

# Blue Gold Program



## Curriculum Development Workshop on Blue Gold Program for DAE Officials

**Embassy of the Kingdom of the Netherlands,  
Dhaka, Bangladesh**

**Bangladesh Water Development Board (BWDB)  
Department of Agricultural Extension (DAE)**

Dhaka, Bangladesh, 19th December, 2013



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# List of Abbreviations

BWDB	Bangladesh Water Development Board
DAE	Department of Agricultural Extension
EKN	Embassy of the Kingdom of the Netherlands
FFS	Farmer Field School
FO	FFS Organizer
BWDB	Bangladesh Water Development Board
IPSWAM	Integrated Planning for Sustainable Water Management
WMG	Water Management Group
WMA	Water Management Association
WMO	Water Management Organization
DPP	Development Project Proposal

# 1. Introduction

## 1.1 Background information

The Blue Gold Program is a Dutch – Bangladesh joint endeavour to support the people of Khulna, Satkhira and Patuakhali districts in water management for development. In these three districts, Blue Gold Program will work in 9 polders that were already developed by BWDB during a previous project (IPSWAM) and 17 other polders will be selected for rehabilitation and fine-tuning. Total area of the Blue Gold polders is 150,000 hectares.

DAE will provide crop production technology to the WMGs through the Farmer Field School (FFS) approach. About 1000 FFS on rice, field crops, vegetables and fruits will be organized by Departmental Trainers (DT) and Farmers Trainers (FT). Total 25,000 farm household (one male and one female) both male and female would be trained up through these FFS and learning would spread out through FFS farmers to WMGs member in the polder. During the implementation period, DAE will also setup demonstration-trials for real learning opportunities to the farmers in the Blue Gold areas.

The crops FFS will be implemented by DAE under a separate DPP. These activities are expected to start in late November 2013, initially by organizing a season-long TOT for DAE staffs.

To review a curriculum on FFS and season long TOT, DAE organized a day-long workshop on . “Technology Selection (Curriculum Development for Farmers Field School & Season Long ToT Courses)” under the project entitled “Transfer of Technology for Agriculture Production under Blue Gold Program (DAE Part)” on Thursday, 19 December, 2013. The venue was at DAE conference room 2<sup>nd</sup> floor, middle building, Khamarbari, Dhaka.

## 1.2 Objectives of the DAE workshop

The main objectives of the DAE workshops are:

- To review the ICM curriculum and develop an updated version for homestead garden and crops in line with the Blue Gold objectives
- To review the ICM curriculum and develop a new version for season-long TOT for DAE staffs to achieve Blue Gold activities

## 1.3 Inauguration

KBD MD MATIAR RAHMAN, Director, Field Services Wing, DAE chaired the meeting. The inaugural session began with a recitation from the Holy Quran. Tahmina Begum, Project Director, welcomed all the guests and participants in the curriculum development workshop and gave a short overview on DAE activities mainly crop part with DPP. She mentioned in the workshop that DAE was not involved in formulation of DPP initially. However, it was included with this project later and prepared a separate DPP. Funding for the DPP has not been released yet. On behalf of TA part Mr. Md. Ashraful Islam, Deputy Component Leader of Food security and agricultural component of Blue Gold programme gave an overview on Blue Gold activities. He focused on the project areas, duration and different components. The components are:

Component 1: Community Mobilization and Institutional Strengthening

Component 2: Water Resources Management Infrastructure Development, which will help to manage water properly which will help increase agricultural production

Component 4: Business Development. This component is working on value chain development that is from input supply to marketing. FFS participants will be benefitted by getting information on good input supply source and the best marketing places.

Component 5: Cross Cutting Issues, that is gender, Good Governance, Environment, Disaster management and Training.

Component 3: Food Security and Agricultural Production The main objective of this component is to help our target farmers to increase their production through FFS approach. Ashraf said TA team will implement FFS on Homestead garden, nutrition, poultry, livestock and fisheries and DAE will run the FFS on crop sector (rice, other field crops, homestead vegetables and fruits). The FFS curriculum should be realistic with current field situation. He hoped that the experts will review the ICM module and then suggest improvements to make a revised curriculum.

The Special Guest, KBD MD ABU HANIF MIAH, Director, Plant Protection Wing, DAE stated that before entering this workshop the project name was bit new to him and try to understand the meaning. After coming to this workshop he learned from his previous speakers. The objectives of this project are good. It is not confined with only vegetable or crop but also deal with livestock and fisheries. He said it is good to select a disaster prone area for the project and suggested to avoid overlapping with other project like IFMC, ICM, IPM, etc. He hoped that all experts will give their input and ideas to develop a good curriculum. He also stated that this project will practice environmental friendly agriculture activities by FFS approach. And in near future farmers could see the ultimate output.

After that, 2nd special guest, KBD ANIL CHANDRA SARKER, Director, Food Crops Wing, DAE, welcomed everybody to the workshop. He opined that the FFS should be conducted on considering the agro-ecological environment. The plain land activities may not be applicable for this project. And he emphasised on avoiding duplication with other projects. If the beneficiaries overlapped with other projects then the real number of beneficiaries will not be increased.

KBD MUKUL CHANDRA ROY, Director General, DAE, he stated that Blue Gold means water. To use water for crop production and then the produced crop will turn as gold to the farmers. He said that it's necessary to consider the baseline situation in different polders and develop the curriculum. That will indicate where we are and where we will want to go. Review the similar curriculum, find out the weakness of that curriculum and suggest improvements for Blue Gold. DG emphasized on water logging at the project areas. To consider the floating agriculture if possible and the ail crop. He mentioned that the activities should be depending on farmers demand. Rice-fish culture may be an option there. He opined that after developing the curriculum, it needs to be tested at field level before finalization.

Then followed the Chairpersons speech, in which he stated to learn about the selected area first. Water has different use like fisheries, agriculture, livestock etc and has conflicted with different groups. So, coordination among different groups is necessary. 1000 crops FFS will be run by DAE. That will bring benefit to the local farmers. Duplication need to be avoided with other projects. Water should be managed properly. He hopes that all expert members in this workshop will give their time properly and develop a good curriculum. He also thanked the project team for organizing this workshop with a political unrest and opened the session.

#### 1.4. Working session

After the inaugural session Tahmina made an oral presentation to the participants. She focused on DPP with DAE.

- 1000 FFS will be run by DAE
- FFS for field crop will be for male
- FFS for HG and nutrition will be female
- Demonstration will be 380

- Exchange visit will be organized
- Demo will be organized.

After her presentation, an open discussion was started as the participants are not clear what kind of input they will incorporate. Project Director (SCDP) opined that for technology transfer it needs to be known the main crop in the project area. He mentioned that is the DAE, DPP confined with only rice? What will be happened if there any other crop which one is very useful for farmers or may be the new crop? Other participants also have some queries on that issue.

To clarify more about Blue Gold program, Mr. Ashraf then gave a presentation. He explained that the FFS will start with WMG members in different polders, nine polders are available now. FFS will start with first main crop but there is scope with the project to shift with new other crops with second cycle.

There is a innovative demo option with this project. Blue Gold will focus on Value Chain and Gender from TA part. Currently 22 FFS organizers are deployed within four polders and they are going to start their FFS very soon on poultry, nutrition and homestead vegetables and fruits. From TA part a curriculum workshop was organized for homestead garden, nutrition and poultry. Another fisheries and livestock development workshop will be conduct soon etc. At least 30% women will be included with FFS. After his presentation all participants got a clear idea about the overall activities of the project. However, PD of DAE emphasized to restrict with her DPP. She mentioned that it is not DAE's concern what TA team will do. DAE will do their activities according DPP.

According to today's schedule there were two groups work for FFS curriculum and two groups for season long TOT. But it was decided that two groups would work on homestead garden and nutrition modules and two groups will worked on rice curriculum module. Groups are divided numerically.

Group 1 and group 3 worked on rice curriculum and group 2 and group 4 worked on homestead curriculum. Season-long TOT activities were dropped from the schedule due to time constraint. She explained to the participants that 20 sessions will be prepared for rice and vegetables module each. Ashraf from TA team suggested that curriculum designed need to be based on the Blue Gold objectives. For vegetables module for TA part, there are 8 sessions suggested by the expert from a workshop. But the PD said for DAE part the session should be 20 for rice and vegetables each.



### 1.5. Presentation session: Group leaders

#### Curriculum for FFS on Rice (Group-1)

Session	Timing & duration	Activities/Topics
1		<p>Several activities need to be prepared before the actual start of the FFS, even before the start of the growing season. These include:</p> <ul style="list-style-type: none"> <li>- Site selection for the FFS</li> <li>- Selection of 25 farmer families</li> <li>- Benchmark survey</li> <li>- Identify the local crop production constraints after discussing with the farmers</li> <li>- Site selection for trial plots.</li> <li>- Collection of seeds for trials/observation plots</li> <li>- Preparation of materials for ballot boxes</li> <li>- Purchase &amp; collection of FFS materials.</li> </ul>
2		<ul style="list-style-type: none"> <li>- Pre FFS ballot box test</li> <li>- Introduction to Farmer Field School (FFS) and Integrated Crop Management (ICM) on rice</li> <li>- Discussion: Norms and Expectations for FFS participants</li> <li>- Presentation of main subjects for each of the 20 sessions.</li> <li>- Presentation of the budget for the FFS and list of materials</li> <li>- Discuss the importance of group work and form groups</li> <li>- Group Dynamics: Role plays to present the name of the groups.</li> <li>- Brief inauguration of the FFS</li> <li>- Special topic on seed health: Characteristics of good quality seed, seed selection, sorting of seeds, germination test</li> <li>- Ideal seedbed preparation and sowing seed in the seed bed (establish within this week).</li> <li>- Raising vegetable seedling for ail crop</li> <li>- Summarize and planning for next session</li> </ul>
3		<ul style="list-style-type: none"> <li>- Recap</li> <li>- Observation and short discussion on results of germination test</li> <li>- Seed bad observation and management.</li> <li>- Salinity and adaptation techniques.</li> <li>- Group Dynamics (e.g. "List as many as you can" or "Mental map exercise" )</li> <li>- Special topic (group exercise): Effect of organic matter on soil texture, soil composition, water holding capacity, etc.</li> <li>- Discussion on special topics ( farmer need based)</li> <li>- Summarize and planning for next session (any special topic requests?)</li> </ul>
4		<ul style="list-style-type: none"> <li>- Recap</li> <li>- Observation of seed bed, and collection, sorting, identification of pest and defenders from seed bed</li> <li>- Short discussion on status of the seed bed.</li> <li>- Discussion on AEZ &amp; Integrated plant nutrition system (IPNS) and fertilizer recommendation on the basis of AEZ &amp; IPNS.</li> <li>- Dynamics (e.g. "Message relay" or ".....")</li> <li>- Special topic: Uprooting and transplanting technique</li> <li>- Summarize and planning for next session</li> </ul>

Session	Timing & duration	Activities/Topics
5		<ul style="list-style-type: none"> <li>- Recap</li> <li>- Discussion on uprooting and transplanting techniques</li> <li>- Soil health. Importance of OM on Soil health. OM preparation and usages.</li> <li>- Finalization on trial plot.</li> <li>- GD</li> <li>- Discussion on Granular pesticide.</li> <li>- Special topics</li> <li>- Function of fertilizer.</li> <li>- Sumarization and planning for nex session.</li> </ul>
6		<ul style="list-style-type: none"> <li>- Recap</li> <li>- Discuss details and set-up the study/observation plots               <ol style="list-style-type: none"> <li>1. ICM plot versus FP plot</li> <li>2. Variety study plot</li> <li>3. Ail crop (AC)</li> <li>4. Other trials/studies according to farmer's decision (e.g. rice-fish culture RFC/transplant 1/2 seedlings/ effect of seedling age on yield/ Alternate wetting &amp; drying etc.)</li> </ol> </li> <li>- Group Dynamics (e.g. "Doing things for or with peoples (across the river)")</li> <li>- Summarize and planning for next session.</li> </ul>
7		<ul style="list-style-type: none"> <li>- Recap</li> <li>- Discuss details and set-up study/observation plots:               <ol style="list-style-type: none"> <li>1. Fertilizer management plots (3 plots, comparing Integrated Plant Nutrition System (IPNS), Inorganic Fertilizer (IF) and Farmers Practice (FP))</li> <li>2. Insect Zoo (IZ)</li> <li>3. Fertilizer Application Method (FAM) study, USG and prilled urea application</li> </ol> </li> <li>- Group Dynamics (e.g. "Water Brigade" or ".....")</li> <li>- Summarize and planning for next session.</li> </ul>
8		<ul style="list-style-type: none"> <li>- Recap</li> <li>- Identification of growth phases of rice plant (vegetative phase) and its related management practices.</li> <li>- Techniques of field sampling.</li> <li>- Sorting, collection and identification of pests and defenders and analyze the results.</li> <li>- Role play on climate change issues and adaptation techniques.</li> <li>- Summarize and plan for next session (any special topic request for the men?)</li> </ul>
9		<ul style="list-style-type: none"> <li>- Recap</li> <li>- Observe insect zoo and reset the insect zoo, if necessary.</li> <li>- Set-up observation plots on detillering and defoliation.</li> <li>- Field survey techniques for pests and diseases of rice, and field sampling of pests and defenders of rice.</li> <li>- Discussion: Introduction to the concept of Agro-ecosystem. What is Agro Ecosystem Analysis (AESA)? How to do AESA?</li> <li>- Agro-Eco-System Analysis (AESA-1)</li> <li>- Group Dynamics (e.g. "Role plays on Predation" or "IPM story" or ".....")</li> <li>- Special topic: Food habits of crop defenders</li> <li>- General discussion on rice pest management, including insect/disease which was found important during the AESA session</li> <li>- Summarize and planning for next session (any special topic requests?)</li> </ul>

Session	Timing & duration	Activities/Topics
10		<ul style="list-style-type: none"> <li>- Recap. Review if decisions from AESA-1 were implemented.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Observation of variety demonstration, ail crop &amp; fertilizer management plot.</li> <li>- Practice AESA-2</li> <li>- Group Dynamics (e.g. "Role play on pesticide" or ".....")</li> <li>- Management of current pest: Insect or disease which was found during the AESA session.</li> <li>- Special topic: Adverse effect of pesticides (discussion and role play) and discussion on how to reduce risk of pesticides.</li> <li>- Summarize and planning for next session (any special topic requests?)</li> </ul>
11		<ul style="list-style-type: none"> <li>- Recap</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Observation: Detillering, Defoliation, and Ail Crops studies.</li> <li>- Identification of growth phases of rice plant (reproductive phase) and its related management practices.</li> <li>- Field observation and decision making for ICM plot</li> <li>- Management of current pest: Pest or disease found during the field observations</li> <li>- Role play on cost reduction through combined irrigation</li> <li>- Summarize and program for next session.</li> </ul>
12		<ul style="list-style-type: none"> <li>- Recap. Review if decisions from AESA-2 were implemented.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Observations study plots: Ail crop &amp; Fertilizer application method</li> <li>- Practice AESA-3</li> <li>- Discussion on seed production techniques and practice (1st roughing)</li> <li>- Group Dynamics (e.g. "Protecting one self" or "Role play on seed" or "Natural defenders, pests and diseases" or ".....")</li> <li>- Management of current pest: Insect or disease found important during the AESA session</li> <li>- Special topic: Conservation and Augmentation of Natural Enemies (parasitoids and predators)</li> <li>- Summarize and planning for next session</li> </ul>
13		<ul style="list-style-type: none"> <li>- Recap.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Observations study plots: Ail crop &amp; Fertilizer application method</li> <li>- Review if decisions from AESA-3 were implemented</li> <li>- Practice AESA-4</li> <li>- Group Dynamics (e.g. "The boat is sinking (Titanic)" or ".....")</li> <li>- Management of current pest: Insect or disease which was found during this session during AESA</li> <li>- Discussion on reproductive phase and related management practices</li> <li>- Special Topic: Exercise on nutrient mining and nutrient flow</li> <li>- Special topic: ..... (based on request by farmers, if any)</li> <li>- Summarize and planning for next session.</li> </ul>

Session	Timing & duration	Activities/Topics
14		<ul style="list-style-type: none"> <li>- Recap.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Observation of variety demonstration, ail crop &amp; fertilizer management plot.</li> <li>- Review if decisions from AESA-4 were implemented</li> <li>- Practice AESA -5</li> <li>- 2nd roughing practice for seed plot (ICM plot)</li> <li>- Group Dynamics (e.g. Blind fold game” or “7 Up game” or “.....”)</li> <li>- Management of current pest: Insect or disease which was found during the AESA</li> <li>- Special topic: ..... (based on request by farmers, if any)</li> <li>- Summarize and planning for next session (any special topic requests?)</li> </ul>
15		<ul style="list-style-type: none"> <li>- Recap.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Observation: Detillering, Defoliation, and Ail Crops studies.</li> <li>- Review if decisions from AESA-5 were implemented</li> <li>- Field observation and decision making for ICM plot</li> <li>- Management of current pest: Pest or disease which were found to be a problem in the field during the session.</li> <li>- Identification of growth phases of rice plant (Ripening phase) and its related management practices.</li> <li>- any special topic requests by participant.</li> <li>- Advantages of agril input purchase and collection through combined effort.</li> <li>- Summarize and planning for next session.</li> </ul>
16	3-4 hours	<ul style="list-style-type: none"> <li>- Recap.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Observation of variety trial, ail crop &amp; fertilizer application method plot.</li> <li>- Review if last weeks decisions were implemented</li> <li>- Observation: , variety observation plot, and insect Zoo</li> <li>- Practice AESA-6</li> <li>- Group Dynamics (e.g. “Finding lost items” or “Puzzles (Drawing insect)” or “.....”)</li> <li>- Management of current pest: Insect or disease observed during AESA</li> <li>- Special topic: ..... (based on request by farmers, if any)</li> <li>- Summarize and planning for next session.</li> </ul>
17		<ul style="list-style-type: none"> <li>- Recap.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Observation: Detillering, defoliation, &amp; fertilizer management plot</li> <li>- Review if decisions from AESA-6 were implemented</li> <li>- Management of current pest: Insect or disease which was found important during field observations</li> <li>- Benefit calculation for improved practices (exercise) comparing the ICM with FP</li> <li>- Summarize and planning for next session (any special topic requests? For men?</li> <li>- developed market chain through group approaches</li> <li>- Summarize and planning for next session</li> </ul>

Session	Timing & duration	Activities/Topics
18		<ul style="list-style-type: none"> <li>- Recap</li> <li>- Horizontal expansion of FFS learning</li> <li>- Benefits of organization and element of a organization</li> <li>- GD</li> <li>- Any leftover topics.</li> </ul> <p>Summarize and planning for next session</p>
19		<ul style="list-style-type: none"> <li>- Recap</li> <li>- Organic sources of nutrient and IPNS concept in case the FFS participants decide to use legumes and green manure for next season.</li> <li>- Importance of Green Manure (GM) / Brown Manure (BM) and it's cultivation procedures</li> <li>- Seed collection. Processing and storage of seed.</li> <li>- Adverse effect of chemicals used for fruit ripening, fish &amp; vegetable processing</li> <li>- Harvesting and yield recording of all observation and study plots, and make economic calculations for all plots</li> <li>- Discussions and conclusions on all the studies</li> <li>- Field day preparation. Who does what and when?</li> </ul>
20		<ul style="list-style-type: none"> <li>- Registration</li> <li>- Group formation,</li> <li>- Field and booth visit.</li> </ul> <ol style="list-style-type: none"> <li>1. ICM Component booth: Banners, explanation of what is ICM, including the ail crops, LCC and USG</li> <li>2. AESA booth: Explain AESA, Pests and Defenders, augmentation and conservation</li> <li>3. Pesticides booth: Adverse effect of pesticides and risk reduction: showing adverse effect and how to reduce risk while transportation, storage, spraying, etc.</li> <li>4. Soil booth: Including soil health, IPNS, show fertilizer recommendations for different grades, plant nutrition, nutrient mining and nutrient flow, results from observation plots, nutrient deficiency study in pots etc.</li> <li>5. Seed booth: Seed health, seed germination , seed production, storage and preservation, results from variety study plots etc</li> <li>6. Improved homestead activities: Showing homestead vegetable garden, information on human nutrition and cooking, improved stove, FYM, tree plantation etc.</li> <li>7. WMG booth: Show activity plans for the coming year and activities already performed.</li> </ol> <p>Big group presentations:</p> <ul style="list-style-type: none"> <li>- A male farmer summarizes what they have done and learned in the FFS (max 5 minutes)</li> <li>- A female farmer summarizes what the women have done and learned in the FFS (max 5 minutes)</li> <li>- Two persons (male and female) present their plans for a club (each max 5 minutes)</li> <li>- Official inauguration of the club for all members (men and women) and visitors.</li> <li>- Rewarding of the best female (2) and best male (2) farmers.</li> <li>- Distribution of certificates to FFS farmers (if all sessions completed)</li> </ul>

### FFS Curriculum on Rice (Group-3)

Session	Timing	Activities/Topics
0	Before FFS  (Facilitators along with tag SAAO will organize a meeting with the possible FFS farmers.)	<ul style="list-style-type: none"> <li>- Site selection for the FFS</li> <li>- Selection of 25 farmers</li> <li>- Benchmark survey</li> <li>- Identify the rice production constraints after discussing with the farmers</li> <li>- Site selection for trial plots.</li> <li>- Collection of seeds for trials/observation plots</li> <li>- Preparation of materials for ballot boxes</li> <li>- Purchase &amp; collection of FFS materials.</li> </ul>
1		<ul style="list-style-type: none"> <li>- Inauguration of FFS</li> <li>- Pre FFS ballot box test</li> <li>- Introduction to Farmer Field School (FFS)</li> <li>- Discussion: Norms and Expectations for FFS participants</li> <li>- Presentation of main subjects for each of the 20 sessions.</li> <li>- Discuss the importance of group work and form groups</li> </ul>
2	Before seedbed preparation	<ul style="list-style-type: none"> <li>- Characteristics of good quality seed, sorting of seeds &amp; germination test</li> <li>- Group Dynamics</li> <li>- Ideal seedbed preparation and sowing seed in the seed bed (establish within this week).</li> <li>- Special topics: Seedling production through polythene to protect from cold injury</li> <li>- Summarize and planning for next session</li> </ul>
3	Before transplanting	<ul style="list-style-type: none"> <li>- Recap</li> <li>- Observation and short discussion on results of germination test</li> <li>- Effect of salinity on rice production and adaptation options</li> <li>- Group Dynamics</li> <li>- Special topic (group exercise): Effect of organic matter on soil texture, soil composition, water holding capacity, etc.</li> <li>- Function of fertilizer and their deficiency symptoms</li> <li>- Summarize and planning for next session</li> </ul>
4	Before transplanting	<ul style="list-style-type: none"> <li>- Recap</li> <li>- Observation of seed bed, and collection, sorting, identification of pest and defenders from seed bed</li> <li>- Discussion on AEZ &amp; Integrated plant nutrition system (IPNS) and fertilizer recommendation on the basis of AEZ &amp; IPNS.</li> <li>- Group Dynamics</li> <li>- Discuss briefly on trial plots and raising seedling in poly bag for ail crop</li> <li>- Special topic: Uprooting and transplanting technique</li> <li>- Summarize and planning for next session</li> </ul>
5	Transplanting time	<ul style="list-style-type: none"> <li>- Recap</li> <li>- Discuss details and set-up the study/observation plots               <ol style="list-style-type: none"> <li>1. Improved practice versus FP plot</li> <li>2. Variety study plot</li> <li>3. Ail crop (AC)</li> <li>4. Rice-fish culture( RFC)</li> <li>5. Alternate wetting &amp; drying (AWD)</li> </ol> </li> <li>- Group Dynamics</li> <li>- Summarize and planning for next session.</li> </ul>

Session	Timing	Activities/Topics
6	Transplanting time	<ul style="list-style-type: none"> <li>- Recap</li> <li>- Discuss details and set-up study/observation plots:               <ol style="list-style-type: none"> <li>1. Fertilizer management plots (comparing Integrated Plant Nutrition System (IPNS), Inorganic Fertilizer (IF) and Farmers Practice (FP))</li> <li>2. Insect Zoo (IZ)</li> <li>3. Fertilizer Application Method (FAM) study (USG and prilled urea application)</li> </ol> </li> <li>- Group Dynamics</li> <li>- Summarize and planning for next session.</li> </ul>
7	14 DAT	<ul style="list-style-type: none"> <li>- Recap</li> <li>- Identification of growth stage of rice plant (tillering stage) and activities related to growth stage.</li> <li>- Techniques of field sampling.</li> <li>- Group dynamics</li> <li>- Sorting, collection and identification of pests and defenders.</li> <li>- Summarize and plan for next session</li> </ul>
8	21 DAT	<ul style="list-style-type: none"> <li>- Recap</li> <li>- Observe insect zoo and reset the insect zoo, if necessary.</li> <li>- Set-up observation plots on detillering and defoliation.</li> <li>- Discussion: Introduction to the concept of Agro-ecosystem. What is Agro Ecosystem Analysis (AESA)? How to do AESA?</li> <li>- Agro-Eco-System Analysis (AESA-1)</li> <li>- Group Dynamics</li> <li>- Special topic: Food habits of crop defenders</li> <li>- General discussion on rice pest management, including insect/disease which was found important during the AESA session</li> <li>- Summarize and planning for next session</li> </ul>
9	28 DAT	<ul style="list-style-type: none"> <li>- Recap</li> <li>- Farm yard manure (FYM): Discussion &amp; practical (Importance of organic manure, source of organic manure, and importance of covering the FYM pit and protect from sun and rain water.</li> <li>- Group Dynamics</li> <li>- Special topics: Soil flashing</li> <li>- Summarize and planning for next session</li> </ul>
10	35 DAT	<ul style="list-style-type: none"> <li>- Recap. Review if decisions from AESA-1 were implemented.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Observation of variety demonstration, ail crop &amp; fertilizer management plot.</li> <li>- Practice AESA-2</li> <li>- Group Dynamics</li> <li>- Management of current pest: Insect or disease which was found during the AESA session.</li> <li>- Special topic: Adverse effect of pesticides (discussion and role play) and discussion on how to reduce risk of pesticides.</li> <li>- Summarize and planning for next session</li> </ul>
11	42 DAT	<ul style="list-style-type: none"> <li>- Recap</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Observation: Detillering, Defoliation, and Ail Crops studies.</li> <li>- Field observation and decision making for Improve practice plot</li> <li>- Special Topic: Exercise on nutrient mining and nutrient flow</li> <li>- Group Dynamics</li> <li>- Management of current pest: Pest or disease found during the field observations</li> <li>- Summarize and program for next session.</li> </ul>

Session	Timing	Activities/Topics
12	49 DAT	<ul style="list-style-type: none"> <li>- Recap. Review if decisions from AESA-2 were implemented.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Observations study plots: Ail crop &amp; Fertilizer application method</li> <li>- Practice AESA-3</li> <li>- Discussion on seed production techniques and practice (1st roughing)</li> <li>- Group Dynamics</li> <li>- Management of current pest: Insect or disease found important during the AESA session</li> <li>- Special topic: Conservation and Augmentation of Natural Enemies (parasitoids and predators)</li> <li>- Summarize and planning for next session</li> </ul>
13	56 DAT	<ul style="list-style-type: none"> <li>- Recap.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Observations study plots: Ail crop &amp; Fertilizer application method</li> <li>- Practice AESA-4</li> <li>- Group Dynamics</li> <li>- Management of current pest: Insect or disease which was found during this session during AESA</li> <li>- Discussion on reproductive phase and related management practices</li> <li>- Summarize and planning for next session.</li> </ul>
14	63 DAT	<ul style="list-style-type: none"> <li>- Recap.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Observation of variety demonstration, ail crop &amp; fertilizer management plot.</li> <li>- Practice AESA -5</li> <li>- 2nd roughing practice for seed plot</li> <li>- Group Dynamics</li> <li>- Management of current pest: Insect or disease which was found during the AESA</li> <li>- Summarize and planning for next session</li> </ul>
15	70 DAT	<ul style="list-style-type: none"> <li>- Recap.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Observation: Detillering, Defoliation, and Ail Crops studies.</li> <li>- Field observation and decision making for trial plot</li> <li>- Management of current pest: Pest or disease which were found to be a problem in the field during the session.</li> <li>- Summarize and planning for next session</li> </ul>
16	77 DAT	<ul style="list-style-type: none"> <li>- Recap.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Observation of variety trial, ail crop &amp; fertilizer application method plot.</li> <li>- Practice AESA-6</li> <li>- Group Dynamics</li> <li>- Management of current pest: Insect or disease observed during AESA</li> <li>- Summarize and planning for next session.</li> </ul>
17	84 DAT	<ul style="list-style-type: none"> <li>- Recap</li> <li>- Organic sources of nutrient and IPNS concept in case the group members decide to use legumes and green manure for next season.</li> <li>- Importance of Green Manure (GM) / Brown Manure (BM) and it's cultivation procedure</li> <li>- Group Dynamics</li> <li>- Post harvest management of rice seeds (harvesting, drying, winnowing, storage and preservation of seed</li> <li>- ummarize and planning for next session</li> </ul>



Session	Timing	Activities/Topics
18	91 DAT	<ul style="list-style-type: none"> <li>- Recap.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Observation: Detillering, defoliation, &amp; fertilizer management plot</li> <li>- Management of current pest: Insect or disease which was found important during field observations</li> <li>- Discussion on ripening phase and related management practices</li> <li>- Horizontal dissemination of improved practices through result demonstration of trial plots</li> <li>- Summarize and planning for next session</li> </ul>
19	98 DAT	<ul style="list-style-type: none"> <li>- Recap</li> <li>- Follow up on Farm Yard Manure production</li> <li>- Stored grain pest management</li> <li>- Harvesting and yield recording of all observation and study plots, and make economic calculations for all plots</li> <li>- Discussions and conclusions on all the studies</li> <li>- Group Dynamics</li> <li>- Discussion on safe food &amp; food security.</li> <li>- BBT</li> <li>- Discuss program and planning for the field day. Who does what and when?</li> <li>- Summarize</li> </ul>
20	Field day session	Field day

**Discussed issues:** Alternative Water management, SRI, Topic, Session, Horizontal Learning,

**Discussant:** Dr. Anis, Munir, Ashraf, Tahmina, Zhumu, Shamsu, Jahedul Alam, Rezaul Islam  
 After discussion regarding alternative water management system it was concluded that due to salinity it is not always possible to practice this system. One master trainer from DAE did his Ph.D on SRI. He opined that in context of Bangladesh it is not always feasible because it need hard labour, more attention. SRI has 6 components, if one components failed then total system will be interrupted. For horizontal learning if will be with 18<sup>th</sup> session then learning can be spread with others. There will be some output to show the other participants in between the sessions. After discussion it was decided that if any result shown before the last sessions then that could be done before. In between one farmer can bring two farmers and show their activities and results for horizontal learning Minimum 6 AESA need to be incorporated with new curriculum. It was also discussed that it need to reduced topics and increased sessions.

Group 2 and 4 FFS curriculum vegetables

Session	Timing & duration	Activities/Topics
0	Before FFS	<ul style="list-style-type: none"> <li>- Site selection for the FFS</li> <li>- Selection of 25 farm families</li> <li>- Benchmark survey</li> <li>- Identify the local crop production constraints after discussing with the farmers</li> <li>- Site selection for trial plots.</li> <li>- Collection of seeds for trials/observation plots</li> <li>- Collection of vegetable seeds for ails crops</li> <li>- Preparation of materials for ballot boxes</li> <li>- Purchase &amp; collection of FFS materials.</li> </ul>
1		<ul style="list-style-type: none"> <li>- Pre FFS ballot box test</li> <li>- Introduction to Farmer Field School (FFS) and Importance of homestead gardening &amp; nutrition</li> <li>- Discussion: Norms and Expectations for FFS participants</li> <li>- Discuss the importance &amp; formation of group work.</li> <li>- Group Dynamics: Role plays to present the name of the groups.</li> <li>- Brief inauguration of the FFS</li> </ul>
2		<ul style="list-style-type: none"> <li>- Problem analysis of vegetables &amp; fruits and prioritizing the problem</li> <li>- Special topic on seed health: Characteristics of good quality seed, seed selection, sorting of seeds, germination test</li> <li>- Ideal seedling growing of vegetables.</li> <li>- Summarize and planning for next session</li> </ul>
3		<ul style="list-style-type: none"> <li>- Recap</li> <li>- Observation and short discussion on results of germination test</li> <li>- Group Dynamics</li> <li>- Special topic (group exercise): Effect of organic matter on soil texture, soil composition, water holding capacity, etc.</li> <li>- Give responsibilities for collection of materials for next week's practical session on improved stove preparation</li> <li>- Summarize and planning for next session (any special topic requests?)</li> </ul>

Session	Timing & duration	Activities/Topics
4		<ul style="list-style-type: none"> <li>- Recap</li> <li>- Homestead vegetable gardening: Introduction (how and why) and setting up plots</li> <li>- Introduction to some vegetable pests and defenders: collection, sorting, identification of insects found in vegetable gardens.</li> <li>- Pest management in homestead vegetable garden by using IPM concepts.</li> <li>- Group Dynamics</li> <li>- Special topic: Discuss and practice hand pollination in vegetables</li> <li>- Summarize and planning for next session (any special topic requests?)</li> </ul>
5		
6		<ul style="list-style-type: none"> <li>- Recap</li> <li>- Discuss details and set-up the study/observation plots               <ol style="list-style-type: none"> <li>1. ICM plot versus FP plot</li> <li>2. Variety study plot</li> </ol> </li> <li>- Ail crop (AC)</li> <li>- Other trials/studies according to farmer's decision</li> <li>- Group Dynamics</li> <li>- Summarize and planning for next session.</li> </ul>
7		<ul style="list-style-type: none"> <li>- Recap               <ol style="list-style-type: none"> <li>1. Discuss details and set-up of Insect Zoo (IZ)</li> </ol> </li> <li>- Group Dynamics</li> <li>- Summarize and planning for next session.</li> </ul>
8		<ul style="list-style-type: none"> <li>- Recap</li> <li>- Sorting, collection and identification of pests and defenders and analyze the results.</li> <li>- Summarize and plan for next session (any special topic request for the men?)</li> </ul>
9		<ul style="list-style-type: none"> <li>- Recap</li> <li>- Observe insect zoo and reset the insect zoo, if necessary.</li> <li>- Discussion: Introduction to the concept of Agro-ecosystem. What is Agro Ecosystem Analysis (AESAs)? How to do AESAs?</li> <li>- Agro-Eco-System Analysis (AESAs-1)</li> <li>- Group Dynamics</li> <li>- Special topic: Food habits of crop defenders</li> <li>- Summarize and planning for next session (any special topic requests?)</li> </ul>

Session	Timing & duration	Activities/Topics
10		<ul style="list-style-type: none"> <li>- Recap</li> <li>- If homestead vegetables were already planted in previous women session then include a short visit to observe the plot, followed by discussion.</li> <li>- What is food, classification of food on the basis of function (Discussion &amp; practical)</li> <li>- Farm yard manure (FYM): Discussion &amp; practical (Importance of organic manure, source of organic manure, and importance of covering the FYM pit and protect from sun and rain water.</li> <li>- Group Dynamics</li> </ul>
11	10 <sup>th</sup> session 3-4 hours	<ul style="list-style-type: none"> <li>- Recap. Review if decisions from AESA-1 were implemented.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Practice AESA-2</li> <li>- Group Dynamics</li> <li>- Management of current pest: Insect or disease which was found during the AESA session.</li> <li>- Special topic:</li> <li>- Summarize and planning for next session (any special topic requests?)</li> </ul>
12	11 <sup>th</sup> session (about 2 hours). (1-1.5 hour)	<ul style="list-style-type: none"> <li>- Recap</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Review if decisions from AESA-2 were implemented.</li> <li>- Field observation and decision making</li> <li>- Management of current pest: Pest or disease found during the field observations</li> <li>- Summarize and program for next session.</li> </ul>
13	12 <sup>th</sup> session  3-4 hours	<ul style="list-style-type: none"> <li>- Recap. Review if decisions from AESA-2 were implemented.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Practice AESA-3</li> <li>- Group Dynamics</li> <li>- Management of current pest: Insect or disease found important during the AESA session</li> <li>- Special topic: Conservation and Augmentation of Natural Enemies (parasitoids and predators)</li> <li>- Summarize and planning for next session</li> </ul>

Session	Timing & duration	Activities/Topics
14		<ul style="list-style-type: none"> <li>- Recap.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Review if decisions from AESA-3 were implemented</li> <li>- Practice AESA-4</li> <li>- Management of current pest: Insect or disease which was found during this session during AESA</li> <li>- Special topic: ..... (based on request by farmers, if any)</li> <li>- Summarize and planning for next session.</li> </ul>
15		<ul style="list-style-type: none"> <li>- Recap.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Review if decisions from AESA-4 were implemented</li> <li>- Practice AESA -5</li> <li>- Group Dynamics</li> <li>- Management of current pest: Insect or disease which was found during the AESA</li> <li>- Special topic: ..... (based on request by farmers, if any)</li> <li>- Summarize and planning for next session (any special topic requests?)</li> </ul>
16		<ul style="list-style-type: none"> <li>- Recap.</li> <li>- Observation of insect zoo and re-set, if needed.</li> <li>- Review if last weeks decisions were implemented</li> <li>- Practice AESA-6</li> <li>- Group Dynamics</li> <li>- Management of current pest: Insect or disease observed during AESA</li> <li>- Special topic: ..... (based on request by farmers, if any)</li> <li>- Follow-up discussion on: how the follow-up session plan can be implemented.</li> <li>- Summarize and planning for next session.</li> </ul>

Session	Timing & duration	Activities/Topics
17		<ul style="list-style-type: none"> <li>- Recap</li> <li>- Brief visit to the vegetable plots</li> <li>- Practical on planting of saplings, and tree management.</li> <li>- Introduction to some pests that might attack fruit-trees and natural enemies (parasitoids and predators) of those pests, and discuss their management in the light of ICM.</li> <li>- Group Dynamics</li> <li>- Post harvest management of rice and vegetable seeds (harvesting, drying, winnowing, storage and preservation of seed, and storage pest management)</li> <li>- Summarize and planning for next session (any special topic requests?)</li> </ul>
18		<ul style="list-style-type: none"> <li>- Recap</li> <li>- Vegetable garden visit, field sampling pest and defenders and observations</li> <li>- Discussion on vegetable garden field visit, identification and discussion on collected pests and defenders, and the management of these pests (=AESA style exercise for the women)</li> <li>- Follow up on Farm Yard Manure production and Tree Plantation</li> <li>- Group Dynamics</li> <li>- Balanced diet: What is balanced diet and why it is necessary. Discussion on diet for vulnerable groups (infants, adolescent girls, pregnant and lactating mothers) and adults.</li> <li>- Discussion on safe food &amp; food security.</li> <li>- Practical on making balanced food &amp; cooking.</li> <li>- Follow-up discussion on how the annual work plan can be implemented.</li> <li>- Discuss program and planning for the field day. Who does what and when?</li> <li>- Summarize</li> </ul>

Session	Timing & duration	Activities/Topics
19	20 <sup>th</sup> session  3-4 hours	<ul style="list-style-type: none"> <li>- Recap.</li> <li>- Adverse effect of chemicals used for fruit ripening, fish &amp; vegetable processing</li> <li>- Harvesting and yield recording of all observation and study plots, and make economic calculations for all plots</li> <li>- Discussions and conclusions on all the studies</li> <li>- Follow-up discussion on how the annual work plan can be implemented</li> <li>- Field day preparation. Who does what and when?</li> </ul>
20	Field day session  4 hours  Before harvesting time (= with crop still in field, but no yield data available) or After harvest (no crop in field, but all yield results are available)	<ul style="list-style-type: none"> <li>- Field day preparation</li> <li>- Registration</li> <li>- Group formation,</li> <li>- Field and booth visit.</li> </ul> <p>8. ICM Component booth 9. AESA booth: Explain AESA, Pests and Defenders, augmentation and conservation 10. Pesticides booth: Adverse effect of pesticides and risk reduction: showing adverse effect and how to reduce risk while transportation, storage, spraying, etc. 11. 12. 13.</p> <p>Big group presentations:</p> <ul style="list-style-type: none"> <li>- A male farmer summarizes what they have done and learned in the FFS (max 5 minutes)</li> <li>- A female farmer summarizes what the women have done and learned in the FFS (max 5 minutes)</li> <li>- Two persons (male and female) present their plans for a club (each max 5 minutes)</li> <li>- Official inauguration of the club for all members (men and women) and visitors.</li> <li>- Rewarding of the best female (2) and best male (2) farmers.</li> <li>- Distribution of certificates to FFS farmers (if all sessions completed)</li> </ul>

#### Topics suggested for fruit portion

- White mite management of coconut
- Fertilizer management in fruit trees
- Pest management in mango (Hopper) and fruit fly
- Impact of calcium carbide in fruit preservation

- Caterpillar management of Hogplum
- Post harvest management of fruit (common session)
- Die-back and Anthracnose disease management of Guava
- Value addition of fruit
- Rodent management in coconut
- Month-wise fruit selection planning for year round fruit supply
- Sapling preparation, raising, selection and planting technique (Practical) and Demonstration setup on New fruit/new variety of a fruit
- Collection, sorting, identification of pest, diseases and nutritional disorder of existing fruit
- Horticultural management in fruit trees (training, pruning, thinning)
- Production and management technique of Jujube
- AESA in fruit garden (20
- Trail set up (Coconut, Mango, Guava
- AESA-2

#### Topics suggested for vegetable portion

- Organic matter and improved stove
- Importance of homestead vegetable cultivation
- Year round vegetable cultivation
- Homestead space planning
- Vegetable production technology of x crop ( major vegetable of that area
- Vegetable production technology of y crop ( 2<sup>nd</sup> major veg. of that area
- Production technology of saline tolerant vegetable (any one/two saline tolerant veg. suggested by BARI/Res.)
- Production techniques for floating vegetables cultivation ( Special & need based topic)
- Natural enemies of vegetables crops
- Insect pest management of vegetable
- Disease management of vegetables
- AESA for Veg. ( at least 3 AESA)
- Trail set-up
  1. Homestead Space Planning
  2. Variety trial
  3. Fertilizer management ( Organic+inorganic)
  4. Pest management through IPM methods
- Post harvest management of vegetable
- Organic matter management ( FYM/Compost)
- Safe use of pesticide ( handling, storage, cleaning etc
- Improved stove: preparation and use
- Storage and preservation of vegetable seed
- Trial/ study plot observation & discuss results

#### Topics suggested for

- Food classification on the basis of function
- Food, nutrition and nutritional disorder and their remedies
- Balance food, importance of balance food and food habit
- Extra balanced food requirement for different age group
- Safe food and food security
- Proper cooking



Horizontal learning

-Field day

-Farm walk

The presenter shown their suggested topics and said that the topic should be organized according to farmers needs.

**Discussed issues:** Number of session, topics, field day, new variety

**Discussant:** Ashraf, Idris, Rezaul, Tahmina, Zhumu

It was found from the FFS curriculum presentation on Homestead Garden that the session increased from 12 to 20 with new FFS curriculum. Problem analysis, space planning, trial set-up, risk reduction for using pesticide need to be emphasized. Saline tolerant variety need to be selected for homestead garden like Indian spinach. One day need to spare for field day preparation.

## 2. Conclusion:

Through Workshop on “Technology Selection (Curriculum Development for Farmers Field School & Season Long ToT Courses)” under the project entitled “Transfer of Technology for Agriculture Production under Blue Gold Program (DAE Part)” DAE part got several new ideas to improve their FFS curriculum on rice and homestead vegetables and fruits. Due to time shortage season long TOT curriculum was dropped from the schedule. The four groups mainly worked on ICM curriculum and made only few changes for both of curriculum. The modules require further review. Tahmina thanked all participants for their contributions and opined that the curriculum modules need further fine tuning.

Blue Gold TA staffs opinion is that there is no need to separate male and female FFS but that the FFS should focus on households (male and female of same family) as in AEC. There is no need to spend 20 sessions on one crop, or 20 sessions on homestead. It is better to follow AEC curriculum and replace the club sessions with extra homestead vegetable sessions. Other adjustments to curriculum needed are more horizontal learning and introduce market orientation in the FFS.



Department of Agricultural Extension (DAE) cordially invites you to the workshop on “Technology Selection (Curriculum Development for Farmers Field School & Season Long ToT Courses)” under the project entitled “Transfer of Technology for Agriculture Production under Blue Gold Program (DAE Part)” on Thursday, 19 December, 2013 at 9.30 AM at DAE conference room, 2nd floor, Middle building, Khamarbari, Dhaka-1215.

**KBD. MUKUL CHANDRA ROY, Director General, DAE** has kindly consented to grace the occasion as the chief guest.

**KBD. ANIL CHANDRA SARKER, Director, Food Crops Wing, DAE** Will attend the workshop as special guest.

**KBD. MD. ABU HANIF MIAH, Director, Plant Protection Wing, DAE,** will also attend the workshop as special guest.

**KBD. MD. MATIAR RAHMAN, Director, Field Services Wing, DAE** will preside over the workshop.

You are kindly requested to attend the workshop on time and participate actively to make the workshop successful.

**TAHMINA BEGUM**

**Project Director**

Transfer of Technology for Agriculture Production under  
Blue Gold Program (DAE Part)

Khamarbari, Dhaka-1215.

# Appendix 2 Programme Schedule

## **Program Schedule**

**Venue:** DAE Conference room, 2nd floor, Middle building, Khamarbari, Dhaka-1215.

**Date:** Thursday, 19 December, 2013

**Time:** 9.30 AM

## **Inaugural Session**

09.00-10.00: Registration  
10.00-10.05: Guests take their seats  
10.05-10.10: Recitation from the Holy Quran  
10.10-10.20: Welcome Address by **TAHMINA BEGUM**, Project Director  
10.20-10.30: Speech by the Special guest -1  
10.30-10.40: Speech by the Special guest -2  
10.40-10.50: Speech by the Chief Guest and inauguration of the workshop  
10.50-11.00: Speech by the Chairperson and closing of the 1<sup>st</sup> session  
11.00-11.20: Tea Break

## **Group Exercise**

11.30-11.35: Group work introduction by **TAHMINA BEGUM**  
11.35-01.15: Group work (Four Groups)  
01.15-02.00: Lunch and prayer break  
02.00-03.30: Group work presentation  
Group - 1- FFS Curriculum  
Group - 2 - FFS Curriculum  
Group - 3 - Season long ToT  
Group - 4 - Season long ToT  
03.30-04.15: Wrap up and concluding remarks  
04.15-04.30: Tea break and closing

## Appendix-3 : Participants List

Sl no.	Name	Designation
1	MUKUL CHANDRA ROY	Director General, Department of Agricultural Extension (DAE), Khamarbari , Dhaka.
2	MD.MATIAR RAHMAN	Director, Field Services Wing, DAE.
3	MD. ABDUL QUDDUS	Director, Training Wing, DAE
4	ANIL CHANDRA SARKER	Director, Food Crops Wing, DAE
5	MD ABU HANIF MIAH	Director, Plant Protection Wig, DAE
6	MD.KHALIL AZAD	Additional Director, Admin & Personnel, DAE.
7	MD.HASIBUR RAHMAN	Additional Director (Extension), Field Services Wing, DAE.
8	MD. SHAHIDULLAH	Additional Director (Implementation), Field Services Wing, DAE.
9	MD. MOHSIN MIAH	Additional Director, Dhaka Region, DAE.
10	MD. KAMRUL ISLAM	Additional Director (Monitoring), Planning and Evaluation Wing, DAE.
11	AKM JAHANGIR CHOWDHURY	Additional Director, Training Wing, DAE.
12	PIJUSH KANTI SARKER	Deputy Director, Inputs, Field Services Wing, DAE.
13	MD. ABUL HASHEM	Deputy Director, Farm Economics, Field Services Wing, DAE.
14	MD. MOZAFFAR RAHMAN	Deputy Director, Soil Science, Field Services Wing, DAE
15	DR. BINOY CHANDRA SEN	Deputy Director (Extension), Field Services Wing, DAE.
16	MD. RAFIQUUL HASAN	Deputy Director (Monitoring), Field Services Wing, DAE.
17	MD.SALEH AHMED	Deputy Director, Admin & Personnel, DAE.
18	MD. KHAIRUL ALAM PRINCE	Additional Deputy Director, Admin & Personnel, DAE.
19	MD. MOFAZZAL HOSSAIN	Additional Deputy Director, Admin & Personnel, DAE.
20	S M KAMRUZZAMAN	Project Director, Integrated Standard Horticulture Development Project-2 <sup>nd</sup> Phase, DAE.
21	TAHMINA BEGUM	Deputy Director, Water Management, Field Services Wing & Project Director, Blue Gold ( DAE Part)
22	MD. MUBARAK ALI	Project Director, Safe Crop Production Project through IPM Approach, DAE.
23	S. TASADDEK AHMED	Project Director, Transfer of Technology through Farmer's Training at Upazila Level (2 <sup>nd</sup> phase) Project, DAE.
24	MD. HAMIDUR RAHMAN	Project Director, 2 <sup>nd</sup> Crop Diversification Project (SCDP) Project, DAE.
25	MR. ANIL KUMAR DAS	Program Director, ICT Supported Development Program (ICTDP), DAE.

26	MD. TAJUL ISLAM PATWARY	Project Director, Special Program on Exportable Citrus and vegetables Production, DAE
27	DR.MD.ABUL HOSSAIN	Project Director, Establishment of Krishbid Institution, Bangladesh Complex, DAE.
28	DR. ABU WALI RAGIB HASSAN	Project Director, Disaster and Climate Risk Management Project(DCRMA), DAE.
29	DR. NIROD CHANDRA SARKER	Program Director, Strengthening Mushroom Development Program, DAE.
30	MD. RIFATUL HOSSAIN	Program Director, Agriculture Extension Program in the Salt lodging and fallow land of the 7 Coastal Districts
31	MD. MEHEDI MOBARAK	Project Director, Eastern Integrated Agriculture Development Project, DAE
32	DR.ANSARI	CSO , Bangladesh Rice Research Institute, Joydevpur, Gazipur.
33	DR. SYED RAFIQUL AMIN	Senior M and E Officer,2 <sup>nd</sup> Crop Diversification Project (SCDP) Project, DAE
34	MD.SAIFUL ISLAM PATWARY	Project Director, SAAO Quarter Development Project, DAE
35	MD. ASHRAFUL ISLAM	Deputy Component Leader, Food Security and Agricultural Production, Blue Gold, TA Part.
36	DR. LATIFUL HAIDER	Consultant, Disaster and Climate Risk Management Project (DCRMA), DAE.
37	MD. MONIRUL ISLAM	IPM Specialist, Safe Crop Production Project through IPM Approach, DAE.
38	SYEDA AKTAR PORAG	IPM Specialist, Safe Crop Production Project through IPM Approach, DAE.
39	MD. SAFIUZZAMAN	IPM Specialist, Safe Crop Production Project through IPM Approach, DAE.
40	MD. AMINUR RASHID	IPM Specialist, Safe Crop Production Project through IPM Approach, DAE.
41	MD.REZAUL ISLAM	IPM Specialist, Safe Crop Production Project through IPM Approach, DAE.
42	MD. SAHADAT HOSSEN	Technical Officer, Disaster and Climate Risk Management Project (DCRMA), DAE.
43	DR. SHAJAHAN	Principal Scientific Officer, BARC
44	S K SHARIFUL ISLAM	Deputy Chief, Planning and evaluation wing,DAE
45	DR. MD RAFIQUL ISLAM	ULO(Attachment),Control Room, DAE
46	MD. MIZANUR RAHMAN	Deputy Project Director, M& E, Agricultural Extension Component Project, DAE.
47	MD. SAMSUL ALAM	ULO (Attachment), Agricultural Extension Component (AEC) Project, DAE.
48	GOLAM MD. IDRIS	ULO (Attachment), Agricultural Extension

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49	SHAKIL ARVIN ZHUMU	Production Economist, Planning and Evaluation Wing, DAE
50	MAHBUBA MUNMUN	Production Economist, Planning and Evaluation Wing, DAE.
51	MD.MIZANUR RAHMAN	Horticulturist, Horticulture Centre, Doulatpur, Khulna
52	DR. MD. JAHANGIR ALAM	Radio Agriculture Officer, Agriculture Information services, DAE.
53	DR. BIMOL CHANDRA DEY	Deputy Director, Training Wing, DAE
54	HASIDA KHATUN	Senior Instructor, ATI, Dhaka.
55	MASUMA YUNUS	Research Officer, Monitoring, Planning and Evaluation Wing, DAE.
56	MUNIR AHMED	Agriculturist, Blue Gold, TA part
57	MD. HARUN	AD, Finance,DAE, Khamarbari,Dhaka
58	MD. HUMAYOUN KABIR	Monitoring & Evaluation Officer, TTAP under Blue Gold Program (DAE Part).
59	MD. AMANULLAH	AA,TTAP under BGP,DAE
60	MD. JAHIDUL ALAM	IPM Specialist, Safe Crop Production Project through IPM Approach, DAE.
61	SUMONA RANI DAS	Agriculturist, Blue Gold, TA part
62	MD. ABUL KASHEM	Training Expert, Blue Gold, TA Part.
63	MD. ABU BAKKAR MATUBBAR	OA, FSW, DAE, Khamarbari, Dhaka
64	MD. ALAMGIR HOSSAIN MIAN	AO, Admin, DAE, Khamarbari,Dhaka

Note: 1-5 & 21 worked as resource speaker. The rest 58 are Participants.

# Appendix-4: Presentation by Ashraf



**Appendix 5: Some pictures**