhaka | 01711224573 awrhassan@gmail.com |
| 05 | Jibon Krishna Biswas | Ex. DG, BRRI, Gazipur | 01711960439,01715285096 Biswas.jiban@gmail.com |
| 06 | Dr. Md. Abdul Muyeed | DG,DAE, Khamarbari,Dhaka | 01716940311 muyeedbd61@gmail.com |
| 07 | Dr. Md. Atiqur Rahman | Addl. Secretary, MoDMR | atiqur4032@gmail.com |

| | | | |
|---|---|---|---|
| 08 | Dr. Parimal Chandra Sarker | SSO (STD), BARI, Gazipur | 01712102012 |
| 09 | Md. Shameem Hassan Bhuiyan | Meteorology & Project Manager, WIBCI, Bangladesh Meteorological Department | 01750000456 shameem_bmd@yahoo.com |
| 10 | Dr. Md. Abdul Mazed, | DD, NATA,Gazipur | 01814849190 mazed13th.dae@gmail.com |
| 11 | Dr. Md. Jamal Uddin | DD, NATA,Gazipur | 01712272859 |
| 12 | Md. Eskandar Hossain | Sr. AD, NATA, Gazipur | 019386152225 eskandarhossain |

## 14. Training Schedule

**Date: 27/10/2019** **Working Day-01** **Day: Sunday**

| Time | Planned sessions and Topics | **Lecturer/Facilitator** |
|---|---|---|
| 9.00-9.30 | Registration | ACC &Sadiqunnahar, Demonstrator (Lab) |
| 9.30-10.00 | Inaugural Session | DG/Directors, Course Coordinator & Assistant Course Coordinators |
| 10.00-10.30 | Pre-evaluation | CC/ACC |
| 10.30-11.30 | ICT for Disaster Management | Dr. Farida Perveen, ADD ( In-charge of GIS and Remote Sensing Lab.), Planning, Project implementation and ICT Wing, DAE, Khamarbari, Dhaka. 01741240156,perveengis@gmail.com |
| 11.30-11.50 | Tea Break | |
| 11.50-12.50 | GIS and Remote sensing in disaster Management | Dr. Farida Perveen, ADD ( In-charge of GIS and Remote Sensing Lab.), Planning, Project implementation and ICT Wing, DAE, Khamarbari, Dhaka. 01741240156,perveengis@gmail.com |
| 12.50-02.00 | **Prayer & Lunch Break** | |
| 2.00-3.00 | Meteorology and weather forecasting for agriculture | Dr. Md. Shameem Hassan Bhuiyan Meteorologist & Project Manager, WIBCI, Bangladesh Meteorological Department 01750000456 , Shameem.bmd@gmail.com |
| 3.00-4.00 | Implication of agro-meteorology for agriculture disaster management | Dr. Md. Shameem Hassan Bhuiyan Meteorologist & Project Manager, WIBCI, Bangladesh Meteorological Department 01750000456, Shameem.bmd@gmail.com |
| 4.00-5.00 | Basic concept on disaster, hazard, vulnerability, risk and climate change | Md. Eskandar Hossain,SAD (Vegetable and Spices), NATA 01938615225 eskandarhossain@yahoo.com |

**Date:28/10/2019** **Working Day-02** **Day:Monday**

| Time | Planned sessions and Topics | Lecturer/Facilitator |
|---|---|---|
| 9.15-9.30 | **Review of the previous day** | CC/ACC |
| 9.30-10.30 | Present Disaster scenario of Bangladesh | Dr. Md. Humayun Kabir, Professor, Department of Geography and Environment, Dhaka University, 01717711024, mh_kabir@yahoo.com |
| 10.35-11.35 | Projection of climate change and disaster challenges in Bangladesh | Dr. Md. Humayun Kabir, Professor, Department of Geography and Environment, Dhaka University 01717711024, mh_kabir@yahoo.com |
| 11.35-12.00 | **Tea Break** | |
| 12.00-01.00 | Inter-relation between environment, population and development | Dr. Md. Humayun Kabir, Professor, Department of Geography and Environment, Dhaka University 01717711024, mh_kabir@yahoo.com |
| 01.00-2.30 | **Prayer & lunch Break** | |
| 2.300-3.30 | Updated technologies of BRRI in relation to disaster management | Dr. Jibon Krishna Biswas, Ex DG, BRRI, Gazipur 01711960439,01715285096 Biswas.jiban@gmail.com |
| 3.35-4.35 | Updated technologies of BRRI for Char and Haor Areas | Dr. Jibon Krishna Biswas, Ex DG, BRRI, Gazipur 01711960439, 01715285096 Biswas.jiban@gmail.com |

**Date: 29/10/2019** **Working Day-03** **Day:Tuesday**

| Time | Planned sessions and Topics | Lecturer/Facilitator |
|---|---|---|
| 9.15-9.30 | **Review of the previous day** | CC/ACC |
| 9.30-10.30 | Updated technologies of BARI in relation to disaster management | Dr. Parimal Chandra Sarker, SSO (STD), BARI, Gazipur 01712102012 |
| 10.35-11.35 | Updated technologies of BARI for Char and Haor Areas | Dr. Parimal Chandra Sarker, SSO (STD), BARI, Gazipur 01712102012 |
| 11.35-12.00 | **Tea Break** | |

| | | |
|---|---|---|
| 12.00-01.00 | Loss Assessment After Disaster | Dr. Parimal Chandra Sarker, SSO (STD), BARI, Gazipur 01712102012 |
| 01.00-2.30 | **Prayer & lunch Break** | |
| 2.30-3.30 | Disaster Management System in Bangladesh | Dr. Md. Abdul Mazed, DD (LR), NATA,Gazipur 01814849190 mazed13th.dae@gmail.com |
| 3.30-4.30 | Impact of climate change on agriculture in Bangladesh | Dr. Md. Abdul Mazed, DD (LR), NATA,Gazipur 01814849190 mazed13th.dae@gmail.com |

**Date: 30/10/2019 Working Day-04 Day: Wednesday**

| Time | Planned sessions and Topics | Lecturer/Facilitator |
|---|---|---|
| 9.15-9.30 | **Review of the previous day** | CC/ACC |
| 9.30-10.30 | Salinity Intrusion and Agricultural Adaptations in Coastal Areas of Bangladesh | Dr. Abu Wali Raghib Hassan, Ex. Director, Planning, Project Implementation & ICT wing, DAE, Khamarbari, Dhaka 01711224573 awrhassan@gmail.com |
| 10.35-11.35 | Adaptation Strategies for Disaster and Climate Risks Management in Agriculture | Dr. Abu Wali Raghib Hassan, Ex. Director, Planning, Project Implementation & ICT wing, DAE, Khamarbari, Dhaka 01711224573 awrhassan@gmail.com |
| 11.35-12.00 | **Tea Break** | |
| 12.00-01.00 | Make an agriculture rehabilitation plan of your working area (eg. Flood, drought, salinity) | Dr. Md. Abdul Mazed, DD (LR), NATA,Gazipur 01814849190 mazed13th.dae@gmail.com |
| 01.00-2.30 | **Prayer & lunch Break** | |
| 2.300-3.30 | **Group presentation and discussion (flood, drought and Salinity)** | Dr. Md. Abdul Mazed, DD (LR), NATA,Gazipur 01814849190 mazed13th.dae@gmail.com |
| 3.35-4.35 | Sustainable Development Goal (SDGs) | Dr. Md. Jamal Uddin, DD ( Plant Pathology), NATA, Gazipur |

**Date: 31/10/2019 Working Day-05 Day: Thursday**

| Time | Planned sessions and Topics | Lecturer/Facilitator |
|---|---|---|
| 9.00-10.00 | National Policy, Planning and Act on Disaster Management | Dr. Md. Atiqur Rahman , Addl. Secretary MoDMR, 01715234606, atiqur4032@gmail.com |
| 10.00-11.00 | Bangladesh Disaster Management Planning and Future Perspective | Dr. Md. Atiqur Rahman , Addl. Secretary MoDMR, 01715234606, atiqur4032@gmail.com |
| 11.00-11.20 | **Tea Break** | |

| | | |
|---|---|---|
| 11.20-12.20 | Climate Services in Agriculture to Mitigate Disaster Risk | Dr. Mazharul Aziz, PD, Agro-Meteorological information Systems Development Project, DAE, khamarbari, Dhaka, 01712119259, azizdae@gmail.com |
| 012.20-1.20 | **Prayer & lunch Break** | |
| 1.20-02.20 | Flood, flash flood and water logging and their impacts on agriculture | Dr. Md. Abdul Muyeed, DG, DAE, Khamarbari, Dhaka01716940311 muyeedbd61@gmail.com |
| 2.20-3.20 | Global Warming and Drought Effect on agriculture and crop production | Dr. Md. Abdul Muyeed, DG, DAE, Khamarbari, Dhaka01716940311 muyeedbd61@gmail.com |
| 3.20-4.20 | Agriculture rehabilitation program planning after disaster | Dr. Md. Abdul Muyeed, DG, DAE, Khamarbari, Dhaka01716940311muyeedbd61@gmail.com |
| 4.20-4.40 | Post Evaluation | Course Coordinator & Assistant Course Coordinator |
| 4.40-5.00 | Closing Ceremony | DG/Directors, Course Co-ordinator and faculty Members, NATA |

## 15. Training Course Evaluation by the participants

**The topics they liked :**

1. Basic concept on disaster, hazard, vulnerability, risk and climate change
2. Projection of climate change and disaster challenges in Bangladesh
3. Flood, flash flood and water logging and their impacts on agriculture
4. Drought effect on agriculture and crop production
5. Salinity intrusion and agricultural adaptations in coastal areas of Bangladesh
6. Adaptation strategies for disaster and climate risks management in agriculture
7. Mitigation strategies for disaster and climate risks management in agriculture
8. GIS and remote sensing in disaster management
9. Meteorology and weather forecasting for agriculture
10. Implication of agro-meteorology for agricultural disaster management
11. Innovation and idea generation for disaster management
12. Updated technologies of BARI in relation to disaster management
13. Updated technologies of BRRI in relationto disaster management

## The topics need to be added

1. Technology for future disaster management in agriculture
2. Research program/initiatives for disaster management
3. Visit *Bangabandhu* satellite station and airport meteorology system;
4. Implementation of GIS, GPS and remote sensing in agriculture should be included;
5. International techniques for disease and insects management as disaster management should be included;

6. Basic concepts of meteorology and factors of disaster should be included;
7. Modern ICT and GIS technologies used in disaster management should be included;

## Best Training Methods choose by the participants

1. Discussion and group exercise
2. Group wise problem solution
3. Group discussion and presentation
4. Some pictorial presentation

## The issues that are disliked by the participants

1. Less time for Practice
2. Load shedding
3. Very tight schedule
4. Interruption of mobile network in dormitory

## The others associated issues they liked

1. Topic wise expert resource persons were selected very wisely.
2. Time management
3. Cooperation of Course Coordinator and Asst. Course Coordinator very Remarkable
5. Discipline & management
6. Management of dormitory
7. Expert resource persons
8. Cooperation of NATA Authority

## Provided Service Quality

1. Neat and cleanliness facilities-80%
2. Library facilities – 30%
3. Audiovisual facilities – 70%

## Recommendations for the improvement of the course

1. Uninterrupted internet and electricity supply should be provided
2. Training duration should be increased
3. Practical class should be more
4. Internet access should be increased
5. Provide more time for discussion and exercise
6. Hard copy of manual of training course
7. LAN Connection should be available
9. Refresher's course should be arranged
10. Increase of honorarium
11. Important class should be conducted in the morning
12. Diploma course or long course for agriculture/ ICT/Language

| Day-1 (27.11.2019) | Day-2 (28.11.2019) |
|---|---|

**Following Future planning should be considered to establish NATA as a centre of excellence**

1. Specific team building to specific task
2. Expert faculty member
3. Uninterrupted electricity
4. Whole campus should be under CCTV

| Participant | ICT for Disaster Management | GIS and Remote sensing in disaster Management | Meteorology and weather forecasting for agriculture | Implication of agro meteorology for agriculture disaster management | Basic concept on disaster, hazard, vulnerability, risk and climate change | Present Disaster scenario of Bangladesh | Projection of climate change and disaster challenges in Bangladesh | Inter relation between environment population and development | Updated technologies of BRRI in relation to disaster management | Updated technologies of BRRI for Char and Haor | Impact of climate change on agriculture in Bangladesh |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dr. Farida Perveen, ADD,Planning,project implementation and ICT Wing,DAE,Khamarbari | | Dr.Md.Shameem Hassan Bhuiyan,Meterologist & Project Manager, WIBCI,BMD | | Md. Eskandar Hossain, SAD,NATA | Dr.Md. Humayun Kabir, Professor, Department of Geography and Environment, Dhaka University | | | Dr.Jibon Krishna Biswas, Ex DG, BRRI | | Dr.Md.Abdul Mazed, DD(LR),NATA |
| 1 | 5.0 | 5.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| 2 | 3.8 | 3.8 | 6.0 | 6.0 | 5.6 | 6.0 | 6.0 | 6.0 | 5.0 | 5.0 | 6.0 |
| 3 | 5.8 | 5.8 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 4.0 | 4.0 | 4.0 |
| 4 | 4.2 | 4.2 | 4.8 | 4.8 | 4.8 | 5.0 | 5.8 | 5.0 | 6.0 | 6.0 | 6.0 |
| 5 | 5.0 | 5.0 | 5.0 | 5.0 | 4.2 | 5.6 | 5.6 | 5.6 | 5.8 | 5.8 | 5.0 |
| 6 | 5.0 | 5.0 | 5.0 | 5.0 | 4.2 | 4.0 | 4.0 | 4.0 | 3.0 | 3.0 | 4.0 |
| 7 | 4.6 | 4.6 | 5.2 | 5.2 | 4.4 | 6.0 | 6.0 | 6.0 | 5.8 | 5.8 | 6.0 |
| 8 | 3.2 | 3.2 | 6 | 6 | 4.4 | 4.2 | 4.2 | 3.2 | 4.6 | 4.2 | 5.0 |
| 9 | 4.4 | 4.4 | 5.8 | 5.2 | 5.0 | 5.6 | 5.4 | 5.2 | 5.8 | 5.6 | 5.0 |
| 10 | 5.4 | 5.4 | 5.0 | 5.0 | 4.4 | 6.0 | 6.0 | 6.0 | 5.6 | 5.4 | 5.6 |
| 11 | 4.2 | 4.4 | 4.8 | 5.0 | 5.0 | 5.8 | 5.8 | 5.8 | 6.0 | 6.0 | 3.8 |
| 12 | 4.0 | 4.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 4.6 |
| 13 | 6.0 | 6.0 | 2.4 | 1.4 | 6.0 | 4.6 | 4.6 | 4.6 | 5.0 | 5.0 | 5.0 |
| 14 | 3.4 | 3.4 | 4.0 | 3.6 | 5.0 | 3.4 | 3.4 | 3.4 | 4.6 | 4.4 | 4.8 |
| 15 | 4.6 | 4.2 | 4.8 | 4.4 | 4.6 | 5.8 | 5.4 | 5.8 | 5.6 | 5.6 | 5.0 |
| 16 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 4.8 | 6.0 | 5.8 | 6.0 | 6.0 | 5.0 |
| 17 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.4 | 4.6 | 4.6 | 4.6 | 4.6 |
| 18 | 5.6 | 5.6 | 6.0 | 6.0 | 4.8 | 5.0 | 5.0 | 5.0 | 4.8 | 5.0 | 4.6 |
| 19 | 5.6 | 6.0 | 6.0 | 6.0 | 6.0 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 |
| 20 | 5.2 | 5.0 | 5.6 | 5.0 | 4.2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 4.6 |
| 21 | 5.4 | 5.4 | 5.0 | 5.0 | 4.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| 22 | 3.6 | 3.6 | 4.2 | 4.2 | 4.4 | 5.0 | 4.0 | 5.0 | 5.8 | 5.0 | 5.0 |
| 23 | 5.8 | 5.8 | 5.0 | 5.0 | 5.0 | 3.2 | 3.2 | 3.2 | 3.8 | 3.4 | 4.0 |
| 24 | 5.8 | 5.8 | 5.8 | 5.8 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.2 |
| 25 | 5.2 | 5.2 | 4.6 | 5.0 | 5.2 | 4.8 | 5.2 | 4.8 | 4.8 | 5.0 | 5.6 |
| 26 | 3.2 | 3.2 | 3.6 | 3.8 | 3.2 | 4.4 | 4.0 | 4.0 | 4.2 | 4.2 | 3.4 |
| 27 | 5.6 | 5.4 | 5.8 | 6.0 | 5.6 | 4.0 | 4.0 | 4.0 | 3.0 | 3.0 | 3.0 |
| 28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.2 | 4.4 | 4.4 | 4.2 | 4.4 | 5.0 |
| 29 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.4 | 4.6 | 5.2 | 4.6 | 4.6 | 4.6 |
| 30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.8 | 4.8 | 4.8 | 5.0 | 5.6 | 5.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.8 | 4.8 | 4.8 | 5.0 | 5.6 | 5.0 |
| Total | 134.2 | 130 | 138 | 136 | 123.2 | 154.0 | 154.4 | 153.6 | 129.8 | 152.2 | 130.8 |
| Av. | 4.97 | 4.81 | 5.11 | 5.03 | 4.56 | 4.96 | 4.98 | 4.95 | 4.18 | 4.90 | 4.22 |

## 16. Resource Speakers Evaluation by the Participant

| Day-3 (29.11.2019) | | | | | | Day-4 (30.11.2019) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Participants | Disaster Management in Bangladesh | Sustainable Development Goal | Updated technologies of BARI in relation to disaster management | Updated technologies of BARI for Char and Hoar Areas | Loss Assessment After Disaster | Salinity Intrusion and Agricultural Adoptions in Coastal Areas of Bangladesh | Adaption Strategies for Disaster and Climate Risk Management | Flood, flash flood and water logging and their impacts on agriculture | Agriculture rehabilitation program planning after disaster | Make an Agriculture rehabilitation plan of your working area |
| | Dr.Md.Abdul Mazed,DD,NATA | Dr.Md. Jamal Uddin, DD,NATA | Dr.Parimal Chandra Sarker,SO, BARI | Dr.Parimal Chandra Sarker,SO, BARI | Dr.Parimal Chandra Sarker,SO, BARI | Dr.Abu Wali Raghib Hassan, Ex.Director,ICT wing, DAE | Dr.Abu Wali Raghib Hassan, Ex.Director,ICT wing, DAE | Dr.Md. Abdul Mazed, DD,NATA | Dr.Md.Abdul Mazed,DD,NATA | Dr.Md.Abdul Mazed,DD,NATA |
| 1 | 5.0 | 3.2 | 4.4 | 6.0 | 4.4 | 4.4 | 4.6 | 5.0 | 4.6 | 4.6 |
| 2 | 4.2 | 4.0 | 5.0 | 3.6 | 3.6 | 5.4 | 5.0 | 5.0 | 5.0 | 5.0 |
| 3 | 5.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.4 | 4.4 | 5.0 | 5.0 | 5.0 |
| 4 | 5.0 | 4.2 | 4.0 | 5.0 | 4.0 | 6.0 | 6.0 | 5.0 | 5.0 | 5.0 |
| 5 | 6.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.8 | 5.8 | 5.0 | 5.0 | 5.0 |
| 6 | 5.0 | 5.4 | 5.4 | 5.4 | 5.4 | 5.8 | 5.8 | 5.0 | 5.0 | 5.0 |
| 7 | 3.6 | 3.6 | 5.0 | 5.0 | 5.0 | 5.0 | 4.5 | 5.0 | 5.0 | 5.0 |
| 8 | 5.0 | 5.2 | 5.4 | 5.2 | 4.6 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| 9 | 5.8 | 5.6 | 5.0 | 5.0 | 5.0 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| 10 | 3.4 | 5.6 | 5.2 | 5.2 | 5.2 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| 11 | 4.6 | 4.6 | 4.4 | 4.4 | 4.4 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| 12 | 4.6 | 4.2 | 4.2 | 4.8 | 4.8 | 6.0 | 6.0 | 5.0 | 5.0 | 5.0 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 13 | 4.8 | 4.0 | 5.2 | 5.6 | 5.6 | 5.2 | 5.2 | 5.0 | 6.0 | 6.0 |
| 14 | 6.0 | 3.6 | 6.0 | 6.0 | 6.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 |
| 15 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| 16 | 4.6 | 4.4 | 4.6 | 4.4 | 4.6 | 4.4 | 4.4 | 4.0 | 4.0 | 4.0 |
| 17 | 4.2 | 4.4 | 3.8 | 3.4 | 3.4 | 4.6 | 5.0 | 5.0 | 5.0 | 5.0 |
| 18 | 3.6 | 4.4 | 5.0 | 5.0 | 5.0 | 4.0 | 4.0 | 4.0 | 5.0 | 5.0 |
| 19 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 4.4 | 4.4 | 5.0 | 5.0 | 5.0 |
| 20 | 6.0 | 5.6 | 5.6 | 6.0 | 6.0 | 4.4 | 4.4 | 5.0 | 5.0 | 5.0 |
| 21 | 5.0 | 4.4 | 4.2 | 4.2 | 4.2 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| 22 | 4.6 | 4.2 | 4.0 | 4.0 | 4.0 | 4.6 | 5.2 | 4.0 | 4.0 | 4.0 |
| 23 | 5.0 | 5.0 | 6.0 | 5.4 | 6.0 | 4.0 | 4.6 | 4.0 | 4.6 | 4.0 |
| 24 | 3.8 | 4.8 | 4.2 | 4.0 | 4.8 | 4.5 | 4.5 | 4.5 | 4.5 | 4.0 |
| 25 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 3.4 | 5.0 | 4.0 | 4.0 | 4.0 |
| 26 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.8 | 6.0 | 5.8 | 5.8 | 6.0 |
| 27 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 28 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 29 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 31 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total | 114.2 | 108.8 | 115 | 116 | 108.4 | 129.7 | 127.4 | 123.9 | 131.1 | 130.2 |
| Average | 4.75 | 4.53 | 4.79 | 4.83 | 4.51 | 5.18 | 5.09 | 4.95 | 5.24 | 5.00 |

| Day-5 (31.11.2019) | | | | |
|---|---|---|---|---|
| Participants | Drought Effect on agriculture and crop production | National Policy and Act on Disaster Management | Bangladesh Disaster Management Planning and Future Prospective | Climate Services in Agriculture to Mitigate Disaster Risk |
| | Dr.Md. Abdul muyeed,DG, DAE | Dr.Md. Atiqur Rahman,Addl. Secretary,Mo DMR | Dr.Md. Atiqur Rahman,Ad dl.Secretary, MoDMR | Dr.Mazharul Aziz,PD,Agro-Meterological Information Systems Development Project,DAE |
| 1 | 6.0 | 6.0 | 6.0 | 6.0 |
| 2 | 6.0 | 6.0 | 6.0 | 6.0 |
| 3 | 6.0 | 5.0 | 5.0 | 4.0 |
| 4 | 4.8 | 5.4 | 5.4 | 5.0 |
| 5 | 5.0 | 5.0 | 5.0 | 5.0 |
| 6 | 6.0 | 5.8 | 5.8 | 6.0 |
| 7 | 5.8 | 5.6 | 5.6 | 5.0 |
| 8 | 5.0 | 4.0 | 4.0 | 5.0 |
| 9 | 6.0 | 5.2 | 5.2 | 5.0 |
| 10 | 4.8 | 5.2 | 4.6 | 4.8 |
| 11 | 5.8 | 5.4 | 5.0 | 5.0 |
| 12 | 6.0 | 5.4 | 5.4 | 5.4 |
| 13 | 5.6 | 5.8 | 5.8 | 5.2 |
| 14 | 4.1 | 4.1 | 4.8 | 4.6 |
| 15 | 5.0 | 5.0 | 5.0 | 4.0 |
| 16 | 6.0 | 5.8 | 5.8 | 6.0 |
| 17 | 5.4 | 4.2 | 4.8 | 4.0 |
| 18 | 6.0 | 4.6 | 4.7 | 4.6 |
| 19 | 5.8 | 5.4 | 5.4 | 5.0 |
| 20 | 4.8 | 6.0 | 5.0 | 4.6 |
| 21 | 5.2 | 4.4 | 4.5 | 5.0 |
| 22 | 6.0 | 6.0 | 5.8 | 6.0 |
| 23 | 5.0 | 5.0 | 5.0 | 5.0 |
| 24 | 6.0 | 5.6 | 5.6 | 4.8 |
| 25 | 6.0 | 5.4 | 5.2 | 5.4 |
| 26 | 6.0 | 4.4 | 5.4 | 6.0 |
| 27 | 5.8 | 5.8 | 5.8 | 5.0 |
| 28 | 6.0 | 6.0 | 6.0 | 5.2 |
| 29 | 4.6 | 4.4 | 4.6 | 5.0 |
| 30 | 5.4 | 5.5 | 6.0 | 5.7 |
| 31 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total | 161.26 | 157.4 | 157.8 | 157.9 |

| | | | | |
|---|---|---|---|---|
| Average | 5.38 | 5.24 | 5.26 | 5.26 |

## 17. Training Evaluation Report of Participants on Disaster Management in Agriculture

Duration: 27-31 October 2019 Full Marks: 30

| SL. | Name | Designation | Pre Evaluation | Post Evaluation |
|---|---|---|---|---|
| 1. | Md. Faridul Hassan | District Seed Certification Officer, Seed Certification Agency, Sirajganj | 11 | 24 |
| 2. | Md. Hasan Warisul Kabir | District Seed Certification Officer, Seed Certification Agency, Gopalganj | 5.5 | 22 |
| 3. | Mohammad Rakibul Hasan Sarker | Cotton Development Officer, Cotton Development Board, Kushtia Zone, Kushtia | 1 | 19 |
| 4. | Hafizur Rahaman | Scientific Officer, WMMD ivision, Bangladesh Rice Research Institute | 8 | 21 |
| 5. | Md. Abul Hossain | Farm Manager, GRS Division, BRRI, Gazipur | 6 | 13 |
| 6. | Md. Mahabubur Rahman | Senior Scientific Officer, Soil Resource Development Institute, Regional Laboratory, Govt., Cumilla | 10 | 22 |
| 7. | Md. Jainal Abedin | Senior Scientific Officer, Soil Resource Development Institute, Regional Laboratory, Daulatpur, Khulna | 4 | 25 |
| 8. | Md.Ahasan Habib | Scientific Officer, Bangladesh Sugarcrop Research Institute, Ishurdi, Pabna | 6 | 16 |
| 9. | Dipok Kumar Saha | Agriculture Extension Officer, Upazila Agriculture Office, Sadar, Meherpur | 7 | 22 |
| 10. | Pijush Roy | Agriculture Extension Officer, Upazila Agriculture Office, Kashiani, Gopalganj | 2.5 | 24 |
| 11. | Abu Jafor Mohammad Moin Uddin | Upazila Agriculture Officer, Kutubdia, Cox's Bazar | 3 | 20 |
| 12. | Md. Anisuzzaman | Upazila Agriculture Officer, Upazila Agriculture Office, Nasirnagar, Brahmanbaria | 6.5 | 23 |
| 13. | Md.Shariaj Biswas | Agriculture Extension Officer, Upazila Agriculture Office, Tahirpur, Sunamganj | - | 22 |
| 14. | Md. Al-Amin | Agriculture Extension Officer, Upazila Agriculture Office, Banaripara, Barishal | 8 | 22 |
| 15. | Ratan Chandra Barman | Agriculture Extension Officer, Upazila Agriculture Office, Gurudaspur, Natore | 7 | 24 |

| SL. | Name | Designation | Pre Evaluation | Post Evaluation |
|---|---|---|---|---|
| 16. | Md.Atiqul Haq | Additional Deputy Director (Horticulture), Department of Agriculture Extension, Habiganj | - | 12 |
| 17. | Md. Abdullah Al-Mamun | Agriculture Extension Officer, Upazila Agriculture Office, Bheramara, Kushtia | 6.5 | 24 |
| 18. | Iffat Kibria Al Nayeem | Agriculture Extension Officer, Upazila Agriculture Office, Baliadangi, Thakurgaon | 10 | 23 |
| 19. | Susmita Ray | Agriculture Extension Officer, Upazila Agriculture Office, Rangpur Sadar, Rangpur | 4.5 | 25 |
| 20. | Waliul Islam | Agriculture Extension Officer, Upazila Agriculture Office, Mongla, Bagerhat | 4.5 | 17 |
| 21. | Md. Hasan Ali | Upazila Agriculture Officer, Upazila Agriculture Office, Badalgachi, Naogaon | 5 | 20 |
| 22. | Gazi Nazmul Hasan | Scientific Officer, Bangladesh Agricultural Research Institute, Bhola | 6 | 25 |
| 23. | Md. Mostafizur Rahman | Assistant Engineer, Godagari, Zone-2, BMDA | 2.5 | 22 |
| 24. | Alomgir Md. Ruhul Islam | Assistant Engineer, Nilphamari Zone, BMDA | - | 22 |
| 25. | S. M.Mahbubu lAlam | Scientific Officer, Regional Station, BWMRI,Shyampur,Rajshahi | 4.5 | 24 |
| 26. | Md. Shahidullah Kaisher | Assistant Director, Contract Growers Zone, BADC, Dinajpur | 8.5 | 21 |
| 27. | Md.Asafuzzaman | Assistant Engineer, Minor Irrigation Zone, BADC, Ullapara, Sirajganj | 6 | 21 |
| 28. | Md. Rashidul Hasan Anik | Scientific Officer, BARI,Gopalganj, | 8.5 | 23 |
| 29. | Sadia Tasmin | Senior Scientific Officer, Department of Horticulture, BINA, Mymensingh | 4.5 | 25 |
| 30. | Dr. Md. Mahbubul Alam Tarafder | Senior Scientific Officer, Soil Science Department, BINA, Mymensingh | 2.5 | 23 |
| 31. | Abida Sultana | Scientific Officer, Bangladesh Jute Research Institute, Manikganj | 5 | 26 |