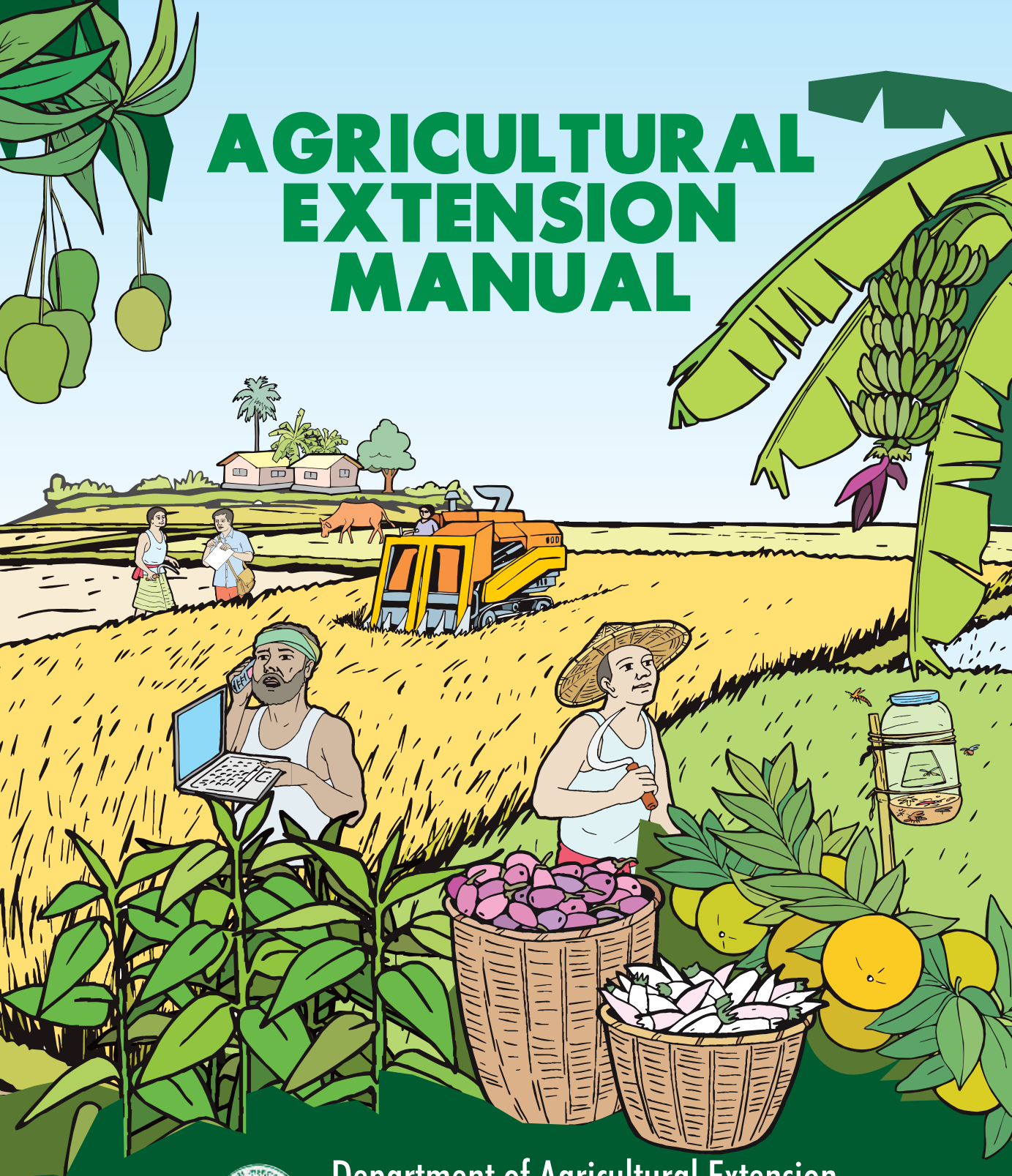


AGRICULTURAL EXTENSION MANUAL



Department of Agricultural Extension
Ministry of Agriculture
Government of the People's Republic of Bangladesh

AGRICULTURAL EXTENSION MANUAL

Fourth Edition



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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Message



Minister
Ministry of Agriculture
Government of the People's Republic of Bangladesh

Agriculture has always been the main driving force behind Bengal's heritage and socio-economic development. The energy from food, of life itself, of labour and intellect shares strong links and a single source of origin – agriculture. More than 45% of the country's labour force is involved with the agriculture sector. Therefore, the development of the country is dependent on the overall development of agriculture.

Upon forming Government in the 1996-2001, *Jananetri* Sheikh Hasina brought the country near to self-sufficiency in food grain production. Recognizing her contributions, United Nation's Food and Agriculture Organization awarded her the CERES Medal in 1999. Under the dynamic and visionary leadership of the Hon'ble Prime Minister Sheikh Hasina, the present people's government has prioritized the agriculture sector and increased allocation of national budget in agriculture along with higher subsidies on fertilizer, insecticide, fuel and electricity. Moreover, aiming to facilitate the innovation of modern agro-technologies and their extensions, several projects are undertaken to strengthen agriculture education, research and development. As modern, scientific agriculture methods are replacing the archaic agricultural models, agricultural yield has increased and developed and has now turned into a commercial sector.

Today agriculture sector is facing diverse challenges. Reduction of cultivable land, population boom, increase in cost of production etc. are hindering development of agriculture as a whole. Besides, climate change across the globe, especially global warming, is worsening the scenario. Given this situation, what we need to help farmers to meet their requirement by improving skills of officials of all tiers at DAE, ensuring professionalism and achieving technical know-how. I am happy that, to address the challenges of changing scenario in agriculture, the Agricultural Extension Manual 1999 (Revised) is being updated to Agricultural Extension Manual 2016. I believe that the Agricultural Extension Manual 2016, which is aligned to the 'National Agricultural Extension Policy 2016' (under revision), would help increase professionalism and skills of DAE and at the same time develop the country's agriculture sector.

Strengthening partnership and better coordination among organisations that extend agricultural extension services and improvement of quality of service will be made possible through effective use of

the Agricultural Extension Manual 2016. I hope this manual will contribute immensely ensuring DAE's quality of the services through partnership, and linking market with extension, research, education, farmer and agriculture in coming days. I expect that the updated Agricultural Extension Manual 2016 will not only strengthen DAE's current and future extension activities to meet the challenge of increasing population set against reducing agricultural land, but also assist in development of export oriented commerce with surplus agricultural products.

In this auspicious month of victory, I hereby respectfully remember 30 lac martyrs, sacrifices of 2 lac women and unforgettable contributions of the freedom fighters who paved the way to the formation of an independent sovereign Bangladesh.

I extend my heartiest gratitude to everyone involved in updating the manual.

Joy Bangla, Joy Bangabandhu
May Bangladesh live forever.

মতিয়া চৌধুরী
২৫.১২.২০২৪

(Matia Chowdhury MP)



Message

Senior Secretary
Ministry of Agriculture
Government of the People's Republic of Bangladesh

Bangladesh has made immense development in agriculture sector. The Department of Agricultural Extension is playing a significant role in developing Bangladesh's agriculture. To meet the challenging need, the publication of Agricultural Extension Manual 2016 as an update to the Agricultural Extension Manual 1999 in alignment with the 'National Agricultural Extension Policy 2016' (under review) is an admirable initiative.

The Agricultural Extension Manual 2016 is published with a view to addressing the existing needs in the field. The manual incorporates direction's of implementing policies relevant to 'Revised Extension Approaches', application of e-extension services, guidelines on management of agricultural extension with accountability. It also details realistic guidelines, and outlines the duties and responsibilities of extension officials on how to strengthen extension services through partnership. Sections of the manual on need-based programme plans for farmers, monitoring and evaluation of completed projects will also strengthen the quality of extension work.

I sincerely appreciate everyone involved in the publication of this manual.

Mohammad Moinuddin Abdullah
Senior Secretary



Message of Director General

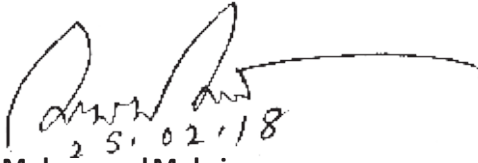
The agriculture of Bangladesh is one of the main forces to take the country towards its goal of establishing Bangladesh globally as a middle income country by 2021 and a developed and prosperous country by 2041. Following the government's vision, agriculture is now set to face a transformation that will be benefitting the nation as a whole. At DAE, we are prepared and dedicated ourselves to support the farmers of our country, who forms the main engine of agricultural goal, in anyway possible.

Our beloved country faces challenges such reducing availability of cultivable land, adverse effect of climate change, increased international competition and growing demand of food grains as a result of growing population. On the other hand, opportunities have risen in form of demand in nutritious and safe food, advancement of agricultural and communication technology and international trade, increased income of people in agriculture through agribusiness. The changing scenarios, to address challenges and harness the opportunities, we have prepared ourselves both technically and administratively.

Our 25000-strong workforce is now more qualified and motivated with the technological advancement and improved process. To make ourselves more attuned with the challenges and opportunities, we have successfully developed the Agricultural Extension Manual 4th Edition since 2016. We have successfully introduced the Bangla version of the manual and our workforce has accepted it wholeheartedly.

We, at DAE, believe that the beneficial agriculture extension work is a culmination of important partnerships with various stakeholders. And it is also an ever developing science. To support our mission, and to promote partnership as well as to introduce DAE to international platform, we have translated the Agricultural Extension Manual 4th Edition to English. As English is the lingua franca, through this version, wider agriculture community will learn more about DAE and learn about its workforce. The translated version will also allow students and faculty members of academia to learn about us and research more on modern agricultural extension practices.

Finally, my especial thanks to Planning, Project implementation and ICT Wing and Katalyst for their support to bring this into reality. I hope that the wider agriculture extension community including international partners and members from academia will perceive the manual wholeheartedly and collectively we will attain our vision.



Handwritten signature of Krishibid Mohammad Mohsin, dated 25.02.18.

Krishibid Mohammad Mohsin
Director General
Department of Agricultural Extension



Prelude to English Edition of Agricultural Extension Manual

Agriculture in Bangladesh is modernising to address the country's need to develop and grow both to support our subsistence and economic growth following our government's goal. Department of Agricultural Extension (DAE) is working tirelessly to form the main supporting arm to assist the farmers who are the main force of our agricultural sector. As DAE is the largest and most effective agriculture extension service provider, the Agricultural Extension Manual is the key document to provide direction to the workforce consisting members over 25000 personnel. In 2016, DAE accomplished an important task of revising and publishing the manual for the 4th time. In relation to that progress, as this is a key document, we felt the need to publish the manual in English.

As we live in the era of partnerships, we need not only to reach our workforce efficiently but also to reach our partners. The manual will play a strong role in reaching international community who play a strong supportive role in agricultural development of our country. This version will also be useful for grassroot level extensionist, who provides the future of the agriculture extension force and supports through bringing technological innovation and advancements.

The manual has been translated by The Planning, Project Implementation and ICT wing of DAE with support from Katalyst. It has gone through various stages of translation and editing by competent authority of Bangla Academy. I am thankful to the original writers as well as to the translators, editors and publisher for bringing the English version of The Agricultural Extension Manual 4th Edition into a reality.

Mir Nurul Alam

Director (In Charge)

Planning, Project implementation and ICT Wing



Preface

In the land once belonging to the Indian subcontinent currently named as Bangladesh, although the history of the beginning of agricultural extension program is very old, the introduction of modern agricultural extension service in this country started in the 70's after its independence through the Great Liberation War. At that time, to create a hunger-free nation, the Father of the Nation Bangabandhu Sheikh Mujibur Rahman undertook initiatives for massive structural and procedural reformation of all relevant institutions with the system of agricultural education, research, extension and management of machineries within the very short time. Consequently, modern agricultural extension service program was implemented by wide inclusion of the farmer society with the advent of 'Training and Visit' approach. As instructions for field level implementation of this program, the 'Agricultural Extension Manual' was published for the first time in 1982. The second edition of which was published in 1985. Both of the editions were in English.

The characteristics of the 'Training and Visit' approach was implemented on principle of implementation based on including farmers from all classes through formulation action plan, performing tasks with accountability and adopting participative policy and provide encouragement according to the change in demands of various services. In 1996, through application of 'Revised Extension Methodology' the Department of Agricultural Extension became active in implementing the New Agriculture Extension policy. In this Agriculture Extension Policy "DAE Mission" were clearly outlined for the first time and third edition of the 'Agricultural Extension Manual' was published in January, 1999 accordingly with assistance of ASIRP project. Both Bengali and English versions were prepared for this edition.

Almost 17 years have passed and to make the agriculture program swift, that is due to inclusion of some new elements such as- increasing agricultural productivity, commercialisation of agriculture, managing climate change risk, cultivation of nutritious and safe food, marketing, initial processing of agricultural commodities,

Increasing exports, using advanced technology, farm mechanization, advancement of effective and water-saving irrigation system, integrated crop production system, integrated

farm management system, implementation of Good Agricultural Practice and Organic Agricultural Technology, minimizing losses through development of post-harvest management, participation of women in agriculture, implementation of ICT in agriculture, it had become extremely necessary to develop the manual and make it up-to-date. From this need the initiative of updating the 'Agricultural Extension Manual' has been undertaken.

Agri-business for Trade Competitiveness Project (ATC-P), branded as Katalyst, a development partner has extended the hand of support to the Department of Agricultural Extension in implementing this initiative. To update the manual, the officials of the Department of Agricultural Extension and their team of experts have worked relentlessly. The current version of the Agricultural Extension Manual has been developed by the opinions from all relevant stakeholders including the experienced senior and retired officials of the field, men and women farmers from various categories, agricultural scientists, BADC officials, NGO representatives and agricultural input and machinery traders. That is why it is informative, objective, timely and compatible with changing circumstances. Hopefully, this manual will play a significant and effective role in developing the skills and application of the professionals in the agricultural extension service. I express my sincere gratitude to all those involved in the publication of this manual's updated edition.

My expectation is that the agricultural extension workers from all levels of the Department of Agricultural Extension will perceive the manual wholeheartedly and contribute to the development of agriculture by reflecting it in their workplace.



Krishibid Md. Hamidur Rahman

Director General

Department of Agricultural Extension

* **Krishibid Md. Hamidur Rahman** is former Director General of DAE and head of content committee formed to develop the Agricultural Extension Manual



Acknowledgement

Our country is faced with the challenges of reducing cultivable land and growing need of food and nutrition. Increase in food production requires application of suitable technology and effective extension work. In a nutshell, there is no alternative to extension services for development of farmers and agriculture. Moreover, climate change and the changing needs of farmers need to be addressed through modernised extension work and improved technical knowledge. To strengthen the agricultural extension work, extension professionals including senior officials of Department of Agricultural Extension were directly or indirectly involved in updating the Agriculture Extension Manual 1999 and publishing the Agricultural Extension Manual 2016. It is impossible to name all the names – however, I must thankfully acknowledge the support received from Additional Secretary (Extension) of the Ministry of Agriculture Mr. Md. Mosharraf Hossain along with relevant officials.

A team of experts were directly involved in developing and publishing of Agricultural Extension Manual 2016. The team was led by Mr. Wasiuzzaman Akonda with members Mr. Rabindra Kumar Mazumder, Mr. Pijush Kanti Sarker and Dr. Benoy Chandra Sen. Their continuous efforts and efforts of other relevant officials have made it possible to update the Agricultural Extension Manual. I express my sincere gratitude towards the team.

The team has conducted workshops, discussion sessions, and surveys with farmers, officials, personnel of several tiers and other sectors at both local and national level to collect inputs to develop and to publish updated Agricultural Extension Manual 2016. Finally, with consolidation of the input with the feedback from Ministry of Agriculture, the manual has been prepared. I hereby gratefully thank everyone in the regional and national levels for extending their valuable contributions and inputs.

The final draft of the Manual was minutely reviewed by high officials of both the Ministry of Agriculture and the Department of Agricultural Extension alongside former Director Generals, Directors and experts of the Department of Agricultural Extension. Special thanks and heartfelt appreciations to them for offering adequate time and extending valuable technical assistance.

Finally, special thanks to everyone at Katalyst for thoroughly supporting with the update and publication process of the Agricultural Extension Manual 2016.

Md. Monzurul Hannan

Director, Administration and Finance Wing
Department of Agricultural Extension

* **Krishibid Md. Monzurul Hannan** was Director of Administration and Finance Wing during publication of the manual in December 2016, later he was also Director General of DAE. He was also Head of Finance, Workplan and Budget committee formed to develop manual in 2016.

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Greetings

I would like to take this opportunity to congratulate the Department of Agricultural Extension (DAE) and its officials on successfully updating the Extension Manual. This marks the beginning of a new era for Bangladesh's agriculture extension service officials, as they will now be better equipped with an updated manual to provide services to larger number of farmers.

We at Agribusiness for Trade Competitiveness Project (ATC-P, branded as Katalyst) are proud of our association with the DAE, in updating this manual. The mandate of Katalyst is to enhance the income of the poor farmers of Bangladesh through facilitating access to inputs, information and other essential services in a sustainable manner. We believe that, this revised version of the manual – which incorporates collective experiences from DAE, the private sector, NGOs, senior extension officers and farmers – will be a milestone in further developing the capacity of DAE extension officers. The updated manual also includes many new developments in modern agriculture, which we feel will be immensely useful to the DAE field officers.

Katalyst is confident that this manual will better serve the needs of DAE in supporting and promoting agricultural sector in Bangladesh for many years to come.

Markus Ehmann
General Manager

Implemented by



Funded by



Content

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Abbreviation

AAEO	: Assistant Agricultural Extension Officer
AAO	: Additional Agricultural Officer
ACR	: Annual Confidential Report
AD	: Additional Director
ADD	: Additional Deputy Director
ADP	: Annual Development Programme
AEC	: Agricultural Extension Component
AEO	: Agricultural Extension Officer
AEZ	: Agro-ecological Zone
AICC	: Agricultural Information and Communication Centre
AIS	: Agriculture Information Service
APA	: Annual Performance Agreement
ASIRP	: Agricultural Services Innovation and Reform Project
ASSSRBP	: Agricultural Support for Smallholders in South-Western Region of Bangladesh Project
ATC	: Agricultural Technical Committee
ATI	: Agricultural Training Institute
AWD	: Alternate Wetting and Drying
BADC	: Bangladesh Agricultural Development Corporation
BARC	: Bangladesh Agricultural Research Council
BBS	: Bangladesh Bureau of Statistics
BCIC	: Bangladesh Chemical Industries Corporation
BIID	: Bangladesh Institute of ICT in Development
BRRRI	: Bangladesh Rice Research Institute
BTRC	: Bangladesh Telecommunication Regulatory Commission
CFS	: Community Farmers' School
CLP	: Char Livelihood Programme
CPR	: Crop Production Report
DAE	: Department of Agricultural Extension
DATCC	: District Agricultural Technical Coordination Committee
DCRMA	: Disaster and Climate Risk Management in Agriculture
DD	: Deputy Director
DECC	: District Extension Coordination Committee

DEPC	: District Extension Planning Committee
DFID	: Department for International Development)
DG	: Director General
DTC	: District Technical Committee (DATCC)
EIA	: Environmental Impact Assessment
EPICC	: Extension Planning Implementation Coordination Committee
FAO	: Food and Agriculture Organisation
FFS	: Farmers' Field School
FIAC	: Farmers Information and Advice Centre
FINA	: Farmers' Information Need Assessment
GAP	: Good Agricultural Practice
GIS	: Geographical Information System
GO	: Government Organisation
GPF	: General Provident Fund
GRS	: Grievance Redress System
IANFP	: Integrated Agricultural Approach for Ensuring Nutrition and Food Security Project
IAPP	: Integrated Agricultural Productivity Project
IAS	: Impact Assessment System
ICM	: Integrated Crop Management
ICT	: Information and Communication Technology
IFMC	: Integrated Farm Management Component
IFPRI	: International Food Policy Research Institute
IP	: Import Permit
IPM	: Integrated Pest Management
IPPC	: International Plant Protection Convention
IRRI	: International Rice Research Institute
KAP	: Knowledge, Attitude and Practice
LAN	: Local Agribusiness Network
LC	: Letter of Credit
LFS	: Landless Farmers' School
LLP	: Low Lift Pump
MDG	: Millennium Development Goal
MRL	: Maximum Residual Limit
NAEP	: New Agricultural Extension Policy
NATA	: National Agricultural Training Academy

NATCC	: National Agricultural Technical Coordination Committee
NATP	: National Agricultural Technology Project
NECC	: National Extension Coordination Committee
NGO	: Non-Governmental Organisation
NPPO	: National Plant Protection Organisation
NTC	: National Technical Committee (NATCC)
PC	Phytosanitary Certificate
PC	: Problem Census
PDC	: Para Unnayan Kandra (cvov Dbœeqb †K`ª)
PKSF	: Palli Karma Sahayak Foundation
PPI	: Public Private Initiative
PPM	: Plant Protection Mokaddem
PPP	: Public Private Partnership
PRA	: Participatory Rural Appraisal
PS to DG	: Personal Secretary to Director General
PTAC	: Pesticide Technical Advisory Committee
PTD	: Participatory Technology Development
RADP	: Revised Annual Development Programme
RATCC	: Regional Agricultural Technical Coordination Committee
REA	: Revised Extension Approach
RICC	: Research Institute Coordination Committee
RTC	: Regional Technical Committee (RATCC)
SAAO	: Sub-Assistant Agricultural Officer
SAPPO	: Sub-Assistant Plant Protection Officer
SCDP	: Second Crop Diversification Project
SCPP-IPM	: Safe Crop Production Project through IPM Approach
SDG	: Sustainable Development Goal
SFG	: Small Farmers' Group
SMS	: Short Message Service
SPARRSO	: Bangladesh Space Research and Remote Sensing Organization
SPPS	: Strengthening Plant Protection Services
SRDI	: Soil Resource Development Institute
SRI	: System of Rice Intensification
SRO	: Statutory Regulatory Order
T & V	: Training and Visit
TFP	: Total Factor Productivity

TIN	: Tax Identification Number
TO & E	: Table of Oganogram and Equipment
TTAP	: Transfer of Technology for Agricultural Project
TV	: Television
UAECC	: Upazila Agricultural Extension Coordination Committee
UAO	: Upazila Agricultural Officer
UATCC	: Upazila Agricultural Technical Coordination Committee
UDC	: Union Digital Centre
UECC	: Upazila Extension Coordination Committee
UNDP	: United Nations Development Programme
UPW	: Upazila Planning Workshop
UTC	: Upazila Technical Committee (UATCC)
VAT	: Value-Added Tax
VBO	: Village Based Organisation

Chapter 1

Agricultural Extension Approach



Agricultural Extension Approach

1.1 Introduction to Agricultural Extension Approach

Bangladesh has a very long history of agricultural activities. The Agriculture Department was set up in the 1870s, during the British regime in the Bengal region and a number of agricultural initiatives had since taken place in the eastern region of undivided Indian sub-continent. To keep up with the changing nature of agriculture and farming, modern science and advanced cultivation techniques have been used to transform the agriculture sector over time.

After the independence of Bangladesh in 1971, numerous transformations have taken place in the agriculture sector by the visionary leadership of the father of the nation, Bangabandhu Sheikh Mujibur Rahman. He focused on infrastructural development and reformations in the agricultural institutions to increase their efficiency and increased the number of services surrounding agricultural extension, irrigation, agriculture inputs, etc. Subsequently, a new approach to agriculture titled 'Training and Visit' (T&V) came into being.

In 1988, Axinn pointed out eight agricultural extension approaches, which have been replicated by numerous organizations or institutions globally (Annex 1). The approaches are:

1. General or traditional agricultural extension approach
2. Produce-focused approach
3. Training and visit approach
4. Participatory agricultural extension approach
5. Project-based approach
6. Farm development approach
7. Extension-cost sharing approach
8. Educational institution-based approach.

To keep with the changing needs in agriculture, the Department of Agricultural Extension adapted with the above mentioned eight recommendations of Axinn and formulated the Revised Extension Approach (REA) in the 90s.

1.2 Revised Extension Approach

The Revised Extension Approach talks about punctuality, bottom-up approach, discipline, training of field workers, linkage between farmer-extension-research, free flow of information, partnership, working with farmer groups and scope of good communication with farmers. This extension approach is based on farmer's, needs, on demands based on seasonal and annual planning, and encompasses farmer groups of all tiers. A wellset monitoring and evaluation mechanism is in place to ensure the accountability of the approach. Following the adoption of the 'Revised Extension Approach', the Department of Agricultural Extension has decided to materialize the 'New Agricultural Extension Policy 1996 (Annex 2) and its mission of ensuring sustainable and profitable crop production.

Agricultural extension has become more modern and resourceful through the integration of e-extension service in it. As a result, new vistas in the field of extension work have unfolded with a promise of development in the field of agriculture.

The new Agricultural Extension Policy (1996) has been updated and the National Agricultural Extension Policy 2016 has been drafted. The department has also updated its 'mission' and made its 'vision' more reflective of the changing time.

Vision of the Department of Agricultural Extension

'Sustainable
and
profitable crop production'

Mission of the Department of Agricultural Extension

'In order to ensure the growth of sustainable and profitable crop production, optimise the knowledge and skills of farmers of all tiers through providing skilled, effective, decentralised, localised, needs based and integrated agricultural extension services.

The Department of Agricultural Extension will continue to achieve its mission and vision by implementing the "Revised Extension Approaches" in the light of the "New Agricultural Extension Policy 1996".

Based on past experiences, it can be assumed that the agricultural extension will continue to evolve. In fact, continuous improvement is an integral part of the revised extension approach.

1.3 Policies Relating Revised Extension Approach

The "Revised Extension Approaches" can ensure a very effective extension service. The approach consists of five principles:

- i. Decentralization
- ii. Targeting
- iii. Responsiveness to farmer's needs
- iv. Use of a range of extension methods
- vi. Working with farmer groups or organizations.

1.3.1 Decentralization

To meet the varying needs of different geographical regions, DAE has decentralised the responsibilities for planning, budgeting, implementation, monitoring and evaluation of extension programs at block, upazila, district and regional levels.

This system of decentralization helps to reach a quick decision, resolve challenges locally, plan and implement need-based projects, ensure accountability, and deliver quality agricultural equipment at the farmers' doorsteps, and has enabled skills at all levels of administration.

The following is a brief description of the Department of Agricultural Extension's decentralized administrative levels.

1.3.1.1 Block Level

Each Sub Assistant Agricultural Officer (SAAO) is responsible for the provision of day to day extension services in the respective block. The SAAO is designated to ensure flow of technical information and extend effective services around crop production. A brief on the block-based extension work is given below:

- i. Identifying farmers' need of information and block-level plan around it
- ii. Assisting farmers to identify problems and possible solutions
- iii. Supporting farmers, farmer groups or farmers' organizations for making micro-extension plan
- iv. Extending support around farm management and improved cultivation-methods
- v. Monitoring of quality agro-equipment and ensuring their timely availability
- vi. Completing official activities at block levels 'Agriculture Advice Centre' and collection or dissemination of information

- vii. Building coordination among Local Government and relevant GO/NGOs and representing the Department
- viii. Serving integrated extension service
- ix. Strengthening farmer groups or organizations in the development of agriculture.

1.3.1.2 Upazila Level

The Upazila level is fundamentally the tier where planning, implementation, monitoring and evaluation of extension work take place. The extension officials at this level are specially entrusted with the supply of required resources as well as the skill development of the extension workers.

A brief summary of decentralized extension work at Upazila levels is given below:

- i. Identifying farmers' need of information and plan around it
- ii. Identifying training needs of extension workers for their skill development
- iii. Making developed agricultural extension plans
- iv. Adopting field-specific special provisions
- v. Taking effective actions to improve extension services
- vi. Solving technical problems of the block level
- vii. Ensuring ready availability of agri-equipment for farmers
- viii. Performing fertilizer or seed inspectors' responsibilities and taking required legal measures
- ix. Conducting agriculture equipment monitoring and taking administrative actions
- x. Organizing the Upazila Technical Committee (UTC) meeting or planning workshops
- xi. Linking Government, non-Government organizations with relevant entities
- xii. Local coordination and required action around disaster management
- xiii. Representing the Department in all Upazila level agricultural works.

1.3.1.3 District Level

The district level officials are designated to oversee extension work, decision making, solving challenges and strengthening human resources in the district.

A brief summary of decentralized extension work at the district level is given below:

- i. Preparing a district extension plan.

- ii. Overseeing or evaluating if the upazila level extension plan is technically sound and also is based on identified information need of farmers
- iii. Taking effective actions to speed up extension work
- iv. Ensuring that all approved extension work is carried out successfully
- v. Representing the Department in all district level agricultural works
- vi. Coordinating with all partners in ensuring participatory extension works
- vii. Identifying challenges farmers face in block and upazila levels, and speeding up the solution processes.

1.3.1.4 Regional Level

The regional office has complete authority on all agricultural extension work in the block, upazila and district levels which have been awarded to the regional level office.

A brief summary of decentralized work at the regional level is as follows:

- i. Quality evaluation of the upazila and district level extension plans, its reviews, necessary amendment and approval
- ii. Overseeing and adoption of successful implementation actions for all extension work in the block, upazila and district levels
- iii. Extending support to upazila and district level in the implementation of extension strategies and agro-technologies
- iv. Settling issues unresolved in the block, Upazila and district levels
- v. Technical inspection of the implemented extension work
- vi. Representing and coordinating for the Department in all agricultural initiatives taken by government and non-government organizations and other entities.

1.3.1.5 Decentralization and Development of Agriculture Training Institutes, Horticulture Centre and Plant Quarantine Centers

Field level DAE offices such as the Agriculture Training Institutes, Horticulture Centres, Mushroom Development Centres, Plant Quarantine Centres have improved their quality of service and decentralized their operations. Due to the improvement of service quality and decentralization, DAE's field offices show increased ability, skilled and fast delivery of services.

1.3.2 Targeting

All farmer's families are not in a class. To meet the varying needs of farmers of different kinds of tiers, targeting should be thorough and should include all farmer groups of all tiers in the agricultural extension work.

Department of Agricultural Extension has made it a mandate to provide extension services to all categories of farmers. Therefore, needs and problems of different farmers have to be identified and responsive services must be provided. The following list shows the categories of farmers that need to be considered:

- i. Woman farmers
- ii. Young people and future farmers
- iii. Small and marginal farmers
- iv. Large and medium category of farmers
- v. Members of landless families who have no farmland but a homestead, or take land of other to cultivate

Department of Agricultural Extension follows the government approved classification of farmers as per their farmland.

Table 1: Classification of farmers based on size of land

Classification of farmers' agricultural household by operated area	Farmer households in category (Per cent of Total)
Landless Households (Operating below 0.02 hectares)	28.0
Marginal Farm Households (Operating between 0.02 and 0.2 hectares)	40.2
Small Farm Households (Operating between 0.2 and 1.0 hectares)	16.3
Medium Farm Households (Operating between 1.0 and 3.0 hectares)	14.0
Large Farm Households (Operating above 3.0 hectares)	1.5
Total	100

Source: BBS 2013

Table 1 shows that 85% of farm households in Bangladesh operate below one hectare of land. This means that landless, marginal and small farmers are a major target group for DAE work. Small and marginal farmers can be targeted by the approaches below:

- i. including specific programmes for small and marginal farmers in the upazila and district extension work plans
- ii. including specific programs for women who head households and women of those households in the upazila and district extension work plans
- iii. ensuring that field workers engage with male and female farmers everyday

- iv. selecting appropriate technologies for farmers
- v encouraging extension workers to work with all farmer groups
- vi. considering farmer groups or organization's demand of the agriculture market
- xii considering the farmers who are in attacked by natural disaster
- viii. considering farmers' access to inputs and exposure to supply chain or value chain
- ix. considering the needs of farmers who produce export goods.

1.3.3 Responsiveness to Farmer's Needs

One of the central roles of the "Revised Extension Work" is to meet the needs of farmers. To ensure this, the first step of action is to conduct a Farmer Information Needs Assessment (FINA). The steps to conduct FINA are listed below:

- a. **SAAO's Diary:** The SAAO's diary is a tool to record details of their daily field work. It contains details of problems faced by farmers and their changing needs. The diary helps SAAO's to build a report on farmers' problems.
- b. **Problem Census:** It is a structured meeting with a group of farmers designed to ensure full farmers' participation in identifying their needs. It is a direct means of documenting the problems farmers face individually or as a group.
- c. **Participatory Rural Appraisal (PRA):** It is a set of techniques designed to formally ensure full participation of farmers in identifying their problems or needs for planning appropriate responses. However, this step can sometimes be time consuming and costly, and also require specialized skill on part of the extension worker.
- d. **Consultation with other Organizations:** Ascertaining farmers' problems and needs is also possible through exchange of opinions and discussions with agriculturalists at block, union, upazila, district and regional level committees.

Following identification of the problems and ascertaining possible solutions, the next steps include preparing a master list of farmers' problems and then identifying priority issues, followed by categorizing farmers' problems into tiers.

1.3.4 Using Extension Approaches

The type of extension work and its objectives are considered in making a selection of the extension approach. Department of Agricultural Extension encourages field workers to employ diverse extension approaches, which are:

- i. Mass media: such as television, radio, newspaper and other printed materials
- ii. Folk media: such as local popular song (like jārigān), street theatre etc.
- iii. Agriculture fairs: such as distribution of technological equipment, fruit fair, etc.
- iv. Group extension events: such as field-days, group discussion and yard meetings, etc.
- v. Formal farmers' training classes and farmers' field schools
- vi. Individual extension Services: such as demonstrations, interpersonal communication, and farm visits
- vii. ICT or e-extension work: such as mobile app, SMS, website, social media (e.g., Facebook, forming Facebook groups with farmers), etc.

The reasons for using a range of extension approaches are briefly examined below:

- a. **Adoption Process:** Different extension programs play different roles in the adoption process. Different tools (leaflets, meetings, etc.) may be used to disseminate knowledge to farmers on different topics.
- b. **Cost-effectiveness:** Extension activities can be carried out cost-effectively, for example, by having a SAAO's using an extension approach with a group of 10 farmers rather than an individual farmer. This would reduce investment made by every farmer.
- c. **Targeting:** Different extension activities are appropriate for different types of farmers. For example, motivational tours are often easier to arrange with a group of male farmers, while courtyard meetings are often easily replicable for female farmers.
- d. **Integrated Extension Activities:** Extension activities can be mixed up to increase effectiveness. For example, demonstrations can be coincided with field days, disseminating printed materials during group discussion meetings.
- e. **ICT or E-extension Services:** Due to the advent of the digital age, and the utilization of e-extension approach, quick dissemination of vital information has become very easy. For example, mobile app, SMS, website, social media would assist dissemination of information reaching farmers in remote locations.

1.3.5 Working with Farmer Groups or Organizations

The central idea in working with farmer groups or organizations is that it enables engaging numerous farmers at the same time. Working with many farmers simultaneously opens up diverse opportunities, such as:

- i. Linking up farmers in a single platform and giving access to extension services
- ii. Making all farmers aware of a problem an individual farmer is facing

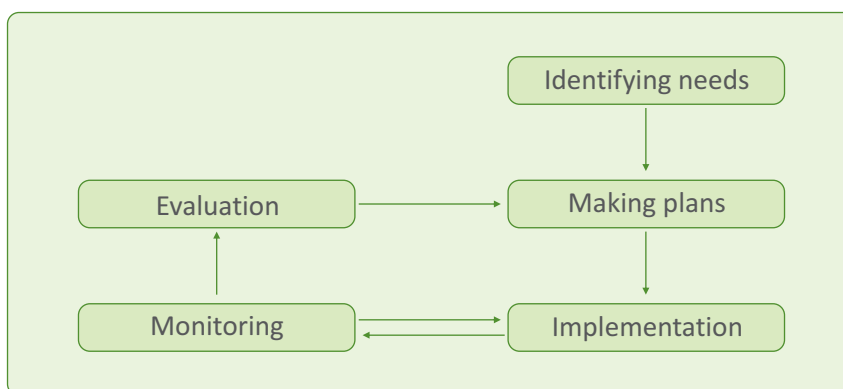
- iii. Ensuring service to farmers who cannot access it individually
- iv. Building liaison among farmer groups, increases cooperation and enables solving of problems that would not have been addressed at the individual level
- v. Working with farmers in groups makes extension work cost-effective
- vi. Improvement of the extension services and cooperation becomes possible
- vii. Assessing farmers' needs and selecting the right service become easier
- viii. It also fosters inter-personal communication among individual farmers.

1.4 Applying Revised Extension Approach to Extension Planning Cycle

The most significant elements of the "Revised Extension Approach" is the planning of extension approaches. The first prerequisite of planning is to identify information-needs of farmers, which needs to be carefully utilized in the planning phase. The next step is implementation of the extension plan. Monitoring and evaluation are carried out to assess if the extension work is carried out as per plan. Tracing an error at the early stages help extension approaches planning better in future.

The extension planning cycle of the "Revised Extension Approach" is shown below:

Figure 1: Extension Planning Cycle



There are five steps in the extension planning cycle.

- a. **Identifying Needs:** The first step in the planning cycle is identifying the problems farmers face and deciding what information they need to address those problems.

- b. **Making Plans:** Information accumulated is utilized to plan the relevant responses.
- c. **Implementation:** Extension work is carried out as per planned actions. However, before implementation, a final check is carried out to find any discrepancy in the event of which further review of the plan takes place.
- d. **Monitoring:** To assess if the implementation of extension work is going as per plan, monitoring helps significantly. There are several ways to conduct monitoring, such as supervising the program implementation in person, examining recorded data or information, interviewing relevant people etc.
- e. **Evaluation:** Evaluation helps to find out if the objective of the whole implementation work is achieved and thereby assesses the success of the project itself. If a gap is found, a review of planning would be in order so that future project implementation becomes better.

1.5 Conditions of Effective and Fruitful Extension Approach

For extension approach to be effective, the conditions are as follows:

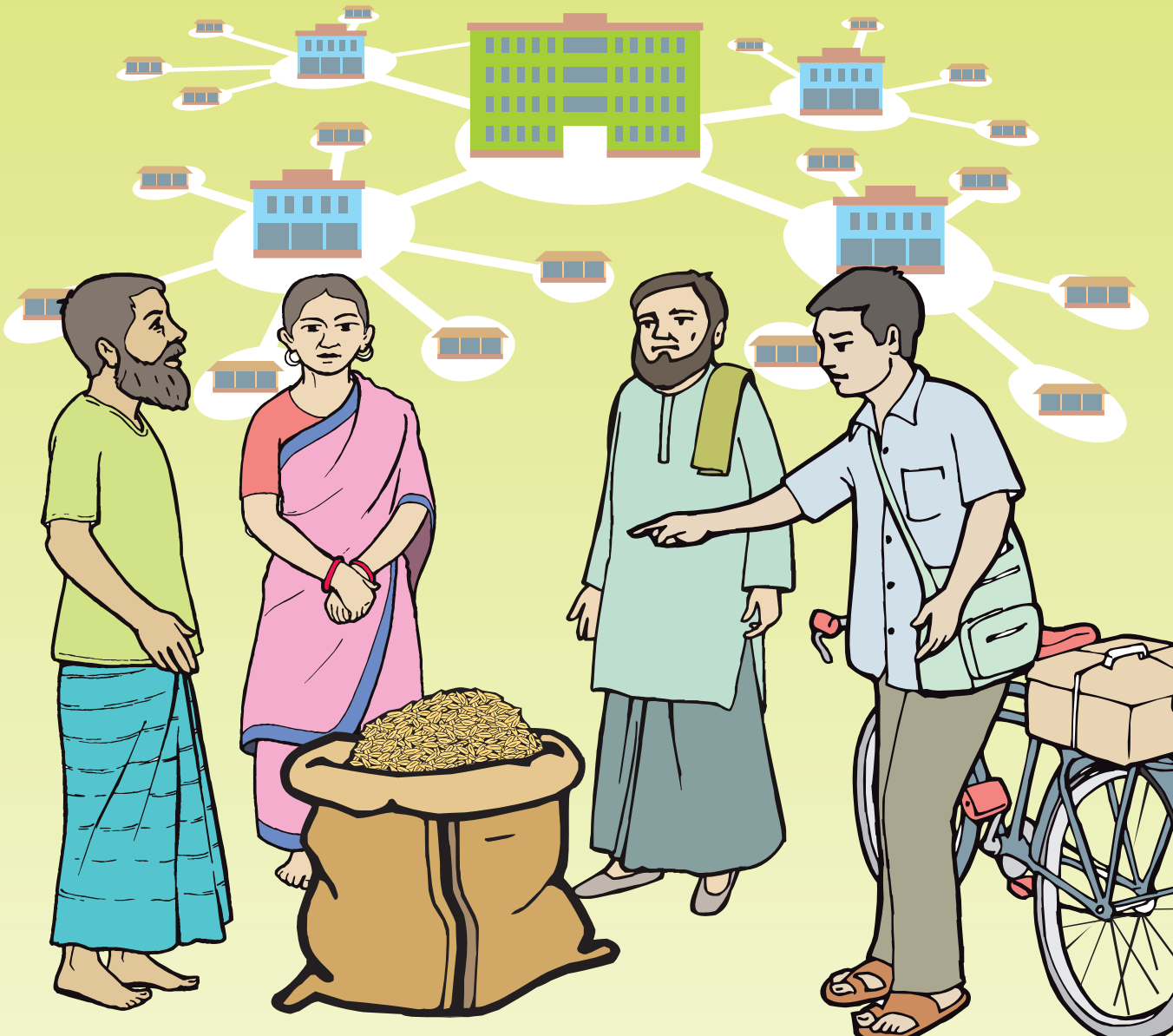
- i. Creation of an environment conducive to extension work
- ii. Safeguarding environment
- iii. Weighing the usefulness of technologies
- iv. Engaging women and securing their rights
- v. Extension service given irrespective of farmer category
- vi. Extending services after assessing farmers' capacity
- vii. Cost-effectiveness.

1.6 Following Revised Extension Approach Policies in all Development Projects or Programmes of the Department of Agricultural Extension

To strengthen the extension work, Department of Agricultural Extension takes up different projects and activities. If extension work is carried out in several extension approaches, its inconsistencies may create dissatisfaction among farmers. Moreover, farmers may grow apprehensions regarding accessing need-based, effective and fruitful extension services. Therefore, it is highly recommended that only the "Revised Extension Approaches" be followed in planning and executing all projects and activities of extension work of the Department of Agricultural Extension as following several approach is likely to hinder service quality and effectiveness.

Chapter 2

Management of Agricultural Extension



Management of Agricultural Extension

2.1 Extension as an Integrated Management

Production and productivity, agriculture market linkage, commercial agriculture, protection of environment, women's participation, value chain, supply chain etc. are major concerns for agricultural extension. Participation and partnership among government, non-government, autonomous and private organizations is how the extension work is being implemented. Everyone relevant in it has made farmers the centre of interest, with agriculture and development of the farmer as the main objective. It is expected that contributions, cooperation and strong partnership among all the organizations related to agriculture will help increase farmers' capacity, adding a new dimension to journey of present success in agriculture.

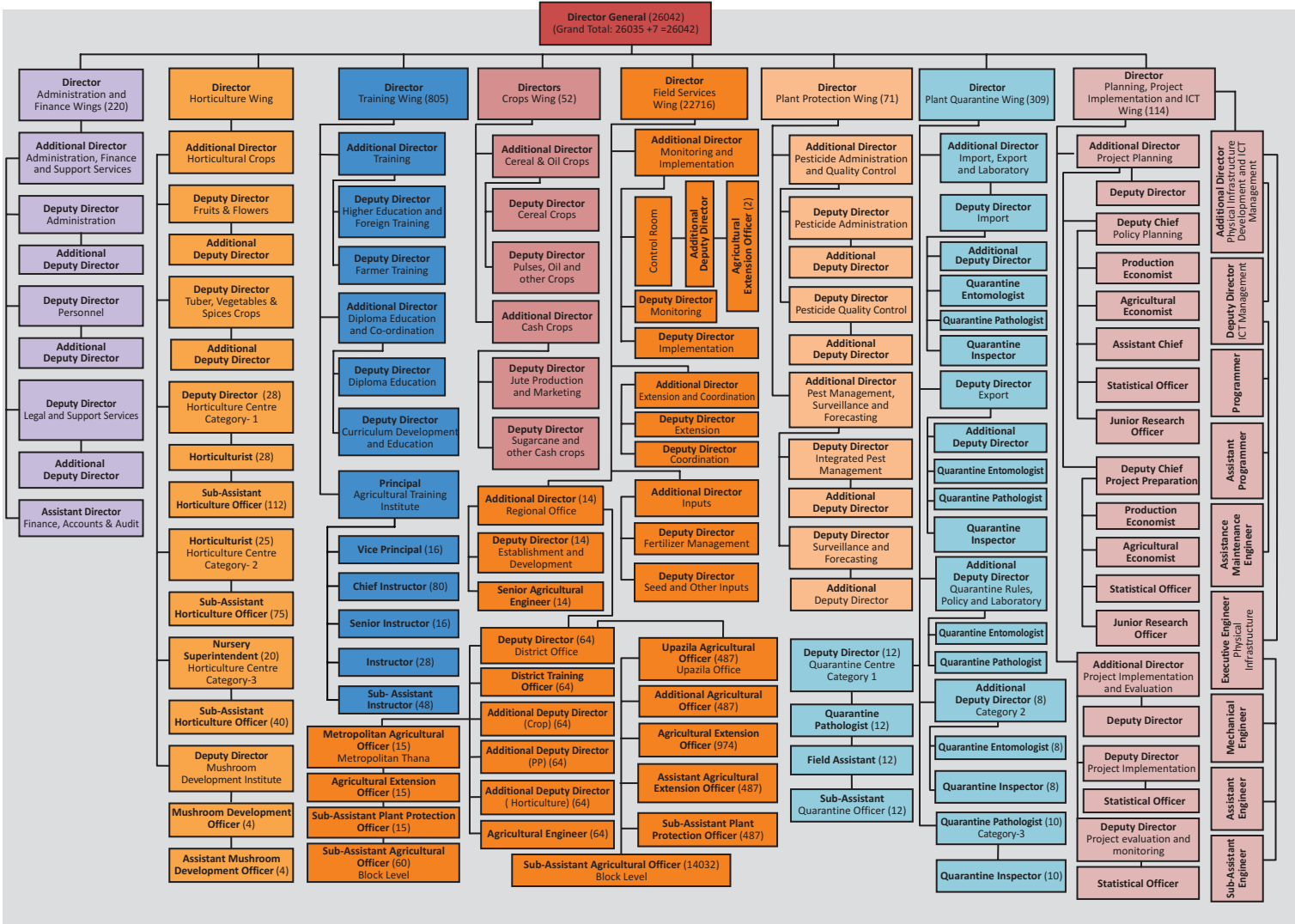
2.2 Reformed Organizational Structure of the Department of Agricultural Extension

Timely technological innovation and its application in agriculture, arduous inputs by farmers, active participation from extension and research organizations under agricultural research system lead to a greater change in production and productivity including increase in cropping intensity. Resultantly, farmers' knowledge, skill and ability increase manifold.

Side by side, many adverse situations including increase in farm families and the impacts of climate change renders the workforce in extension work inadequate and inefficient. To address these challenges, the Department of Agricultural Extension was reformed in 2014 with 26,042 extension worker positions created from block to national levels.

The Director General of DAE is leading this gigantic human resource. Following a thorough analyses and considering the types and nature of overall activities, the Department has been organised into 8 wings. This reformed infrastructure of the Department of Agriculture is shown overleaf.

Figure 2: Organogram of Department of Agricultural Extension (DAE)



2.3 Responsibilities of the Wings of the Department of Agricultural Extension

For the efficient and successful management of the Department of Agricultural Extension, the Director General plays the lead coordination role for all its wings. For overall extension activities like the extension of technology, the increase of production and productivity, the production of standard agricultural products that are safe for public health, management of agricultural inputs, tackling natural disasters, services around e-extension, value chain creation and development of the export sector, adaptation of technology with the changing climate, safeguard of agricultural environment, increasing capacity of people responsible for the services around extension, overall socio-economic development of farmers – every wing of the Department has assigned roles to play. However, Field services wing is mainly responsible to ensure that farmers get the extension services. This section lists a brief description of the responsibilities of the Departmental wings.

2.3.1 Administration and Finance Wing

The main responsibilities of the administration and finance wing are:

- i. Coordination for the development of annual budget of all the wings of the Department
- ii. Maintenance of all types of revenue budget and accounts of the Department
- iii. Carrying out administrative duties around recruitment, transfer and management of staff
- iv. Safeguarding the updated list of all assets of the Department and settling disputes
- v. Taking vehicles from many sources into Department carpool, allocation and maintenance
- vi. Ensuring working environment of the Department, infrastructure management and safety
- vii. Operation of all administrative activities of the Department and their management etc.

2.3.2 Horticulture Wing

The main responsibilities of the horticulture wing are:

- i. Finding the intricacy behind food crop and ensuring extension of new technologies
- ii. Collection and assessment of native and foreign food crop's germplasm, their extension planning and execution
- iii. Supervise the production of improved and quality seeds and saplings in horticulture centres
- iv. Annual production planning and implementation of the horticulture or mushroom centres, administrative approval of financing and monitoring of ongoing projects
- v. Overseeing fund release, taking steps to raise revenues and checking all income-expenditure transactions of the centers
- vi. Development planning for the horticulture centres' human resources, infrastructure and technological aspects and its implementation
- vii. Planning, implementation and monitoring of the wing activities

- viii. Coordination with relevant research and other institutions
- ix. Identifying challenges of food crop production and liaising with research institutes and universities for a research-based solution
- x. Initiating human resource capacity building steps at head office and the centres
- xi. Coordination with private nursery or mushroom production institutions for extending support etc.

2.3.3 Training Wing

The main responsibilities of the training wing are listed below:

- i. Assessing the training needs of all levels of the Department of Agricultural Extension, planning the training schedule and its implementation
- ii. Initiating training for farmers and thus enhance their capacity, and coordinating and collecting information regarding the upazila or district-level farmer trainings
- iii. Developing training guidelines for the department and updating it as required
- iv. Developing a master plan regarding internal and international trainings
- v. Drafting and improving training curriculum of all the trainings
- vi. Overseeing and monitoring of the administrative, academic and development activities of the Agricultural Extension Institutes.
- vii. Liaising with 'Bangladesh Technical Education Board' on Diploma in Agriculture
- viii. Taking initiative to develop and implement the semester plan for the Diploma in Agriculture curriculum.
- ix. Preparing and reviewing the text books of the Agriculture Training Institute
- x. Coordination among Bangladesh Technical Education Board and similar entities
- xi. Developing farmer training modules that are need-based and timely
- xii. Collection, dissemination and publication of ICT and internet information related to agriculture
- xiii. Creating a database of people who were trained locally and internationally.

2.3.4 Crops Wing

The major roles of the crops wing are listed below:

- i. Planning of cultivation and production of all field crops and overseeing and monitoring its implementation.
- ii. Playing a role in the spreading of crop production technologies
- iii. Assessing farmers' acceptance or adoption rate and usage of the crop production technologies
- iv. Contributing to the development of proposal leading to national policy formulation
- v. Taking special action for the increased modern cultivation technology of cash crops and non-cereal crops such as pulses, oil etc.

- vi. Finding about field-level problems in commercial crops production, consulting research institutions for probable solution and sending it to the field level
- vii. Drafting extension message focusing the adoption of the latest crop production technology and taking initiative to ensure that extension workers are duly trained on it etc.

2.3.5 Field Services Wing

The main roles of the field services wing are as follows:

- i. Finalisation of seasonal and annual programme plans responsive to agricultural contexts and regions and farmers' needs, then extending assistance for their successful implementation, and conducting monitoring and evaluation
- ii. Contributing in selecting the targeted crop cultivation and production and taking necessary actions to achieve those targets
- iii. Dissemination of information and technology received from research institutions and other organisations
- iv. Ensuring that farmers have ready access to quality crop seed and fertiliser as per assessment of farmers' needs
- v. Calculating crop production cost based on information received from field level
- vi. Taking timely and effective actions to promote agricultural mechanization
- vii. Implementing effective strategy in tackling the effects of climate change on agriculture
- viii. Taking appropriate actions for early warning in the onset of disaster and for rehabilitation activities in the post-disaster time
- ix. Collecting information from diverse sources regularly, assessing the overall progress of extension work and conducting, monitoring and evaluation
- x. Extending instant solution to problems identified on a daily basis
- xi. Building coordination among all government and non-government organizations related to agricultural extension work
- xii. Taking steps so that the extension workers and farmers can easily access e-extension work
- xiii. Stressing on crop production as per crop-zones to protect the environment
- xiv. Taking measures in selecting suitable technology, ensuring overall management and collecting feedback in the backward, disaster-prone and adverse condition (for example, the southern region, draught-affected barind areas, *char* lands and hilly areas)
- xv. Building a linkage among the farmers, extension work, research, education and the market, and establishing a supportive environment
- xvi. Playing a role in drafting revenue and development budgets, and in releasing funds.

2.3.6 Plant Protection Wing

The main responsibilities of the plant protection wing are:

- i. Performing duties of pesticide registration and licensing activities in the light of The Pesticide Ordinance 1971 (amendment of 2009), The Pesticide Rules 1985 (Amendment of 2010) and other regulations.
- ii. Quality control of pesticides together with region, district, upazila and metropolitan level officials
- iii. Implementation of vigilant surveys (surveillance) and Early Warning Programmes
- iv. Monitoring of environmental friendly and quality standard pesticide production and marketing system
- v. Steps to save crops by enhancing administration and quality control activities of pesticide
- vi. Monitoring of pesticides factories and production methods
- vii. Organize training, seminars and workshops to increase the awareness of the people on the use of safe pesticides
- viii. Coordination with research institutes and the collection and extension of crop protection technologies
- ix. Sample analysis for the accuracy of pesticide quality or application doses
- x. Examine the residual levels of pesticides and take action accordingly
- xi. Management of pesticide laboratory established in the wing
- xii. Monitoring the presence of pest regularly at the field level and reduce the loss of crop loss by management.

2.3.7 Plant Quarantine Wing

The main responsibilities of the plant quarantine wing are:

- i. Play a role in controlling plant health by following international regulations in exporting and importing the plant and plant product
- ii. Encourage and implement of Good Agricultural Practice (GAP)
- iii. Play a role in International Plant Protection Organization (NPPO) according to International Plant Protection Convention (IPPC)
- iv. Implementation of plant quarantine law
- v. Following and implementing international agreements, protocols, conventions, etc. on conserving plant health supported and following, implementing and coordinating plant biodiversity conservation activities
- vi. Coordination with the quarantine center and all related agencies for importing plants and plant products fairly
- vii. Manage plant quarantine programme for keeping export activities strong

- viii. Performing phytosanitary inspection and issuing phytosanitary certificate for exportable products before export
- ix. Examining papers of exportable flora and vegetable products and check if they comply with the imported country's demand
- x. Conduct field test or inspection activities before exporting plant and vegetable products.

2.3.8 Planning, Project Implementation and ICT wing

The main responsibilities of the planning, implementation and ICT wing:

- i. Inform Bangladesh High Commissioners or Ambassadors deployed abroad about potential crops and exchange information related to agricultural interest for the sake of the overall development of Bangladesh
- ii. Duties of providing agriculture related information and opinion according to the global needs
- iii. Assessing the wing's demand-based training plan and taking all necessary actions to improve the skills of all the employees working in it.
- iv. Collection of updated information about crops along with various activities of DAE and create databases
- v. Preparation of data, analyses and collection of information related to crop and implementation of specific strategies to accelerate crop production
- vi. Preparation, implementation, monitoring and supervision of plans of all the physical works of the Department
- vii. Contact with different donor agencies for receiving project assistance
- viii. Taking initiative and monitoring to formulate, approval and implement various schemes or programmes related to the department demand
- ix. Evaluate the feasibility of the project; take the necessary steps like receiving Environmental Impact Assessment certificates and other necessary initiative.
- x. Editing and preparing report on base line surveys of the accepted project, mid-term evaluation, impact assessment and make future plan based on the data received
- xi. Prepare DAE's short-term, mid-term and long-term project concept papers and outline timely
- xii. Take action to prepare, implement and expand the necessary plans for e-agriculture activities
- xiii. Taking effective measures for setting up and commissioning e-extension service centers at headquarters and field levels
- xiv. DAE website management, data addition and updating
- xv. Create database with all information related to the Department of Agricultural Extension, overall activities and detailed information of the farmer
- xvi. Maintenance and development of the department's physical infrastructure
- xvii. Collect information, maintain and respire ICT equipment at headquarters and field offices.

2.4 Monitoring and Supervision of Field-Level Extension Work by all Heads of Wings

DAE's wings are assigned with special assignments for maintaining transparency and wellbeing in field extension activities. Wings have to carry out these responsibilities seriously, such as plant protection wing is responsible for controlling pest attack on crop and pest surveillance, Plant quarantine wing is responsible for producing exportable crop and implementing GAP, Crops wing is responsible for extension of technology in the fields especially in the promotion of new inventive technologies, utilization of region and farmer need-based technologies and formulate production plan, Horticulture wing is responsible for high value crop cultivation and extension of technology and Training wing is responsible for developing capacity for all the extension workers including farmers and SAAO.

The Directors of respective DAE wings will play a role in supervision and monitoring of all extension activities (and inter-wing activities) along with wing related activities using their own and field expertise which will have an impact on the production and productivity of crops.

2.5 Activities Management Committee of DAE

2.5.1 Agricultural Extension Management Committee

The wings of the department are inter-related to planning, implementation, monitoring and evaluation of agricultural extension programs. Besides, it is particularly important to have coordination between the wings for determining well planned work-process and decision making in the review of progress of different activities, successful execution of plans, taking appropriate actions under changed circumstances and natural disasters etc. Therefore, a committee headed by the Director General will be active to coordinate the overall activities of the Department named by the **Agricultural Extension Management Committee**. Heads of each wing will play an active role in discussing, reviewing and taking development decisions about the situation in the field of their jurisdiction in the meeting.

Committee members will meet at least once a month and review the decisions taken in the previous meeting and decide the future plan analysing the current situation. The decisions taken in the meeting will be implemented through increasing coordination within the DAE wings.

Committee may coopt the other related agencies or organizations in the committee if they think it is necessary or invite them to attend the meeting if necessary.

Director of Planning, Project implementation and ICT Wing will act as Member-Secretary of the committee.

2.5.2 Review Committee of DAE Annual Development Programme

Various projects of the Department have been playing an important role in the extension activities. The meeting on annual development programme will be held at least once per month to take immediate action for reviewing monitoring and overcoming challenges related to project activities and to implement the project's activities efficiently. The Director General of the Department will call this meeting exclusively and coordinate the overall affairs of the project. All wing Directors will be present in the meeting.

Director of Planning, Project implementation and ICT Wing will perform all the duties related to this meeting.

2.6 Co-ordination Committee of DAE

There is a co-ordination committee of the DAE with the regional head and ATI heads to review the progress of the field level activities, bring speed or dynamism & coordination in work and to improve the effectiveness of the extension activities. The head of the committee is DAE Director General and Member-Secretary Deputy Director (Administration, Administration and Finance Wing). Every year meeting will be held three times in season-wise schedule, every meeting will be held before the crop season- 1st meeting: Kharif I season- in January, 2nd meeting: Kharif II season in May and 3rd meeting: In the Rabi season in September. The committee will call for interim meeting considering the need.

2.7 Finding Ways for Strengthening Extension Works in Departmental Meetings at the District or Regional Level

2.7.1 District Level Departmental Monthly Meeting

The Deputy Director of the district will call monthly meetings with the Upazila Agricultural Officers in the first week of every month or at a convenient time. The officials of the institutes of the district under national agricultural research system, Bangladesh Agricultural Development Corporation and other agriculture related government and non-government organizations will be invited to attend the meeting.

The meeting will be discussed in detail about the activities of technology application, quality of extension services, condition of crop field, progress of implementation of development work, farmers' problems and solution in the field and decision will be taken.

All the participants will be assured in the decision-making process as they present in the meeting of the Inter-departmental delegation, supportive environment for integrated extension work will be created, positive relationship and linkage between the DAE and relevant organization will be established, and partnership will increase. Moreover, all the district and upazila level officials

can be informed about the latest agricultural technology, inputs receipt or supply situation etc. Inter-departmental interaction in the meeting will create opportunities for determining the process of consolidation of extension programmes in the district.

2.7.2 Departmental Monthly Meeting of the Region

Similar to the district, monthly meetings will be held in regional level with the participation of Deputy Directors of the districts. Additional Director of the region will organize this meeting. The designated officers from the Regional Centres of Research Institutes, Bangladesh Agricultural Development Corporation and other non-government organizations related to agriculture will be invited to be present in the meeting.

The meeting will be discussed in detail about the activity of technology application, quality of extension services, condition of crop field, progress of implementation of development work, farmer's problems and solution in the field and decision will be taken.

Inter-departmental discussion and review will help in strengthening extension programs. The regular presence of inter-departmental delegates will strengthen mutual cooperation and linkage in the agricultural development work.

2.8 Seasonal Workshop on Crop Production and Extension Planning at National Levels

A fair plan plays an important role in ensuring accountability and compulsive work. DAE completes the preparation of annual plan in advance in order to implement crop production and need based extension programmes. Day-long planning workshop will be organized at national level for the purpose of revising, correcting, timely and perfect planning based on time change and demand before the start of three seasons (Kharif-I, Kharif-II and Robi). The workshop will have two phases, 1st phase- Review and finalization of the seasonal crop production plan and the second phase- Review and finalization of the plans for seasonal extension programmes based on farmers' needs.

The workshop will be organized before the start of the season so that the advance and total preparation of all the activities can be taken. Approved various seasonal activities of different projects of DAE will also be presented in the workshop.

The participants of the workshop will be the officials from the headquarters of the Department of Agricultural Extension, Regional and District level officials, representatives of the organizations under National Agricultural Research Systems, representatives of the seed certification agency, representatives of Bangladesh Agricultural Development Corporation and representatives of agricultural and other related public and non-government organisations.

Director, Field Services Wing or Crops Wing will play a role in organising and managing the workshop.

2.9 Project Preparation and Mainstreaming and Follow-Up of Project Activities in DAE

2.9.1 Preparation of the Project Plan

Planning, Project Implementation and ICT wing will formulate project plan to enhance extension activities by verifying the feasibility of suitable and sustainable agricultural technologies. Special attention will be given on the following topics in planning the project:

- i. The fundamental basis for formulating the project plan is based on demand, which will indicate "Bottom-up" activities
- ii. Char area, southern, hill tracks, haor areas, barind tracks and agricultural backward areas will be given priority for project preparation
- iii. Emphasize in planning project on the extension of newly developed technologies and introduction of such productive cropping pattern that can increase cropping intensity.
- iv. Adaptation to climate change, export trade, high value crop production, flower farming, supply chain or value chain etc. will be considered
- v. "Revised Extension Approach" will be applicable for all the projects
- vi. The maximum use of local resources will be ensured
- vii. Female and educated youth's participation in agriculture will increase
- viii. Mechanization in agriculture will be expanded
- ix. Projected activities won't have any adverse impact on the environment
- x. Maximum use of available resources will be ensured
- xi. It will be helpful for poverty reduction and employment generation
- xii. Extension activities under the project will be sustainable even after the expiration of the project
- Xiii. Emphasis will be given on such extension activities in the project so that the crop production and productivity will be increased as well as can be supportive for development of capabilities of farmers and extension workers.

2.9.2 Mainstreaming DAE Project Activities and Follow-Up

It is noteworthy that this project activities or applications do not sustain after the expiration of the project even though the implemented extension activities are productive. Therefore, there will be a no-cost or low-cost follow up system at the end of the project for assimilation of the productive extension activities with main stream.

2.10 Annual Performance Agreement

The government has adopted the strategy of implementing the 'Annual Performance Agreement' (APA) on the basis of administration level in order to increase institutional efficiency, strengthen transparency and accountability, good governance and consolidation of resources. The Department of Agricultural Extension will determine the target of annual activities at the national, zonal, district, upazila and block levels. The designated officers of every level of the department will complete the work assigned to them on the basis of the signed 'Annual Performance Agreement'.

2.11 Extension Services Responsive to Crop Zoning or Environment

Additional Director of the region and the Deputy Director of the district will be responsible for taking appropriate strategy for providing crop zoning-based or environment friendly extension services.

2.11.1 Region-based Extension Services

All crops are not equally suitable for all regions due to geological and natural environmental factors. The Department of Extension will identify areas and local environment friendly crops (crop zoning) and the extension plan will be made and the extension services will be ensured.

2.11.2 Specialised Extension Services in Backward Agricultural Areas

Of southern char area, hill tracks, barind tracks, haor region etc are known as backward area in crop production due to their natural disadvantages. The Department of Agricultural Extension will prepare an environment friendly extension plan for the development of these backward areas and play an effective role in providing specialised extension services so that the development of the socio-economic conditions of the farmers accelerates.

2.11.3 Environmental Conservation Activities

The Department will not take any extension activities which is a threat to environment. They will ensure the proper use of the resources and will continue the extension activities by ensuring the balance of nature.

For example, the Department will give priority on selecting crops that have less pressure on the underground irrigation source and give importance to efficient irrigation management in order to prevent under-ground water level degradation or to maintain water level. It will

provide emphasis on surface water sources and rain water harvest to preserve underground water. Recently, the Ministry of Agriculture and DAE has imposed special importance on the implementation of aus rice based cropping pattern technology dependent on rain water due to overall economic and technical reason including environmental conservation.

2.11.4 Extension Activities in the Imbalanced and Decaying Natural Environment

The productivity of the agriculture sector is facing a negative impact due to climate change, increase in salinity and uptake of salinity, gradual lowering of ground water level, reduction in fertility of agricultural land due to lack of supply of organic matter and micronutrients. There have to be greater efforts in planning and implementing extension plans including the environment-friendly technologies and strategies in order to maintain productivity in the changed environment.

2.12 Extension Management in the Event of Natural Disaster

There is natural disaster in every year in Bangladesh and this disaster can be seen as a reason for severe hindrance in agriculture. The Department of Extension will be very careful about dealing with the disaster and will work to determine the appropriate action plan.

Two types of action will be taken against the disaster in agriculture, namely–

- i. Preparedness of the disaster: Using disaster-tolerant technology and identifying disaster prone areas
- ii. Post-disaster management: Agricultural rehabilitation or agricultural incentive programmes after the disaster

Regardless of the practices, it will be applied in a very highly productive extension programme in both cases.

2.13 Observing 'Agricultural Extension Week'

The DAE will observe 'Agricultural Extension Week' at any week of the first fourteen days of December every year in order to make the extension program strong and dynamic and will include the following activities:

- i. Unique theme will be selected for each year
- ii. Week will be celebrated at national, district and upazila levels
- iii. Farmers, all government, semi-government, non-government autonomous, private organizations including people from all walks of society will be invited to celebrate the week
- iv. A rally will be organised on the 1st day of the week in national, district and upazila level to initiate the extension week celebrations

- v. There will be strong promotion through print, electronic media, posters, banners, microphone etc. and memorandum will be published
- vi. There will be arrangements for meetings or seminars or workshops everyday and discussion on DAE's achievements, future action plans, increase in agricultural production and productivity, development of agro-technology extension and extension programs, development of the socio-economic condition of the farmers etc. will be given importance on these programs.
- vii. Selected best farmers will be rewarded at the upazilas, districts and national levels, but a farmer will be rewarded from any one place, upazila, district or national.
- viii. On the occasion of celebrating the week, 'Agriculture Technology Fair' will be organised in the national, district and upazila level.

2.14 Role of Extension Work in the Management of Agricultural Inputs

Monitoring and distribution of various agricultural inputs at the doorstep of the farmer is an important responsibility of the Department of Extension. The necessity of fertilizers, seeds, insecticides, agricultural machinery, etc. for the production of crops is essential. The Department of Extension is constantly working to provide quality agricultural inputs and guaranteed availability to the farmers in their doorsteps. All the officials of the Department of Extension have to take more vigilance measures for continuous efforts so that this effort doesn't decrease rather increasing the speed of the development and continue this effort.

It is to be noted that upazila level officials are designated as fertilizer and seed inspectors. The designated officers of the upazila should ensure the monitoring and supervision system to be continuous and effective.

There are District or Upazila Fertilizer and Seed Monitoring Committee and District or Upazila Agriculture Rehabilitation Implementation Committee for the distribution and management of fertilizers, seeds, agricultural machinery and other agricultural inputs. The officials of the district or upazila level offices of the extension department have been working as the member-secretary of these committees. The officials of the Department will be very diligent in fulfilling their responsibilities in these committees.

2.15 Agricultural Input Assistance Card

Agricultural input assistance cards jointly signed by SAAO, UP or Municipality Chairman or Mayor, Upazila Agriculture Officer and Upazila Nirbahi Officer was introduced the by the Ministry of Agriculture in the year 2009-10 to maintain transparency in the activities regarding agricultural input distribution, subsidy, agricultural credit, agricultural rehabilitation, agricultural incentives etc. This card is also recognised as the identity card of the farmer, this

card is especially helpful for opening the bank account in exchange for only 10 taka. Another feature of the card is that the cardholder farmer feels his dignity and introduces himself proudly.

The card has various information including their own photograph which helps them to become aware of the actual identity and description. Department of Agricultural Extension plays a role in distribution, use and management to the farmers. Currently, 20.8 million 14 thousand families which is 99% of 21 million 26 thousand farm families are benefited from agricultural input assistance cards.

2.16 Farmer's Bank Account

The Ministry of Agriculture introduced farmer's bank account in exchange for only 10 taka per annum in the year 2009-10 to the farmers in order to bring transparency in the field of agriculture loan, agricultural rehabilitation, agricultural incentives, subsidy etc. This is very popular among farmers and has encouraged the attitude of saving money among farmers. So far, the number of opening of the farmer's account is 11.2 million, i.e. about 50% of the total farming households. The government's financial assistance to the farmers is directly delivered to the farmers' bank account. Later, the farmers withdraw money from the bank account whenever they need. The Department of Food has taken measures so that the farmers can directly pay through their bank account during the purchase of rice, thereby increasing the importance of the farmer bank account. Department of Agricultural Extension provides full support to the farmers for opening and managing the bank account.

2.17 Complaint Centres for Addressing Problems and Complaints and Flow of Information

2.17.1 Complaint Centre

Farmers and different groups of people go to the Agriculture Office directly to get fast solution to their problems and lack-complaint or use the information and communication technology to inform their problems. 'Complaints Centre' will be opened in every Block (Agriculture Advisory Centre), Upazila, District, Regional and National level offices in order to handle problems and complaints. Immediate solution will be taken and recorded in the reserved register with due consideration of the problems and complaints submitted in the complaint centre. Senior officers will monitor the register during the office inspection and record his comments.

These issues and problems will be taken into account during the process of formulating a development plan and decision-making. It is possible to know about the situation in the field and the condition of the extension programme by observing recorded problems and deficiency-complaints. The complaints centre will be open every day during office hours.

2.17.2 Information Flow of the Extension Department

Field level problems can be considered in two ways:

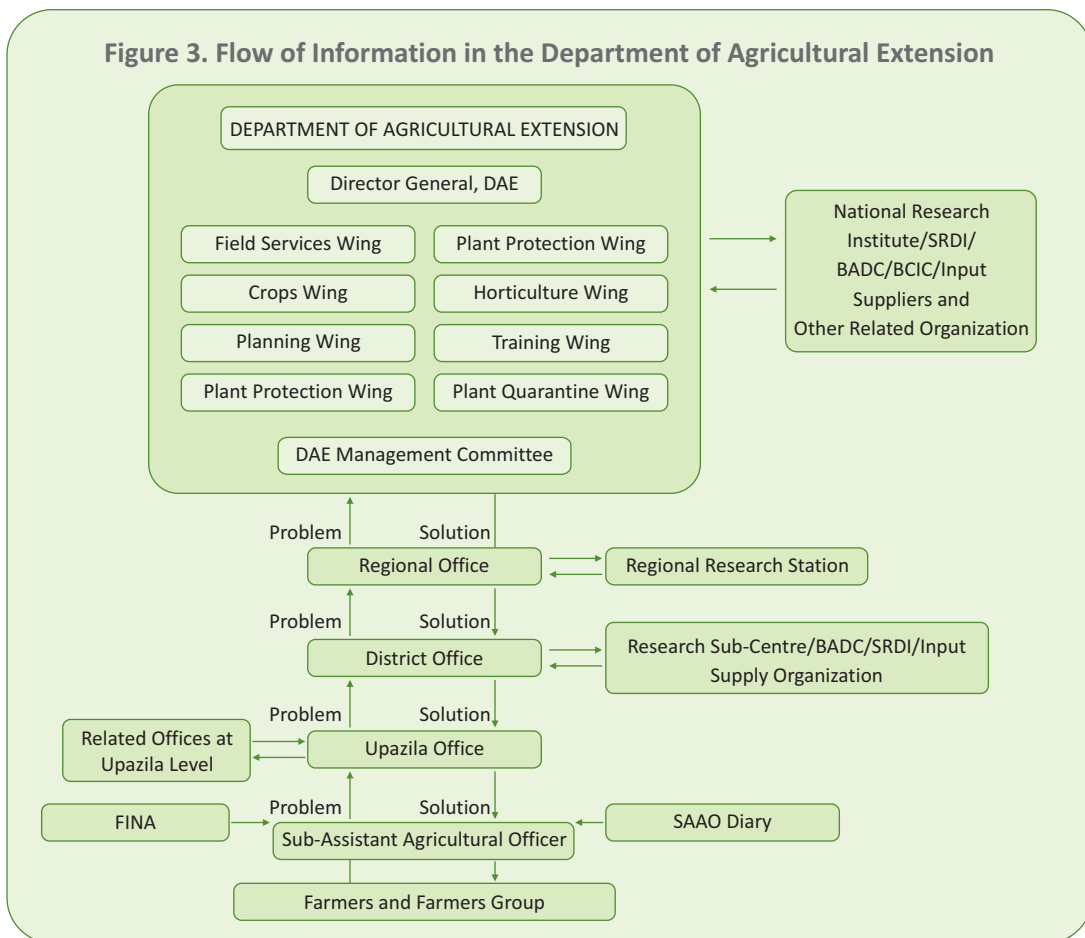
- a. Problems that need to be solved urgently or take precautions, such as attack of brown grasshoppers.
- b. Technical problems when emergency solutions are not possible and require time for monitoring and research, such as, less production even after good nursing.

Immediate solutions should be given to emergency problems and inform higher officials understanding the importance of the problem. Draw attention step by step to bring the attention of higher authorities or competent organizations in order to get satisfactory solutions in the case of other technical issues.

Note that any specific problem solved or pending should be immediately notified to the Director General and the Director, Field Services Wing.

The Department of Agricultural Extension has a continuous flow of information to solve any problem of the farmer (Figure 3), the details of the flow of information from the Department of Agricultural Extension are:

Figure 3. Flow of Information in the Department of Agricultural Extension



2.17.2.1 From the Farmers to Sub-assistant Agriculture Officer

The arrangement for recording problems and solutions of farmers is contained in the specific part of the diary of Sub-Assistant Agriculture Officers. The Sub-Assistant Agriculture Officer will write the problems received from the farmers and the solution given to the problem in the diary. If any problems remain unresolved, keep it also in diary. All these written problems will be helpful in formulating the agriculture-extension plans.

2.17.2.2. From Sub-Assistant Agriculture Officer to Upazila

Sub-Assistant Agriculture Officer will present in the next weekly meeting or training to be held in the upazila to solve the unresolved problems recorded in the diary and the solution will be informed to the concerned farmers as soon as possible. The Agricultural Extension Officer will

be responsible for this and take help from Additional Agriculture Officers or Upazila Agriculture Officers or any experienced person to solve the problem if needed. Issues related to any other department (e.g. fisheries, livestock etc.) have to transfer to Upazila Agriculture officers.

2.17.2.3. From the Upazila to District

Upazila Agriculture Officers will present the unresolved issues at the district level monthly meeting and the received solution will be made available to the concerned farmers through the Deputy Agriculture Officer. The Deputy Director can take assistance with experienced person or organization of the district to solve the problem.

2.17.2.4. From District to the Regional Level

The Deputy Directors will present the unresolved issues at the district level in the monthly meeting held in the region and will take the arrangement to reach the given solution to the concerned farmers regularly. The Additional Director of Region will present unresolved pending problem in the monthly meeting in the Regional Agricultural Technical Coordination Committee (RTC) and will take measures to reach the concerned solution to the farmers.

2.17.2.5 From Regional to the Headquarter

The Additional Director will send the pending unresolved problems to the Director, Field Services Wing, who will be assisted by the DAE Management Committee or the national level related research institute or any related organisation.

2.18 Linkage Between Extension and Other Institutions

2.18.1 Extension-Research-Farmer Linkage

Development of linkage among Extension-Research-Farmer is undeniable in extension work. Special emphasis has been laid on this linkage in the new agricultural extension policy and the revised extension approach. Extension-Research is working with mutual collaboration and linkage. Connecting the farmer with the extension-research will strengthen the foundation of interconnected bridges.

The areas of Extension-Research-Farmer linkage are mentioned below:

- i. There are various committees such as EPICC, NATCC, ATC, DEPC, UAECC as part of the implementation strategy of the new Agricultural Extension Policy, which are currently

- reorganised as NTC, RTC, DTC, UTC are in the national, regional, district and upazila levels. Extension, research and farmers will play an active role in these committees
- ii. Extension, research and farmer will be active participants in the Research Institute Coordination Committee (RICC), Research Institute Planning Meeting, Extension-Research Workshop, Extension Planning Workshop etc.
 - iii. Extension, research and farmers will implement on-farm research and multi-location testing with the cooperation of each other
 - iv. Extension and farmers will be included in the training or workshop on "inventive technology reporting" organized by research institutions.
 - v. There will be spontaneous participation of research institutions and farmers in any meeting or workshop or agricultural fair or field day etc. organized by the Department of Agricultural Extension, similarly there will be extension and farmer's participation in the programmes organised by the research institutes
 - vi. The department of extension will implement the motivational tourism programme for farmers' motivation in the research centres
 - vii. Department of Agricultural Extension and Research will work jointly to resolve field level issues
 - viii. Research-extension-farmers will jointly visit the disease prone areas or hotspots of disease and take necessary action.
 - ix. Extension and research will encourage farmers in innovative work.

Besides, new areas of extension-research-farmer links need to be identified.

2.18.2 Extension- Government or Non-Government or Semi-Government or Autonomous or Private Agency Linkage

The Department of Agricultural Extension (DAE) is committed to respond to all the needs of the farmers. The Department of Extension has to take up the responsibility of ensuring the availability of various agricultural inputs, agricultural machinery, agricultural credit etc. in addition to the activities of extension of technology to the doorstep of farmers. Due to this, the Department of Extension will maintain connectivity and coordination with Agricultural Information Service (AIS), BADC, BCIC, Bank and other all the public or private or semi-autonomous or autonomous private organizations. This will increase mutual partnership.

2.18.2.1 DAE-AIS Linkage

DAE and AIS have been working in mutual cooperation and strong bonding to promote agriculture. 'Krishi Kotha' published by AIS is a highly established magazine for promoting timely agricultural messages for farmers. DAE places great effort on this magazine to disseminate relevant agricultural information. Community Radio FM 98.8 is broadcasting under the management of AIS in Amtali of Barguna, has over a million listeners. The Department of

AIS Agricultural Extension has initiated the reaching the farmers through modern and timely extension messages to the farmers by initiating the agronomical information and communication center (AICC) at the IPM or ICM Club. AIS have set up 'Agri-Call Center' from where farmers can get specific agricultural information services by dialing 16123 through the mobile phones. In addition, through AIS-DAE collaboration Agricultural documentary, Extension Message, Agriculture Diary, SAAO Diary etc. are being published and Radio and Television Programmes on agriculture is being broadcasted. AIS promotes information or extension messages of DAE. The extension program or activities will be expanded and the dynamism will increase with the strengthening of DAE-AIS links and strong ties.

2.18.3 Extension – Ideal Farmers -Farmers Linkage

The Department of Agricultural Extension will encourage farmers-farmer links to transfer technologies. There are many farmers among the other who are technically advanced, innovative or ideal farmers or early adopter. The field staff of the Department of Extension will find out such ideal farmers and enroll them and play an active role in enhancing the ideal Farmers-Farmer's cooperation in extension of agricultural technologies.

2.18.4 Extension - Agricultural Market Linkage

The market activity of the agricultural produces and market price has a direct effect on the extension works. Lack of proper marketing system and assurance of getting appropriate price have negative impact on the application of agricultural technology and its sustainable dimension. In this situation, extension workers will also help the farmers to get appropriate price and regarding market linkage process.

Effective information and strategies to create market connections are not yet good enough. A comprehensive link between the Department of Agricultural Extension and the Department of Agricultural Marketing can be established to determine the effective and specific action strategies to create market connectivity and there could be research on related issues. The department of agricultural extension can take initiative to formulate a policy in the light of agricultural market linkage.

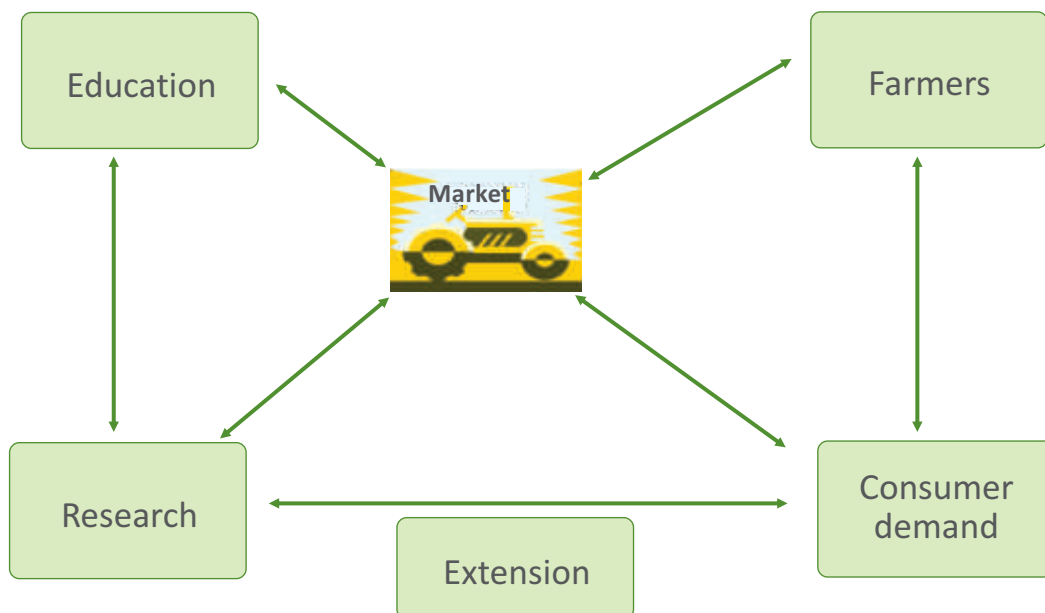
2.18.5 Extension-Research-Education-Farmer-Market Linkage

The extension-research-education-farmer-market linkages and coordination will play an important role in increasing productivity and production of agriculture.

Extension-research-education-peasant-market related institutions or individuals will work jointly and establish a sustainable and orderly market system by establishing a deep linkage in receiving appropriate prices of production and the development of market system.

Extension-research-education-farmer-market linkage and coordination structure are shown below (Figure 4):

Figure 4: Linkage among Extension, Research, Education, Farmer and the Market



2.18.6 Linkage Between Extension and the Meteorological Department

The agricultural work is intensely related to the weather. The importance of weather in agriculture has been increasing rapidly due to climate change. It is a special responsibility of the Department of Agricultural Extension to inform the farmers about the daily information related to weather forecasts. Especially, farmers can take special efforts to protect their field crops in natural disasters when they are informed about weather forecasts. Attack of pest and disease and severity of attack in crops is controlled due to the weather and the farmers can take cautious measures in time. Therefore, DAE have to play an active role in establishing linkage and good relations with the Meteorological Department.

2.19 Modernization in Extension Activities

2.19.1 Undertake Timely Extension Activities

Present and future agriculture extension will not be limited only to crop production operations. Supplemental activities will increase the coverage of commercial agriculture, agricultural market linkage, value chain, and supply chain. In addition to this, the current

target is exportable, safe and high-value crop production. The Department of Agricultural Extension will play the role of timely implementation extension activities in wide areas.

2.19.2 e-Extension Services

The importance of e-extension in current digital era and agricultural development is immense. The Department of Agricultural Extension will give special importance to the e-extension service programmes and will play a significant role in providing all the need-based services including extended extension services to the farmers using online, off-line technology in the shortest possible time.

Extension workers can play a role in extension activities using social networking, such as creating 'Face Book Group' with farmers, can coordinate various extension technologies, market rates, availability of agricultural inputs etc. e-extension services can be easily popular by creating and using mobile applications. It will be easy to provide extension services to the farmers of the backward areas especially in the short run and in the same time for a large number of farmers if the e-extension service became popular.

The Department of Agricultural Extension may take initiative to popularise e-extension services by formulating and implementing project.

Department of Agricultural Extension has already been gradually moving ahead with e-extension services by providing e-extension services on the ground level through mobile phone, sim card, smart phone, tablet PC, laptop supply and internet connection through project support and partnership activities. The Department has inserted several informational services box and important links to expand its own website *www.dae.gov.bd* which is contributing to the extension program. e-Extension services box and important links include:

e-extension service box

- a. Crop Production Technology**
 - i. Cereal crops
 - ii. Pulses, oil and spices
 - iii. Vegetables and tuber crops
 - iv. Fruits, flowers and cash crops

- e. E-extension Service**
 - i. Farmer's window (Krishaker Janala)
 - ii. The digital address of the farmer
 - iii. e-pesticide prescription

- c. Agricultural Decision Support**
 - i. On-line fertilizer recommendations

- ii. Bangladesh Rice Production Technology Knowledge Bank
- iii. Rice Crop Manager
- iv. Rice Doctor, IRRI

d. Important links includes

- i. Bangladesh Rice Research Institute
- ii. Bangladesh Agricultural Research Institute.

Radio and television are very important media to promote extension messages. Community radio and non-governmental or public national and local TV channels can be used more than before in promotional activities on extension messages.

2.20 Strengthening of Female Farmer's Participation in Extension Work

It is undeniable that female farmer play an important role in agriculture. But the participation of female farmers in the activities of DAE did not increase, the effect of the application of modern agricultural technology in their activities is not noticeable. In order to develop women's capabilities in agriculture, they need to be involved in extension activities more efficiently and have to be educated in modern technical knowledge and work.

2.21 DAE's Increased Engagement in Essential Activities Including Pest Surveillance and Pest Management

Surveillance is the proper way to analyse the presence of pest and diseases and the probability of attack in crops. Sometimes, there is a great loss of crops due to the severe attack of any pest in a favorable environment before knowing about its presence. Effective measures can be ensured to safeguard the crops by knowing the presence of these harmful pests and forecasting their attack by surveillance. So, vigilant surveys in crop field will be considered as an essential activity of the DAE. The surveillance activity will be conducted under supervision of the Director, Plant Protection Wing with special emphasis on weekly basis following the surveillance policy and the Director; Plant Protection Wing will submit the summary of weekly survey to the Director General.

Pest management is a very good way to control the presence and attack of pest and diseases. Pest management will be considered as an essential activity of the DAE. Extension workers will be well aware of pest management and will take effective actions in the light of this knowledge. Note that, perching is a very simple, effective and cost-effective technique in pest

management. The Director of the Plant Protection wing will take all measures effectively to make perching popular.

Surveillance and pest management is one of the most important functions of the Plant Protection Wing. Therefore, the Director, Plant Protection Wing will be conducting surveys and pest management activities with full monitoring and supervision.

2.22 Skill Development

2.22.1 Technical Capacity Development of Input Sellers/Dealers

Farmers collect their required agricultural inputs like fertilizers, seeds, pesticides, etc. directly from sellers or dealers. It is necessary for the sellers or dealers to know the quality of these materials. Often, the sellers or dealers give advice to farmers about the methods of application of these inputs. Therefore, the sellers or dealers need sufficient technical knowledge regarding the selection and application procedures of input. In addition, honesty and transparency of business is also important. Therefore, the Department of Extension will play an active role in developing the technical capacity of inputs dealers or dealers through training and monitoring on overall affairs.

2.22.2 Monitoring and Development of the Capacities of the People or Organization Related to Agricultural Services

Different persons or organizations related to agricultural services work with farmers and provide inadequate advice to farmers for their interests or perform unreasonable tasks, such as the manager of irrigation schemes or relevant personnel to irrigation water distribution system, agricultural machinery mechanic, field worker of pesticide or fertilizer companies, Market development officers of pesticides or fertilizer companies and pesticides spraying related non-government persons. DAE will monitor the work-activity of these people working in the field level. The DAE take initiatives to develop the skills of relevant people, agricultural machinery mechanics or other agriculture service providers through training and request the concerned authorities by issuing conditions for the development of the skills of persons of different organizations.

It is to be noted that some private or autonomous companies are engaged in promotional activities including setting demonstrations on the field regarding agricultural use for experimental or commercial purposes without the approval of the DAE, there may be confusion among the farmers in many cases and farmers can be harmed by the misuse of technologies. No non-government or privately-owned organization will take active action in the promotional activities including the demonstration on the use of agricultural inputs for experimental or commercial purposes on the field without the approval of DAE headquarters. Extension workers working in the field level will perform effective responsibilities in monitoring related issues.

2.22.3 Skill Development of Extension Workers and Farmers

In recent years, agricultural work has become more complex due to climate change, environmental imbalance, and declining land fertility. In addition, the paradigm of modern agriculture extension has been expanding. Modern farming technologies are also being developed in conjunction with every situation. Past meditative concepts and skills are incomprehensible for recent agriculture. Therefore, the skill development of the DAE extension officials is prime concern and the farmer's skill will develop if the efficiency of the extension officials develops. There is no alternative to training in skill development. So, DAE will increase and strengthen the training jurisdiction of extension officers and farmers.

2.23 Fortnightly Visit Schedule of Sub-Assistant Agriculture Officers (SAAO) and their Training

2.23.1 Fortnightly Visit Schedule for SAAO

The Principle of the "Revised Extension Approach" is to work with farmers groups. Sub-Assistant Agriculture Officers will mainly work with the DAE farming group, if necessary, the old farmer groups of DAE will be reconstituted and new farmer groups will be formed (Chapter 6). In this case, farmer's field schools will be converted into the effective farmer group.

Details of the SAAO's fortnightly visits

- a. A fortnightly visit schedule will be prepared including activities of two weeks or 14 calendar days
- b. A SAAO's work description of two weeks or 14 calendar days is mentioned below:
 - i. During the 14 working days (two weeks), SAAO will meet with minimum 12 (two per day) farmers groups within 6 working days in the group's scheduled meeting place at the first half of the day and provide services to farmers of Farmer Information Advice Centre established at block or union parishad in the afternoon.
 - ii. SAAO will attend the meeting or training of the Upazila Office on 2 working days
 - iii. SAAO will conduct farmer meeting at Union Digital Centre (UDC) and the unattended farmers' group meetings if any or special work of projects or setting demonstration or other work will be done on two working days. Will be ready to use the existing IT (Computer, Internet) facility in the farmers meeting at the Digital Centre.
 - iv. Enjoy four-day weekly holidays.
- c. The place of every farmers' group meeting will be determined by the choice of members of the group
- d. There will be an attractive signboard of reasonable size at the venue, the signboard will include the name of the meeting place, the time of the meeting: For example, 9 am in the morning on Sunday of the 1st and 3rd week of every english month, the name of the SAAO, the mobile number of the SAAO etc.

- e. SAAO will visit their field along with their meeting with the members on a scheduled day of visiting a farmers group.
- f. In the meeting, the SAAO will perform duties as a facilitator and mentor on other topics or issues given by the formal training of the Upazila Office.
- g. Fortnightly formal training of SAAOs will be held on any scheduled day of the 1st and 3rd week of the month in the upazila office, counting the days of the visit will start from the day after training
- h. The daily working hours of the SAAO in the block will be around 9.00am to 5.00pm.

Fortnightly Visit Schedule of SAAO* as example is given below:**

Day	1st Week			Day	2nd Week		
	9.00-12.00	12.00-3.00	3.00-5.00		9.00-12.00	12.00-3.00	3.00-5.00
Tuesday	Formal Training at Upazila Office			Tuesday	Meeting/Informal Training at Upazila Office		
Wednesday	Farmers Group 1	Farmers Group 2	Farmer's Information and Advice Centre	Wednesday	Farmers Group 7	Farmers Group 8	Farmer's Information and Advice Centre
Thursday	Farmers Group 3	Farmers Group 4	Farmer's Information and Advice Centre	Thursday	Farmers Group 9	Farmers Group 10	Farmer's Information and Advice Centre
Friday	Weekly Holiday			Friday	Weekly Holiday		
Saturday	Weekly Holiday			Saturday	Weekly Holiday		
Sunday	Farmers Group 5	Farmers Group 6	Farmer's Information and Advice Centre	Sunday	Farmers Group 11	Farmers Group 12	Farmer's Information and Advice Centre
Monday	Meeting with Farmers at UDC and Project work/Establishment of Demonstration/Others			Monday	Meeting with Farmers at UDC and Project work/Establishment of Demonstration/Others		

- ***
1. In the visit schedule, timings for meetings or visits of SAAO with farmers group and attending farmer information and advice centres can be changed or adjusted only in order to ensure maximum participation of farmers. But these changes will be limited to working days. Concerned Upazila Agriculture Officer will take approval of the Additional Director of the region through the district supervisor for arranging a change in schedule or visit with the farmers group and attendance at the Farmer Information and Advice Centre with appropriate explanation, otherwise the revised timings will not be considered effective.

2. The SAAO's fortnightly visit schedule is prepared considering the "Training and Visit System (considered as the basis of the extension program of the Department of Agricultural Extension) which is consistent with the principles and conditions of 'Revised Extension Approach. This visit schedule will mitigate fault of the training and Visit (T & V) system, for example -
 - i. Farmers' group-based approach instead of a personal contact
 - ii. Providing demand-based bottom-up extension services to farmers instead of top-down following the principle of decentralization
 - iii. Conducting fortnightly programmes ensures the participation of all the members-farmers in the decision-making process to implement information related extension and extension programmes as it is group based, which support the participative principle.
 - iv. Emphasis has been laid on both training and visit, which will help to fulfil the information demand of the farmers and improve the efficiency of extension workers.
 - v. Extension workers will be able to work with farmers groups more efficiently.
3. SAAO's fortnightly visit program is a revised arrangement for the implementation of the extension programme. It needs to do hard work in the initial stage of any change. All the persons concerned, especially the upazila, district and zonal level officials, will be able to play a special efficient, competent and effective role in the change management activities by providing proper training to SAAO.

2.23.2. Advantages of Working under Definite Visit Schedule

- i. The visit of SAAO will be completed in accordance with the schedule or work cycle, therefore the visit and execution of the SAAO's field work will be highly disciplined and measurable
- ii. The members of the group do not need to give any advance notice about the SAAO's visit as it is prescheduled, no additional work and responsible person will be required for providing advance notice
- iii. Members of the group will be able to attend their meetings with preparation on the basis of their needs in advance due to fixed schedule and will be able to gain access to demand-based services
- iv. It will be easier to collect the real information needs of farmers which will be used to formulate and implement need based extension plan for the farmers
- v. The training message will be locally suitable and the farmers need-based because it is locally created
- vi. It will not be necessary for the SAAO to make a fortnightly advance visit schedule and prior approval by the supervisor
- vii. Monitoring of the activities of SAAOs by using Mobile Apps will be facilitated in addition to field visits

- viii. All farmers and everyone concerned will be aware of SAAO's presence in the block, so it will be easy for any farmer to get help from SAAO
- ix. The SAAO activities will be more dynamic by following the schedule, it will improve efficiency and increase capacity
- x. Due to visit following fixed fortnightly schedule, DAE connectivity and relationship with the members of the group will be strengthened; as a result, the sustainability of the farmers group will be strengthened and sustainable.

2.23.3 Fortnightly Meeting or Training of SAAO

Sub- Assistant Agriculture Officers will meet in the meeting or training at the Upazila Agriculture Office on specific day of the week with the following agenda:

- i. Upazila Agriculture Officer will set up a day of the week for meeting or training by the discussion and approval with the Deputy Director of the district.
- ii. Training or meeting may be held on different working days of the week in different upazilas of the district in order to supervise and coordinate the district level officials.
- iii. 1st week: there will be formal training on the subject relevant to 1st fortnight time or related to field situation or farmer's demand on the selected day of the week, Agricultural extension officer will be full responsible for the training, short-form training message will be distributed to SAAOs in the training.
- iv. 2nd week: Discussion, review and report submission on field activities at the meeting held in the upazila office and informal training of sub-assistant agricultural officials.
- v. 3rd week: there will be formal training on the subject relevant to 2nd fortnight time or related to field situation or farmer's demand on the selected day of the week, Agricultural Extension officer will be full responsible for the training, short-form training message will be distributed to SAAOs in the training.
- vi. 4th week: Discussion, review and report submission on field activities at the meeting held in the upazila office and informal training of sub-assistant agricultural officials.
 - Sub- Assistant Agriculture Officers will have separate time for informal training and discussion, review and review of ongoing training messages will be made in informal training programmes.

2.23.4 Fortnightly Training Message of SAAO

The steps of creating training messages are as follow:

- i. The training message will be timely, relevant to the situation in the field and need based; the message will include the introduction of new technologies, special extension programmes, soil health and fertility preservation techniques (organic

matter and protection of micro-nutrient and development), crop production managing drought, flood and salinity etc.

- ii. The Agricultural Extension Officer will prepare the draft of the training message in the light of the ongoing extension programmes and submit it to the Upazila Agriculture Officer for verification.
- iii. Upazila Agriculture Officer will send it to the Deputy Director of the District Training Officer after verification and revision
- iv. District Training Officer will return to upazila before the training day with the approval of the Deputy Director after the necessary changes, modification and amendment to the training message sent from the upazila.

2.23.5 Increasing Skills of SAAO

Sub- Assistant Agriculture Officers play an important role in the development of agriculture and farmers by working directly with the farmers. Farmers have become very prosperous in agricultural technologies and knowledge with the change of time, agricultural work is becoming more complex due to the changing climate and environment, and new technologies are being invented for the needs of the people. Accordingly, there is a need to make extension services expeditious. Therefore, the ability of SAAOs to ensure appropriate and efficient extension services with nature, environment and conditions is absolutely essential. The training programmes of the upazila must be equipped in such a way that SAAO can increase their capacities by taking need-based and timely training.

Activities for Increasing Capability of SAAOs

- i. The SAAO training programmes to be held in upazila level must be very effective and fruitful
- ii. Work of SAAOs at the block level should be closely monitored and corrections should be made by proper guidance
- iii. The SAAOs will have to make sincere efforts to fulfil their responsibilities, so that their skills are improved in the process of learning by doing
- iv. Develop the knowledge of SAAO on modern technologies and contemporary issues
- v. Develop competence of SAAOs for working with farmers or farmers groups of all classes and management of field activities
- vi. The best SAAOs should be rewarded so that attentiveness, enthusiasm and skill are created in their work from the encouragement.

2.23.6. Coordination and Supervision of SAAO Training Programme

- i. District Training Officer will be in charge of coordinating and monitoring SAAO training program at upazila level

- ii. The District Training Officer will take all possible efforts to make SAAO training effective
- iii. At least one officer of the district level will be present in every training programme to make the training meaningful and effective in the upazila level, the Deputy Director of the concerned district will ensure this
- iv. The District Training Officer will take necessary action to increase the skills of the concerned officers in order to make the training effective and fruitful
- v. DAE Director of Training Wing will carry out the responsibility of overall coordination, monitoring and supervision from the national level on the training programs of SAAO, creating training messages and increasing capacity.

2.23.7 Farmer Information and Advice Centre

There is a room allocation for SAAO in every Union Parishad Complex. Allocated this room will be considered as farmers information and advice centre. In NATP-registered Upazilas, it has been known as FIAC. The Farmer Information and Advice Centre will get the form of an ideal service centre for providing integrated services to the farmers on their needs. This service centre will be equipped with various information related to agriculture as well as 'Pest Museum' or 'Plant Doctor's Clinic'.

The activities of agricultural information and counseling centres can be conducted from the old Union Parishad building or any place conveniently located in the union where there is no union parishad complex.

2.23.8 SAAO Diary

The diary of SAAO is a government document and it is a very important tool for recording the daily routine of information and extension activities. The SAAO diary will contain an annual agricultural development plan for the relevant area at the beginning. The farmer information needs and identified problems recorded in the diary will be considered seriously in the formulation of extension plan.

Monitoring of SAAO's activities and field situation can be done through SAAO diary observation and it is helpful to know the problem of the farmers and take necessary action. Supervising officers should monitor and ensure that the SAAOs are using diaries properly.

2.24 Ensuring Accountability in Extension Work

The first point of the task of executing extension activities is to record and self-assess the information about the daily work of extension workers and how much of daily work was done.

The accountability of work can be ensured by performing all the duties assigned to all extension officials and active monitoring in every level like block, upazila, district and region.

2.24.1 Block Level

The most important level of the Department of Agricultural Extension is Block level. Sub-Assistant Agriculture Officers are working as spokesmen of the Department of Agricultural Extension who are engaged in the most responsible posts of the block and trying to fulfil their assigned duties. The concerned block farmers will be deprived of the promised services of the Department of Extension if there is a deficit in the duty of the Sub- Assistant Agriculture Officer, which will result in hampering the achievement of the mission of the Department of Agricultural Extension. Therefore, every Sub-Assistance Agricultural Officer must be bound to perform his duties in the block and the performed work will be added to his own assessment and accountable to the farmers.

2.24.2 Upazila Level

Upazila level officials will be committed to performing their duties and will take accountable responsibilities. The main work of the upazila officials is to ensure that the need for extension services is provided to the farmers and monitor the work done by the Sub- Assistant Agriculture Officer. Upazila officials will impose special emphasis on the following areas of supervision of the field and will verify the amount and quality of the work done:

- i. Field visits and farmers interviews
- ii. Establish good relations with the farmers group and verify the quality of the work done by the SAAO in the group
- iii. Quality and quantity of work done by SAAO
- iv. Connection, contact, relationship with the farmers or farmer groups or organizations with SAAOs
- v. SAAO field visits
- vi. Monitoring of SAAO's diary and provide instructional comments
- vii. Implementation progress of approved extension plan
- viii. Achievement or implementation situation of departmental or project work
- ix. Follow-up of project related implementation programmes
- x. Assigned special programs
- xi. Accuracy of various reports submitted etc.

It should be taken into consideration with special importance if there is any problem in agriculture in monitoring and supervision and if there is negligence or shortage of SAAO efficiency observed in the responsibilities then it is necessary to remove it as soon as possible through appropriate patronage.

2.24.3 District and Region Level

District and regional officials will perform very specific and deeply monitoring activities. They will put special emphasis in monitoring on the issues mentioned above and ensure accountability to the subordinates. Upazila and block level activities are largely dependent on the direction, monitoring and supervision work given by the region and district level.

Working area can be divided among the officers working in the upazilas and districts for the purpose of supervision. Every officer should be aware that the supervision work is the most meaningful and effective.

Upazilas, district and regional officials will use a checklist to supervise. The Director of Field Services wing will provide checklist samples for the regional, district and upazila considering the ongoing work conditions and importance. Every officer will prepare monthly report in the prescribed form and submit it with necessary recommendation or comment to the next senior officer within 5th of next month. Samples of the monthly report template will be provided by Field Services Wing.

A possible index of how many days to go to the field for observing and monitoring by the upazilas, district and regional level officials is given below (Table 2):

Table 2: Minimum Monthly Field Visits for Supervision by Officials

Sl no	Administrative level	Designation of the officer	Number of minimum visits
1	Upazila	Assistant Agricultural Extension Officer	10
2	Upazila	Agricultural Extension Officer	10
3	Upazila	Additional Agriculture Officer	10
4	Upazila	Upazila Agriculture Officer	8
5	District	Additional Deputy Director	12
6	District	District Training Officer	12
7	District	Deputy Director	8
8	Region	Deputy Director	12
9	Region	Additional Director	10

2.24.4 Online Movement Data Entry of Region, District and Upazila-Level Officials

Regional, district and upazila level officials have to travel outside of their own head office in government work. They also go out of the workplace in various activities. Higher authority

often needs to know the whereabouts of the region, district and upazila level officials. Therefore, on-line movement data entry systems will be introduced for the region, district and upazila level officials to maintain movement data. Officer of the regional, district and upazila level will go on the outside of the work place after recording his details about movement so that any senior authority can be informed about the movements of each officer at any time.

2.25 Performance Report by All DAE Officials

All officers and the SAAO will prepare daily performance report in order to verify the amount of work done and to ensure accountability and submit the short and accurate or meticulous monthly report of daily performance to the next higher authority in the 10 days of next month. The senior authority will review the submitted report and verify the quality of the work and its effectiveness and provide the necessary suggestions for the improvement in the quantity and quality of the work done.

2.26 Evaluation of Officials' Performance and Awards

2.26.1 Assessment for the Work of SAAO and Reward

Everyone wants to be rewarded for the good work, at least they expect thanks. Recognizing satisfying work increases trust and respect for the responsibility and helps to be more responsible for the purpose. Moreover, recognition gives rise to competition among the workplace. Therefore, good work must be recognized and rewarding opportunities should be created for good work.

The steps in evaluation and rewarding of SAAO's performance will be as follows:

- i. The quality, quantity of executed works and personal characteristics of the SAAOs in the assessment process will be verified
- ii. The work of the SAAO will be assessed 3 times a year in per quarter in order to maintain perfect evaluation and speed of work over the years.
- iii. Every time Upazila Agriculture Officer, Additional Agriculture Officer and Agricultural Extension Officer individually will score the quality, quantity and personal characteristics of the SAAO's work on the basis of specific indicators.
- iv. Upazila Agriculture Officer will secretly save the average scoring account with quarterly assessment sheets
- v. Then at the end of the year, the best three SAAOs will be selected in the upazilas by determining 1st place, 2nd place and 3rd place on the basis of the average calculation of three assessments
- vi. Certificates will be distributed among the winners in January next year for recognition of excellence
- vii. Certificates will be prepared in the joint signature of the Additional Director of the region and the Deputy Director of the district

- viii. The Additional Director of the region and the Deputy Director of the district will be present in the certification ceremony
- ix. Sample of the certificate will be provided by the Director of the DAE, Field Services Wing.

2.26.2 Assessment and Award for Work of Upazila or District Level Officials

District and upazila level officials will also be awarded for their outstanding quality work similar to 2.22.1.

2.27 Monitoring, Supervision and Administrative Management

2.27.1 Appointment of Headquarter Officer in Monitoring of Field Level Extension and Development Activities

The officer from the headquarters of the Department will be assigned in the beginning of the programme for observation and monitoring the real ground situation of seasonal extension programme, agricultural rehabilitation programme, agricultural incentive programme and various development activities of each district. Employed or assigned officers will visit the field of the district on the basis of the scheduled activities and observe the real situation and take immediate action when any obstruction is seen.

The assigned officials will submit the meaningful and objective inspection report to the Director General and the Director of the Field Services Wing after the completion of each inspection. The necessary measures will be taken from the headquarters according to the report submitted.

2.27.2 Technical Audit

Additional Director of the region is responsible for technical auditing. Technical inspection is needed to strengthen supervision. Additional Directors regularly visit upazilas and districts for supervision. Technical audits will be completed every season. A special checklist will be used to monitor the extension works carried out in addition to the general supervision system in technical evaluation. Additional Directors will select a district for technical inspection. Three upazilas will be selected on the basis of random selection and two blocks in each upazila in the same process during the visit of selected districts for the evaluation and the evaluation will follow the specific check list. The Additional Directors will also similarly complete the technical audit of all the districts affiliated.

The standard and quantity of extension services provided at the field level is known by the technical inspection. The results of the audit are particularly effective in providing constructive guidance and capacity building to field staff.

2.27.3 Administrative Management in Effective Implementation of Extension Activities

The smooth implementation of extension activities might reduce due to proper monitoring and lack of supervisory activities. Administrative steps or administrative management may be required in order to ensure responsible, transparent and accountability in monitoring and supervisory activities. The officials of the administration of the national, region, district and upazila will take effective measures in this regard. The DAE may issue administrative instructions or guides or publish an administrative manual.

2.28 Formation of Quality Improvement Cell for Extension Services

DAE Headquarters will take initiative to improve the quality of extension services. Extension service quality development cell will be formed comprising of skilled officers from all the wings of the headquarters headed by the Director, Field Services Wing, to check the quality and improvement of extension services in the field level. At least 15 people will be members of this cell. Director, Field Services Wing will coordinate the member as the chief or convener of the cell. Districts will be distributed among the members. The assigned officer (member) against the districts will check the quality of extension services by visiting the block-level extension activities on the basis of random selection. Members-officer will submit the quarterly report to the Director, Field Services Wing every July and January, which will be the special agenda of discussion at the next DAE management committee meeting and the decision will be taken to improve the quality of extension services.

2.29 DAE's Information Management to Strengthen Programmes Supportive to Extension Work

2.29.1 Increase the Effectiveness of Control Rooms in Fields

There is a control room at the headquarters of the Department of Agricultural Extension. The control room is open from 9 am to 8 pm on every working day. It is kept open on weekly holidays in emergency or special circumstances. The control room plays a very effective and important role in the exchange of information from all levels of the field.

The effectiveness of the control rooms will be applicable in every upazila, district and region level like the headquarters. The control room will also be used as an information centre.

The control room or information centre will be active at any natural disaster or emergency or as per the requirement and will play an effective role as the control room of the head office.

All information will be preserved in the control room or information centre so that any data or report is available on demand.

2.29.2 Online Reporting System

All reports of the Department of Agricultural Extension will be communicated through the on-line system. Therefore, the Director of Planning, Project Implementation and ICT Wing and DAE control room will play an active role in this regard. All regions, districts and upazila will take effective measures in this regard.

The online reporting format will be prepared according to the needs of the concerned wing or project and Planning, Project Implementation and ICT Wing will add this to the on-line system.

In the meantime, effective action has been taken to communicate the report on fertilizer, rainfall, crop cultivation progress, crop stage situation, etc. through the online system on the DAE website. The highest importance will be given on e-mail technology as well as the DAE's website to provide different reports or information.

In addition, the DAE will take initiatives for effective use of the off-line system (Mobile APP) for brief information or report transactions. Currently, the SMS of mobile phones has gained popularity among the people, and its use has to be gradually increased. DAE will try to make full application of information and communication technologies in the current digital era to communicate all types of information.

2.29.3 Documentation of Extension Work

The Department of Agricultural Extension has been performing various tasks with great success. The proper record or documentation of these works is encouraging and displayable. DAE will give special attention to the continuous preservation of success stories and publication of annual report. All wings of the department will collect information about the success stories and documentation in the year so that there is no shortage of information about the concerned issues. It will be a regular process.

The Department of Agricultural Extension will create a cell by Planning, Implementation and ICT wing to undertake the annual report on all the work done by the Department of Agricultural Extension and the cell will take necessary actions to create documentation and preservation. The Department of Agricultural Extension will publish the annual report every financial year.

2.29.4 Creation of Database

The Department of Agricultural Extension will incorporate all the information of its wings and create a complete data base. The information will be of immense importance in all other activities including the decision making process for preparing any extension plan and implementation of any plans related to agriculture. The data base will include many information from other related agriculture institutions such as BADC, research institutes etc.

ICT section of Planning, Project Implementation and ICT wing will be responsible for the management and control of the data base. The other wing of the department will provide information to the ICT section.

"Technology Archive" will be an important feature of data base where the details of all types of technology related to agriculture will be preserved.

Besides, information about the database is as follows:

2.29.4.1 Department of Agricultural Extension

- i. General information on agriculture (region, district, upazila)
- ii. Statistics of all the cultivation and production of crops (region, district, upazila based past few years)
- iii. Common cropping pattern and change or replacement of crop pattern in the last 20 years
- iv. Irrigation areas, number of irrigation devices
- v. Details about project-based work areas and extension activities
- vi. Loss-damage details of natural disaster and implemented rehabilitation and incentive programme
- vii. Details of areas and production under the popular varieties of crops (regions, districts, upazilas)
- viii. Crop zoning related information
- ix. The details of crop production cost
- x. List of technologies that are popular and commonly used in crop fields
- xi. Detailed information on training of officers or employees at home and abroad
- xii. Details of manpower related information of the Department of Extension
- xiii. Agricultural input assistance card and farmer bank account
- xiv. Farmer data base etc.

2.29.4.2 Organizations Related to Agriculture

- i. Supply and distribution of variety-wise seeds by the BADC (last few years)
- ii. The source of getting various agricultural inputs
- iii. The situation of supply of other inputs including agricultural machineries by various non-government organizations
- iv. Information on use of various types of fertilizers (the past few years)
- v. Details of the use of all types of agricultural equipment including irrigation (last few years) etc.

2.30 Following Government Policies, Laws and Rules in Extension Work

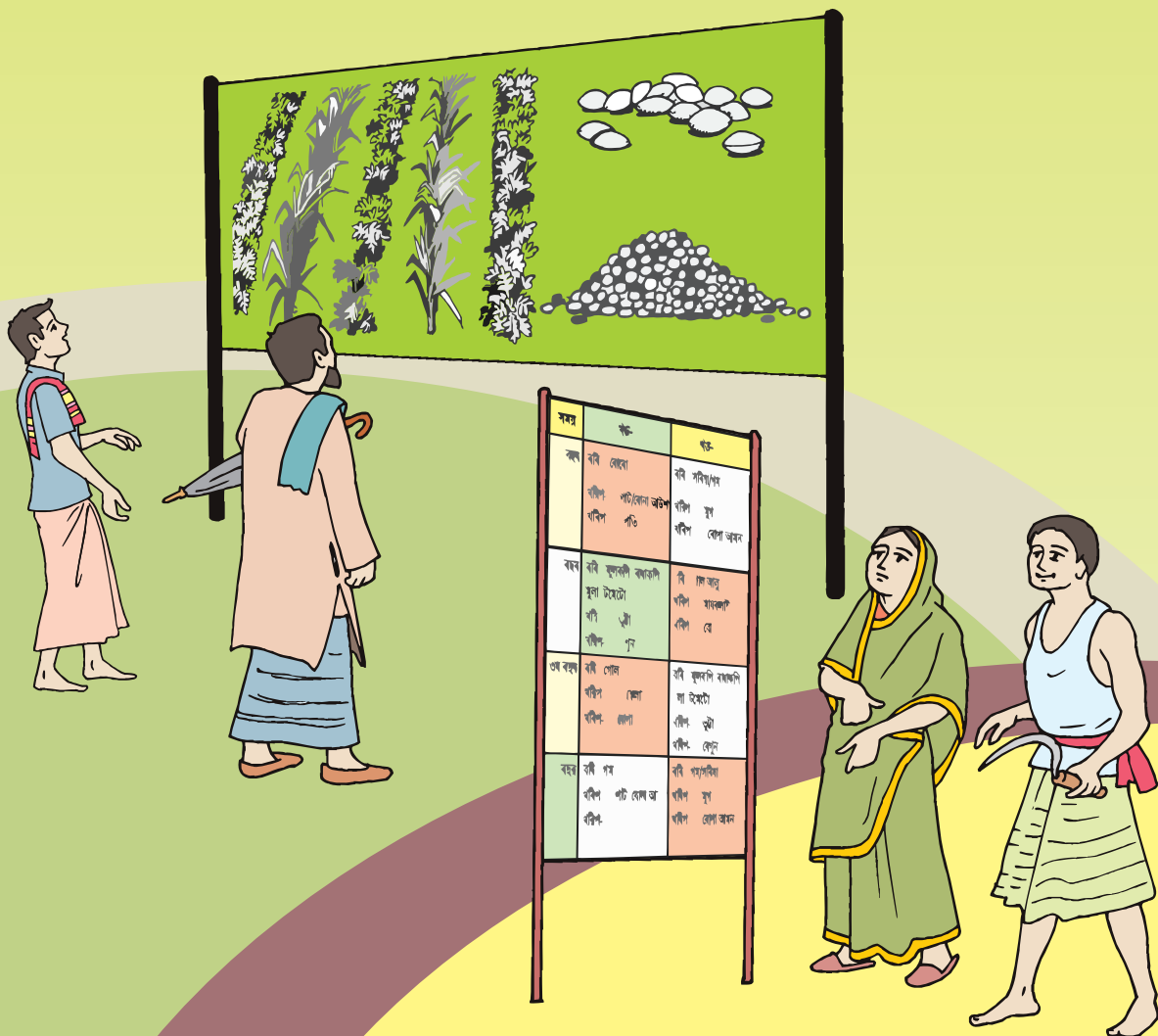
The government is preparing different policies, laws, rules, plans, strategy letters etc. as per different agricultural development initiatives. The Department of Extension will always try to implement these policies, laws, rules, plans, strategies in the extension programme.

Some of the policies, laws, rules, plans and strategies made by the government are-

- i. New Agricultural Extension Policy
- ii. Sustainable Development Goal (SDG)
- iii. National Agriculture Policy
- iv. Coastal Region Policy
- v. Integrated Pest Management Policy
- vi. Bangladesh Climate Change Strategy and Action Plan
- vii. Fertilizer (management) Law
- viii. National Women Development Policy
- ix. Fertilizer (management) rules
- x. Groundwater Management Rules
- xi. Pesticide Rules
- xii. Seventh Five-Year Plan
- xiii. Recruiting fertilizer dealer and fertilizer distribution policy
- xiv. Master Plan for Agricultural Development in Southern Region of Bangladesh etc.

Chapter 3

Citizen Charter and Information on Accessing Citizen Rights



Citizen Charter and Information on Accessing Citizen Rights

3.1 Vision and Mission

3.1.1 Vision: Sustainable and profitable production of crops.

3.1.2 Mission: Developing the technological knowledge and skills of farmers by providing efficient, effective, decentralised, location-specific, need-based and integrated agricultural extension services to increase the production of sustainable and profitable crops.

3.2 Promise of Services

3.2.1 Citizen Services

Sl.	Service name	Basic information related to services	The service delivery system	Required documents and availability	Service and payment method	Service timing	Designated Officer (Designation, Phone Number and email)
1	2	3	4	5	6	7	8
1	Providing agricultural advice	Providing agricultural advice on receiving demand and in cases applicable conducting field visit/ training/ demonstration/field day/group meeting	Received Demand (personal communication, SMS, Telephone / Mobile Call, E-Mail) *Provide suggestions *Application received	-	Free	7 working days	Upazila Agriculture Officer, concerned upazila agriculture office
2	Provide agricultural equipment through development assistance	Providing up to 30% development assistance for purchasing agricultural machinery in order to achieve agricultural mechanisation	* Approval of Upazila committee * Approval of Project Implementation Committee *Order issuance and transfer	Application in the prescribed form, concerned Upazila Agriculture Office	70% Cash Payment of the value of the device	45 working days	1. Upazila Agriculture Officer, concerned upazila agriculture office 2. Project Director, Field Services Wing, Phone: (2) 9102841

Sl.	Service name	Basic information related to services	The service delivery system	Required documents and availability	Service and payment method	Service timing	Designated Officer (Designation, Phone Number and email)
1	2	3	4	5	6	7	8
3	Mushroom cultivation advice and mother seed (spawn) supply	Provide suggestion on mushroom cultivation for the nutrition and empowerment of women and supply seeds (spawn) provide training / demonstration / group meetings / motivation / technical help / spawn supply / leaflets / booklets / brochure / posters / journals in applicable cases	* Demand Receipt (Personal communication, SMS, Telephone / Mobile Call, E-Mail) Advice and mother seed supply Provide Training / exhibition / party meeting / motivation / technical assistance / spawn supply / leaflet / booklet / brochure / poster / journal	-	Cash Payment of 15 / - per mother seed	3 working days subject to reserves	Deputy Director (mushroom) Phone: (2)7742496-102 E-mail: ddmashroom@dae.gov.bd
4	Provide Agriculture Diploma Education	Provide 4-year Agricultural Diploma degree Under the Technical Education Board of Bangladesh	* Receipt of application in the prescribed form * Students admission * Provide Agriculture Diploma education * Providing certificate	Application in the prescribed form ATI's offices www.dae.gov.bd	Cash payment of the fixed government fee	According to Education year-wise notification	Principal, ATI related ATIs
5	Registration of fertilizer and fertilizer related products import	Registration of fertilizers and related material import to ensure quality fertilizer supply at farmers' level	Receipt of application in the prescribed form * Assessment and related DD DAE's recommendations * Provide registration certificate	1. Application in the prescribed form 2. Other documents mentioned in the application form are available in the form of Field Services Wing, DAE, Khamarbari, Farmgate, Dhaka.	1000 / -, through treasury invoice/ challan	30 working days	Additional Director (Input) Field Services Wing, DAE, Khamarbari, Farmgate, Dhaka Phone: (2)9132088 E-mail: adimplement@dae.gov.bd

Sl.	Service name	Basic information related to services	The service delivery system	Required documents and availability	Service and payment method	Service timing	Designated Officer (Designation, Phone Number and email)
1	2	3	4	5	6	7	8
6	Registration of production of fertilizer and fertilizer related products	Registration of the production of fertilizer and fertilizer related products to ensure quality fertilizer supply at farmers' level	* Receipt of application in the prescribed form * Assessment and related DD, DAE recommendations * Provide registration certificate	1. Application in the prescribed form 2. Other documents mentioned in the application form, Field Services Wing, DAE, Farmgate, Khamarbari, Dhaka.	1000 / -, through Treasury invoice	30 working days	Additional Director (Input) Field Services Wing, DAE, Khamarbar, Farmgate, Dhaka. Phone: (2) 91320208, E-mail: adimplement@dae.gov.bd
7	Registration of fertilizer and fertilizer related materials marketing	Registration of fertilizer and fertilizer related material market in the farmers' level to ensure quality fertilizer supply	* Receipt of application in the prescribed form * Assessment and related DD, DAE's recommendation * Provide registration certificate	1. Application in the prescribed form 2. Other documents mentioned in the application form Filed Services Wing, DAE, Khamarbari, Farmgate, Dhaka.	1000 / -, through treasury invoice	30 working days	Additional Director (Input) Outreach Wing, DAE, Khamarbari, Farmgate, Dhaka Phone: (2) 91320208 E-mail: adimplement@dae.gov.bd
8	Renewal of registration of fertilizer and fertilizer related products	Renewal of registration of fertilizer and fertilizer related products to ensure quality fertilizer supply at farmers' level	* Receipt of application in the prescribed form * Assessment and related DD, DAE's recommendations * Provide registration Certificate	1. Application in the prescribed form 2. Other documents mentioned in the application form Field Services Wing, DAE, Khamarbari, Farmgate, Dhaka.	1000 / -, through treasury invoice	30 working days	Additional Director (Input) Field Services Wing, DAE, Khamarbari, Farmgate, Dhaka Phone: (2) 91320208 E-mail: adimplement@dae.gov.bd

Sl.	Service name	Basic information related to services	The service delivery system	Required documents and availability	Service and payment method	Service timing	Designated Officer (Designation, Phone Number and email)
1	2	3	4	5	6	7	8
9	Cooperation in the establishment of garden on the roof of the house	Provide assistance in setting up vegetable garden on the roof to meet the nutritional demand and provide training / demonstration / motivation / leaflet / booklet / brochure / poster / journal in applicable cases	* Demand Receipt (Personal Communication, SMS, Telephone / Mobile Call, E-Mail) * Inspection and technical assistance	-	Free	Years wide	1. Metropolitan Agriculture Officer related Metro Farm Office 2. Deputy Director (fruit and flowers), Horticulture Wing, DAE, Khamarbari, Farmgate, Dhaka. Phone: (2) 9117789
10	Advice on cultivation of horticultural crops and support for setting up nurseries	Provide consultation and technical support for expansion of horticultural crops and establishment of nursery and provide training / demonstration / motivation / leaflet / booklet / brochure / poster / journal in applicable cases	Demand Receipt (Personal Communication, SMS, Telephone / Mobile Call, E-Mail) * Inspection and technical assistance * Sapling-supply after payment	-	At the cash price fixed by the government	10 working days (year-over)	Director, Horticulture Wing, DAE, Khamarbari, Farmgate, Dhaka. Phone: (02) 9117030, E-mail: dhw@dae.gov.bd, Deputy Director, Horticulture Center Upazila Agriculture Officer, concerned upazila agricultural office. Deputy Director, concerned District Agriculture Office. Additional Director, concerned Regional Agriculture Office.

Sl.	Service name	Basic information related to services	The service delivery system	Required documents and availability	Service and payment method	Service timing	Designated Officer (Designation, Phone Number and email)
1	2	3	4	5	6	7	8
11	Provide Product registration A. Chemical pesticide B. Bio-Pesticide C. Microbial pesticide	Provide registration of all types of pesticide materials to ensure quality pesticide supply at the farmers' level	* Receipt of application in the prescribed form * Evaluation and recommendation of plant protection wing * Provide registration certificate	1. Application in the prescribed form A. Chemical pesticide, Form 1 (a) B. Bio-Pesticide, Form 1 (b) C. Microbial pesticide, Form 1 (c) 2. Other documents mentioned in the application form Plant Protection Wing, DAE, Khamarbari, Farmgate, Dhaka.	20,000 / - Treasury invoice	two years or time fixed by the government	Deputy Director (pesticide administration) Plant Protection Wing, DAE, Farmgate, Khamarbari, Dhaka. Phone: (2) 9118594
12	Provide license for Pesticide Import	Provide all types of pesticide import licenses to ensure quality pesticide supply at the farmer's level	* Receipt of application in the prescribed form * Evaluation and recommendation of Plant Protection Wing * Provide license	1. Two-copy application for Form-5 2. Registration certificate 3. Factory / Warehouse / Factory place deed / Agreement 4. Bank Solvency Certificate 5. Trade license, 6. TIN Certificate 7. Certificate by local authority 8. MBBS Doctor recruitment 9. Clearance from Department of environment 10. Fire Service provided License 11. ETP. Plant Protection Wing, DAE, Khamarbari, Farmgate, Dhaka.	2000 / - Treasury invoice	30 working days	Deputy Director (pesticide administration) Plant Protection Wing, DAE, Farmgate, Khamarbari, Dhaka. Phone: (2) 9118594

Sl.	Service name	Basic information related to services	The service delivery system	Required documents and availability	Service and payment method	Service timing	Designated Officer (Designation, Phone Number and email)
1	2	3	4	5	6	7	8
13	Pesticide Formulation License	Provide all types of pesticide formulation licenses to ensure quality of pesticide supply at the farmer's level	<ul style="list-style-type: none"> * Receipt of application in the prescribed form * Evaluation and recommendation of plant protection wing * Provide license 	1. Two-copy application for Form-6, 2. Registration certificate, 3. TIN Certificate, 4. Bank Solvency Certificate, 5. Trade license, 6. Certificate by local authority, 7. MBBS Doctor Recruitment, 8. Clearance from the Department of Environment, 9. Fire Service provided license, 10. Factory / Warehouse / Factory place deed / Agreement, 11. Factory lay-out plan, 12. Factory Inspection report, 13. Chemist's recruitment (including educational certificates). Plant Protection wing, DAE, Khamarbari, Farmgate, Dhaka.	5000 / - through treasury invoice	30 working days	Deputy Director (pesticide administration) Plant Protection Wing, DAE, Khamarbari, Farmgate, Dhaka. Phone: (2) 9118594
14	Pesticide Wholesale Licenses	Provide All types of Pesticide whole sell licenses to ensure quality of pesticide supply at the peasant level	<ul style="list-style-type: none"> * Receipt of application in the prescribed form * Evaluation and recommendation of plant protection wing * Provide license 	1. Two copies of form 7, 2. Registration certificate, 3. Bank solvency certificate, 4. Trade license, 5. TIN Certificate. Plant Protection Wing, DAE, Khamarbari, Farmgate, Dhaka. and district offices of the DAE.	1000 /- through treasury invoice	30 working days	Deputy Director (pesticide administration) Plant Protection Wing, DAE, Khamarbari, Dhaka. Phone: (2) 9118594

Sl.	Service name	Basic information related to services	The service delivery system	Required documents and availability	Service and payment method	Service timing	Designated Officer (Designation, Phone Number and email)
1	2	3	4	5	6	7	8
15	Pesticide Retail License	Provide all types of pesticide retail licenses to ensure quality pesticide supply at farmers' level	<ul style="list-style-type: none"> * Receipt of application in the prescribed form * Evaluation and recommendation of plant protection wing * Provide License 	1. Two-copies application for form-8 2. Trade license, 3. Store details, 4 Citizenship certificate. District and Upazila offices of DAE.	300 / - through treasury invoice	30 working days	Additional Deputy Director (Plant Protection Wing) related District Offices
16	Pesticide re-packing license	Provide all types of pesticide re-packing licenses to ensure quality pesticide supply at farmers' level	<ul style="list-style-type: none"> * Receipt of application in the prescribed form * Evaluation and recommendation of plant protection wing * Provide license 	1. Two copies of form-9, 2 Registration Certificate, 3 Bank solvency, 4 Trade license, 5. TIN certificate, 6 Certificate by local authority, 7. MBBS Doctor appointment, 8. Clearance of the Department of Environment, 9. Fire Service provided license, 10. Factory / Warehouse / Factory place deed / Agreement, 11 Factory layout-out plan, 12 Factory Inspection Report, 13 Chemists' appointment (including educational certificates). Plant Protection Wing, DAE, Farmgate, Khamarbari, Farmgate, Dhaka.	2000 / - through treasury invoice	30 working days	Deputy Director (pesticide administration) Plant Protection Wing, DAE, Khamarbari, Farmgate, Dhaka. Phone: (2) 9118594

Sl.	Service name	Basic information related to services	The service delivery system	Required documents and availability	Service and payment method	Service timing	Designated Officer (Designation, Phone Number and email)
1	2	3	4	5	6	7	8
17	Paste Control License	Provide all types of pest control licenses for plant and plant products	<ul style="list-style-type: none"> * Receipt of application in the prescribed form * Evaluation and recommendation of plant protection wing * Provide license 	1. Two copies of form 10, 2. Trade license, 3. TIN certificate, 4 Certificates by local authority, 5 Efficient person recruitment (including educational qualification certificate), 6 Factory inspection report, 7. Chemists' appointment (including educational certificates), 8 Fire-proof certification. Plant Protection Wing, DAE, Farmgate, Khamarbari, Farmgate, Dhaka.	2000 / - through treasury invoice	30 working days	Deputy Director (pesticide administration) Plant Protection Wing, DAE, Khamarbari, Farmgate, Dhaka. Phone: (2) 9118594
18	Pesticide Advertisement licenses	Licensing for all types of advertisement for buying and selling pesticide in the market (Advertisement)	<ul style="list-style-type: none"> * Receipt of application in the prescribed form * Evaluation and recommendation of plant protection wing * Provide License 	1. Two copies of form-11, 2. registration certificate, 3 Trade license, 4. TIN Certificate. Plant Protection Wing, DAE, Farmgate, Khamarbari, Farmgate, Dhaka.	1000 / - taka through treasury invoice	30 working days	Deputy Director (Pesticides Administration) Plant Protection Wing, DAE, Khamarbari, Farmgate, Dhaka. Phone: (2) 9118594
19	Import Permission for Plant and plant products (IP)	<ul style="list-style-type: none"> * Provide Import * Permit (IP) to ensure the import of standardized plant and plant products 	<ul style="list-style-type: none"> * Receipt of application in the prescribed form * Evaluation * Provide permission latter 	1. Application in the prescribed form, 2. Trade license, 3. Import registration certificate, 4. VAT certification, 5. TIN certificate, 6. Seed registration certificate of agriculture ministry, 7. Copy of treasury invoice of fees. Plant Protection Wing, DAE, Farmgate, Khamarbari, Farmgate, Dhaka.	10 / - taka 1st ton and the next one tone at taka 1 / through invoice	7 working days	Deputy Director (import) Plant Quarantine Wing, DAE, Khamarbari, Farmgate, Farmgate, Dhaka. E-mail: dpqw@dae.gov.bd and Deputy Director of concerned Quarantine Centre

Sl.	Service name	Basic information related to services	The service delivery system	Required documents and availability	Service and payment method	Service timing	Designated Officer (Designation, Phone Number and email)
1	2	3	4	5	6	7	8
20	Health certification for plant and plant products (PC)	Health certificates to ensure the import and export of standardised plant and vegetable products	<ul style="list-style-type: none"> * Receipt of application in the prescribed form * Evaluation * Provide Health certification (PC) 	1. Application in the prescribed form, 2. Trade license, 3. Export Registration Certificate, 4. VAT certification, 5. TIN certificate, 6. Seed registration certificate of Agriculture Ministry, 7. Copy of fee in treasury invoice. Plant Protection Wing, DAE, Farmgate, Khamarbari, Farmgate, Dhaka.	50 / - taka / ton and fumigation cost (if required) through invoice	3 working days	Deputy Director (Export) Plant Quarantine Wing, DAE, Khamarbari, Farmgate, Dhaka. E-mail: dpqw@dae.gov.bd
21	Certificate of plant and plant products	Provide clearance to ensure the import and export of quality plants and plant products	<ul style="list-style-type: none"> * Receipt of application in the prescribed form * Evaluation * Giving clearance 	1. Application in the prescribed form, 2. Import permit, 3 Health certificates of the exporting plant and plant products, 4 In-voice, 5 Packing list, 6. Bill of lading etc. Plant Protection Wing, DAE, Farmgate, Khamarbari, Farmgate, Dhaka.	price set by the government according to the type of goods to be paid through invoice	3 working days	Director, Plant Quarantine Wing, DAE, Khamarbari, Farmgate, Dhaka. Phone: 02913196 E-mail: dpqw@dae.gov.bd and sub-registrar, associated convention center
22	Special clearance for plant and plant products	Issuance of clearance in applicable cases to ensure the import and export of standardized plant and plant product products	<ul style="list-style-type: none"> * Receipt of application in the prescribed form * Evaluation * Provide special clearance 	1. Application in the prescribed form 2. Import permit, 3. Health certificates of the plant and plant products of the exporting country, 4. Airway bills / invoices, 5 Packing list, 6. LC, 7 Certificate of origin etc. Plant Protection Wing, DAE, Farmgate, Khamarbari, Farmgate, Dhaka.	price set by the government according to the type of goods through invoice	3 working days	Director, Plant Quarantine Wing, DAE, Khamarbari, Farmgate, Dhaka. Phone: (2) 9131296 E-mail: dpqw@dae.gov.bd

Sl.	Service name	Basic information related to services	The service delivery system	Required documents and availability	Service and payment method	Service timing	Designated Officer (Designation, Phone Number and email)
1	2	3	4	5	6	7	8
23	Anchorage permit of plant and plant products	Anchorage permits to ensure the import of quality plant and plant products	* Receipt of application in the prescribed form Evaluation provide anchorage permit	1. Receipt of application in the prescribed form, 2. Ship name, 3 Product details, 4. Import permit, 5 Bill of Lading etc. Plant Protection Wing, DAE, Khamarbari, Farmgate, Dhaka.	Free	3 working days	Deputy Director (Import) Plant Quarantine Wing, DAE, Khamarbari, Farmgate, Dhaka. E-mail: dpqw@dae.gov.bd

3.2.2 Official Services

Sl.	Service name	Basic information related to services	The service delivery system	Required documents and availability	Service and payment method	Service timing	Designated Officer (Designation, Phone Number and email)
1	2	3	4	5	6	7	8
1	Budget allocation and Money release	Annual budget allocation and release of funds for field level offices to perform government works	* Demand Receipt * Budget approval * Budget allocation and money release	1.Allotment letter, 2.Expenditure statement. Finance and Administration Wing, DAE, Khamarbari, Farmgate, Dhaka.	Free	7 working days	1. Director (Administration & Finance), Finance and Administration Wing, DAE, Farmgate, Khamarbari, Dhaka. Phone: (2) 9111738 E-mail: dafw@dae.gov.bd 2. Assistant Director (Finance), finance and administration Wing, DAE, Farmgate, Khamarbari, Dhaka.

3.2.3 Internal Services

Sl.	Service name	Basic information related to services	The service delivery system	Required documents and availability	Service and payment method	Service timing	Designated Officer (Designation, Phone Number and email)
1	Advance GPF payment (up to 3rd instalment)	Subject to receipt of demand, advance GPF payment of government employees (up to 3rd instalment)	* Demand Receipt * Approval and distribution	GPF application form, bill register and other related documents Assistant Director (Finance), DAE, Khamarbari, Farmgate, Dhaka.	Free	10 working days	1. Additional Deputy Director (Administration-1), Administration and Finance Wing, DAE, Farmgate, Khamarbari, Dhaka. Phone: (2) 9117614 2. Additional Deputy Director (Administration-2), Administration and Finance Wing, DAE, Farmgate, Khamarbari, Dhaka. Phone: (2) 9102831
2	Approve Leave	Approval of different types of leave for government employees subject to right	Application received Approval	Application for leave allowance, holiday availability certificate (if applicable) and other related documents Assistant Director (Finance), Administration and Money Wing, DAE, Khamarbari, Farmgate, Dhaka.	Free	15 working days	1. Additional Deputy Director (Administration-1), Administration and Finance Wing, DAE, Farmgate, Khamarbari, Dhaka. Phone: (2) 9117614 2. Additional Deputy Director (Administration-2), Administration and Money Wing, DAE, Farmgate, Khamarbari, Dhaka. Phone: (2) 9102831
3	Car / house construction advance	The government employee's car or house building advance regarding the demand received	* Application received * Recommendations and Advances	Application and other related documents in the prescribed form Assistant Director (Finance), Administration and Finance Wing, DAE, Khamarbari, Farmgate, Dhaka.	Free	10 working days	1. Additional Deputy Director (Administration-1), Administration and Finance Wing, DAE, Farmgate, Khamarbari, Dhaka. Phone: (2) 9117614 2. Additional Deputy Director (Administration-2), Administration and Finance Wing, DAE, Farmgate, Khamarbari, Dhaka. Phone: (2) 9102831

Sl.	Service name	Basic information related to services	The service delivery system	Required documents and availability	Service and payment method	Service timing	Designated Officer (Designation, Phone Number and email)
4	Provide the clothes for the 4th class employees	Provide the cloth for the 4th class government employees with the demand received	* Application received * Approval * Collection and supply	Application for dress, bill and related papers Assistant Director (Finance), Administration and Finance Wing, DAE, Khamarbari, Farmgate, Dhaka.	Free	30 working days	1. Additional Deputy Director (Administration-1), Administration and Money Wing, DAE, Farmgate, Khamarbari, Dhaka. Phone: (2) 9117614 2. Additional Deputy Director (Administration-2), Administration and Money Wing, DAE, Farmgate, Khamarbari, Dhaka. Phone: (2) 9102831
5	Provide pension and related rent	Provide the government employees' pension and related allowances regarding the receipt of the demand	Application received Approval / Advance	Application received in the prescribed form, pension papers Assistant Director (Finance), Administration and Finance Wing, DAE, Khamarbari, Farmgate, Dhaka.	Free	7 working days	1. Additional Deputy Director (Administration-1), Administration and Money Wing, DAE, Farmgate, Khamarbari, Dhaka. Phone: (2) 9117614 2. Additional Deputy Director (Administration-2), Administration and Money Wing, DAE, Farmgate, Khamarbari, Dhaka. Phone: (2) 9102831

3.2.4 E-services Provided by the Department of Agricultural Extension (with Link)

	Crop production technology	On-line reporting system	Notice board
Farmer's window	Cereal crops	Rain conditions	Day-to-day phytosanitary certificate
The digital address of the farmer	Pulses, oil and spices	Crop planting situation	
E-pesticide prescription	Vegetables and tuber crops	Fertilizer situation	
Annual Report 2014-15	Fruits, flowers and cash crops	Crop stage condition	
Pest Risk Analysis Report	Forms of Field Services Wing	Agricultural Diploma Admission	
Weekly report of field crops	Forms of Plant Protection Wing	Appointment of Sub- Assistant Agriculture Officer, 2016	
Ongoing fortnightly production report	Forms of Plant Quarantine Wing	Instructions for completing online forms	

3.3 What We Expect From You

SL.no	Things to do to get promised or desirable services
1	Completed application submission in the prescribed form (if applicable)
2	Payment of the necessary fees through proper way (if applicable)
3	Attend the meeting before the scheduled time
4	Full contact address (including telephone or mobile number)

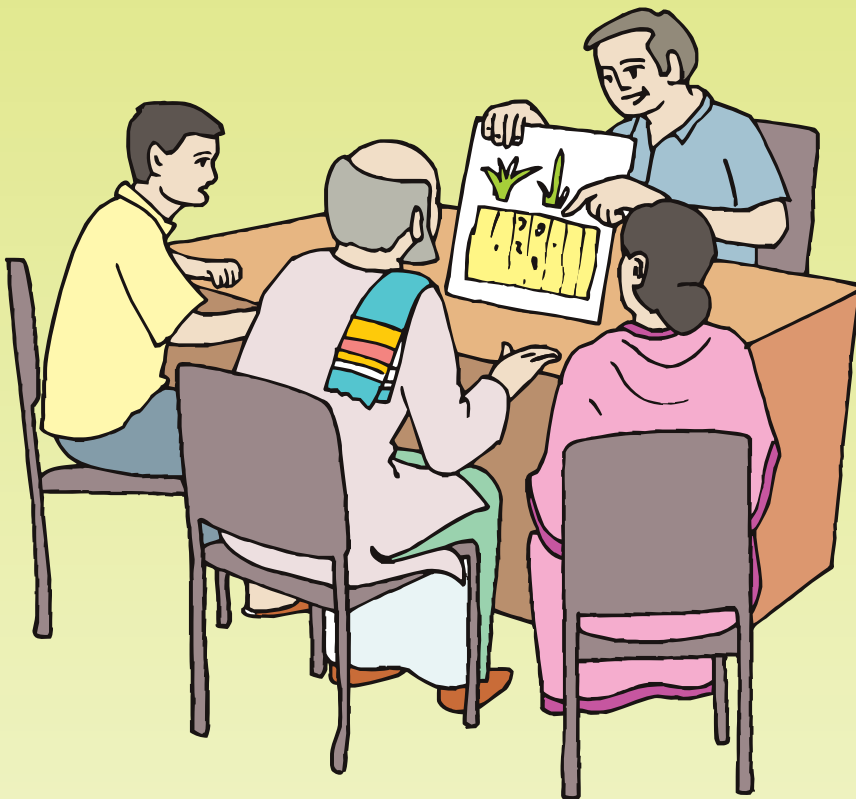
3.4 Grievance Resolve System (GRS)

If you are unhappy with the service, please communicate with the officer in charge. If the office in charge fails to give you a solution, please follow these steps to file your complaint

Sl.no	When to communicate	Who to talk to	Contact address	Settlement time limit
1	If the officer in charge fails to resolve the issue	Grievance resolve officer (ONIK)	Additional Director (Administration, Finance and Support Services) Administration and Finance Wing, DAE, Khamarbari, Farmgate, Dhaka Phone: (02) 9130928 Email: adadmin@dae.gov.bd Website: www.dae.gov.bd	25 working days
2	If the grievance resolve officer fails to settle the matter	Appeal officer	Director General Department of Agricultural Extension (DAE) Khamarbari, Farmgate, Dhaka Phone: (02) 9140857, (02) 9140850 Email: adadmin@dae.gov.bd Website: www.dae.gov.bd	30 working days
4	If appeal officer fails to settle the issue within the stipulated time	Secretary, Ministry of Agriculture	Secretary Ministry of Agriculture Dhaka Phone: (02) 9540100 Email: secretary@moa.gov.bd Website: www.moa.gov.bd	60 working days

Chapter 4

The Duties and Responsibilities of Extension Officers of the Department of Agricultural Extension



The Duties and Responsibilities of Extension Officers of the Department of Agricultural Extension

Director General, Grade-1, Number of Position-1

- i. To accomplish the administrative and financial activities of DAE as an administrative head of the Department of Agricultural Extension
- ii. To design and implement DAE's strategic planning and initiatives for e-agriculture, modern and sustainable agricultural technologies and to enhance the production of agricultural products
- iii. To take steps for expanding the information received from agricultural research institutions, agricultural business institutions and the international arena
- iv. To develop the socio-economic condition of Bangladesh, by taking initiatives for making realistic national policies in the agricultural sector, and taking up new projects and implementing and evaluating based on field level needs
- v. Making partnerships between public and private organisations related to agricultural education, research and extension for working together
- vi. Changing the agricultural technologies according to the environment and enhancing crop production in an environment-friendly way, post-harvest management and making plans about value addition
- vii. Taking necessary initiatives to enrich the knowledge and ability of the officers and employees of the department
- viii. Taking participatory approaches for farmers to ensure development of need-based extensional activities
- ix. To play a vital role in developing and implementing the National Agricultural Extension Policy (NAEP) and to provide help and assistance to other extension-related organisations
- x. Coordinate among different wings of the Department, conducting activities for its management and acting as the head of the committee formed for strategic management
- xi. Review the monitoring and evaluation report on regional activities for ensuring the success of the Department's vision, mission statement and NAEP
- xii. Review the regional annual extension plans and budget as well as endorsement
- xiii. To play a crucial role in protecting all kinds of assets of the Department
- xiv. To provide directives about the departmental activities and operational policies and if needed seek the assistance of the Ministry of Agriculture
- xv. Maintaining coordination with other ministries including the Ministry of Agriculture as well as other departments and divisions.

Administration and Finance Wing

Director, Grade-2, Number of Position-1

- i. To act as the head of administration and the finance wing
- ii. To coordinate among all the wings of the Department for preparing budget
- iii. To make all kinds of revenue budgets and balance expenditures under this department
- iv. Take control of the quantity of annual development budget in project proforma and assist Planning, Project Implementation & ICT Wing to review annual development programmes
- v. To permit all kinds of revenue budget for headquarter of the department including field level activities
- vi. Ensure the audit of accounts of all departmental revenues, projects, programmes etc. as per government policies
- vii. To acquire human resources to the department and to take administrative measures for transfer
- viii. To act as the administrative head for the management of all the human resources of the department
- ix. To maintain the updated record of the movable and immovable assets of the department and to take steps in settling disputes
- x. To take measures for collection, protection and supply of the commodities in time and for protecting their records
- xi. To take measures in case of addressing financial as well as administrative complications of human resources of the department (officers or employees) as per public laws
- xii. To maintain and allocate the vehicles received from different sources and to take them in the transport pool or vehicle pool
- xiii. To coordinate all the works of the management committee of the department
- xiv. To ensure the protection and dynamism of the working environment and physical infrastructure of the department
- xv. To take roles in preparing, implementing and monitoring Project Concept Paper according to the demand of the department
- xvi. To wait upon all the directions given by superior authority.

Additional Director (Administration, Finance and Support Services), Grade-3, Number of Position-1

- i. To assist the Director (Administration and Finance) in preparing the annual budget of all the wings of the department
- ii. To help prepare the reports of all types of revenue accounts or balance under the department
- iii. To help prepare the audit of the accounts of all departmental revenue, projects, programmes etc. according to the public conventional laws
- iv. Help to take control of the annual developmental budget mentioned in projects proforma and assist Planning, Project Implementation and ICT Wing in annual development programme readjustment

- v. To present all kind of revenue budget proposals under the department before the Director
- vi. Coordinate the revenue expenditure according to governmental laws by maintaining consistency
- vii. To help the Director (Administration and Finance) to take measures for collection protection and supply of the commodities in time and for preserving the records of those
- viii. To help the Director (Administration and Finance) to take measures in case of mitigating financial as well as administrative complications of the human resource department (officers/employees) according to public laws
- ix. To help the Director (Administration and Finance) for the evaluation of any kind of work of the human resources (officers or employees)
- x. To help the Director (Administration and Finance) in all administrative works.

Deputy Director (Administration), Grade-5, Number of Position-1

- i. To take administrative measures for making a list of the empty or vacant posts of officers and employees and for their transfer and posting for enhancement of dynamism in the department
- ii. To ensure opportunities for the officers and employees of the department and to take measures in case of mitigating administrative complications according to the public laws
- iii. To help superiors maintain rules and disciplines
- iv. To help in administrative measures for the promotion and transfer of cadre and non-cadre officers at all levels of department
- v. To file the records of all leave, timescale, selection grade, lump grant and pension sanction of the human resources of the department
- vi. To assist the Additional Director (Administration, Finance and Support Service) in all administrative works.

Deputy Director (Legal and Support Services), Grade-5, Number of Position-1

- i. To collect necessary commodities in due time, ensure supply, safeguard and transfer and take measures in case of protecting all kinds of supplies and stored products and tools with the approval of the superior authority
- ii. To keep all information about the repair of the offices of the department including field level office rooms and to supervise all the repair activities with the approval of the committee
- iii. To assist any kind of alleged charges against any officer and employee in lawful way and keep updated records of the estate or assets and investigate any kind of lawsuit regarding these
- iv. To collect and preserve updated information about the vehicles for the entitled officers of the department
- v. To take initiatives to include TO&E to the vehicles after ending different projects of the department
- vi. To help the Additional Director (Administrative, Finance and Service) in legal activities.

Deputy Director (Personnel), Grade-5, Number of Position-1

- i. To help the department in appointing human resources for the empty or vacant posts and for their promotion
- ii. To collect and preserve the updated record of the officers or employees of the department
- iii. To help the training wing so that it enhances the activities of the human resources of the department
- iv. To assist the Additional Director (Administration, Finance and Support Services).

Additional Deputy Director (Administration-1), Grade-6, Number of Position-1

- i. To prepare and keep the records of empty or vacant posts of cadre officers of the department
- ii. To take initiatives for helping to appoint to the vacant posts and for transfer, promotion, dispatch and other administrative activities for the cadre officers of the department
- iii. To ensure necessary facilities for cadre officers (such as, leave, timescale, selection grade, lump grant and pension etc.) and help resolve administrative and other complications of the department
- iv. To help and assist the Deputy Director (Administration).

Additional Deputy Director (Administration-2), Grade-6, Number of Position-1

- i. To prepare and keep the records of empty posts of non-cadre officers of all sectors of the department
- ii. To help take initiatives in case of helping to appoint to the empty or vacant posts, and for transfer, promotion, and other administrative activities for all stages of employees and non-cadre officers of the department
- iii. To ensure necessary facilities for non-cadre officers and other employees (such as leave, timescale, selection grade, lump grant and pension etc.) and to help resolve administrative and other complications of the department
- iv. To help senior officers in coordinating all projects or programmes of the department and to maintain records
- v. To take measures for transferring human resources from development projects to revenue section
- vi. To help the Deputy Director (Administration).

Additional Deputy Director (Legal and Support Services), Grade-6, Number of Position-1

- i. To help in maintaining the updated record of the movable and immovable assets of the department and to take steps in mitigating complexities
- ii. To help assisting any kind of alleged charges against any officer and employee of the department in lawful ways
- iii. To help the Deputy Director (Legal and Support Services) in the process of managing all kinds of vehicle, to keep updated records of them and to assist in case of purchasing process under revenue budget of the department
- iv. To help and assist Deputy Director (Legal and Support Services) all the while.

Additional Deputy Director (Personnel), Grade-6, Number of Position-1

- i. To help the Deputy Director (Personnel) to keep updated records of the officers or workers of the department
- ii. To help the Deputy Director (Personnel) in planning to enhance the capacity of human resources of the department
- iii. To help in maintaining properly the records of the human resources of the department
- iv. To help the Deputy Director (Personnel) make a list of the employees of the department for promotion
- v. To help the Deputy Director (Personnel).

Additional Deputy Director (PS to DG), Grade-6, Number of Position-1

- i. To act according to the directions of Director General and to help Director General in his or her daily activities
- ii. To coordinate among the activities of Director General and all the wings of department and to help implementing the programmes, communicating through field levels
- iii. To help in coordinating with different agricultural research, agricultural education institutions including all related institutions and other government, semi-government, non-government, autonomous, foreign aided organizations, NGOs etc. by the Director General of the department
- iv. To schedule the time for daily visits, interviewees, offices, organizations and meetings and to let the Director General know within due time
- v. To notify the Director General about all sent or received letters from or in the Director General's office.

Field Services Wing

Director, Grade-2, Number of Position-1

- i. To play roles in making farmers' need-based annual crop production plans, implementation, monitoring and evaluation with the help of field level officers and to provide instructions for further actions.
- ii. To take necessary initiatives to achieve the cultivation and production target of crops
- iii. To make a revenue and development budget and to release money for the headquarter and field level offices under Field Services Wing
- iv. To take measures in case of spreading or disseminating the messages received from research institutions and other organisations to the field level
- v. To ascertain the demand of seeds, fertilizers, etc. and to send it to the ministry for final approval
- vi. To point out the complications in case of agriculture and to take measures to solve them
- vii. To take effective measures for agricultural mechanization, research on related topics and coordinating with the business organizations
- viii. To take necessary steps in case of dealing with the disasters caused by climate change and agricultural rehabilitation and incentive programmes
- ix. To investigate and monitor the field level activities
- x. To take initiatives to enhance the skill and capability of the field level officers and employees of DAE
- xi. To supervise, monitor and coordinate activities of all the field level projects or programmes under implementation
- xii. To play a role in making national agricultural policies and DAE's mission, making a citizen-charter in the light of the of DAE
- xiii. To make crop cutting programmes throughout the country in coordination with BBS to estimate the total amount of food crops produced in the country
- xiv. To assist superior authority based on needs.

Additional Director (Monitoring and Implementation), Grade-3, Number of Position-1

- i. To take charge of making the production plan of seasonal crops
- ii. To accomplish the activities related to the crop production report (CPR)
- iii. To monitor season based programmes directly, marking or identifying the problems and evaluating them
- iv. To monitor the agricultural activities in progress
- v. To take responsibilities for making DAE's annual report and technical papers
- vi. To help by supplying information in case of making DAE's and Agricultural Ministry's annual report
- vii. To collect information regarding the loss caused by natural disasters, preparing agricultural rehabilitation programmes, making incentive programmes for cultivating special kind of crops and to work for their implementation

- viii. To arrange workshops on seasonal crop production plans
- ix. To act as the controlling officer of all the activities of DAE's control rooms
- x. To take measures to outreach weather forecast quickly
- xi. To prepare the answers of the possible questions related to agriculture that can be raised in the national parliament and to send them to the superior authority.

Deputy Director (Monitoring), Grade-5, Number of Position-1

- i. To collect, examine and make reports of the regional production of crops
- ii. To monitor the development of the field level programme implementation based on seasons
- iii. To take effective steps to reach or achieve the target of crop cultivation and production
- iv. To perform activities related to the crop production report (CPR)
- v. To play a role in making the annual report of DAE
- vi. To help by supplying information in the Agricultural Ministry's annual report
- vii. To work in different seminars held in the parliament and others held at the national level
- viii. To collect information regarding the losses caused by natural disasters, help in preparing agricultural rehabilitation or incentive programmes
- ix. To collect information of crop production programmes, monthly reports of main crops, fertilizer distribution condition, information of rainfall and to inform the relevant stakeholders
- x. To prepare the working papers of the season based crop production
- xi. To play a role in making the programme chart or calendar of crop production
- xii. To collect information and monitor all agricultural activities throughout the country via the control room
- xiii. To act as the principal officer of control rooms and to supervise all activities of the control room.

Deputy Director (Implementation), Grade-5, Number of Position-1

- i. To help by supplying all kinds of information in case of making DAE's and the Agricultural Ministry's annual report
- ii. To take effective steps in making agricultural mechanization and coordination among research and business organisations
- iii. To play a role in using land and managing the soil and crop production survey and making reports
- iv. To help in taking measures related to the pest management of the crops
- v. To collect information about the losses caused by natural disasters and to implement agricultural rehabilitation or incentive programmes
- vi. To analyse the progress of field level projects and to report the progress to the superior authority

Additional Deputy Director, Control Room, Grade-6, Number of Position-1

- i. To inform the regional and district levels about the national target of crop production
- ii. To send information about agricultural inputs to the field level
- iii. To collect information about the demand of inputs, its storage and market management from field levels
- iv. To take measures to disseminate weather forecasts to the field level quickly
- v. To make reports by collecting updated information about the losses of natural disasters and sending it to superior authorities
- vi. To send any vital information from the headquarters to the field levels and vice versa
- vii. To supervise the activities of other officers working in the control room
- viii. To prepare reports according to the direction of the superior authority.

Agricultural Extension Officer, Control Room, Grade-9, Number of Position-2

- i. To help exchange of information and reports of all kinds
- ii. To send informational messages from headquarters to field levels
- iii. To collect other reports including the daily development of cultivating crops, stages of crops, fertilizer reserve condition, daily rainfall, and temperature and others
- iv. To inform the emergency directives to the field level and to collect problems from field levels
- v. To play a special role for exchanging information during calamities.

Additional Director (Extension and Coordination), Grade-3, Number of Position-1

- i. To play a role in the technology extension of field level crop production
- ii. To identify the complications at the field level and to notify or inform the authority to mitigate them
- iii. To play a role in preparing and approving seasonal and annual extension plans based on the agro-ecological zone, crop zoning and adaptation to face the effect of climate change, etc. and implementing them at field levels
- iv. To coordinate between extension and research institutions
- v. To help the Director in administrative works
- vi. To supervise the quality and quantity of extension services or activities provided in the field level through performing technical audit.

Deputy Director (Extension), Grade-5, Number of Position- 1

- i. To play a role in bringing and implementing dynamism in extension of technologies for crop production

- ii. To help to make extension and implement seasonal and annual extension plans based on agroecological region, crop zoning and adaptation to face the effect of climate change etc.
- iii. To collect problems from the field levels and report on them to notify the superior authority and to take initiatives to solve them
- iv. To prepare and present field level reports to the superior authority
- v. To help the Director for the management and administrative works within the wing
- vi. To play a role in case of opinion sharing on behalf of DAE while preparing public policies, instructions, laws and directions related to agriculture
- vii. To play a role for arrangement, addition and amendment of different information in agricultural diary of SAAO.

Deputy Director (Coordination), Grade-5, Number of Position-1

- i. To manage the participation of officers at trainings, workshops, seminars, etc.
- ii. To coordinate between extension and research institutes at the national level and to take measures to spread the latest technology at the field level
- iii. To prepare the field level programme report for presenting to the superior authority
- iv. To coordinate between different public or private institutions or organizations related to agriculture
- v. Coordinate among other wings to assist the Director and the Additional Director
- vi. To take relevant steps in the light of agriculture related news published in different media.

Additional Director (Inputs), Grade-3, Number of Position-1

- i. To play a role in monitoring and managing seed, fertilizer, fuel or electricity, irrigation and other agricultural tools
- ii. To collect necessary information about agricultural tools and to preserve them for future use
- iii. To play a role in integrated soil management, to encourage the use of organic fertilizer and to protect the soil health
- iv. To help the Director to coordinate among collaborating institutions for management of fertilizer, seed and irrigation
- v. To play a role in solving any kind of input related problems at field levels
- vi. To help the Director or the Head of the wing to preserve all the records of the section and to prepare updated reports
- vii. To monitor the marketing process of quality seeds and fertilizers
- viii. To supervise the registration processes of production, import, preservation, distribution and sales of fertilizer and similar products.

Deputy Director (Fertilizer Management), Grade-5, Number of Position-1

- i. To play a role in conducting activities related to fertilization
- ii. To collect all kinds of information about fertilizers and related products and to be in charge of the preservation process and their usage
- iii. To take legal measures in the registration process and renewal of importing, production and marketing of fertilizers and related products; and to resolve any issue related to these with the help of Director
- iv. To help the Director in coordinating among all the organizations related to fertilizer (BADC, BCIC, SRDI, BARC etc.)
- v. To help implement decisions of the National Fertilizer Standardisation Committee or the technical sub-committee regarding fertilizer
- vi. To help the Head of the wing to prepare updated reports of fertilizer and all other products related to it
- vii. To take lawful initiatives to protect the quality of fertilizer with the directors' suggestions
- viii. To monitor and prepare the annual demand of fertilizer and related products and to make allotment
- ix. To take necessary steps for soil management and to encourage the use of organic matters and to protect the health of soil
- x. To help the Additional Director or the Head of the section to preserve all records, update them and prepare reports on them.

Deputy Director (Seed and Other Inputs), Grade-5, Number of Position-1

- i. To play a role in making work plans, management and monitoring related to quality seed, fuel or electricity for irrigation, etc.
- ii. To take measures to ensure supply of seeds according to the demand of the district
- iii. To supervise production of quality seeds
- iv. To assess the compatibility of imported seeds and the seeds produced in the country
- v. To coordinate among those who produce seeds, control quality and work in marketing
- vi. To play a role in the implementation of the government's seed policy and seed laws in the field level
- vii. To collect information, analyse and make reports on the use of irrigation tools and irrigated lands
- viii. To communicate and coordinate among the irrigation management institutions.

Additional Deputy Director (Inputs), Grade-6, Number of Position-1

- i. To help the Deputy Director (seeds and Inputs) in input related work
- ii. To transfer information about seeds, fertilizers and fertilizer related products (including organic fertilizer), irrigation and soil management to field levels.

- iii. To collect necessary information, to preserve them through processing for future use and to send it to the Additional Director for taking necessary steps
- iv. To do all necessary tasks for soil management, to encourage the use of compost or organic matters and to take steps for the protection of the health of soil
- v. To assist in the preservation of all records of the section and to keep them updated.

Additional Director (Region), Grade-3, Number of Position-14

- i. To take charge as the head of the agricultural region
- ii. To plan, evaluate and analyse all the divisional activities of the region
- iii. To coordinate among the agricultural research institutes, all public or semi-government and non-government institutions in regional areas
- iv. To take steps to solve the problems marked by the officers of district levels and to help the district level officers through technical suggestions
- v. To investigate the quantity and quality of extension services in the field level through technical audit
- vi. To take effective measures in case of transfers, postings, administrative and financial matters within the region
- vii. To investigate all activities of the officers and employees under the region.

Deputy Director (Establishment and Development), Grade- 5, Number of Position-14

- i. To help the Additional Director in developmental, financial and administrative activities of the region
- ii. To maintain the updated record of human resources of the agricultural extension department
- iii. To help to protect the updated record of the movable and immovable assets of the region
- iv. To help in making policies and implementing the measures to enhance the skill and to develop other activities of the human resource of the region
- v. To act as the member-secretary of the activities regarding the promotion of 3rd class and 4th class employees
- vi. To scrutinize the pension records of the 3rd class and 4th class employees and presenting it before the Additional Director
- vii. To prepare the Annual Confidential Record (ACR) of the officers and employees of the Additional Director's office.

Senior Agricultural Engineer, Grade-6, Number of Position-14

- i. To help the Additional Director to make policies and implement activities like agricultural mechanization, irrigation and drainage
- ii. To supervise the activities of Senior Agricultural Engineers of the district under the region.

- iii. To encourage the farm mechanization and to help superiors to make all kinds of agricultural equipment available
- iv. To help the Additional Director to solve problems and to implement the programmes in the field level.

Deputy Director (District), Grade-5, Number of Position-64

- i. To take charge as the head of agricultural activities of the district
- ii. To undertake the duties of planning, implementation and evaluation of agricultural activities in the upazilas and blocks as the main field supervising officer of the district
- iii. To take care of all the works under District Agricultural Office and ensure the accountability of their works
- iv. To take effective measures regarding the transfers in the district, postings, administrative and financial matters by the power given by the government
- v. To take charge of preparing and implementing seasonal crop production plans, in district levels
- vi. To take charge of visiting, evaluating and making report of crop production activities of the respective district
- vii. To assess the annual need of all kinds of agricultural equipment and inputs including seed, fertilizer, electricity, diesel, pesticide and to make policies to supply these to the farmers at the value fixed by the government
- viii. To encourage the mechanization of agriculture and to play a role in making agricultural equipment available
- ix. To act as the head of the district's plan and implementation of agricultural rehabilitation programme as a part of natural disaster management
- x. To act as the coordinator of district level activities regarding the agricultural research, extension and input supply management
- xi. To act as the link between district level input and credit management agencies
- xii. To act as the connector of flow of technological information from national levels to local levels
- xiii. To take charge to find out the problems at the field level and to solve them by sending them to related national institutions
- xiv. To act as the drawing-disbursing officer according to the laws and to keep record of it
- xv. To investigate implementation of the project or programme activity
- xvi. To plan and take measures for training to develop the skill of departmental officials or employees
- xvii. To investigate into the quality of extension services in the field level through technical audit or surveys.

District Training Officer, Grade-5, Number of Position-64

- i. To assess the training needs of officers or employees in the district level, to make annual training activity plans of the district and to help implement proper management of all these
- ii. To approve upazila training modules, training materials etc. after verification.

- iii. To take measures to train officers or employees in different levels of the district
- iv. To take measures in compiling the impact points of fortnightly trainings of SAAOs of the district
- v. To provide instructions to upazilas about management of farmers' trainings on timely and locally appropriate crop production technologies and monitoring them
- vi. To take charge in case of collecting and supplying training materials
- vii. To coordinate among different training programmes of the district, to help the Deputy Director to sanction nomination for the officers or employees for training.

Additional Deputy Director (Crop), Grade-6, Number of Position-64

- i. To help the Deputy Director for making and implementing the seasonal crop production plans
- ii. To play the role of a technical person in case of spreading modern technologies for crop production
- iii. To take charge in case of collecting and preserving all information about crop cultivation, to develop the cropping system and to make agricultural calendars
- iv. To play a role in assessing the demand for seeds, fertilizer and different inputs of the district and for getting approval from the district's Fertilizer and Seed Monitoring Committee
- v. To make plans of all kinds of demonstration, to instruct other Agricultural Officers for implementing them, preserving records, to make strategic plans of activity for implementing field days and to take measures to send reports
- vi. To help in producing and preserving improved seeds at the farmers' levels
- vii. To help the Deputy Director to mechanize agriculture and to manage inputs
- viii. To identify the problems of producing crops at the field level and to take steps to solve them
- ix. To help implement and evaluate the steps taken in the national level
- x. To conduct surveys on different agricultural issues and to inform superior authorities about their outcome from time to time.

Additional Deputy Director (PP), Grade-6, Number of Position-64

- i. To help regarding plant protection programmes for planning and implementing crop production
- ii. To implement several activities under plant protection programmes followed by public policies and laws and to act as the authority of pesticide licensing and lead the vigilance team to verify the standard of pesticides for marketing
- iii. To lead and take steps for the programmes of the vigilant survey (surveillance) related to the pests of the field crop and to manage the programme
- iv. To take effective steps for encouraging integrated pest management of field crops and horticultural crops
- v. To play a role in the implementation process of Good Agricultural Practices (GAP) for producing safe food under safe food laws
- vi. To assist the Deputy Director in making and implementing departmental plans.

Additional Deputy Director (Horticulture), Grade-6, Number of Position-64

- i. To help in planning and implementing the production of horticultural crops
- ii. To execute realistic activities to spread newly invented varieties for horticultural crop production
- iii. To identify the obstacles in producing horticultural crops and to take necessary steps to extend them
- iv. To implement, evaluate and analyse the activities taken in national levels
- v. To visit nurseries, to register them and to train the owners
- vi. To encourage all farmers to plant trees (fruit & forest trees) in the light of climate change situation.

Agricultural Engineer, Grade-9, Number of Position-64

- i. To display modern agricultural equipment to the farmers in the district level under the Deputy Director, to provide training for skilled operators and mechanics in the field level, to provide extension services about the use and maintenance of irrigation equipment in the field level
- ii. Providing assistance in the development and implementation of training and demonstration in the upazilas for the development of the irrigation system and the development of structures
- iii. To survey national minor irrigation and agricultural equipment, to collect information on rainfalls and underground water as well as above ground water and to take initiatives to protect these
- iv. To encourage the mechanization of agriculture and to play a role in making agricultural equipment easily available
- v. To collect updated information about agricultural equipment in district and upazila levels, to take initiatives to repair usable equipment, and to make a list of unrepairable equipment for taking further initiatives by informing superior authorities
- vi. To help in preparing budgets for equipment to be repaired in the department
- vii. To investigate into the activities of upazila via assistant agricultural engineer.

Upazila Agricultural Officer, Grade-6, Number of Position-487

- i. To take measures in developing programmes and implementation of local agricultural development through Upazila councils
- ii. To prioritize and perform the local activities and oversee high value crop production and crop diversification including development of commercial agriculture
- iii. To coordinate the activities regarding supply, availability and distribution of fertilizer, seed and other agricultural equipment
- iv. To coordinate and undertake the inter-union and sub-district's minor irrigation projects and to excavate and re-excavate canals for irrigation and drainage to ensure proper use of the water above ground or surface water

- v. To take measures to extend all kinds of technologies related to crop production
- vi. To take initiatives to arrange agricultural fairs, new crops, new technology advancements for increasing enthusiasm of the farmers to adopt appropriate agricultural technologies
- vii. To take timely measures to use information and communication technologies (digitization or digitalisation) and to expand it
- viii. To take local initiatives to face harmful effects in agriculture caused by global climate change and to coordinate with involved divisions or organisations
- ix. Bringing dynamism in the farmer service centres and to take necessary steps to maintain it
- x. To do the duties for implementing the projects and programme activities under the Agricultural Extension Department
- xi. To take initiatives and to take effective steps for launching e-agriculture, and providing orientation to AAOs, AEOs, SAAOs and others
- xii. To take the responsibility of coordinating the farmers and researchers and others to circulate or disseminate modern and sustainable agricultural technologies in upazila levels
- xiii. To supervise the work of subordinates, to take immediate actions about the problems of the farmers and to inform the district authority immediately
- xiv. To perform the other tasks given by the government, upazila council or other proper authorities
- xv. To act as the upazila fertilizer inspector.

Additional Agricultural Officer, Grade-6, Number of Position-487

- i. To assess the training needs of farmers in the local level and to take measures in developing training modules
- ii. To help Upazila Agricultural Officer to take effective measures by making the reports of visiting all activities of the field level
- iii. To perform the duties specified in the gazette published by the government along with supervising and monitoring activities related to fertilizer, seeds, pesticides etc. of upazilas
- iv. To help Upazila Agricultural Officer to collect local agricultural information, preserve them and to make a data bank
- v. To help Upazila Agricultural Officer to coordinate between different intra-departmental activities of the sub-district
- vi. To perform the other tasks given by the government, upazila- council or other proper authorities
- vii. To take charge of close monitoring of the suggestion service activities done through providing written "Agricultural Prescription" including management of Plant Clinics based on blocks, union councils or upazila parishads
- viii. To act as the upazila fertilizer inspector
- ix. To perform other tasks given by Upazila Agricultural Officer.

Agricultural Extension Officer, Grade-9, Number of Position- 495

- i. To play a role in planning and implementing the seasonal production of crops
- ii. To make extension programme plans in the light of farmers' information needs
- iii. To play an effective role for enhancing technical skill of SAAOs by using e-agriculture for helping farmers
- iv. To make a demand list of different inputs of upazilas by SAAO through agricultural surveys
- v. To oversee the training activities of SAAO
- vi. To play a vital role in preserving the records of evaluation, supervision, implementation, policy making, farmers' training, field days related to projects and beyond
- vii. To help the Upazila Agricultural Officers in case of crop production, plan preservation, irrigation management, equipment availability, etc.
- viii. To direct AAEO, SAPPO, SAAO for different kinds of works and to supervise them for implementation
- ix. To work as the supervising officer for approval of SAAO's fortnightly work programmes and to ensure its implementation
- x. To solve the problems in block levels, in case of failure to inform the collaborating organisation or district specialist about it and to provide final suggestions about recommending solutions to the problems
- xi. To train and suggest SAAOs to make crop diversification, to supply inputs and loan and to transfer technologies among farmers etc.
- xii. To play a role in planning and implementing extension activities in sub-district levels such as agricultural fairs, technology fairs, motivational tours, farmers' training etc.
- xiii. To help superior officers in planning and implementing crop production in the field level of agricultural department
- xiv. To play the role of sub-district fertilizer and pesticide auditors
- xv. To perform the other tasks given by the government, upazila council or other proper authorities.

Metropolitan Agricultural Officer, Grade-6, Number of Position-24

- i. To perform the local activities on the priority basis for developing commercial agriculture including high value crop production and crop diversification
- ii. To take steps to collect, preserve and distribute local agricultural information and to make a data bank
- iii. To coordinate the supply, availability and distribution of fertilizers, seeds, other inputs and modern agricultural equipment including irrigation
- iv. To take steps for implementing the plans of local landscaping, kitchen gardening, interior gardening and roof top gardening.

- v. To take initiatives to plan and train for the extension of urban horticulture in urban areas
- vi. To take steps for rat control programmes and the management of tree plantation and to help make compost from garbage
- vii. To supervise subordinate extension employees.

Assistant Agricultural Extension Officer, Grade-10, Number of Position-487

- i. To collect information of daily activities in the field, preparing reports and presenting them to the next officer
- ii. To help the farmers of sub-district levels in every way
- iii. To visit and supervise fields
- iv. To help AAO or AEOs in making a demand list related to crop production
- v. To help AAO or AEOs in plant protection activities
- vi. To help Upazila Agricultural Officer to plan, implement and evaluate the agricultural extension programme
- vii. To be dutiful to other extensional activities including training SAAOs and farmers
- viii. To help and suggest the accountable officer in collecting and protecting departmental asset's information.

Sub-assistant Plant Protection Officer, Grade-11, Number of Position-509

- i. To help to control the pests in the field
- ii. To collect all information on pesticides
- iii. To take initiatives for pest management of field crops and horticultural crops in the light of IPM and ICM
- iv. To prepare a weekly report on pest surveillance and forecasting and operate a squad for pest management in severe cases
- v. To collect the sample of counterfeit pesticides, to visit the dealers' pesticide shops for collecting information to help the Agricultural Extension Officer
- vi. To preserve all the records regarding pest management
- vii. To help the Agricultural Extension Officers to undertake different programmes on plant protection
- viii. To take effective steps to establish and maintain an insect and disease museum at upazila levels
- ix. To collect block reports regarding damage of insects and diseases and to take initiatives to send it to superior authorities after making report
- x. To assist operating farmers' field schools of IPM, ICM, climate change and other programmes
- xi. To implement different types of motivating programmes including pest management of crops and rat control campaigns.

- xii. To engage PPM in the protection of plants, to make sprayers ready for controlling pests and to help the farmers about pest management
- xiii. To visit the shops of the pesticide dealers and to suggest the dealers for keeping pesticides according to that locality's need and to inform authorities about it
- xiv. To collect and protect information of the list of pesticide dealers and to visit shops according to the notice of the authority for providing new licenses and renewal of licenses
- xv. To perform all the duties given to any related committee of plant protection.

Sub-assistant Agricultural Officer, Grade-11, Number of Position-14092

- i. To help in directing implementation of field programmes of the Department of Agricultural Extension at the farmers' levels
- ii. To help farmers in every way by being present in the field all the time
- iii. To inform authorities after marking the problems of the farmers
- iv. To take realistic steps in solving farmers' problems regarding their fields and horticultural crops
- v. To provide agricultural extension services to all types of farmers
- vi. To find out the problems of the farmers by staying with them and to provide possible solutions
- vii. To send the seasonal production planning proposal to made on the basis of farmers' information-needs upazila officer and to help him in planning workshops and for planning suitable extension activities or programmes
- viii. To make plans of fortnightly visit in accordance with seasonal activity plans and to implement it with the help of the supervising officer's approval, to suggest the farmers about the unsolvable problems by discussing it in upazila- trainings or reporting days
- ix. To operate different planned extension programmes such as: demonstration, motivational trainings, motivational meetings, group discussions, establishing small trial plots through partnerships and conducting field days on the basis of local demands
- x. To conduct surveys on natural calamities or other issues for collecting information
- xi. To collect all agriculture related information of the block and preserve in the diary those information about natural resources, population, area of cultivatable land, traditional cropping pattern, demand of different inputs, number of modern agricultural technology users and their successes, problems or obstacles, marketing process of produced crops, the advantages and disadvantages of getting loans, storage of agricultural commodities etc.
- xii. To provide need based motivational trainings under DAE's projects and beyond
- xiii. To work in the management of integrated farms by helping the farmers get information and help of other organizations
- xiv. To perform the sample crop cuttings of food crops and other crops to measure the total production and to send it to upazilas
- xv. To inform the Upazila Agricultural Officer and pesticide inspectors about the daily condition and needs of seed, fertilizer, diesel, electricity and other inputs of the block.

- xvi. To arrange meetings as the member-secretary of union's agricultural committees and to send the reports to the president of Upazila Agricultural Committee
- xvii. To take necessary steps in the invention process and to increase the use of new varieties of crops including mushroom and others by giving suggestions to the farmers and by providing motivational trainings
- xviii. To play a role in fulfilling the information demands or needs of the farmers via e-agriculture

Plant Protection Wing

Director, Grade-2, Number of Position-1

- i. To control the quality of pesticide by involving regional, district, upazila and metropolitan officers
- ii. To act as the authority of pesticide registration and licensing according to The Pesticide Ordinance, 1971 (2009 amendment), The Pesticide Rules 1985 (2010 amendment) and other laws
- iii. To implement the recommendations of Pesticide Technical Advisor Committees as the member-secretary of the committee
- iv. To register new pesticides as the President of Pesticide Technical Advisor Sub-Committee and to prepare minutes or loges and recommendation for Pesticide Technical Advisor Committee
- v. To implement the pest surveillance and forecasting
- vi. To extend environment friendly IPM in the field level
- vii. To prepare and implement national rat control programmes or campaigns
- viii. To supervise and monitor the production systems and sales of environment-friendly and good quality pesticides
- ix. To prepare a project concept paper and implement, monitor and evaluate projects
- x. To keep all programmes of Plant Protection wing active.

Additional Director (Pesticide Administration and Quality Control), Grade-3, Number of Position-1

- i. To help protect crops and make pesticide administration and quality control activities effective
- ii. To act as the member- secretary of pesticide technical advisory sub-committee
- iii. To make work plans for pesticide technical advisory committee
- iv. To help in registering pesticides and provide licenses
- v. To visit pesticide factories and to monitor the production processes
- vi. To visit and evaluate the revenues received from pesticide registration and different licenses
- vii. To arrange trainings, seminars and workshops for increasing consciousness about using safe pesticides
- viii. To help the Director to operate the plant protection wing.

Additional Director (Pest Management, Surveillance and Forecasting), Grade-3, Number of Position-1

- i. To ensure pest surveillance surveys related to crops, forecasts and warnings
- ii. To determine the presence of insects in crops via surveillance surveys in the field level and to transfer and extend technologies according to it
- iii. To implement the national rat control campaign or programme
- iv. To maintain communication with research institutions and to collect developed technologies and extend them for protecting crops
- v. To arrange training, seminars and workshops on vigilant surveys and IPM
- vi. To implement and monitor IPM programmes
- vii. To act upon the news and information published or telecasted via media about crop protection.

Deputy Director (Pesticide Administration), Grade-5, Number of Position-1

- i. To control the production, distribution and use of pesticide according to pesticide rules
- ii. To notify the involved to prepare agenda and minutes of Sub-PITAC and PITAC
- iii. To visit the distributing centres and pesticide factories according to the superior authority's order
- iv. To keep the books related to pesticide registration, licensing and renewal
- v. To notify the involved regarding activities of pesticide registration, licensing, etc.
- vi. To build proper pesticide administration by communicating with the officials of district and upazila levels

Deputy Director (Pesticide Quality Control), Grade-5, Number of Position-1

- i. To analyse samples and make reports for ensuring the quality of pesticide or accurateness
- ii. To examine the maximum residual (MRL) level of pesticide
- iii. To analyse the samples and to make reports for registering and renewing and to direct Additional Deputy Director (Pesticide Quality Control) and chemists to prepare agenda for meetings of sub-PITAC and PITAC committees according to the laboratory report
- iv. To direct Additional Deputy Director (Pesticide Quality Control) and chemists to take samples of pesticide from fields and institutions to analyse and make reports
- v. To take measures to fix standard dose of application and safe usage of pesticide
- vi. To distribute the charge to the Additional Deputy Directors (Pesticide Quality Control) as laboratory in charge on rotation
- vii. To help in visiting pesticide factories, collecting samples and in quality control activities by the direction of the Director
- viii. To provide technical assistance while visiting the establishment of new pesticide or factories.

Deputy Director (Integrated Pest Management), Grade-5, Number of position-1

- i. To take steps in preparing and implementing programmes of integrated Pest Management
- ii. To take steps after supervising, monitoring and evaluating the programmes of field levels
- iii. To provide proper technical suggestions and trainings to the involved ones for the implementation of IPM
- iv. To help implement IPM through maintaining continuous communication with the involved projects
- v. To take measures to conduct training on IPM
- vi. To prepare booklets, leaflets and video presentations consisting of IPM information
- vii. To continue the programmes of IPM by maintaining communication with the officers of district and upazila levels

Additional Deputy Director (Pesticide Administration), Grade-6, Number of Position-1

- i. To assist the process of registration and licensing of pesticide
- ii. To provide feedback after following the process of renewing registration and licenses of all kinds
- iii. To visit the factory and distribution centres of pesticide following the order of superior authorities and to help the proper distribution process of pesticide
- iv. To assist the involved ones to make agenda for PTAC and sub-PTAC
- v. To provide opinion on the injunctions about the changing of country of the origin
- vi. To ensure product inclusion.

Additional Deputy Director (Pesticide Quality Control), Grade-6, Number of Position-1

- i. To prepare reports after sample analyses and examining the application letter for the registration as well as renewal of pesticide and to help the Deputy Director (Pesticide Quality Control) for making agenda of the Sub-Pesticide Technical Advisory Committee (Sub-PTAC) according to the laboratory report
- ii. To prepare report of the maximum residual level (MRL) after examining the sample of reported crops and analysing the sample of pesticide received from the organization and the field according to the direction of Deputy Director (Pesticide Quality Control)
- iii. To provide technical support to the chemists to find out the maximum residual level (MRL) of the pesticide of crops and to analyse pesticide, providing analytic reports for determining the exact needed amount of pesticide or the quality of pesticide
- iv. To provide technical support to approve the label of pesticide, safe use of pesticide and to determine exact dose of use.

- v. To ascertain the demand of chemicals and equipment of the chemistry lab with the suggestion of superior authorities and to act as the laboratory in-charge
- vi. To assist by visiting the factory of pesticide and collecting samples with the notice of superior authorities for helping to control the quality
- vii. To supervise destroying pesticide materials and draining pesticide factory waste and to provide necessary instructions and suggestions.

Additional Deputy Director (Surveillance and Forecasting), Grade-6, Number of Position-1

- i. To supervise the surveillance activities or vigilant surveys in the field
- ii. To collect data about crop diseases and insects in the field level and to send cautionary messages in advance after analysing the data
- iii. To help send forecasting messages about pest condition
- iv. To monitor the condition of the field and to inform involved ones including the Additional Deputy Director (Surveillance and Forecasting)
- v. To assist training the involved officers of field level in the light of vigilant surveys.

Additional Deputy Director (Integrated Pest Management), Grade-6, Number of Position-1

- i. To help implementing the field level programmes of IPM, training, data collecting and taking steps after analyses
- ii. To assist the involved in implementing the field level programmes of IPM and monitoring the programmes
- iii. To prepare a bulletin on IPM related technologies
- iv. To maintain communication with IPM related projects for IPM implementation
- v. To help arrange trainings on IPM.

Pesticide Regulation Officer, Grade-9, Number of Position-2

- i. To prepare all the processes of the record of registration and licensing of pesticides
- ii. To assist by visiting and monitoring the factory and distribution centres with the notice of superior authorities for helping to keep the distribution process sound
- iii. To help superior authorities to implement pesticide laws and ordinance
- iv. To assist making agenda for PTAC and Sub-PTAC.

Plant Quarantine Wing

Director, Grade-2, Number of Position-1

- i. To play a role in controlling plant health in accordance with international regulations in the programmes of import and export of plants and plant related products
- ii. To take charge of National Plant Protection Organisation (NPPO) according to the International Plant Protection Convention (IPPC)
- iii. To add new laws and policies to plan quarantine programmes and to enact quarantine laws
- iv. To supervise the administrative and financial management of all quarantine centres including the headquarter
- v. To supervise quarantine activities in all the entrances of the country
- vi. To issue import permission (IP), phytosanitary certificate (PC), special clearance or release order (SRO) and anchorage permit
- vii. To coordinate, follow and operate programmes related to plant biodiversity and to follow and implement such international deals, protocol, convention, etc. which are signed by or sided with Bangladesh about the protection of plant's health.
- viii. To maintain communication with research institutions and other institutions about plant health protection for national interest.

Additional Director (Import, Export and Laboratory), Grade-3, Number of Position-1

- i. To supervise export-import activities according to import policies, export policies and international injunctions
- ii. To help issuing import permissions (IP), phytosanitary certificates (PC) and anchorage permits
- iii. To arrange workshops, seminars, and meetings about export-import and quarantine
- iv. To visit plant quarantine centres, to take measures to develop quality according in the area
- v. To find out the solutions of the possible problems by communicating with officers
- vi. To examine exportable plants and related products and to disinfect them if needed
- vii. To take extensive management measures to examine imported and exportable plants and plant products
- viii. To help the Director in administrative and official work
- ix. To operate and monitor quarantine laboratory.

Deputy Director (Import), Grade-5, Number of Position-1

- i. To take necessary steps to issue import permit (IP) letters

- ii. To verify the papers of imported plant and plant products and to take proper measures to collect samples
- iii. To help issuing Anchorage Permits
- iv. To conduct phytosanitary inspection of the imported products and if needed, take steps to treat or to seize the products
- v. To visit plant quarantine centres and to monitor export-import programmes
- vi. To help superior authorities to identify and restrain foreign plant diseases
- vii. To finalize weekly and monthly report about imported plants and plant products and send it to the superior authority
- viii. To visit seized imported plants and plant products and to take measures so that diseases do not enter and spread inside the country
- ix. To command how, where and in which way the imported products will be purified and to monitor its implementation
- x. To negotiate the problems between inspector and importer and to take measures to solve the problems of plant quarantine activity
- xi. To visit the quarantine centres for proper importation of plants and plant products and to coordinate among all other agencies of the port.

Deputy Director (Export), Grade-5, Number of Position-1

- i. To operate plant quarantine programmes for keeping the export procedures strong
- ii. To verify the papers of exportable plants and plant products and to take proper measures to collect samples
- iii. To operate monitoring programmes and field investigations before exporting plants and plant products
- iv. To monitor import-export programmes and to visit plant quarantine centres
- v. To conduct phytosanitary inspection of the exportable products and if needed to take steps to examine and purify
- vi. To ensure that the exportable consignment is from the locality which is pest free or little pest-infected
- vii. To issue Phytosanitary Certificates (PC)
- viii. To decide and operate quarantine programmes that will be used in exportable plant products
- ix. To negotiate the problems raised in between inspector and exporters and to solve the problems of plant quarantine activities
- x. To visit the quarantine centres for proper exportation of plants and plant products and to coordinate among all other agencies of the port
- xi. To finalize the weekly or monthly reports and send it to the superior authority.

Deputy Director (Quarantine Centre), Grade-5, Number of Position-12

- i. To verify the papers of importable or exportable plants and plant products and to take proper measures to collect samples
- ii. To conduct phytosanitary inspection of the imported products and, if needed, take steps to purify or to seize the products
- iii. To help in issuing Phytosanitary Certificates (PC)
- iv. To help superior authorities to identify and restrain foreign plant diseases
- v. To finalize weekly or monthly reports and to send them to the superior authority
- vi. To visit seized imported plants and plant products and to take measures so that diseases do not enter and spread inside the country
- vii. To command how, where and in which way the imported or exportable products will be purified and to monitor its implementation
- viii. To negotiate the problem between visitors and importers or exporters and to take measures to solve the problems of plant quarantine activities
- ix. To visit the quarantine centres for proper importation or exportation of plants and plant products and to coordinate among all other agencies of the port
- x. To take charge of all kinds of work of the laboratory under jurisdiction
- xi. To provide financial power and office management.

Additional Deputy Director (Export), Grade-6, Number of Position-1

- i. To verify the papers of exportable plants and plant products and to take proper measures to collect samples
- ii. To operate monitoring programmes and field investigations before exporting plants and plant like products
- iii. To monitor import-export programmes and to visit plant quarantine centres
- iv. To conduct phytosanitary inspection of the exportable products and, if needed, to take steps to examine and treat them
- v. To issue Phytosanitary Certificates (PC)
- vi. To visit pre-export field tests and activities
- vii. To ensure whether the exportable consignment is from the locality which it is pest free or slightly pest-infected
- viii. To decide and operate different kinds of quarantine programmes which will be used in exportable plant products
- ix. To visit the quarantine centres for proper exportation of plants and plant products and to coordinate among all other agencies of the port
- x. To help operating PRA programmes and to keep data related to it
- xi. To finalize weekly or monthly reports and to send them to the superior authority.

Additional Deputy Director (Import), Grade-6, Number of Position-2

- i. To take measures in collecting data and to verify the documents of imported plant and plant products
- ii. To conduct phytosanitary inspection of the exportable products and, if needed, to take steps to purify them
- iii. To do pre-import inspection and post-quarantine field inspection
- iv. To visit plant quarantine centres and to monitor export-import programmes
- v. To help superior authorities to identify and restrain foreign plant diseases
- vi. To visit seized imported plants and plant products and to take measures so that pest and diseases do not enter and spread inside the country
- vii. To command how, where and in which way the imported products will be purified and to monitor its implementation
- viii. To visit the quarantine centre for proper importation of plants and plant products and to coordinate among all other agencies of the port
- ix. To help operating PRA programmes and to keep data related to it
- x. To finalize weekly and monthly reports on imported plants and plant products and send it to the superior authority.

Additional Deputy Director (Quarantine Rules, Policy and Laboratory), Grade-6, Number of Position-1

- i. To operate all kinds of lab activities including the treatment and laboratory test of imported as well as exportable plants and plant products
- ii. To manage, develop, and visit the laboratories of plant quarantine centres and to undertake development programmes for the human resources of the laboratory
- iii. To take steps in detecting new pest and diseases
- iv. To notify others about newly received data according to IPPC and ISPM's guidelines
- v. To help operating PRA programmes and to maintain data related to it
- vi. To coordinate between headquarters and other laboratories of plant quarantine centre.

Additional Deputy Director (Plant Quarantine Centre), Grade-6, Number of Position-8

- i. To verify the papers of imported or exportable plants and plant products and to take proper measures to collect samples
- ii. To conduct phytosanitary inspection of the exportable products and, if needed, to take steps to purify them
- iii. To help issue Phytosanitary Certificate (PC).

- iv. To help superior authorities to identify and restrain foreign plant diseases
- v. To finalize weekly or monthly reports and send them to the superior authority
- vi. To visit seized imported plants and plant like products and to take measures so that diseases do not enter and spread inside the country
- vii. To command how, where and in which way the imported or exportable products will be purified and to monitor its implementation
- viii. To negotiate the problems raised in between visitors and importers or exporters and to take measures to solve the problems of plant quarantine activities
- ix. To visit the quarantine centre for proper importation or exportation of plants and plant products and to coordinate among all other agencies of the port
- x. To take charge of all kinds of work of the laboratory under jurisdiction
- xi. To provide financial power and office management.

Quarantine Entomologist (Rules & Policy and Laboratory), Grade-9, Number of Position-1

- i. To perform all lab related activities and send reports to the superior authority
- ii. To identify new insects and notify the involved authority
- iii. To visit the field and examine the exportable products before exporting
- iv. To ensure that the exported consignment is from a pest free locality
- v. To inspect post-quarantine fields and related activities
- vi. To help superior authorities to finalize weekly and monthly reports.

Quarantine Pathologist (Rules & Policy and Laboratory), Grade-9, Number of Position-1

- i. To perform all kinds of lab activity including the lab test and treatment of imported as well as exportable products and send reports to the superior authority
- ii. To identify new pest and notify the involved authority
- iii. To visit the field and examine the exportable products before exporting
- iv. To ensure that the exported consignment is from a pest free locality
- v. To inspect post-quarantine fields and related activities
- vi. To help superior authorities to finalize weekly and monthly report.

Quarantine Pathologist (Export), Grade-9, Number of Position-1

- i. To identify diseases of exportable plants and plant products and to inform the authority.

- ii. To collect samples of causal microorganism to check if there is any disease infection in exportable plants and plant products
- iii. To collect samples of exportable plants and plant products if needed
- iv. To visit the field and examine the products before exporting and to operate according to the suggestion of superior authorities
- v. To conduct phytosanitary inspection of the exportable plants and plant products and, if needed, help superior officers, of the same section to take steps to purify and treat them
- vi. To ensure that the exported consignment is from a pest free locality
- vii. To decide and operate different kinds of quarantine programmes which will be used in different exportable plant products and to help superior officers of the same section to take necessary steps
- viii. To prepare weekly and monthly reports and send it to the superior authority.

Quarantine Entomologist (Export), Grade-9, Number of Position-1

- i. To identify new insects in exportable plants and plant products and to inform the involved authority
- ii. To send the samples of exportable plants and plant products to the laboratory to preserve if any insect is found in them
- iii. To collect samples of exportable plants and plant products if needed
- iv. To visit the field and examine the products before exporting and to operate according to the suggestion of the superior authority
- v. To ensure that the exported consignment is from a pest free locality
- vi. To decide and operate different kinds of quarantine programmes which will be used in different exportable plant products and to help superior officers of the same section to take necessary steps
- vii. To prepare weekly and monthly reports and send it to the superior authority.

Quarantine Pathologist (Import), Grade-9, Number of Position-1

- i. To conduct phytosanitary inspection to identify the presence of infection in imported plants and plant products and to notify involved ones
- ii. To send samples of imported plants and plant- products to check for infection and the reason for infection
- iii. To collect samples of imported plants and plant products if needed
- iv. To visit seized imported plants and plant products and to take measures so that diseases do not enter and spread inside the country.

- v. To command how, where and in which way the imported or exportable products will be purified or treated and to monitor its implementation
- vi. To inform important incidents to the superior authority immediately
- vii. To prepare weekly and monthly reports and send it to the superior authority.

Quarantine Entomologist (Import), Grade-9, Number of Position-1

- i. To conduct phytosanitary inspection to identify the presence of infection in imported plants and plant products and to notify involved ones or concerned all
- ii. To send sample of imported plant and plant product if the presence of insects is identified to find out the reason
- iii. To collect samples of imported plants and plant products if needed
- iv. To visit seized imported plants and plant products and to take measures so that pest do not enter and spread inside the country
- v. To command how, where and in which way the imported or exportable products will be treated and to monitor its implementation
- vi. To notify important incidents to the superior authority immediately
- vii. To prepare weekly and monthly report and send it to the superior authority.

Quarantine Pathologist (Quarantine Centre - Category A), Grade-9, Number of Position-8

- i. To ensure that there is no pest infection in imported and exportable products by laboratory tests
- ii. To help the Deputy Director to perform of all kinds of work of the laboratory under jurisdiction
- iii. To inspect post-quarantine fields and related programmes
- iv. To undertake the activities regarding the entrance and verification of foreign buses, trucks, airplanes, ships etc. that are accessible to the country
- v. To take part in controlling and eradicating or eliminating foreign plant diseases
- vi. To find out banned plant products and the entrance of any export or import related cargo and to take proper steps
- vii. To inform superior authorities about any important matter related to quarantine
- viii. To help superior authorities to prepare weekly and monthly report.

Quarantine Pathologist (Quarantine Centre - Category B), Grade-9, Number of Position-12

- i. To ensure that there is no pest infection in imported and exportable products by laboratory tests.

- ii. To help the Additional Deputy Director to perform of all kinds of work of the laboratory under his jurisdiction
- iii. To inspect post-quarantine fields and related programmes
- iv. To examine the activities of the entrance of foreign buses, trucks, airplanes, ships etc. that are accessible to the country
- v. To take part in controlling and uprooting or eliminating foreign plant diseases
- vi. To find out banned plant products and the entrance of any export or import related cargo and to take proper steps
- vii. To inform superior authorities about any important matter related to quarantine
- viii. To help superior authorities to prepare weekly and monthly report.

Quarantine Pathologist (Quarantine Centre - Category C), Grade-9, Number of Position-10

- i. To verify the documents of imported or exportable plants and plants and to take proper measures to collect samples
- ii. To conduct Phytosanitary inspection of the imported or exportable product and if needed to take steps to treat or to seize them
- iii. To issue phytosanitary Certificate (PC)
- iv. To help the superior authority to identify and restrain foreign plant diseases
- v. To finalize weekly or monthly reports and to send it to superior authorities.
- vi. To visit seized imported plants and plant products and to take measures so that diseases do not enter and spread inside the country
- vii. To command how, where and in which way the imported products will be treated and to monitor its implementation
- viii. To negotiate the problem raised in between visitor and importer or exporter and to take measures to solve the problems of plant quarantine activities
- ix. To visit the concussion centres for proper importation or exportation of plants and plant like products and to coordinate among all other agencies of the port
- x. To take charge of all kinds of work of the laboratory under jurisdiction
- xi. To provide financial power and office management.

Quarantine Inspector (Quarantine Centre), Grade-10, Number of Position-18

- i. To verify the documents of imported or exportable plant and plant products if the products complies with the requirement of importation
- ii. To check phytosanitary certificate and other documents primarily in case of the entrance of imported cargo in the country
- iii. To collect sample of the products
- iv. To examine the activities of the entrance of foreign buses, trucks, airplanes, ships etc. that are accessible to the country.

- v. To let the cargo in and to find out banned plant products related to export or import under the direction of superior authorities
- vi. To find out and seize banned exportable or importable plants and plant products under the direction of superior authorities and to inform them
- vii. To provide necessary service in case of incoming or outgoing plants and plant products in airport and land port according to laws
- viii. To check port's incoming or outgoing doubtful passenger's baggage manually, by X-ray or sniffer dogs and to provide necessary services
- ix. To find out the importable or exportable risky banned plants and plant products that can be imported or exported
- x. To allow luggage or cargos that meet the demand of inside country
- xi. To take part in controlling and eliminating or eradicating foreign plant diseases
- xii. To help superior authorities to prepare weekly and monthly reports.

Quarantine Inspector (Export), Grade-10, Number of Position-2

- i. To inspect products before exporting
- ii. To operate pre-export necessary tests and treatments according to the suggestion of superior authorities
- iii. To help the quarantine pathologists in case of pre-export field test and inspections
- iv. To ensure that the exported consignment is from a pest free locality
- v. To test phytosanitary certificates and other primarily documents for exporter's cargo to leave the country under the direction of superior authorities
- vi. To examine the activities of the entrance of foreign buses, trucks, airplanes, ships etc. that are accessible to the country
- vii. To find out banned exportable plant products in cargo and to take necessary steps
- viii. To find out risky passengers having exportable banned plant and plant products in the cargo
- ix. To help superior authorities to prepare weekly and monthly reports.

Quarantine Inspector (Import), Grade- 10, Number of Position-1

- i. To verify the document of imported plant and plant products if the product complies with the requirement of imported country.
- ii. To collect samples
- iii. To verify phytosanitary certificate primarily for imported cargo getting inside the country
- iv. To examine the activities of the entrance of foreign buses, trucks, airplanes, ships etc. that are accessible to the country
- v. To find out risky passengers carrying exportable banned plant and plant products in the cargo
- vi. To find out banned importable plant products in the cargo and to seize and destroy them under the direction of superior authority
- vii. To allow the luggage or cargos that meet the demand to get inside country.

- viii. To take part in controlling and eliminating foreign plant diseases
- ix. To help superior authorities to prepare weekly and monthly report.

Sub-assistant Quarantine Officer (Quarantine Centre), Grade-11, Number of Position-26

- i. To collect sample of products
- ii. To verify the documents of imported plant and plant products if the products complies with the requirements of importation
- iii. To find out banned importable or exportable plants and plant products and to seize and destroy them under the direction of superior authority
- iv. To provide necessary services and interrogate the outgoing passengers carrying plants and plant products in airports and land ports according to laws
- v. To check port's outgoing doubtful passenger's baggage manually, by X-ray or sniffer dogs and to provide necessary services
- vi. To find out the high risky importable or exportable banned plant and plant products that can be imported or exported
- vii. To help superior authorities to prepare weekly and monthly report.

Field Assistant (Quarantine Centre), Grade-16, Number of Position-12

- i. To help inspect imported and exportable plants and plant products
- ii. To collect sample and to help in laboratory testing
- iii. To examine the activities of the entrance of foreign buses, trucks, airplanes, ships etc. that are accessible to the country
- iv. To supervise the entrance of cargos and to find out banned plant product
- v. To destroy banned importable plants and plant products under the direction of superior authorities
- vi. To allow luggage or cargos that meet the demand to get inside the country
- vii. To take part in controlling and uprooting or eradicating foreign plant diseases
- viii. To help superior authorities to prepare weekly and monthly report.

Plant Observer, Grade-16, Number of Position-30

- i. To help in inspecting imported and exportable plants and plant products
- ii. To collect samples and to help laboratory tests under the direction of authorities
- iii. To search and provide services to the outgoing passengers carrying plants and plant products in airport and land port according to laws under the direction of authorities
- iv. To find out the risky importable or exportable banned plants and plant products that can be imported or exported
- v. To look for banned importable products in the cargo under the direction of superior authorities.

- vi. To destroy banned importable plants and plant products under the direction of superior authorities
- vii. To take part in controlling and eliminating foreign plant diseases
- viii. To help superior authorities to prepare weekly and monthly reports.

Horticulture Wing

Director (Horticulture Wing), Grade-2, Number of Position-1

- i. Granting of administrative approval regarding the yearly production planning, scheduled programmes and financial issues of horticulture centres
- ii. Providing directions in horticultural crops extension activities
- iii. Collecting the modern updated technologies about horticultural crops recommended by the research institutes and universities and taking initiatives to extend them among the farmers
- iv. Taking steps to increase the skills of the staffs in the headquarters and horticulture centres
- v. Leading the plan compilations or preparation or implementation and monitoring of the wing
- vi. Adopting activities for the expansion of post-harvest technologies of horticultural crops
- vii. Taking initiatives for bringing the pace in the similar activities of different research institutes by creating an inter-institutional relation between them
- viii. Providing support to the Director General in the implementation of running activities of DAE.

Additional Director, Grade -3, Number of Position-1

- i. Identification of the horticultural crops production technology extension activities
- ii. Helping the Director in conducting and coordinating the activities regarding transfer of modern technology of horticultural crops
- iii. Taking initiatives in the expansion of production of coconut or plum or betel nuts or dates along with other palm types of crops, medicinal plants and other fruits which are on the verge of extinction
- iv. Taking initiatives in creating an inter-organisational relation between horticultural crops research institutes and the business organizations
- v. Helping the Director in planning the development of manpower, infrastructure and technology of the horticulture centres and implementing them
- vi. Identifying the problems with the production of horticultural crops and keeping the communications with the universities and research institutes for research based solutions
- vii. Helping the Director in overall planning, implementation and monitoring of the wing.

Deputy Director (Tuber, Vegetable and Spice Crops), Grade-5, Number of Position-1

- i. Providing assistance to higher authorities in planning and implementation of annual production of the horticulture centres
- ii. Verifying the utility and taking expansion initiative of foreign varieties of tuber, vegetables and spice crops
- iii. Providing assistance to the higher authorities in planning and technology transfer of tuber, vegetables and spice crops production
- iv. Providing technical assistance in increase of tuber, vegetables and spice crops production programmes in the horticulture centres
- v. Identifying the problems with the productions of above mentioned crops and for a research based solution of the problems, establishing a communication with the research institutes and universities, collecting the updated technology and providing assistance to the higher authorities to reach the farmers for extension
- vi. Increasing the skills of the staffs in the horticulture centres for the extension of technologies of tuber, vegetables and spice crops.

Deputy Director (Fruits and Flowers), Grade-5, Number of Position-1

- i. Providing assistance to the higher authorities in implementing and preparing the yearly production plans of the horticulture centres
- ii. Providing assistance to the higher authorities in preparation of plans and transferring technologies for fruit and flower production
- iii. Providing technical assistance to the horticulture centres in order to implement the production increasing activities of fruits and flowers
- iv. Identifying the problems with the productions of fruits and flowers, for a research based solution of the problems, establishing a communication with the research institutes and universities, collecting the updated technology and providing assistance to the higher authorities to reach the farmers for extension
- v. Verifying the utility and taking extension initiative of foreign variety of fruits and flowers
- vi. Increasing the skills of the staffs in the horticulture centres for the extension of technologies of fruits and flowers.

Additional Deputy Director (Tuber, Vegetable and Spice Crops), Grade-6, Number of Position-1

- i. Planning activities in order to create mass awareness about the nutritive quality of vegetables, tuber and spice crops and playing role in increasing the skills of people with the multiple uses of these
- ii. Providing assistance to the higher authorities in the extension of production technologies of vegetables, mushroom, tuber and spice crops
- iii. Providing technical assistance to the horticulture centres in implementing the arranged programmes for the increase of tuber, vegetables and spice crops.

- iv. Helping the higher authorities by collecting of updated technology recommended by the research institutes and universities and expanding towards the farmers
- v. Verifying the utility and taking expansion initiative in the extension activities of foreign vegetables, tuber and spice crops
- vi. Increasing the skills of the staffs in the horticulture centres for the extension of cultivation technologies of tuber, vegetables and spice crops.

Additional Deputy Director (Fruits and Flowers), Grade-6, Number of Position-1

- i. Planning activities in order to create mass awareness about the nutritive quality of fruits and flowers and playing role in increasing the skills of people with the multiple uses of these
- ii. Providing assistance to the higher authorities in the extension of production technologies of fruits and flowers
- iii. Providing technical assistance to the horticulture centres in implementing the arranged programmes for the increase of fruits and flower production
- iv. Helping the higher authorities by collecting of updated technologies recommended by the research institutes and universities and expanding towards the farmers
- v. Verifying the utility and providing assistance in the expansion activities of foreign fruits and flowers
- vi. Increasing the skills of the staffs in the horticulture centres for the extension of cultivation technologies of fruits and flowers.

Deputy Director (Horticulture Centre), Grade-5, Number of Position-28

- i. Submission for approval of preparation of “Annual Production Plan” in the light of demands of supervised areas to the Director of Horticulture wing
- ii. Submitting the development report of the activities adopted in the light of annual production plan to the Director of the Horticulture wing
- iii. Taking initiatives to compile and implement the annual production plan through coordinating the respective offices of DDAE or Upazilla Agricultural Offices and the horticulture centres of the same area
- iv. Production, implementation of the latest and modern varieties of seeds, mushrooms in the light of production policy and taking initiatives to sell among the common people
- v. Creating mass awareness regarding the nutritive value of horticultural crops and mushrooms and informing the common people about the multiple uses of these
- vi. Providing adequate training to the common people for creating the awareness regarding the importance of trees in preservation of nature and nutrition
- vii. Taking initiatives to collect and install modern usable technology in the nurseries recommended by the research institutes and university authority

- viii. Verifying the utility and providing assistance in the extension activities of varieties of foreign fruits and flowers and taking initiatives to implement them
- ix. Taking fruitful initiatives to develop the skills of staffs in the horticulture staffs in the light of their planning
- x. Taking initiatives to establish an inter institution relation
- xi. Supervising the accounts of all kinds of cost and income of the centre
- xii. Assuring the delivery of all kinds of return report to the higher authorities
- xiii. Taking initiatives to increase the earning of revenue
- xiv. Assisting in building up private nurseries and inspiring to expand the horticultural crops
- xv. Taking initiatives for the preservation of the records of departmental properties of all kinds.

Deputy Director (Mushroom), Grade-5, Number of Position-1

- i. Planning the research, extension and yearly production of mushroom, acquiring the approval of the Director and taking steps to implement them
- ii. Taking necessary arrangement for the preservation and documentation of mushroom germplasm
- iii. Inventing modern new technology and varieties of mushroom and its cultivation technologies and taking initiatives to expand them in field level and their implementation
- iv. Creating entrepreneurs in the private sector of mushroom for the production and trading and inventing technologies in collaboration with involved person or institution and communicating regarding the extension and planning activities together
- v. Coordinating in research and extension of mushroom and providing assistance to the farmers for the popularization and marketing of mushroom
- vi. Making arrangements for the convenience of mushroom seed production and taking steps for the extension and development of mushroom
- vii. Creating a database along with the information collection, preservation and distribution of mushroom at local level
- viii. Providing assistance in the production and extension activities of mushroom sub centres and monitoring them

Horticulturist (Horticulture Centre), Grade-9, Number of Position-25

- i. Applying for approval to the Director of Horticulture wing after preparation of the 'Yearly Production Plan in the light of respective areas
- ii. Submitting the progress report of activities taken in the light of yearly production plan to the Director of Horticulture wing
- iii. Preparation of the yearly production policy, taking initiatives for the implementation through the coordination between the horticulture centres and the DDAE or Upazila Agriculture Offices of the same area

- iv. Production, extension and taking steps for the distribution of the modern, quality seeds of mushroom in the light of yearly production policy of the horticulture centres
- v. Creating mass awareness about the nutritive quality of the horticultural crops and mushroom and informing the common people about the multiple uses of these
- vi. Making arrangement for the proper development of the manpower and taking steps to implement them in the light of policy of the horticulture centres
- vii. Supervising all the income and cost accounts of the centres
- viii. Assuring the submission of all kinds of return reports of the centres to the higher authority
- ix. Taking steps to increase the revenue income
- x. Providing assistance in establishing private nurseries and helping in the extension of the horticulture crops
- xi. Preservation of the records of all kinds of divisional assets.

Mushroom Development Officer, Grade-9, Number of Position-4

- i. Preparing mushroom research, extension and yearly production plans and implementing them under the order of the Deputy Director
- ii. Providing assistance to the higher authorities for the preservation and proper documentation of the mushroom germplasm
- iii. Inventing technologies for the mushroom seed (spawn), mushroom production, processing and usage and providing assistance to the interested farmers and consumes for the extension
- iv. Providing assistance and technical guidance to the assistant mushroom development officers in the technology invention and extension programmes
- v. Overall supervision of the management task of laboratory, workshop and cultivation room of mushroom development institute
- vi. Advising the interested farmers in mushroom production, use and marketing
- vii. Arranging training for the farmers and dormitory supervision.

Assistant Mushroom Development Officer, Grade-11, Number of Position-4

- i. Providing advice and training to the interested farmers in mushroom production, use and marketing
- ii. Providing assistance in implementation of the programmes arranged according to the plan made for mushroom research and extension
- iii. Determining the mushroom cultivation area, number of farmers and quantity of produced mushrooms and supervising at the field level
- iv. Implementing other programmes ordered by the higher authorities.

Nursery Superintendent (Horticulture Centre), Grade-10, Number of Position-20

- i. Preparation of the yearly production plan and implementation through the coordination of the horticulture centres and the DAE or Upazila Agriculture Office of the respective area
- ii. Applying for approval to the Director of the Horticulture wing for the compilation of the yearly production plan
- iii. Submitting the progress report of the programmes taken under the yearly production plan of the Horticulture centres to the Director of the Horticulture wing
- iv. Production of developed varieties of seeds and mushroom in the light of Horticulture centre's yearly production plan and taking steps to sell them among the common people
- v. Supervising the balance sheets regarding the income and costs of all kinds of the centres.
- vi. Assuring the submission of all kind of return reports to the higher authorities at right time
- vii. Taking steps to increase the revenue income
- viii. Providing assistance in establishing private nurseries and helping in the extension of the horticulture and other crops
- ix. Preservation of the records of all kinds of departmental assets.

Sub-assistant Horticulture Officer, Grade-11, Number of Position-227

- i. Regular paper work and preservation of all kinds of registers (requisition register of daily duties, overseer diary, sales register and other types of registers)
- ii. Taking proper initiatives for the implementation of the planning of the centres and providing assistance to the duty officer
- iii. Taking initiatives to collect the necessary items for the running programmes or activities of the centre and providing assistance to the duty officer
- iv. Conduction of the daily activities of the farm labourer or gardener or labourer fairly
- v. Monitoring the duties of the duty guards for the security of the centre
- vi. Providing assistance to the duty officer of the centre in establishing new mother gardens and assuring the care of the old mother plants
- vii. Making proper arrangements for tagging the mother plants
- viii. Tagging the produced seedlings or grafts with the proper quality and variety
- ix. Making arrangements for the overall beautification and cleanliness of the centre.

Training Wing

Director, Grade-2, Number of Position-1

- i. Determining the training needs, drawing of the training schedule and implementation for the officers from all levels and tiers of the Agricultural Extension Institute.

- ii. Compilation of training policies or guidelines for the Department of Agricultural Extension
- iii. Determining the wing based training needs on the light of the policies of DAE and preparing a master plan for the training in the country as well as abroad
- iv. Assuring the preparation of syllabus, development and use of the educational items in all kinds of training
- v. Compilation and implementation of the crop based training programme (yearly) at different level (small, medium and large)
- vi. Assuring the overall administrative, academic and development programmes through the coordination of the training demand of DAE and other institutions
- vii. Taking necessary steps in the monitoring and supervision of training of all undergoing projects
- viii. Preparing a long-term programme for the development of divisional manpower.

Additional Director (Training), Grade-3, Number of Position-1

- i. Providing assistance to the Director in preparing the database of the Training wing
- ii. Providing assistance to the Director in all kinds of financial management (revenue budget) of all Agricultural Training Institutes and headquarters
- iii. Providing assistance to the Director in determining the demand of wing based training in the light of the policies of DAE and preparing a master plan for the training in the country as well as abroad
- iv. Supervision, implementation and evaluation of the master training plan and development of syllabus if needed and providing assistance to the involved officer, development and supervision of overall educational plans
- v. Work as a chairman of the technical committee of Agriculture Training Institute's development programmes.

Additional Director (Diploma Education and Co-ordination), Grade-3, Number of Position-1

- i. Supervising all the academic and development programmes and activities of ATI
- ii. Supervising the activities or programmes regarding the agricultural diploma course
- iii. Coordinating Bangladesh Technical Education Board concerning the educational programmes
- iv. Providing assistance to the Director in all kinds of administrative, management, preservation and academic fields regarding ATI
- v. Providing assistance in preparing and allotment of the revenue budget of ATIs'
- vi. Completing other tasks assigned by the authority.

Deputy Director (Diploma Education), Grade-5, Number of Position-1

- i. Providing assistance in conducting all the classes and exams of ATI properly and in time
- ii. Providing assistance in admission of the students within due time

- iii. Providing necessary assistance in compiling and implementing the semester plan according to the course curriculum
- iv. Providing assistance in the administrative issues of the staffs
- v. Providing assistance in preparation of budget compiling and allotment of ATI to the Additional Director (Diploma Education and Co-ordination).

Deputy Director (Farmer Training), Grade-5, Number of Position-1

- i. Providing assistance in coordination of the Agriculture Training Institutes, Project of DAE and training conducted for the field level farmers
- ii. Providing assistance in preparing the demand based and timely farmer training module
- iii. Collecting information and preparing reports regarding the training of the farmers
- iv. Providing assistance in implementing foundation training of the staffs along with all the departmental training programmes
- v. Preparing various reports regarding training within the country
- vi. Providing assistance to the Director in coordinating training of the running projects as well as other training programmes
- vii. Providing assistance to the Director in preparing, implementing and supervising crop wise yearly training programmes of all categories farmers.

Deputy Director (Curriculum Development and Education), Grade-5, Number of Position-1

- i. Providing assistance in compilation and development of syllabuses of ATIs'
- ii. Preparing syllabus mixed with age suitable and practical activities
- iii. Preparing syllabus mixed with modern cultivation techniques and technical knowledge
- iv. Assisting the Director to improve the curriculum quality
- v. Maintaining communication with Bangladesh Technical Education Board and other similar level institutions.

Deputy Director (Higher Education and Foreign Training), Grade-5, Number of Position-1

- i. Acting as the secretary of all kinds of selection committees along with the projects regarding foreign training, educational or study tour, and seminars for all staff, officers and farmers, higher education of officers abroad
- ii. Preparing and preserving the database on the officers who obtained training within the country and from abroad
- iii. Preparing and submitting reports regarding foreign training to higher authorities
- iv. Creating chances or opportunities for higher education through communicating with the institutions and universities all over the world.

Assistant Chief, Grade-6, Number of Position-1

- i. Taking necessary steps for development of the libraries of DAE and communicating with the other libraries as well as the public libraries
- ii. Overall supervision of the library
- iii. Providing assistance to higher authorities in making the master plan of all sorts of training of the training wings
- iv. Preparing different kinds of reports regarding training.

Research Officer, Grade-9, Number of Position-2

- i. Providing assistance to higher authorities in compiling training programmes
- ii. Compiling various plans regarding the foundation training of officers and capacity development of the staffs
- iii. Coordinating communication with different research institutes for in-service training
- iv. Providing assistance in preparing various reports regarding the training programmes within the country
- v. Providing assistance in preparing monthly reports of training wings.

Publication Officer, Grade-09, Number of Position-1

- i. To work according to the directions from the authority in the publication of all the wings and projects of DAE
- ii. Collecting agricultural information based on ICT and internet and taking initiatives to promote and publish the same
- iii. Providing assistance for publication and supervising in the printing of various publications of wings and Agriculture Training Institutes.
- iv. Preparing various manuals and leaflets regarding the training of staffs and officers through training wings
- v. Providing assistance to the higher authorities in all sorts of publication.

Principal, Grade-3, Number of Position-16

- i. Planning, implementation and supervision of all the programmes of ATI
- ii. Conducting the academic, administrative and financial activities of ATI
- iii. Conducting all academic activities along with students' admission, curriculum distribution and examinations
- iv. Communicating and coordinating with Bangladesh Technical Education Board and other related organisations
- v. Preservation and supervision of all types of assets of the institute
- vi. Supervising the resident facility of office staffs, students and taking functional initiatives for preservation and maintenance of the physical infrastructure

- vii. Assuring the maximum usage of the institutes, properties (ponds, fruit orchard and nurseries) and arable lands
- viii. Implementing the academic schedule according to the academic calendar provided by the Bangladesh Technical Education Board
- ix. Supervising the activities of the staffs and officers working in the institute
- x. Keeping constant contact with the Director of the Training Wing for conducting all activities.

Vice Principal, Grade-5, Number of Position-16

- i. Providing assistance to the Principal in compilation, implementation and supervision of the policies in the development activities of ATI and advising the subordinates
- ii. Providing assistance to the Principal in academic activities of ATI and other tasks
- iii. Providing assistance to the Principal in duty distribution of all the staffs and officers
- iv. Carrying out all the responsibilities of the principal in his absence
- v. Communicating and coordinating with the Bangladesh Technical Education Board and all other related organisations.

Chief Instructor, Grade-5, Number of Position-80

- i. Act as the course coordinator
- ii. Providing assistance to the principal in teaching, academic and administrative tasks
- iii. Completing any task assigned by the authority.

Senior Instructor, Grade-6, Number of Position-16

- i. Providing assistance in theoretical and practical lessons, class test, preparing question papers for mid-term examinations, conducting examinations, evaluation of the answer sheets and for publication of results
- ii. Acting as the warden of the ATI hostels
- iii. Providing assistance to the Principal in academic and administrative tasks.

Instructor, Grade-9, Number of Position-228

- i. Providing assistance in theoretical and practical lessons, class test, preparing question papers for mid-term examinations, conducting examinations, evaluation of the answer sheets and for publication of results
- ii. Conducting the field activities under ATI and coordinating in implementating the same
- iii. Completing any task assigned by the authority.

Sub-assistant Instructor, Grade-11, Number of Position-48

- i. Providing assistance in implementing the plans at field levels
- ii. Providing assistance in crop cultivation of the farms of ATI
- iii. Providing assistance in pest control of the crops
- iv. Providing assistance to the students in practical lessons
- v. Completing any task assigned by the authority.

Planning, Project Implementation and ICT Wing

Director, Grade-2, Number of Position-1

- i. Making demand based training plans for Planning, Project Implementation and ICT Wing and accordingly taking initiatives to develop the skills of all the officers and staffs
- ii. Administering and providing overall support and advice, coordinating with the subordinate officers and the staffs as a chief of wing
- iii. Carrying out the responsibility as a secretary of DAE's management committee and organizing meetings based on the consultation with the Director General and preparing reports
- iv. Providing overall help to the Director General for informing the Bangladesh High Commissioners or Ambassadors around the world about the promising crops and exchange of information about the role of agriculture in overall progress of Bangladesh
- v. Helping the Director General in preparing reports on information, opinions in accordance with the demand of the world regarding agriculture
- vi. Collecting information about different activities of DAE along with the updates about crops from the field level and creating a database for preservation
- vii. Collecting all information and data about the crops, analysing them and planning specific work schedules to enhance the production
- viii. Planning, implementation and supervision of all kinds of physical works of the department
- ix. Helping in the preservation, repairing and maintenance of all the assets of the department including transports
- x. Communicating adequately with different donor organisations in order to achieve project aids
- xi. Based on department's demand planning and acquiring permission for different projects and taking necessary steps for the implementation and monitoring
- xii. Conducting feasibility studies and taking necessary initiatives for getting the Environmental Impact Assessment Certificate for new projects
- xiii. Performing baseline surveys, midterm evaluation, impact assessment of the approved project and preparing reports and future planning after analysing acquired evaluation data.

- xiv. Helping the Director General in scheduling programmes and implementing them in the light of strategic planning and different policies.

Additional Director (Project Planning), Grade-3, Number of Position-1

- i. Planning principles and strategies of DAE
- ii. Taking proper and timely initiatives in order to ensure the food security of the country and helping the higher authorities for implementation
- iii. Providing overall help and maintaining communication with different projects of the involved ministry or organisations which are taken or engaged to ensure food security
- iv. Maintaining communication with different organisations according to the demand for overall development of the country and encouraging the development partners by putting importance on the activities of DAE in front of them
- v. Submitting the opinion to increase the production of high value or other crops according to the Agroecological Zone (AEZ)
- vi. Informing the higher authority timely, about the overall situation and development of DAE and the farmers
- vii. Preparing the concept paper and outline of the short, middle and long-term projects of DAE
- viii. Future planning after analysing the approved projects' baseline survey, midterm evaluation, impact assessment reports and acquired evaluation data
- ix. Conducting the works according to the directions of the Director (Planning, Project Implementation and ICT wing).

Senior Production Economist, Grade-5, Number of Position-1

- i. Providing helps to the Director of the Planning, Project implementation and ICT wing in the light of strategic planning and different policies
- ii. Providing opinions on the policy determining surveys and aid proposals
- iii. Preparing the opinion of DAE on strategic policy determining acquired from different organisations and other development activities
- iv. Conducting the works according to the directions of Director of the Planning, Project Implementation and ICT wing.

Deputy Director (Project Planning), Grade-5, Number of Position-1

- i. To help in planning for the proposed projects considering the overall agricultural development
- ii. To help in project planning after reviewing the government policy determining documents
- iii. To prepare the idea and outline for short, middle and long-term projects according to the possibility.

- iv. To coordinate in preparing of DPP in the light of the Government planning and demand
- v. Providing overall assistance to the Additional Director of project planning.

Deputy Chief (Policy Planning), Grade-5, Number of Position-1

- i. Crop production planning in the light of the government's five years' plan, strategical plans and agricultural extension policies
- ii. Opinion submission on policy determining surveys and aid proposals
- iii. Preparing necessary proposals for foreign aid and cooperation and keeping contact with other organisations
- iv. One year and five year planning in accordance with the policy and objectives of DAE
- v. Preparing the opinion report of DAE on different projects acquired from different organisations and other strategic policies
- vi. Providing information according to the demand of the National Parliament
- vii. Giving opinions on memorandum of understanding, loan agreement, pro-dock and different appraisal deeds
- viii. Submitting reports according to the Ministry's demand
- ix. Preparing reports on the determination of production cost of different crops
- x. Conducting activities by coordinating with the Additional Director of the Project Planning.

Production Economist (Policy Planning), Grade-6, Number of Position-1

- i. Helping the Deputy Chief (policy planning) in crop production planning in the light of the government's five years' plan, strategical planning and agricultural extension policies
- ii. Preparing necessary concept paper for the growth in planning crop production activities which run under DAE
- iii. Helping the Deputy Chief (policy planning) in making annual and five years' planning in accordance with the strategical objectives of DAE
- iv. Helping in putting opinions on policy determining surveys preparing and aid proposals
- v. Collection of information regarding the cost of production and preparing a report on it
- vi. Information collection and report compilation for preparing the Economic Survey Report by the Finance Ministry
- vii. Yearly and mid-term budget drawing for development programmes or projects
- viii. Preparing reports on the baseline surveys, mid-term evaluation, and to influence evaluation of the ongoing approved projects and helping the Additional Director in compiling the future plan basing on the analysed data
- ix. Determining the feasibility of projects for the approval of new projects and helping in acquiring EIA certificates and taking other necessary measures.

Agricultural Economist (Policy planning), Grade-6, Number of Position-1

- i. Helping the Deputy Chief (policy planning) in compiling the crop production planning in the light of the government's five years' plans, strategic plans and national agricultural extension policies.
- ii. Preparing an outline for the growth increment on the planning of crop production activities conducted under DAE
- iii. Preparing DAE's yearly development reports
- iv. Preparing the monthly, quarterly and yearly progress reports of DAE's development projects
- v. Compiling market based short, mid and long term agricultural production policies by analysing the domestic and international agriculture markets
- vi. Performing the baseline survey, mid-term evaluation, and to influence evaluation of the ongoing approved projects and reporting to and helping the Additional Director in compiling the future plan basing on the analysed data.

Assistant Chief (Policy Planning), Grade-6, Number of Position-1

- i. Completing the task of compiling the yearly and five years' plans of DAE by the order of higher authorities
- ii. Helping the Deputy Chief (policy planning) in compiling the need based projects or programmes of the department
- iii. Preparing memorandum of understanding, loan agreement, pro-dock and different appraisal deeds by the order and direction of Deputy Chief (policy planning)
- iv. Helping the Deputy Chief (policy planning) in preparing and submitting a statement on the acquired projects from different organisations and other proposals
- v. Helping the higher authorities in collecting and composing reports of monthly and yearly activities according to the specific format from different organisations
- vi. Preparing seasonal crop production survey instruments and reports
- vii. Compilation of research based reports from the analyses of the results obtained from the field level successful projects
- viii. Helping the respective authority in collecting information and preparing reports based on the demand of the Ministry.

Statistical Officer (Policy Planning), Grade-9, Number of Position-1

- i. Helping the higher authority in preparing a format of projects and programmes
- ii. Helping the higher authority in preparing and submitting IMED report
- iii. Helping the higher authority in collection, entry and processing of research based data regarding agricultural extension
- iv. Collecting information regarding the projects and programmes from the respective Directors (project or programme) and preparing a report on it.

- v. Helping in case of preparing the structure of yearly and mid-term budget of DAE
- vi. Providing necessary assistance to the higher authorities in making agricultural policies
- vii. Preparing clean data for the preservation in the database and helping in the preparation of the report.

Junior Research Officer (Policy Planning), Grade-10, Number of Position-1

- i. Preparing an outline for the compilation of project based research reports
- ii. Conducting research regularly based on the results of the projects
- iii. Preparing a proposal for the consideration of the next project based on the research data
- iv. Providing overall assistance by the order of higher authority.

Deputy Chief (Project Preparation), Grade-5, Number of Position-1

- i. Composition, amendments, approval of development projects and programmes and preparing next activities
- ii. Preparing short, mid and long-term project plan composition through the collection of information from the wings of DAE
- iii. Participating in different seminars regarding project planning and approval
- iv. Helping in progress of development programmes and financial aid activities
- v. Receiving information regarding baseline surveys, mid-term evaluation, evaluation reports of the approved projects and composing projects after analyses
- vi. Conducting activities by coordinating with the Additional Director (Project Planning).

Production Economist (Project Preparation), Grade-6, Number of Position-1

- i. Composition, amendments and processing of projects
- ii. Helping in arranging seminars on ADP discussions about the development projects and composing worklist
- iii. Performing the feasibility study in preparing new projects and processing in acquiring EIA (Environmental Impact Assessment) certificates from the Department of Environment Determining the feasibility studies of projects for approval of new projects and helping in acquiring EIA certificates and taking other necessary measures.

Agricultural Economist (Project Preparation), Grade-6, Number of Position-1

- i. Preparation, amendments and processing of programmes under general budget.
- ii. Participating in the survey of staple crop evaluation and composing reports
- iii. Performing the feasibility study of projects for the approval of new projects and helping for acquiring EIA certificates and taking other necessary measures

- iv. Performing and reporting regarding baseline surveys, mid-term evaluation, to influence evaluation of the approved projects and helping in composing projects after analyses
- v. Helping the Deputy Chief (Project Generation) in composing projects and programmes.

Statistical Officer (Project Preparation), Grade-9, Number of Position-1

- i. Helping the higher authority in collection, entry and processing of research based data
- ii. Helping the authority in making formats and PCR of the projects
- iii. Collecting, composing and compiling information regarding projects under the command of higher authorities
- iv. Helping in different tasks under the command of higher authorities for the project planning and implementation.
- v. To collect and compile information to help the higher authorities as per demand of ECNEC.

Junior Research Officer (Project Preparation), Grade-10, Number of Position-1

- i. Providing necessary assistance in balancing with the government policy, strategy and five years' plans while generating projects
- ii. Providing assistance in compiling the results in PP which are obtained from the Junior Research Officer (policy planning)
- iii. Helping the higher authorities in overall tasks of project compilation.

Additional Director (Project Implementation and Evaluation), Grade-3, Number of Position-1

- i. Helping in project and activity implementation of DAE, monitoring the project and evaluating and helping the Director of Planning, Project Implementation and ICT Wing
- ii. Submitting the implementation progress reports to the approved projects of the ministry, Planning Commission and IMED
- iii. Informing the higher authorities about the present and future needs and probable problems and solution and proposal for taking timely initiatives
- iv. To work with the donor organisations for the strategic policy implementation of DAE
- v. Helping the respective authority for fighting a changing situation in ensuring food securities
- vi. Preparing and submitting the PCR of all the completed projects
- vii. Helping in undertaking timely programmes according to the demand of the country.

- viii. Helping in overall tasks of the department in accordance with the demand of higher authorities
- ix. Helping the Director regarding administrative and office management activities.

Deputy Director (Project Implementation and Evaluation), Grade-5, Number of Position-1

- i. Preparing supervising and monitoring reports of implementation of the running projects at the field levels
- ii. Composing the evaluation report of the running projects regularly
- iii. Conducting the overall evaluation programme of the completed projects
- iv. Composition of baseline surveys, planning, implementation and a proposal before starting a project
- v. Composing overall evaluation and implementation reports of projects
- vi. Helping the Additional Director (Project Implementation and Evaluation)
- vii. Providing overall assistance in the department according to the demand of higher authorities
- viii. Providing assistance to the Director and taking steps to increase the skills of manforce in the wing.

Deputy Director (Project Implementation), Grade-5, Number of Position-1

- i. Providing assistance to the Additional Director for implementation of running programmes and projects
- ii. Taking necessary steps to implement the mid-term and long-term planning of DAE properly
- iii. Advising the higher authority for proper distribution of allotted budget and activity implementation in the foreign aided or supported projects
- iv. Verification of the allotted costs of the implemented projects and submitting a written opinion
- v. Verification of the price of the projects set by the DAE and submitting a written opinion
- vi. According to the objectives of the project, need based baseline survey, preparing the instruments for impact assessment and determining the right way to collect information and informing everyone
- vii. Preparing instruments for seasonal crop based production surveys and submitting the report by making a format of information collection
- viii. Solving the problems of the farmers regarding different issues and demands by creating a good relationship with responsible people in service of the respective office
- ix. Helping in the tasks of Additional Director (project implementation and evaluation).

Statistical Officer (Project Implementation), Grade-9, Number of Position-1

- i. Data entry and analysis by the order of higher authorities and helping them in preparing reports.

- ii. Collection, preservation and compilation of information of the projects as per directions of authorities
- iii. Helping in preparing the progress report of annual development programmes
- iv. Helping for projects implementation by the order of higher authorities.

Deputy Director (Project Evaluation and Monitoring), Grade-5, Number of Position-1

- i. Monitoring and preparing the evaluation report of the approved undergoing or completed projects
- ii. Field level evaluation of the completed projects and compiling project completion reports
- iii. Regular monitoring of the progress of the project's implementation at the field level
- iv. Presenting the evaluation and monitoring reports of the projects in the ADP conference
- v. Overall assistance in the Additional Director's job.

Statistical Officer (Project Evaluation and Monitoring), Grade-9, Number of Position-1

- i. Recording and analysing the information regarding the projects, programmes and normal activities of DAE and helping the higher authority in preparing reports
- ii. Helping the higher authorities in preparing completion reports of the projects and programmes
- iii. Helping higher authorities in monitoring activities at the field level of DAE and preparing a report for them
- iv. Helping in different types of agricultural extension research (adaptive, action and social) by the orders of the authority.

Additional Director (Physical Infrastructure Development and ICT Management), Grade-3, Number of Position-1

- i. Conducting the ICT management and physical infrastructure activities
- ii. Compiling the agricultural extension activities in the light of 6th generation agriculture development programmes, climate resilience and e-agriculture considering the present and future domestic demands
- iii. Protecting all ICT properties and conducting ICT activities at field levels
- iv. Making the plans of DAE's agricultural activities through coordinating with the Additional Directors of all the wings including planning
- v. Taking initiatives to add e-agriculture ideas and necessary ICT activities while preparing for the new project
- vi. Monitoring the activities of subordinate officers and staffs
- vii. Monitoring, evaluation and implementation of the physical works or programmes conducted by the physical infrastructure development section

- viii. Coordinating the repair and maintenance of the office transports
- ix. Coordinating the repairing and maintenance of different instruments of the office
- x. To coordinate the repairing and maintenance of all the offices of the department
- xi. To collect, preserve and make reports of the updated information of the present infrastructure including the head office of DAE and to help in the inclusion of future planning of DAE.

Deputy Director (ICT Management), Grade-5, Number of Position-1

- i. To operate activities regarding ICT with the counsel and overall coordination of the Additional Director of physical infrastructure development and ICT management
- ii. To operate and extend e-agriculture service programmes and to make necessary planning
- iii. To ensure the proper use of e-agriculture in headquarters and field levels
- iv. To collect updated data of ICT equipment from the headquarter offices and field levels, to direct maintaining and repairing activities
- v. To prepare ICT based data of DAE's officers or employees
- vi. To provide necessary help to the Additional Director regarding e-agriculture and to operate ICT programmes
- vii. To supervise the activities of subordinate officers and employees.

Programmer (ICT Management), Grade-6, Number of Position-1

- i. To make technical planning of necessary software to operate DAE's activities according to the demand
- ii. To install the software provided by vendor, to upload them and to ensure proper use of all software
- iii. To solve all technical problems related to software and to take measures for using them in future
- iv. To ensure maximum service by coordinating the software supplied by computer systems and vendors
- v. To keep backup files of all stored data and to recover lost data from damaged systems or damaged information
- vi. To provide necessary opinions after examining new system software and application software
- vii. To coordinate and create effective communication between all equipment and peripheral devices of ICT system
- viii. To operate and observe the making process of application software
- ix. To ensure strategic security in case of storing data
- x. To provide assistance in making necessary policies for ICT systems
- xi. To implement the superior authority's instructions and programmes.

Assistant Programmer (ICT Management), Grade-9, Number of Position-1

- i. To prepare primary planning of making necessary application for the ICT based programmes of DAE
- ii. To operate DAE's server based online and offline services
- iii. To take charge as the admin of database
- iv. To assist the Programmer (ICT Management) extensively
- v. To take charge of ICT related activities with the instructions of superior authorities.

Assistance Maintenance Engineer (ICT Management), Grade-10, Number of Position-1

- i. To take charge of all ICT establishments and to maintain all equipment of the Department of Agricultural Extension
- ii. To make plans and supervise all activities of ICT establishments' maintenance
- iii. To help operate and implement all ICT related programmes with the instructions of superior authorities.

Executive Engineer (Physical Infrastructure), Grade-6, Number of Position-1

- i. To prepare, implement and supervise the design of physical works of the department
- ii. To make the planning of supervision and implementation of electrical activities, mechanical activities and when needed repletion or physical works related activities
- iii. To fasten/enhance the electrical, mechanical and physical works of the construction process of different projects as well as the department's own
- iv. To counsel and coordinate with Additional Director (Physical Infrastructure Development and ICT Management) regarding repletion work and others

Mechanical Engineer, Grade-9, Number of Position-1

- i. To collect and maintain the vehicles of the department and to keep record of them
- ii. To plan for ensuring proper use of all equipment of field levels including DAE's headquarter's vehicles and other repairing works
- iii. To help in observing and repairing the equipment of all the offices of DAE regularly
- iv. To perform duties in accordance with the instructions of superior authorities.

Assistant Engineer (Physical Infrastructure), Grade-9, Number of Position-2

- i. To assist the Executive Engineer regarding all the establishments, repair and collection of the projects of the department.

- ii. To supervise all the field level activities for implementation
- iii. To assist in any involved work related to all these with the instructions of the superior authority.

Sub-assistant Engineer (Physical Infrastructure), Grade-10, Number of Position-4

- i. To perform duties according to their own department
- ii. To extend necessary assistance to Assistant Engineer (Physical Infrastructure)
- iii. To assist in any involved work related to all these with the instructions of the superior authority.

*** Monitoring and Evaluation Officer (Project Evaluation and Monitoring), Grade-6, Number of Position-1**

- i. To monitor directly after visiting the field level activities implemented by the development project and programmes under DAE
- ii. To evaluate the implemented activity under projects and programmes according to the goal and aim of it and to prepare reports
- iii. To identify the successes and obstacles of the implemented activities under projects and programmes, to prepare report mentioning necessary suggestions and to send it to the involved authority
- iv. To prepare completed projects's report according to their demand of baseline surveys and mid-term evaluation
- v. To assist in the directed works with the instructions of the superior authority.

*** Scientific Officer (Project Evaluation and Monitoring), Grade-9, Number of Position-1**

- i. To assist in preparing proper monitoring-reports of the field level activity of DAE's different development projects and programmes
- ii. To assist the Superior Officer in case of data collection, entry and processing of researches (adaptive, action and solar) related to agricultural extension
- iii. To help in preparing the baseline survey, midterm evaluation, effect or impact evaluation according to the demand of the project
- iv. To collect and preserve information related to the project and to inform authorities
- v. To evaluate the implemented activity and programme as per the goal and aim of it and to prepare reports
- vi. To identify project achievements and challenges, and develop reports accommodating recommendations and send them to relevant authorities
- vii. To complete the work directed by superior authorities.

*** Research Officer, Grade-9, Number of Position-5**

- i. Collection of information from all DAE's wings, and extending supports in the preparation of short-term, mid-term and long-term programme plans
- ii. Preparing project proposals targeting international funding, and liaising with relevant organizations
- iii. Giving informed opinion on projects and development programmes funded or managed by different organizations
- iv. Sending reports as per guidelines from the Ministry
- v. Extending overall supports to the Department as per guidelines of the higher authority

*** (The present revisit does not mention this position although officials exist with the same designation in reality. The proposed revised terms of revisit have been suggested for inclusion)**

Crops Wing

Director, Grade-2, Number of Position-1

- i. To make cultivation and production plans of all field crops and supervision, monitoring and acting as a chief coordinator for implementation
- ii. To act as a main coordinator for extension of all field crops production technologies
- iii. To play a main role in management of quality seed production, preservation and distribution
- iv. To make policies and coordinate quality seed production at farmers' levels and to inspect all the projects taken to increase production of seeds and supervising, monitoring and collaborating the progress of project implementation
- v. To organize training programmes in order to implement crop production technologies properly
- vi. Applying the improved cultivation techniques for jute by strengthening activities and unifying the jute farmers' associations providing support for a better production at farmers' levels for all kinds of cash crops along with jute
- vii. To administrate the activities following the government policy in tobacco production and issuing a certificate of 'Country of Origin' for the tobacco export
- viii. To provide help and support in drawing national policies for agricultural development
- ix. To provide supports in different works of the Director General and completing the work by coordinating with different wings.

Additional Director (Cash Crops), Grade-3, Number of Position-1

- i. To take care of the technicalities in production of jute, sugarcane and other cash crops and development of the jute and sugarcane products
- ii. To make production policies, implement them, supervise and examine the cultivation of jute, sugarcane and other cash crops

- iii. Collecting the technology and information of production of jute, sugarcane and other cash crops and establishing technical communication with corresponding organisations and expansion of the technology through field demonstrations
- iv. Identifying the field level problems with the production of the cash crops and reporting them to research institutes and applying the solutions to field levels again
- v. Preparing extension messages about the latest technologies for the cash crops and training the corresponding or involved officers about it
- vi. Providing directions about jute, sugarcane and other cash crop production to the field level officers through their respective Heads of the offices (region or district)
- vii. Advising the designated policymaker organisations by the government with the technicalities regarding the production, usage, distribution and easy marketing of the cash crops
- viii. Coordinating between the regional or district Heads and the respective research institutes for the expansion of modern technologies invented in research institutes regarding the production and use of the cash crops
- ix. To take necessary initiatives to ensure proper price of sugarcane by increasing use of sugarcane in the small molasses production centre set up by the sugarcane farmers outside the sugar mill area
- x. To administrate the activities in tobacco production following the policies and helping the Director in issuing a 'Country of Origin' certificate.

**** Cash crops are mainly jute, sugarcane, betel leaf and tobacco. Other cash crops are bamboo, cane, palmyra palm, dates, palm and palm leaves.**

Deputy Director (Jute Production and Marketing), Grade-5, Number of Position-1

- i. Observing the technical responsibilities of jute production and its developments
- ii. Collecting the technology and information regarding jute production and expanding the proper technology by field demonstrations with the corresponding organisations and carrying duties of production policy making, implementation, supervision and examination of jute cultivation
- iii. Identifying the field level problems with jute production and communicating with respective research institutes for solution and launching of the solution at field levels and coordinating with other institutes
- iv. Preparing extension messages about the latest technology regarding jute and providing necessary training to the respective officers
- v. Giving directions to the officers involved in jute production at field levels through respective heads of the offices of regions or districts
- vi. Advising the government designated policymaker organisation with the technicalities regarding the production, usage, distribution and easy marketing of jute.

- vii. Coordinating between the regional or district heads and the respective research institutes for the extension of modern technologies invented in native research institutes regarding the production and use of jute
- viii. Applying the modern jute cultivation techniques and determining price at farmers' levels by organizing the farmers through strengthening of the association activities.

7. Deputy Director (Sugarcane and other Cash Crops), Grade-5, Number of Position-1

- i. Cultivation and production policy making, implementation, supervision of and monitoring sugarcane as well as other cash crops
- ii. Technical responsibilities in the production of sugarcane and other cash crops and development of sugarcane products
- iii. Technological development and collection of information from the outer world about sugarcane and other cash crops production and establishing a technical communication with the corresponding institution with extension of proper technologies through field demonstration
- iv. Identifying the field level problems with sugarcane production and communicating with respective research institutes for solution and launching of the solution at field levels and coordinating with other institutes
- v. Preparation of extension messages on the latest technology regarding sugarcane and other related cash crops and providing necessary training to the respective officers
- vi. Giving directions to the officers involved in sugarcane production at field levels through respective heads of the offices of regions or districts
- vii. Advising the government designated policy maker organisation with the technicalities regarding the production, usage, distribution and easy marketing of sugarcane
- viii. Coordinating between the regional or district heads and the respective research institutes for extension of modern technologies invented in native research institutes regarding the use and production of sugarcane
- ix. Applying the modern sugarcane cultivation techniques and determining price at farmers' levels by organizing the farmers through strengthening of the association activities
- x. Conducting the tobacco production following the government policy.

Additional Deputy Director (Sugarcane and other Cash Crops), Grade-6, Number of Position-1

- i. Technological development and collection of information from the outer world about sugarcane and other cash crops production and establishing a technical communication with the corresponding institutions and extension of proper technologies through field demonstration

- ii. Technical responsibilities in the production of sugarcane and other cash crops
- iii. Collecting the technology invented in local research institutes regarding the production and use of sugarcane and other cash crops and submitting it to the higher the authorities
- iv. Providing supports in implementation, evaluation and supervision of nationally undertaken projects at field levels
- v. Spreading the latest technology extension message regarding jute and providing necessary training to the respective officers
- vi. Conducting the tobacco production following the government policy.

8. Additional Deputy Director (Jute Production and Marketing), Grade-6, Number of Position-1

- i. Providing technical supports in jute cultivation, processing, marketing and development of jute products
- ii. Technological development and collection of information from the outer world about jute production and establishing a technical communication with the corresponding institutions and extension of proper technologies through field demonstration
- iii. Identifying the field level problems with jute production and communicating with respective research institutes for the solutions of respective problems and launching the solution at field levels and coordinating with other institutes
- iv. Providing supports for extension of modern technologies in use of jute products invented in local research institutes
- v. Providing supports in implementation, evaluation and supervision of nationally undertaken projects at field levels
- vi. Preparation of extension messages on the latest technologies regarding jute and providing necessary training to the respective officers.

Additional Director (Cereal and Oil Crops), Grade-3, Number of Position-1

- i. Observing the duty in cultivation, production plan making, implementation, supervision and monitoring of cereal and oil crops
- ii. Technical responsibilities in the development of cereal, oil, pulses and other crops
- iii. Adequate technology planning and successfully running the expansion programme of cereal, oil and pulses crops in Bangladesh
- iv. Ensuring the supply of quality seeds and coordinating between the seed production and business parties
- v. Taking initiatives in establishing inter institutional relation among different institutions to bring the pace in the activities
- vi. Identifying non-conventional crops production technology, extension, policy making and submitting to the higher authorities for implementation, providing supports in proper management of human resources in extension of non-conventional crops
- vii. Identifying the problems in the production of non-conventional crops and taking initiatives for arranging conference with the research institutes for a research based solution.

Deputy Director (Cereal Crops), Grade-5, Number of Position-1

- i. Cultivation, production policy making, implementation, supervision of rice, wheat and other cereal crops
- ii. Management and coordinating of activities regarding extension of modern cultivation technologies of rice, wheat and other cereal crops
- iii. Identification and collection of rice, wheat and extension activities of the cultivation technology of other cereal crops and reporting to the higher authorities for implementation
- iv. Providing supports to higher authorities in proper management, policy making of the human resources management for the extension of technologies on rice, wheat and other cereal crops
- v. Identifying the problems in field level production of rice and communicating with the research institute for the solutions and field level launching with the solutions and collaboration with other organisations
- vi. Providing supports to the Additional Director to bring pace in activities through collaborating with different organisations.

Deputy Director (Pulses, Oil and other Crops), Grade-5, Number of Position-1

- i. Performing the duty in cultivation, production, policymaking, implementation, supervision and observation of pulses, oil and other crops
- ii. Managing and coordinating extension activities of modern technologies of pulses, oil and other crops
- iii. Identification and policy making of the modern technology extension activities of pulses, oil and other crops and submitting it to the higher authorities for implementation
- iv. Providing supports to the Additional Director for the collaboration of modern technology extension activities management
- v. Providing supports to the higher authorities in technological extension of pulses, oil and other crops, proper management of human resources and policy making
- vi. Identifying the problems with production of pluses and oil at field levels and communicating with the research institutes for the solution of the problems and launching at field levels with the solutions and collaboration with other organizations
- vii. Identification, policymaking of non-conventional crop's technological extension activities and submitting to the higher authorities for implementation and providing supports to the higher authorities in human resources management and policy making regarding the technological extension of all these non-conventional crops
- viii. Identifying problems with the field level production of non-conventional crops and communicating with research institutes for solution and field level launching with solution and collaboration with different organisations
- ix. Providing supports to the Additional Director in creating an inter-organisational relation for development and pace the activities.

Additional Deputy Director (Cereal Crops), Grade-6, Number of Position-1

- i. Development of technologies in cereal crop production and collecting the technological development information from the outer world and establishing a communication with the corresponding institution and providing the help or aid for extension activities of the technology through field demonstration
- ii. Additional Deputy Director will be under the authority of Deputy Director for production of cereal crops
- iii. Aiding with planning, implementation, supervision in the production of cereal crops
- iv. Providing supports to production of the cereal crops, instigation of new varieties and technological supports with the cultivation and harvest
- v. Overall support in production and preservation of high quality cereal crops seed.
- vi. Sorting out the obstacles in field level production of cereal crops and taking necessary steps to solve them
- vii. Providing supports to the implementation, evaluation and supervision of the activities adopted from national levels.

Additional Deputy Director (Pulses, Oil and other Crops), Grade-6, Number of Position-1

- i. Providing supports to the making of production plan of pulses, oil and other crops, implementation and supervision of plans
- ii. He will be under the supervision of Deputy Director for the technical responsibilities of the production of pulses, oil and other related crops
- iii. Instigating new varieties and providing technical supports to cultivation
- iv. Overall supports to production and preservation of high quality seeds of pulses, oil and other crops
- v. Sorting out the obstacles at field level production of oil, pulses and other crops and taking necessary steps to solve them
- vi. Providing supports to the implementation, evaluation and supervision of the activities adopted from national levels
- vii. Identification, policy making of non-conventional crop's technological extension activities and submitting to the higher authorities for implementation and providing supports to the higher authorities in human resources management and policy making regarding the technological extension of all these non-conventional crops
- viii. Identifying problems with the field level production of non-conventional crops and communicating with research institutes for solution and field level launching with solution and collaboration with different organisations
- ix. Development of technologies in pulses, oil and other crop production and collecting the technological development information from the outer world and establishing a communication with the corresponding institutions and providing the help or aid for extension activities of proper technologies through field demonstration.

Chapter 5

Partnership



Partnership

5.1 Partnership and Its Importance to the Agricultural Extension

Partnership in agricultural extensions means- “Department of Agricultural Extension, Directorate and other partners in order to achieve the intended purpose based on mutual trust and understanding by building up a spontaneous relationship, provides effective and fruitful services together or cooperatively in the context of agricultural extension.” Partnership gives the opportunity to the partner organizations to work together in order to provide a coordinated and mutually helpful services to the farmers and the partner organizations. Partnership is highly successful only when the under-implemented activities are relaxed for the partner organizations and maintains a good relationship between them.

Partnership is an integral part of the overall activities for the department of Agricultural Extension. In the new agricultural extension law policy 1996 and the revised expansive extension action approach, working in partnership has been considered as the fundamental important responsibility of DAE.

In National Agriculture Policy 2013, partnership has been specially emphasised upon. In National Agriculture Policy 2013, it has been said:

- i. Participatory extension activities of government, non-government and private organizations will be encouraged
- ii. Government-non-government partnership will be encouraged in producing agricultural products
- iii. Strategies will be undertaken to deliver extension services in collaboration with local government at union and upazila levels; and in union and upazilla levels, local government will help extension works by providing services and different activities
- iv. The government through the Department of Agricultural Extension (DAE) and allied agencies will maintain liaison with the NGOs and other development partners at local levels for cooperation and coordination. For support and coordination government will maintain communication among local agriculture extension departments private organizations via agencies of the same communion and other developing partners.

By working through partnerships, partner organizations can learn from one another and increase their work efficiency, and despite their weaknesses in authority and assets they can achieve the ability to formulate promising plans and to implement them; for example- non-government organizations can have shortage of agriculture specialist, but in that case non-government organizations can successfully contribute by taking supports from agricultural extension directorate in farmer training or planning and implementing some other expansive activities. On the other hand, working with farmer organizations or groups is a policy of the extension directorate’s expansive actions; in this case agricultural extension directorate can provide services for farmer organizations and other organizations formed by non-government organizations.

The cooperation or linkage between extension and research organization goes back. As a result of this linkage, extension workers collect knowledge from research and information from research organizations and distribute them among farmers and can take steps to solve field level problems with the help of research. Besides, extension-research coalition can make vital contributions in extending agriculture and its production and productivity. Proper marketing of the grown crops and suitable pricing encourages the expansive activities. Mutual support and information sharing between the extension directorate and market related organizations can help farmers with marketing activities as well as correct price earning.

Department of Agricultural Extension is committed to working in partnership with other service providing organizations.

5.2 Purpose of Working in Partnership

- i. Providing demand driven and coordinated extension services
- ii. Sharing strengths and weaknesses of partnering organizations to provide services to farmers
- iii. Reducing organizations' costs
- iv. Encouraging partners in increasing efficiency and extension services
- v. Working on a large scale with the farmers in extension services in less time and budget
- vi. To save money and assets by reducing repetitions
- vii. To increase the capability of people and organizations involved

5.3 Types of Partnership

5.3.1 Partnership Can be of Two Types Based on The Types of Activities

5.3.1.1 Formal or Collaborative Partnership

Official partnerships will be based on memorandum of understanding (MoU) or a written agreement between partners. Partnership can be based on joint activities, assets and strength sharing and contributing to mutual support and cooperation. For examples:

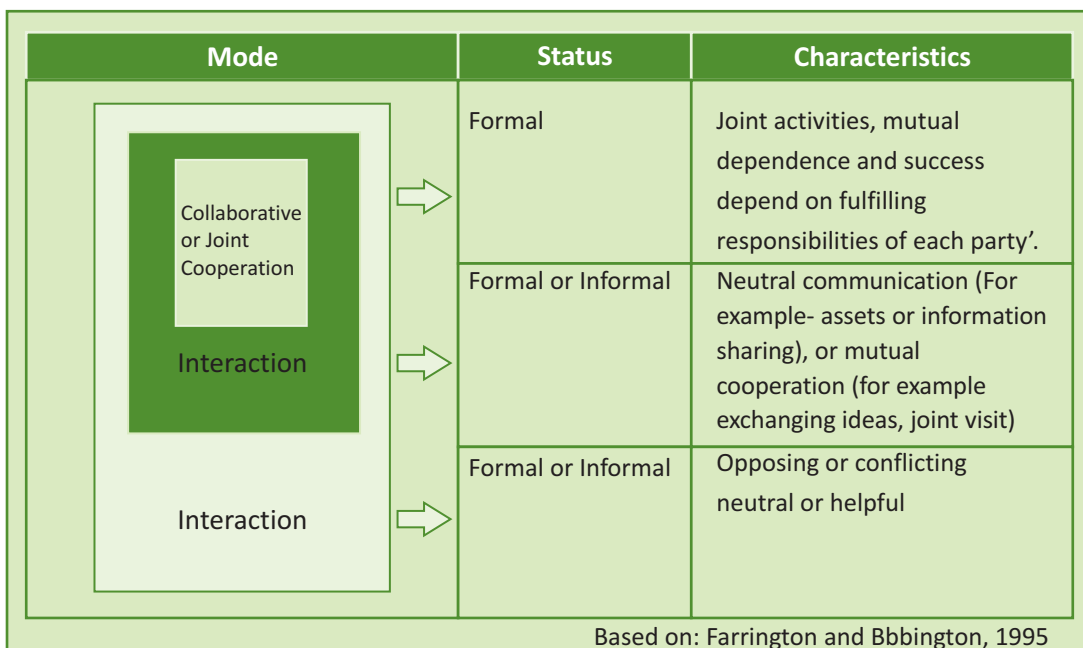
- i. Partnerships through MoUs and contracts between government and non-government organizations and extension organizations to achieve mutual goals
- ii. Supporting NGOs to provide human resources and agricultural extension services in accordance with the agreement with DAE

5.3.1.2 Informal Partnership

Apart from formal agreements, partners can work in mutual partnership. The informal Partnership can play an active role in sharing resources and strength, maintaining mutual cooperation; exchanging views, consulting each other and so on. Extension service providing organizations are providing services through various unofficial coalitions, such as:

- i. Department of Agricultural Extension officers can work as resource persons in farmer training organized by NGOs
- ii. Department of Agricultural Extension and research organizations' workers can work in field supervision and farm fair together
- iii. Partners can share facilities and assets like training rooms, training materials' etc

Figure 5: Types of partnerships are briefly described below



Department of Agricultural Extension encourages partnership both formally and informally, and provides service in accordance with workplaces and their demand. Working with other organizations formally and informally is an essential part of the fundamental responsibilities of Department of Agricultural Extension

5.3.2 Partnership Can be of Three Types Based on the Nature and Class of the Organization

- i. Partnership with a government organization
- ii. Partnership with an NGO
- iii. Partnership with a private ownership

3.3.2.1 Partnership with a Government Organization

DAE can be partner with another government organization both officially and unofficially. Agricultural extension department and local government engineering directorate are materialising are small scale water development sector on the basis of an MoU.

Agricultural Extension department, Animal Resources Directorate and Fish Resources Directorate can be partner officially and unofficially via a memorandum of understanding. Animal Resources Directorate, Fish Resources Directorate, Forest Directorate, Bangladesh Agriculture Development Corporation and other Research organization's partnership in a zila or upazila farm fair is exemplary.

5.3.2.2 Partnership with NGOs

DAE is interested in working with NGOs. But it is noticeable that NGOs involved with agriculture have different characteristics, activities, skills, expertise etc. Agricultural Extension department must be aware of these matters before getting involved with the NGOs.

In order to get the best result from the NGOs, Agriculture Extension department must reduce their differences to establish good relationships and identify and encourage their characteristics, activities, skills, expertise, innovation etc. No matter how large or small the NGOs are, they have local popularity and communication skills to materialize activities. Their abilities should be used for the benefit of people.

NGOs work in groups or teams headed by team leaders. DAE can use the experience of the

NGOs when creating a farmer groups. With their help they can identify the information demanded by the members and help the team they created to extend and provide service to them.

5.3.2.3 Partnership with a Private Farm

Private ownership in Bangladesh is emerging. These are related to farming equipment, inputs and product selling. Clearly, private farms are interested in increasing their interaction with farmers to market their products and increase their sales. In this case, DAE can benefit from a partnership, also help farmers to get farming inputs and equipment from private companies.

5.4 Public-Private Ownership (PPP)

Public-Private Partnership (PPP) is an essential tool for development in developing countries. PPP has been prioritized to achieve SGDs. PPP has been given further importance for infrastructural development along with many other types of development activities. PPPs have been prevalent in Bangladesh as well. Private sector's participation in agriculture has been emphasized in the 7th National five-year plan.

5.4.1 Types of PPP

PPP can be categorized into three kinds- Macro, Meso and Micro

- i. Macro level PPP takes place in central offices. For example, if there is an agreement between DAE's central office (Head office) and private company's central office (Head office), it can be an example of PPP
- ii. Meso-level PPP's can be an agreement between DAE's local office and private company's local offices.
- iii. Micro level PPP can take place if partnership is solely conducted in root levels. An example of micro level PPP is Katalyst's LAN (local agri-business network) project that has formed PPI committees in root levels.

5.5 Strategies of Extension Partnership

Partnerships have been highly prioritized in the new agricultural extension policy of 1996. A number of committees have been formed at national and regional levels to ensure the implementation of partnerships. For example, Extension Policy Implementation Cooperative Coordination Committee (EPICC), National Agricultural Technical Cooperative Coordination Committee (NATCC), DAE or NGO liaison committee, Agricultural Technical Committee (ATC), Division District Extension Policy Planning Committee (DEPC), Upazila Planning Workshop (UPW), Upazila Agricultural Extension Coordination Committee (UAECC). The budgets for the activities of these programmes are allocated from DI's ASIRP project. Budget is allocated immediately after planning. As a result, the normal courses of the committees are hampered. Partnership activities are practiced as a result of these activities taken by these committees.

The NATP programme began in 2007-08 and since then significant importance has been given to partnerships at the national level through the National Extension Coordinating Committee (NECC).

The NECC emphasizes partnership through its programs in 25 districts, 120 upazilas through smaller similar committees (DECC & UECC) and funding for the programmes was also arranged. Current 2016-17 fiscal year marks the beginning of 2nd wave of activities consisting 57 districts and 270 upazilas and similar district or upazila coordinating committees actions were also arranged.

Very recently, BARC and DAE reconstructed and renamed national, local, divisional and upazila level committees and took steps to mobilize these units.

According to the new title, the local level committee will be called Regional Agricultural Technical Coordinating Committee (RATCC), RTC in short, and it will work in 14 areas under DE. The district level will be renamed as District Agricultural Coordinating Committee (DATCC), DTC in short, and upazila level will be renamed as Upazila Agricultural Coordinating Committee (UATCC), UTC in short. It has been decided that the committees will have 3 meetings every year.

Programmes of the meeting are as follows-

Title of the Committee	1st Meeting (for Robi season)	2nd Meeting (for Kharif-I)	3rd Meeting (for Kharif-II)
Upazila Agricultural Technical Coordination Committee (UTC)	10th August	15th January	15th May
District Agricultural Technical Coordination Committee (DTC)	30th August	30th January	30th May
Regional Agricultural Technical Coordination Committee (RTC)	15th September	15th February	15th June
National Agricultural Technical Coordination Committee (NTC)	30th September	01 March	25th June

In order to encourage partnerships, there are other forums such as – Research Institute Coordination Committee (RICC), Research Planning Workshop etc. DAE assesses demands of farmer's make plans for extension and implements them, provides extension services and so on; and it will have full cooperation from all these committees.

DAE will always try to increase its resources and abilities by creating partnerships and extension activities undertaken by the department through Agriculture Fairs, Field Days, Joint Field Supervision, Natural Disaster Prevention etc. Government, NGOs and private farms will be encouraged to partner; at the same time, all partner organizations come forward to create opportunity to partner in expansive activities.

In order to make partnership strong and long-lasting, DAE will emphasize on mutual relationships with the partners. Partnership is not a competition.

Matters to be considered in a partnership:

- i. Partner organizations will work by defining their goals
- ii. Partner organisations' activities will be based on mutual understanding in order to fulfil them
- iii. Partners will benefit from their partnership in their own ways
- iv. Partners will maintain honesty and fairness
- v. Partners will always be encouraged to help one another
- vi. Any kind of confusion or unfairness will be solved by mutual discussions
- vii. Partners will always work on mutual understanding and it will be maintained for the sake of both the parties
- viii. Partners will share a common perspective.

5.6 Coordination Meeting of Organisations Under Ministry of Agriculture Encourage Partnership

Regional and district level organizations under the Ministry of Agriculture are advised to organize monthly coordination meetings. Deputy Director of DAE in the district levels and Additional Director of of DAE in the regional levels arrange meetings. Representatives of several organizations under Agriculture Ministry such as - BADC, Agriculture Research Organizations, Fisheries and Livestock Departments etc.

In these meetings, updates on all related activities, their progress, the vision and achievement strategies, encouragement in partnership and its strategies etc. are discussed. This committee

can contribute largely to partnership relationship development and strengthening. The activities of this committee will be directed in such a way that all the partners are benefitted and the extension of partnership helps achieve mutual capabilities.

5.7 DAE's Role in the Development and Maintainance of Partnership

Among the extension service providers , Department of Agricultural Extension is the largest and in this department, there is collection of ranked, skilled and strong leading manpower. This organization takes most of the responsibilities for any problem of the farmers, and enhances development and productivity in agriculture sector. So, Department of Agricultural Extension has to contribute more to the development and maintainance of partnership for providing skilled and fruitful service to the farmers.

Relationship building and maintaining strategies vary from one place to another. Extension department has to sensitize workers of all the levels about the organization's activities, environment, condition etc. and encourage them to cooperate and enhance their skills in this regard.

5.8 Benefits of Partnership

Mutual supports or facilities that can be achieved through partnership are:

- i. By using the experience and skills of NGOs, the opportunity to provide services to all kinds of farmers like female farmers, small and marginal farmers will be created.
- ii. Experience of the NGOs can be shared while working with the farmer groups and organisations
- iii. Partnerships can help large scale extension planning or activity in their strategies and execution
- iv. Partner organizations will be able to develop mutual skills and strength
- v. A correct decision can be reached upon by unanimous participation in decision making
- vi. It will be possible to complete extension activities properly by mutual cooperation
- vii. High standard extension service can be provided by partnerships
- viii. Coordinated services area will expand
- ix. Financial support from NGOs will create new ways of extension activities
- x. Farmers will receive proper services faster
- xi. The scope of "One Stop Service" will be created.

"One Stop Service" is a current demand. A farmer does not only grow plants, he or she rears livestock and farms fishes. The demands of farmers are to get services regarding plants, animals, fishes and other sectors at one place. Recently, the centres established in union parishad complexes are providing one stop service, which is exemplary in integrated extension service.

Chapter 6

Working With Farmer Groups



Working With Farmer Groups

6.1 Background

Training and Visit (T&V) method has gained special reputation as the disciplined basis of extension activities in the Department of Agricultural Extension. However, one of the drawbacks of this method is that it requires one to one interaction with individual farmers. So, under the revised extension work approach, emphasis has been given to work with farmers groups. This approach has been recognised as one of the key principles of revised extension approach.

The meaning of working with farmers in groups is to work with many farmers at the same time; such as while setting up demonstration, discussion with the farmers regarding selection of demonstration farmer, sharing overall activities and result of demonstration among the group members, arranging field day in the demonstration place and so on. The extension workers will play roles as facilitators while working in farmer's groups.

Giving emphasis on the group does not necessarily mean that working with individual farmers would be stopped. In addition to farmer groups, individual farmers may be part of extension activity. Such as any farmer outside the group may be communicated and given extension service as per demand. But in case of implementing extension programmes, the group will get priority.

6.2 Benefits of Working With Farmer Groups

Working with farmer groups ensures active participation of farmers and increases the responsibility and accountability of extension workers. As per Department of Agricultural Extension (DAE), the most notable usefulness or utility is as follows:

- i. It is possible to communicate with many farmers quickly and at a time
- ii. All categories of farmers, such as male, female, youth, small, medium, large, marginal and landless can work together
- iii. Make greater chances of effective and sustainable extension activities
- iv. Information can spread out quickly and easily
- v. Difficult work can be done easily
- vi. Active participation of a large number of farmers can be ensured
- vii. Farmers get the chance of mutual interaction, as a result their knowledge and skills increase, learning develop and members can be financially benefitted.

- viii. Farmer's skill is increased by solving their own problems mutually not by depending on others' and problems selected information flow will develop
- ix. The knowledge and information of any of the farmers can help increase the knowledge and information of other members
- x. Effective information needs can be fulfilled easily
- xi. Participating in groups ensures credibility of the extension work and the adoption rate of technology or extension work increases
- xii. The confidence level of the group members becomes stronger
- xiii. Rights become established while obtaining service from any aid organisations
- xiv. Innovativeness of the group members increases.

6.3 Limitations of Working with Farmer Groups

A few limitations of working with farmer groups are as follows:

- i. At the initial stage of working with farmer groups, extra time may be needed and extra work may be required to get their attraction or interest
- ii. Some of the members of the group may try to influence and take advantage again and again
- iii. Any negative reaction of a member may have impact on others and the natural pace of activities may be hindered
- iv. For lack of individual communication, it might not be possible to enter the root of the problem
- v. All members may not be equally interested and it could be difficult to ensure their regular and timely presence
- vi. Mutual conflict among the members may threaten the existence of the group and the extension work may be hampered, etc.

The extension workers will try technically to solve the above mentioned limitations. They will also require involvement of other organizations or take help of higher competent authority.

6.4 Farmer Groups with Which DAE Would Work

There are many government, non-government or private groups in every village or block. But most of the groups are constituted by NGOs. Every group has certain purposes. One particular group might not be eligible for the purposes of others.

DAE provides extension services in its own periphery through its resources among farmer groups. The groups that DAE works with are called “DAE Farmer Groups”.

6.5 Description of Farmer Groups Formed by DAE

Department of Agricultural Extension (DAE) has been providing extension services for a long time under various projects through farmer field schools or farmer groups. These types of activities are still continuing. Farmer groups are playing a significant role in implementing projects successfully. Some farmer groups or farmer field schools turned into farmer clubs and are contributing in extension work. On the other hand, many groups remain passive and inactive for lack of proper management system.

The extension department can establish ‘DAE farmer groups’ by reforming field schools or groups of the farmers and can combine them in mainstream activities of DAE. Gradually, these groups can be assets of DAE and may contribute to the increase of agricultural production and growth of productivity by strong participation in extension work. The descriptions of various farmer groups under different projects of DAE are as follows:

Table 3: Description of Farmer Groups Formed under Different Projects of the Department of Agricultural Extension

Serial No.	Name of project	Total Groups Number of FFS	Number of IPM Club
1	SPPS (FFS)	15039	16598
2	AEC (FFS)	11913	
3	IPM (FFS)	8806	6200
4	IFMC (FFS)	4849	
5	TTAP-BLUE GOLD (FFS)	170	
6	IAPP (LFS)	7200	
7	SCDP (SFG)	12000	
8	NATP (CIG)	13450	
9	DCRMA (CFS)	156	
10	ASSSRBP	5000	
11	IANFP	880	
12	SCPP-IPM	3875	
	Total	83698	22798

6.6 Allocation of Groups in Block

SAAO's diary records the size of their block, number of farmer families and agriculture related information such as area of cultivated land, single, double and triple cropped area, cultivated area under different crops, cropping intensity, irrigation areas etc. are noted. SAAOs will have detailed information on farm families. They will exchange views with farmer representatives and will discuss about the purpose of farmer groups elaborately. With the consent of representatives, the block area will be divided into 12 parts. SAAO will explain the purpose to the representatives and for the sake of extension work, will arrange the formation of farmer groups in each of the 12 parts. The activities of SAAOs will be monitored by AEO or AAO and will permit division of the block in parts.

6.7 Formation or Reformation of Farmer Groups

Formation or reformation of farmer groups for extension work is a complex task. For this, best farmers from the groups are chosen to discuss the purposes. Experiences are necessary for formation or reformation of groups. SAAO bears the main responsibility of this. Suggestions and help from the local people or members of local government may be obtained if any complexity arises. AEO or AAO will monitor the group formation work and the UAO would approve it. The Upazila Agriculture Office will preserve the list of new and reformed groups. Each group will get recognition through official letters from Upazila Agriculture Office.

The following points will be followed for group formation or reformation:

- i. A SAAO will divide his working block into 12 parts; each part will consist of a farmer group.
- ii. New farmer groups will be formed in place where no DAE farmer group exists
- iii. For formation or reformation of farmer groups, the SAAO should know about concerned areas and people of the area well
- iv. The farmers interested in group formation or reformation should be spotted and the actual purpose of group formation or reformation should be communicated to them through meetings
- v. Farmers present will form or reform the group by their own initiative, extension workers only will help them
- vi. Groups will be formed in partnership with local NGOs and partner organizations. Their help may be taken to form groups
- vii. The group will have representation from all classes of farmers
- viii. Number of female farmers will be at least 30% of total members.

- ix. Individual influence of members will be tackled carefully
- x. Group leaders will ensure that the groups are sustainable and efficient
- xi. The group will comprise, if necessary, of a convener, a secretary and a cashier (if needed for financial savings)
- xii. The group will be monitored as per promulgated rules
- xiii. SAAOs will play skilled and technical roles to operate the group.

6.8 Block-wise Farmer Group Number and Number of Members Groups

- i. Number of farmer groups in each block will be at least 12, conforming to the periodical visit schedule of SAAO. It is to be noted that a SAAO can meet each farmer group for once every fortnight.
- ii. The number of members in every group can be maximum 30. Time will be wasted and purpose of extension activity will be obstructed if the groups are too small, if the group is too big, then it may lose its effectiveness and purpose.

6.9 Possible Ways to Make the Group Effective and Sustainable

Before understanding the methods of making farmer groups effective and sustainable, the reasons of being ineffective or unsustainable should be considered. It is a principle of revised extension approach to work with farmer groups. So, if the group becomes inactive or fails to carry on its responsibilities, then the application of revised extension approach becomes meaningless. The maxim of revised extension approach is to 'work with farmer groups'.

Reasons why the farmer groups become inactive or unsustainable is given below:

- i. Lack of skill or defect in service providing organization
- ii. The surrounding or condition of community
- iii. Unsound mutual relationship of groups
- iv. Other external problems.

The extension worker must be alert to make farmer groups active and sustainable and he should be aware of factors leading to the loss of effectiveness and prevent them.

The following points can be considered for active and sustainable farmer groups:

- i. The extension worker should build close relationship with members apart from extension activities
- ii. Groups should be visited according to the fortnightly visit schedule, otherwise the interest of farmers may be obstructed

- iii. Extension service should be ensured to the members of the group on demand basis
- iv. Apart from theoretical discussion with groups, visiting crop harvests should be given importance
- v. Special aid to be given to the members regarding market management of produced harvest, value chain, supply chain, production plan etc.
- vi. At the initial stage, the problem of members should be solved and demands should be fulfilled based on the behaviour of members. They should be given clear idea about things by explanation.
- vii. No member should be allowed to cause disturbance in the group through individual influence
- viii. All members should be given equal importance and equal opportunity for expressing opinion
- ix. Members should be encouraged to undertake various activities such as savings or income increasing activities
- x. Members should be made aware of latest technologies in agriculture and given proper support to avail them
- xi. Group members should be given the chance of mutual interaction
- xii. To add a new member in the group, consent of other members should be taken
- xiii. Group management and technical skill of SAAO will be vital for ensuring effectiveness and sustainability of the group. So, SAAO must be skilled on all concerned matters.

6.10 Skill of Extension Worker to Work with Farmer Groups

The duration and effectiveness of farmer groups solely depend on the skill of extension worker or SAAO with farmer groups. Therefore, extension workers or SAAO should be aware of their skills in this regard.

The following required skills should be achieved:

- i. Skill and experience for maintaining good relationship with group members
- ii. Skill on identifying and managing the demands of group members
- iii. Experience in managing any influential member for maintaining cohesiveness among the members of the group
- iv. Patience and sharp in dealing with matters for all the activities with group
- v. SAAO should be kind hearted to quickly solve problems faced by group member
- vi. SAAO should be skilled in management system as a helping hand
- vii. Ability to acquire modern and suitable knowledge on technology
- viii. Expert in creating environment for interaction with members of group
- ix. Ability to connect with the agricultural product supply and agriculture market.

Chapter 7

Farmer's Information Need Assessment



Farmer's Information Need Assessment

7.1 Background

One of the principles of “Revised extension activities” is to respond to the information-need of farmers. For this, the extension worker must be able to determine farmers’ information-needs. Farmers’ Information-needs Assessment (FINA) is likely to determine the major problems that farmers face and the availability of possible solutions to farmers’ problems. The solutions have to be appropriate for the farmers.

Necessity of Farmer’s Information Need Assessment (FINA)

It is necessary that farmers' information-need is assessed because:

- i. Assessment of information-need ensures demand-driven extension service
- ii. Adopted agenda in extension work plans become suitable to reach the goal
- iii. It can increase participation of farmers in extension work
- iv. Farmers can be aware of appropriate technologies
- v. It saves cost of extension activities
- vi. Creates responsibility towards farmers.

Use of FINA in Extension Work

- i. For the preparation of suitable extension messages
- ii. For determining annual performance work-plans
- iii. For the making of plans for annual extension programmes
- iv. During the identification of suitable extension methods
- v. For preparation the training programme for extension workers and farmers
- vi. For determining the demand of inputs, its collection and distribution activities
- vii. During the placement of recommendation for invention of suitable technologies
- viii. During the making of work plans of SAAOs
- ix. For conducting the monitoring and evaluation activities
- x. During the creation of primary information hubs for use whenever necessary.

7.2 Methods Of Farmer's Information Need Assessment

- i. By individual contact and during various extension events
- ii. By conducting Participatory Rural Appraisal (PRA)
- iii. By formal survey
- iv. By discussing with and collecting information from field workers during regular meeting and training at Upazila level
- v. By reviewing the SAAO diary, demonstration register, periodical or monthly report and surveillance report
- vi. By giving encouragement to farmers
- vii. By interacting with different organisations involved in providing extension service
- viii. Through remote sensing.

7.3 Inter-Personal Communication to Manage Extension Work

There is scope for discussion on farmers' problems, challenges, opportunities and information-needs when the extension workers interact with farmers.

Through the following method, extension workers may interact with farmers:

- i. During the field visits, demonstrations and meetings with farmers
- ii. When the farmers visit agricultural advisory centres and plant health clinics
- iii. During various group based extension work, such as method demonstration, field day, farmers' rally, motivational tours, farmer's training, farmer field school etc.
- iv. SAAOs can learn and solve the problems of farmers through team meetings and yard-meetings
- v. During informal discussion in various social places such as mosques, temples, markets, clubs or other places
- vi. During the exchange of information between extension workers and farmers through using mobile phone (use of ICT).

Extension workers can note down the needs of farmers during field trips and meetings. Important topics can be discussed during these meetings. The SAAO can ask farmers about

their problems in these meetings and try to provide solutions to farmers’ issues. If the issues are common, they will be included in yearly extension work scheme at the discretion of the SAAO.

7.4 Participatory Rural Appraisal (PRA)

PRA is “a basket of techniques” by which the rural community can appraise and analyse their overall condition. Information received by this approach can be used in planning development activities. PRA technique is used to help farmers identify and analyse their problems, challenges, opportunities and solutions. There are many techniques of PRA which can be used based on the situation. Some of these have been described in Annex 3. The techniques of PRA are:

i. Problem Census	vi. Daily routine
ii. Geographical Map	vii. Seasonal Diagram
iii. Social Map	viii. Matrix ranking and matrix scoring
iv. Transect walks	ix. Chapatti Diagram
v. Wealth ranking	

SAAOs have to follow individual or integrated techniques:

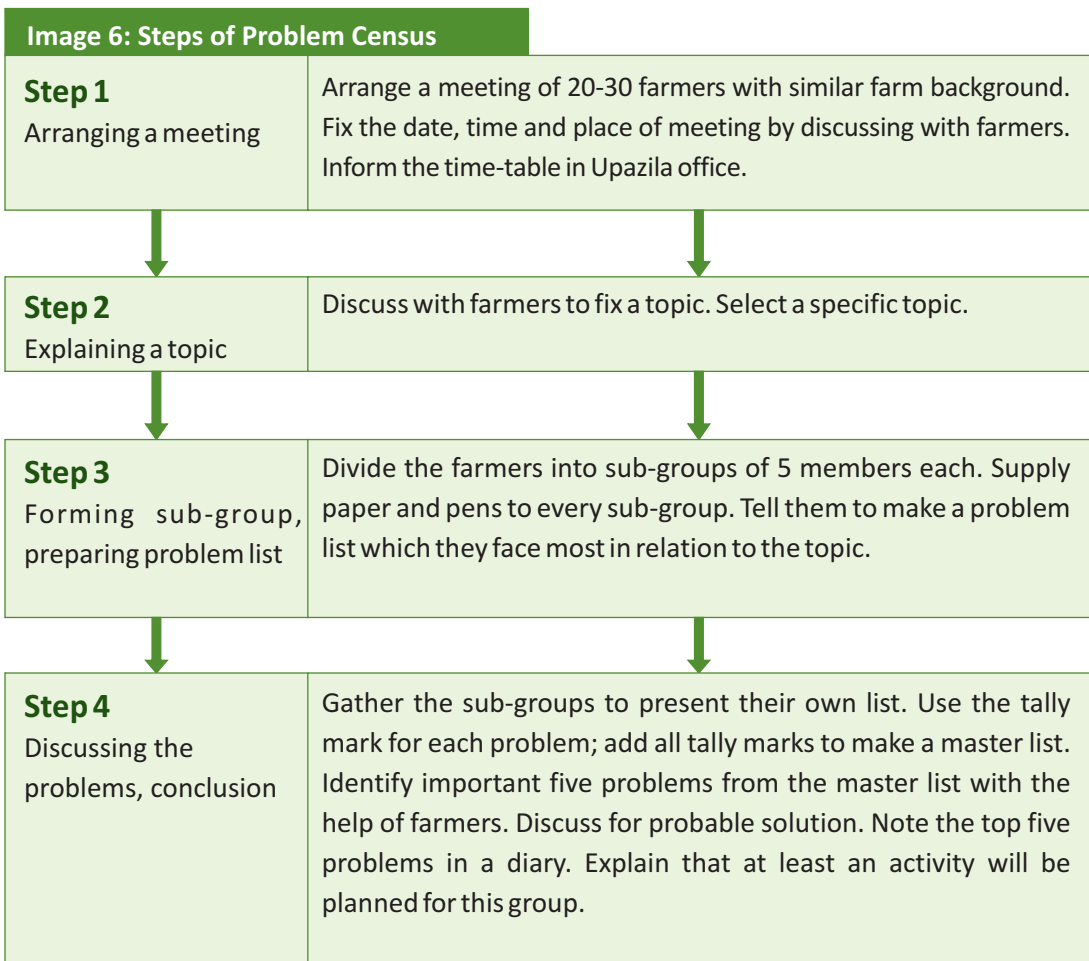
- i. **Area Selection:** Selecting a village or a farmer’s group or a club
- ii. **Area Visit:** Meeting local farmers while visiting the whole area
- iii. **Establishing relationships:** SAAOs have to foster good relationship with the farmers and explain their roles completely by discussing their life styles and farming issues to ensure effective extension service delivery.
- iv. **Tool Selection:** Selecting appropriate tools is important for PRA. Flip chart, paper, marker pen, card, scissors, leaf, seed, sample crop and other locally available things may be used.

7.5 Problem Census

Problem census (PC) is a PRA technique which is informal and participatory. It helps to analyse overall local context, set work-plans and implement them. In fact, it is a discussion program with groups where farmers can detect their problem and recommend solutions. The SAAO will play the role of a moderator here. Every officer must conduct at least 4 PCs every year as per

rule. Two PCs will be with small and marginal farmers (one with male farmers, the other with female farmers; another two PCs will be with medium and large farmers (one with male farmers, the other with female farmers). If problem census is not possible with large female farmers, then SAAOs will communicate in person, identify and note down their problem in diary.

PC should be completed within June before making yearly work-plans. All problems and their importance should be written in a result sheet. For each group, five of the most important problems with their descriptions and related extension work plans should be submitted to the Upazila. To solve the problems, the following (Image 6) steps can be followed:



The important matters to be considered in conducting PC are:

- i. Participants should be from same socio-economic backgrounds; otherwise, problems faced by all cannot be easily identified.
- ii. The activities of meeting should be conducted informally; it inspires farmers to participate spontaneously.
- iii. Subject matter should be explained categorically and clearly, otherwise identifying problems will be difficult for farmers.
- iv. If the farmers do not feel comfortable, they can draw general images to explain their problems; farmers may tell the problems orally and the officer will write down these.
- v. At the end of the event, the extension workers will explain the below to the farmers:
 - a. The DAE will use this information for promulgation of extension schemes.
 - b. Main five problems will be considered in Upazila Plan workshops and PC will be included as an agenda in Upazila Agriculture Extension schemes.
 - c. SAAOs will meet farmers again for further topics to be discussed.
 - d. The results will be written in paper, a sample result sheet is given below:

Sample of Problem Solving Result

Upazila: Block: Village: Betila

Date:

Deputy Agriculture Officer:

Target Farmer's Group: **Betila Farmer's Group**

Type of Group: **Vegetable producing farmer's group**

Subject: **Special problems regarding management of soil and fertilizer for cucumber production**

	Problem	Number
1.	Limited knowledge on effectiveness and use of TSP & MOP	IIII 4
2.	No knowledge on organic fertilizer which increases soil fertility and productivity	III 3
3.	No knowledge on compost preparation	I 1
4.	No knowledge on cultivation of 'Dhaincha' for green fertilizer	II 2
5.	More information needed for classification of suitable cropping pattern	III 3
6.	Knowledge needed on present status of fertility of soil	III 3
7.	No knowledge on per hectare application of Urea fertilizer	II 2
8.	No knowledge on top dressing of Urea fertilizer	III 3

Participatory rural assessment enables farmers to participate in extension activities. This procedure is preferred by DAE. Upazila Agriculture Officer will supervise overall activities of the problem assessment and will ensure presence of at least one upazila level officer in one PC program in every block.

7.6 Survey

Under special circumstances, extension workers are instructed to assess information-need of farmers through formal survey methods such as using questionnaires. Although this helps to get specific information on land size, crop cultivated, use of machinery, equipment costs etc., but farmers are not able to elaborately discuss or cannot exchange ideas.

7.6 Reviewing SAAO's Diary

The diary of SAAO is the main tool for time management and preservation of information. It is an important part of extension activities because it is used during assessment of farmer's information-need, promulgation of plan, supervision and evaluation. A SAAO diary is used for noting daily extension work, problems and needs of farmers. SAAOs will note down the following information of farmers:

- i. Visited place, person and farmers' group
- ii. Problems faced by farmers
- iii. Short description of given suggestions and measures taken
- iv. The problems that could not be solved by SAAOs, which should be sent to Upazila Officer
- vi. List of solutions sent by Upazila Officer to the farmers

7.7 Meeting and View-Exchange with Organizations Related to Extension Services

Meeting with various organizations such as Upazila Agricultural Technical Coordination Committees (UTC) is a way of understanding information-need of farmers. UTC meeting is participatory which takes place at least 3 times every year at the Upazila level. UTC has become a participatory forum consisting of agriculture participants (Govt. and Non Govt.). UTC enables all concerned local service providing organizations to exchange their thoughts, information and resources. One of UTC meetings occurs before reviewing and finalising of DAE's annual and seasonal activities. Besides, at union, district, regional levels, through discussion in agricultural technical coordination committees, there is a scope to assess farmer's information-needs regarding agricultural production related problems and solutions

The following opportunities are created through extension service providing organizations to assess the needs of farmers:

- i. Extension service providing organisations are forums where various extension participants can discuss the results of their own FINAs.
- ii. The results of FINAs of participant organization can be included in DAE's extension plans and these can be reviewed and examined.
- iii. Presenting the work plan with members of different organizations and taking their suggestions for improvements.
- iv. Assess the probability of taking joint collaborations for problems which cannot be solved by one organization.

7.9 Remote Sensing

Remote sensing is a technology by which we can know the condition of an area or a thing, even from distance. Satellite based remote sensing allows capturing images which can be studied to understand their status. It is possible to observe, examine, survey and monitor the organic resources by using this technology. One advantage of remote sensing is collecting information of very remote places and objects. By using the GIS technique, different agricultural information such as soil, soil erosion etc. can be inferred. SPARSO and similar organizations can help in this regard. Below are the uses of remote sensing:

- i. With remote sensing, an opportunity has been created for regular collection of information on weather based problems or prospects in agriculture. By knowing the information about agriculture and weather, it becomes easier to fix what to-do by farmers
- ii. It is used to understand different types of soil, use of land, hydrological matters, drought, floods and crop harvesting
- iii. It helps to examine crop fields, monitor diseases and infestation of insects and provides warnings about disasters and how to take necessary measures
- iv. It provides news regarding crop production can be inferred through observing the growth of crops and damages of any kind
- v. It helps to take decision for assessing the amount of damage in any natural disaster, and suggesting or helping the farmers accordingly
- vi. It helps to take measures in the quickest time for preventing severe natural disasters
- vii. It can be used in determining temperature of earth's surface and sphere, radiation, rain, humidity of soil, production of crops etc
- viii. Thus by using the remote sensing technology, information about crops, soil, water, weather etc. can be received easily and necessary measures can be taken more effectively

Chapter 8

Making Extension Plans



Making Extension Plans

8.1 Definition and Objectives of Planning

The Objectives of the extension plan is to formulate certain priorities for achieving a particular goal within the pre-decided activities. Assessment of information-needs is a basis for formulating the plan. Proper planning is needed to complete a task and to take preparation to select and achieve goals and objectives on the basis of information-needs. The plan increases the efficiency and effectiveness of the organisation. Planning helps taking decisions and saves costs.

The plan can be compared to a map. The plan indicates when to start a job, when the job should be done, who will do what job and when etc. Some conditions are also enforced in the plan. As a result, achieving successful targets is possible by ensuring fair and disciplined accountability within a specific time range.

- a. Considering the time of the plan, there can be three types of plans:
 - i. Short-term planning: The duration is usually 1 year or less
 - ii. Medium-term planning: The duration of the term is usually 2 to 3 years (sometimes 5 years)
 - iii. Long-term plan: The expiry date is generally 5 years.

Short-term and mid-term plans are usually made in DAE.

- b. Considering the administrative territory, three types of planning can be made in DAE:
 - i. Can be made at the national level– macro planning,
 - ii. Can be made at the regional or district levels– meso planning
 - iii. Can be at the local level– micro planning.

DAE extension programmes will focus more on meso and micro planning because–

- i. Growing crops is not equal in all regions or districts of Bangladesh. DAE will adopt agricultural development activities on the basis of the crop zoning. So, meso plan will be accepted based on local compatibility to get more production certainty.
- ii. In view of the increase in production and productivity, DAE is determined to provide demand-based expansion services to the farmers, hence the micro-plan will be made at the block level of the farmers; DAE will focus most on the micro-planning process.

8.2 Importance of DAE's Agricultural Extension Planning

DAE will always try to achieve its intended goals by formulating and implementing extension plans for development process. The requirements of DAE's extension plans are summarized as follows:

- i. Increasing the production and productivity of crops is an ongoing and progressive development trend. In the development process - the primary and most important work will be to make appropriate plans for the execution of extension activities properly
- ii. A special responsibility of the DAE to achieve targets by making production plans it is the responsibility of DAE to make production plans in order to achieve its yearly targets. The target will be determined based on the previous year as the base year, and all extension programmes will be formulated for achieving the target
- iii. The demand for extension technologies is different in different regions and among various types of farmers. A bottom-up approach should be used to understand information-needs of various farmers
- iv. The extension plan will provide guidance for selecting and performing objective oriented activities
- v. Extension plans will play roles in performing necessary tasks within the stipulated time range
- vi. It will be easier to follow the budget due to the extension plan
- vii. The implementation of the programme will be possible within the prescribed time and budget
- viii. It will determine the basis for monitoring and evaluating the programme
- ix. The implementation progress of the planned activities will be easily measurable
- x. Planning will enhance the skills of DAE in carrying out the activities and will help in achieving quality work.

8.3 Making of Extension Plans

DAE will implement the expansion programme on the basis of prepared annual plans. Director of Crops Wing will be especially responsible for coordinating and monitoring all the activities related to planning and implementation of annual extension plans. Details of DAE's annual extension plans are given below:

8.3.1 Planning Annual Extension Programmes

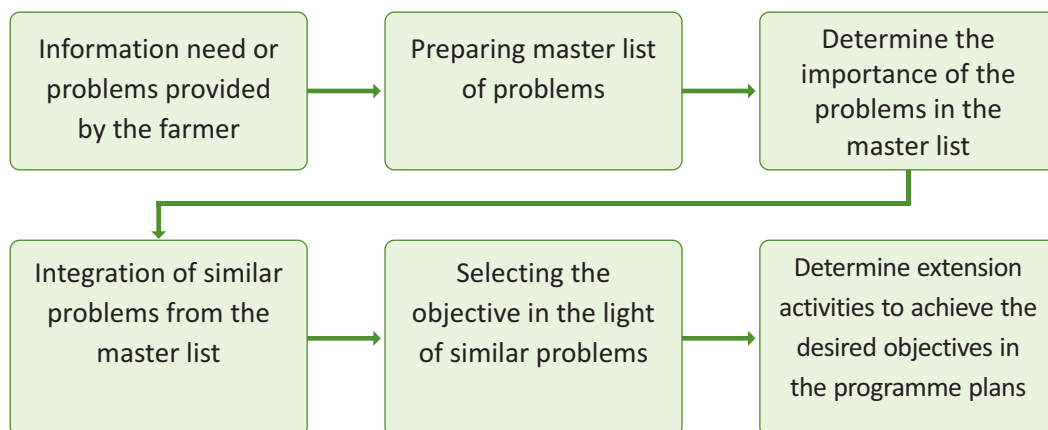
The fundamental basis for planning is to identify the problems and information demand of farmer groups. The next stage of information need assessment is to formulate the master list in relation to the information demand or problem. The details for the formulation of the master list of problems are given below:

- i. Categorical problem identification of targeted farmer groups should be done as– small and marginal women farmers, large and medium women farmers, small and marginal male farmers, large and medium male farmers
- ii. Four separate master lists for the four categories with problems mentioned in the problem census result sheet should be prepared.

- iii. All the problems should be recorded in classwise problem census result sheet and tally mark should be used if the same problems are repeated
- iv. If the result sheets of the problems of farmers under survey are tallies completely and if the problems of every sheet is counted, it will be possible to know how many times every problem is taking place and their importance
- v. Additional problems taken from the SAAO's diary should be added to the master list
- vi. Problems from Technology Extension Monitoring System (TEMS), KAP and any other sources should be considered in the Master list

Identifying the extension programme activities based on the information or problems of farmers, (Figure 7) is displayed:

Image 7: Outline of Extension Work Based on Farmer's Information-Need



8.3.1.1 Considerable Issues to Make Extension Programme Plans

- i. For the next financial year, the annual extension programmes will include activities of three seasons, therefore the annual plans will have three parts namely: Part-1 Kharif-II, Part-2 Robi, and Part-3 Kharif-I
- ii. The annual plans will include major extension activities, such as result demonstration, method demonstration, motivational tours, field days, formal farmer trainings etc.
- iii. The plan will include activities to achieve important and maximum number of objectives as per the needs of the farmers
- iv. Activities for every category of farmers will be added in the plans proportionally
- v. At least 30% of all activities will be for female farmers
- vi. Planning will be cost effective
- vii. The plan will include free follow-up activities.

Selecting objectives of plans for Annual Extension Programmes is in Appendix 4 (A) and annual extension programme planning formats is presented in Appendix 4 (b).

The primary and main responsibility of preparing the annual extension plans lies with Upazila at the discretion of the Agricultural Extension Officer who will follow the instructions and advices of the Upazila Agricultural Officers and Additional Agricultural Officers. Other officials working in DAE at the Upazila will provide full support to this work.

8.3.1.2 Preparing of Intensive Extension Programme for Large Irrigation Projects or Surface Water Irrigation Project Areas

Irrigation is an important step in crop production. There are several large irrigation projects in Bangladesh, such as Chandpur Irrigation Project, Teesta Irrigation Project, and GK Irrigation Project, rubber dam irrigation projects, BADC small irrigation projects etc. In these irrigation projects, irrigation is done from surface water sources. The intensification of the crops will increase by formulating a comprehensive extension programme for these large irrigation projects or surface water irrigation project areas.

8.3.1.3 Preparing Suitable Extension Programmes for Southern Charland Drought Prone Areas or Barind Tracks or Haor Areas or Hill Areas

Crop production technologies and management are different in areas like southern areas or drought prone areas or barind tracks or haor areas or hill areas. There is a chance to increase the production and productivity of these regions by applying location specific technologies. On the basis of utility, separate extension programme plans for these areas will be formulated.

Making plans for these areas is the responsibility of the Additional Director of concerned regions and the Deputy Director of concerned districts and the planning will be implemented through the Crops Wing with the approval of the headquarter of the Agricultural Extension Management Committee.

8.3.1.4 Steps or Work Details of Annual Extension Programmes and Finalization

S.N	Steps	Job description
1	Farmer information-needs assessment	SAAOs will work with the farmers to identify the problems and information-needs of farmers. Survey, PCs, PRA, meeting etc. will be followed to identify the problems and information-needs. SAAO's diary will also be used. Every SAAO will manage at least 4 PCs – 2 for small and marginal farmers (1 for male farmer and 1 for female farmer) and 2 for with medium and large farmers (1 for male farmer and 1 for female

S.N	Steps	Job Description
		farmers). Upazila officials will monitor the accuracy of the work through proper monitoring.
2	Processing and arranging of information related to planning and preparing draft plans in the upazila level	Information-needs and problem sheets will be separated based on the targeted farmer category at the Upazila level and a master list formed with the number or frequency of information-needs to determine the importance of the problem, classify the same problems to select the objectives, and decide the extension programmes to achieve the objectives and prepare a draft plan for the extension programmes. Selected extension activities in the draft plan will be verified and shared with different stakeholders. Amend them if necessary.
3	Approval in the meeting of the Upazila Agricultural Technical Coordination Committee (UTC)	In the meeting of the UTC, the details of the information-needs and problems of the farmers, the master list, the selected objectives, the extension activities to achieve the objectives - and past, present and future extension programmes will be reviewed. The draft of the extension programme plans will be approved subject to the necessary amendments.
4	Approval of the meeting of the District Agricultural Technical Coordination Committee (DTC)	Annual Extension Programmes approved in the upazila will verified, review and validate the technical aspects of the plan.
5	Approval at the meeting of the Regional Agricultural Technical Coordination Committee (RTC)	The Annual Extension Programme approved in the district will verify, review and authorize the technical aspects of the plan and will send it to the Director of Field Services Wing or the Director of Planning, Project implementation and ICT wing and the Director of selected extension programmes related project or program DAE (Head Office).
6	Review and Approval by DAE (DAE Management Committee) Headquarter	Under the supervision of the Director General of DAE, Director of all Wings and relevant officers of HQ in coordination will be authorized to review and monitor the plans of Annual Extension Programmes of upazilas sent from the region and will be approved.
7	Notification in the meeting of the National Agricultural Technical Coordination Committee (NATC)	The approved plans in the DAE Headquarters will be notified in NATC meeting for technical verification and for cooperation in implementation

S.N	Steps	Job Description
8	Extension Program Plan Review	The annual extension programme is planned long before the crop season. During implementation, it is often seen that new ideas have developed and new technologies that are in line with the needs of the farmers have not been included in the annual extension programmes; but it is important to implement them. In this case, the necessary amendments may be made in accordance with the approval of the district and region of DAE and of DTC and RTC.
9	Project / Programme Director	The project or programme Director will release the money at the appropriate time to implement permitted planned activities. Free and follow-up activities will be implemented through motivation.

*** participation of partner organization in all sectors needs to be ensured.

8.3.1.5 Road Map for Planning and Finalizing Annual Extension Programme Plans

S.N	Step of work	Responsibility	Duration of planning and finalization
1	Farmers' Information-Needs Assessment	SAAO	Year-long, April-June (peak)
2	Preparation of information processing and planning at the upazila level	UAO	17th July-7th August
3	Agricultural Technical Committee meeting	UAO	August 10th
4	Verification of the plan prepared by Upazila in the district	DD	16 August - 28 August
5	District Agricultural Technical Committee meeting	DD	August 30th
6	Regional level plan verification	AD	2 September-12 September
7	Regional Technical Committee meeting	AD	15th September
8	Review and approval of planning at headquarters	Director, Crops Wing	20 September-28 September
9	Presented at the National Technical Committee	DG	30 September
10	Approved and final planning from headquarter to upazila	Director, Crops Wing	15th December
11	Funding for implementation of the programme	Project Director, related projects	Rabi - 15th September Kharip 1 - 28 February, Kharif May 2 - 30

8.3.2 Annual Production Plans of DAE

Work on preparation of annual production plans from block, upazila, district, regions and national levels will be started. The plan will be provided from the DAE Crops Wing. Production plans include:

- i. A list of productive and effective extension technologies used in the seasons
- ii. The cultivation and production targets of all seasonal field crops, cash crops, horticultural crops and of all the cultivated crops in the homesteads (in the light of the past year)
- iii. Strategies and production management to achieve goals
- iv. Crop cultivation calendar
- v. Demand, supply and management of inputs
- vi. Condition of the use of the irrigation and cultivable areas under irrigation
- vii. Proper use of groundwater for irrigation, emphasizing the use of surface irrigation water, efficient irrigation management, and supplementary irrigation management
- viii. New and potential crops such as flowers, high value crops cultivation extension plans and action strategies
- ix. Crop diversification strategies
- x. Gardening on roof tops in urban areas
- xi. Special crop management and environment friendly management in backward areas and natural disaster prone areas
- xii. Crops and production techniques suitable for areas or regions
- xiii. Monitoring system etc.

8.3.2.1 Steps to Make Annual Production Plan

The first step of making annual production plans will start from the block. The following activities should be taken by the SAAO in the first step:

- i. SAAOs will be aware of the past 4/5 years of block information and will get ideas about their next year's needs and objectives by interviewing representative farmers
- ii. SAAOs will make a draft of possible production plans for the coming year by adjusting the previous year's information, the overall situation of the current year and next year's demand and objectives.
- iii. Draft plans will be shared with the relevant senior officials of the block and finalized by making necessary changes
- iv. Then the production plan will be submitted to the office of the Upazila Agricultural Officer.

Upazila plans will be made by justifying, updating and consolidating the plans of the blocks, District plans will be made by justifying, updating and consolidating the plans of the Upazila. Regional plan will be made by justifying, updating and consolidating the plans of the District and National plans will be made by justifying, updating and consolidating the plans of the regions.

The national level production plans will be finalized by consulting in the inter-departmental meetings and the project will be approved and it is subject to amendments to the region, district, upazila and block level plans.

It is to be noted, the annual production plan will be presented at the meeting of the Upazila or District or Region or National level Agricultural Technical Coordination Committee, so that the work of making of the upazila or district or region or national level plan will be completed by coordinating with the date of the meeting of the Technical Coordination Committee.

8.3.2.2 Road Map for making and Finalisation of DAE's Annual Production Plans

Office name	Duration of making plan (every year)	Planned submission (per year)	Technical Coordination Committee meeting duration		
			Robi	Kharif I	Kharif II
Block level	July 1 – July 15	Upazila Office, July 16th	-	-	-
Upazila level	17 July – 7th August	District Office,	10 th August	15th January	15th May
District level	16 August – 28 August	August 15th Region Offices, September 2	30 th August	30th January	30th May
Region level	2 September – 12 September	Crops Wing, 20 September	15th September	15th February	15th June
DAE Management Committee	Review and Approval 28th September 28		-	-	-
Discussion on NATCC in national level	30th September		30th September	1st March	25th June
Crops Wing	The final and approved plans are notified within November 30 In the region or district or upazila levels				

8.4 Planning of Annual Performance Agreement (APA)

Steps have been taken to achieve development goals based on the annual performance agreement. In order to implement the Vision 2021 through the increase in institutional efficiency of government departments or organizations, strengthening transparency and accountability, good governance consolidation and assuring wealth.

The Annual Performance Agreement for the Department or Agencies for the year 2016-17 is given in Appendix 5 (a), the annual performance agreement for the field level offices is given in Appendix 5 (b) and format of the Annual Performance Agreement 2015-2016 is in Appendix 5 (c).

DAE's block, upazila, district, region and national level officials will make plans of APA for the next financial year in the appropriate form following related principles.

Departmental works will be performed according to the APA and the Wings of the DAE will be responsible for achieving the target of the APA in their respective areas.

The steps for making the annual production plans as described in section 8.3.2.1 of this chapter will be followed in the preparation of Annual Performance Agreement plans.

Annual Performance Agreement plans will be presented in the meeting of the Upazila / District or Region or National level Agricultural Technical Coordination Committees, so that the work of planning will be completed by coordinating with the date of the meeting of Technical Coordination Committee.

8.4.1 Road Map for making and Finalizing of Annual Performance Agreement

Office name	Duration of making plan (every year)	Plan submission (per year)	Technical Coordination Committee Meeting (Kharif 1)
Block Level	1 December – 30 December	Upazila Office, 1 January	-
Upazila Level	1 January – 10 January	District Office, 12th January	15th January
District level	16 January – 28 January	Region Offices, 2 February	30th January
Regional Level	2 February – 12 February	Crops Wing, 20th February	15th February
DAE Management Committee	Review and Approval – 28th February		
Discussion on NATCC in national level	1st March		1st March
Crops Wing	-	The final and approved plans of the district or district upazila level are notified within 30th of March	

8.5 Planning for the Development of Human Resources Connected to Agricultural Extension Work

DAE's large workforce provides services for the implementation of extension activities. The need to provide effective, efficient and fruitful services is to improve the skill of these large population or extension workers. DAE's Training Wing will make a training plan for the development of the skills of extension workers.

8.6 Input Management Plans

Provide the necessary inputs for the successful implementation of the extension plan. DAE's concerned wing will make annual plans for managing seed, fertilizer, etc. and inform the input providers. Input suppliers will prepare and supply the inputs accordingly. DAE makes annual plans for fertilizer management. This plan is made by the SAAO on the basis of the demand for farmers' crop and seasonal fertilizers for the block. In the plan, the monthly demand or allocation of fertilizer is given in every upazila. Fertilizer is supplied monthly according to the allocated division, the management process is easy and sufficient. DAE will make similar plans for each input.

8.7 Making the Project Plans of the Department of Extension

DAE's extension activities are efficiently taken to the farmers. Directors of Planning, Project Implementation and ICT Wing of DAE play a role in planning and finalizing projects.

Directors of Planning, Project Implementation and ICT Wing will prepare all DAE projects based on identified information-needs of farmers to ensure extension services responding to farmers' demands.

It is important to keep in mind that extension approaches of all the projects are similar and apply the same "Revised Extension Approach" as work strategies otherwise the farmers can be confused due to different types of work strategies in different projects and it can hamper the mobility of the total extension management.

8.8 Risk Management Planning

Almost all activities face unexpected risk. So, whatever the plan may be, there is a possibility of a sudden risk its implementation. Risk management programmes will also be included in to any project plan of DAE. Risk management plans can be different depending on the

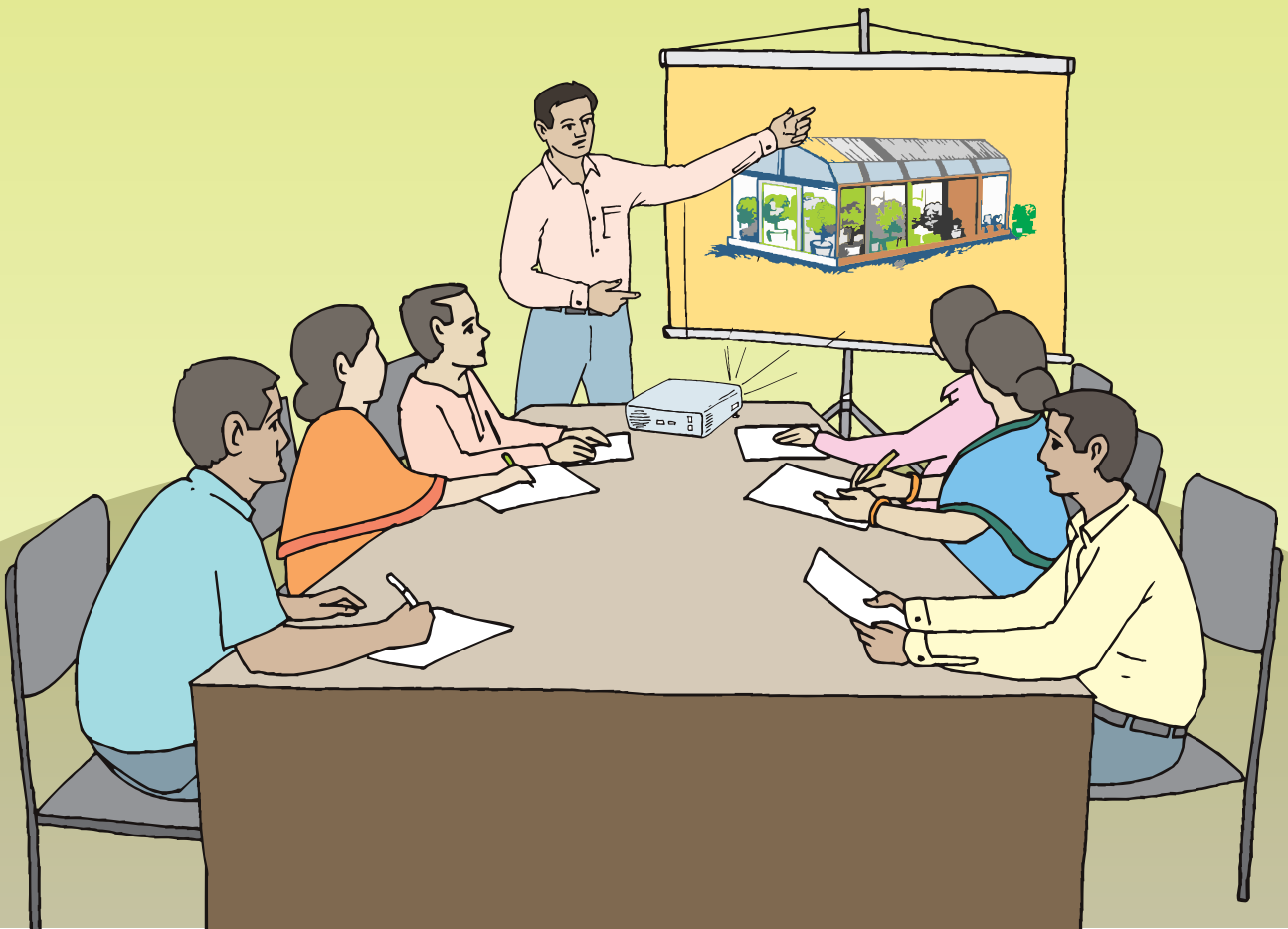
context. In the context of Bangladesh, examples of two types of risk management plans are mentioned below:

1. Risk Avoidance: For example, cultivation of short-duration rice varieties (BRRI dhan 28) instead of long-duration rice varieties (BRRI 29) by using high yielding rice cultivation technology methods can avoid the risk of advance or early floods.

2. Risk Mitigation: For example, ensuring cultivation of long-duration rice BRRI dhan 29 in flood prone areas by flood control embankment.

Chapter 9

Human Resource Development



Human Resource Development

9.1 Introduction

Extension workers should have relevant knowledge and skills to enhance capacity of providing responsive service as per the needs of extension service receivers. Therefore, it is mandatory for the Department of Agricultural Extension to give special importance to enhance the capacity of the extension workers.

In all spheres of DAE, it is necessary to train up the extension workers to enhance their knowledge, skills and capacity. The aim of training is to increase their range of knowledge and skill and nurture their expected attitude so that they can utilize their learning practically.

With a view to responding to the multi-purpose learning-need of farmers, it is necessary to perform multi-dimensional extension activities. There are locally responsive extension activities in different areas of every district and upazila for which extension workers need special knowledge and skills. These activities might have different approaches from area to area, that is why, it is the responsibility of concerned Deputy Director of the areas to develop skills of extension workers, and the responsibility of Upazila Agriculture Officers to develop the skills of Sub-assistant Agriculture Officers.

So, one of the agenda of DAE is to regularly develop its human resources.

Some special ways of human resource development are:

- i. Training
- ii. Self-driven Learning
- iii. Coaching and Mentoring
- iv. Employee Promotion
- v. Job Enrichment
- vi. Job Rotation and Cross-training
- vii. Lateral Moves
- viii. Job Aids

9.2 Importance of Training in Agricultural Extension

In agriculture extension, the importance of training is high. New technologies in agriculture are being invented through agricultural research. Extension workers need to gain knowledge

on new technologies and their usage and spread the knowledge among the farmers. Thus, development of agriculture will take place. Training is necessary in agricultural extension.

The importance of training is as follows:

- i. Newly appointed extension workers do not have practical experience and skills. So, they must undergo induction training about organizations, duties and responsibilities, management etc.
- ii. It is necessary to update knowledge and skill related to production technologies
- iii. Training is necessary to learn the application or utility of newly invented agricultural technics
- iv. Depending on current contexts, some special trainings are getting priority, such as flower cultivation, fruit production, cultivating mushroom, roof top gardening, farm mechanization, commercial agriculture, conservation of soil fertility, producing safe food crops and agriculture adaptation technic in case of climate change challenge
- v. To fulfil the demand of time, attaining competence on updated extension work model and approach, such as knowledge capacity on e-extension service
- vi. As part of extension plans, it is to be assured that the extension workers are skilled in choosing work-plans and carrying out responsibilities
- vii. To work with farmers, extension workers need training about village culture, traditions, customs, rural social systems and land management
- viii. Extension workers need training the methods that are used for motivation or providing training to the farmers, about how to implement method demonstration, and result demonstration, how to conduct meeting and how to observe field day, etc.
- ix. A trained extension worker can contribute in determining accurate amount of fertilizer, irrigation, agriculture loan, etc. and by strong or efficient management, can prevent wastage and thus help in productivity.
- x. Through training, mutual co-operation between farmers and extension workers develop; so extension service becomes credible to farmers and workers can work with farmers easily
- xi. Because of regular training, communication between extension workers and farmers increases and mutual interaction takes place
- xii. The responsibility of trained extension workers increases towards farmers
- xiii. Agriculture often faces natural calamities, so concerned people need training to face natural calamities

- xiv. It is a special duty of agriculture extension service to prepare extension plans. That is why training is necessary for launching human resources in extension planning
- xv. It is very necessary to train up the extension workers on lows of learning, learning, motivation and training strategies as they will be able to extend their experience on improved technologies among the farmers.
- xvi. Extension workers need special training to evaluate the effectiveness of extension work and project activities
- xvii. Farmer's training is necessary for developing need based technological knowledge, skills and attitudes.

9.3 Training Methods

Choosing the perfect training method is necessary for training activities. If one training method is not effective to achieve objectives of the training, then other methods can be used. The approach of the training depends on the context.

The utility of training methods largely depends on the capacity of trainers. Usually in extension organizations, the following training methods are used:

1. Lecture
2. Group-Discussion
3. Conference
4. Workshop
5. Assignment
6. TV or VDO Clip or Cinema
7. Role Playing
8. Management Game.

9.4 Assessing the Competence of Extension Workers

Competence of Extension Workers

Competence is an individual's level of knowledge, skill and experience for completing a certain task. People have different degrees of competence to accomplish different kinds of work. A person might not be competent for everything. Overall competence of a person is usually related to the opportunities they have to learn new skills and to use their existing skills.

The indicators of competence in DAE are:

- a. Technical knowledge and skills in agriculture
- b. Knowledge and skills related to agriculture extension
- c. Knowledge and skills related to management

Assessment of competence level and area of training need can be done in the following ways:

- i. Job Analysis
- ii. Performance Appraisal
- iii. Check List Method
- iv. Observation
- v. Group Discussion

For this assessment one or more suitable procedures can be followed.

Annual Competence Assessment Form

- a. The level of competence of workers and the area of training needs can be realized easily with a comparison against job analysis
- b. For assessing the level of competence, all extension workers will fill up the annual competence assessment form in appendix 6
- c. Completed form will be analysed and reviewed by District Training Officer and Upazila Agriculture Officer and will be saved in computer so that they can be quickly reviewed and evaluated
- d. Collected information through the annual competence assessment form will be used in upazila and zilla for making a database; based on the database, the area of extension plans and training need will be assessed.

Table 4. Level of Competence of Extension Workers

Value	Level of Competence	Gaps	Necessity of Training
5	Skilled	None	None
4	Fully competent	No need to supervise	Can exercise without supervision
3	Almost competent	Supervision needed	Can exercise if supervision is done, on-the-job training is needed
2	Moderately competent	Need some assistance and directions/ guidance	On-the-job training is needed and self-driven learning is necessary
1	Partially competent	Lack of important knowledge and skill	On-the-job training and self-driven learning, specific training activities are necessary
0	Not competent	Cannot accomplish task, no clear knowledge or skill	Full training course is needed

Workers competence database relevant for the works:

- i. To determine the competence level of workers while implementing extension activities
- ii. To determine the area of training demand of workers
- iii. To confer the works as deserved by the worker
- iv. To identify the activities that can be implemented for having the related competence of workers.

9.5 Increasing the Competence of Extension Workers

The best way of increasing the skill of extensions workers is the training activities

- i. All extension workers should constantly increase their competence in existing and new knowledge and skill are as continuously
- ii. Training is important for providing correct and appropriate extension suggestions
- iii. Extension workers are responsible for increasing his own knowledge and skills and it should be an integral part of daily routines to extract knowledge from experience
- v. Formal training is the most effective means for capacity development, but it is not cost saving
- v. SAAOs will discuss with their supervisors regarding demand of training; such a suggestion assists to determine the subject of formal training
- vi. The responsibility of the management authority is to help officers learn the subordinate in various ways.

Some Means for Increasing Competence Level of Extension Workers

1. Training in workplace or on-the-job training
2. Self-directed Learning
3. Informal Training
4. Formal Training

1. Training in Workplace or On-the-Job Training

- i. Training in workplace is to train a subordinate by the supervisor as part of the supervision of a particular work or mentoring.
- ii. It is a common way of enhancing competence level in workplace
- iii. In this method, the supervisor instructs the subordinates to complete their works in a proper way
- iv. Practising task in presence of a-“mentor” provides opportunities for improving one’s capacity
- v. Training in workplace is a two-way process that is why employees have to seek suggestions from the supervisors and the supervisors in turn have to understand which suggestion are needed for workers

- vi. This type of training is common for DAE and supervisors are doing it regularly, such as giving advices for implementing demonstration in plots in better way or suggesting about writing of SAAO's diary accurately

2. Self-Directed Learning

Self-directed learning is a primary way of capacity development for extension workers of all levels. In this regard, a worker is him or herself responsible for being aware of modern knowledge and for exploring answers to their own questions. To cope up with advancement of technologies and changes, self-directed learning is the best method.

Various Ways for Individuals for Self-directed Learning:

- i. Using the learning centres of districts and upazila
- ii. Using the libraries of headquarters
- iii. Practising with technology related publications in various projects of the headquarter
- iv. The quickest means of getting information is to discussion the problem and ask for solution with professionals (high officials or colleagues), experienced farmers, NGO workers, businessmen or any knowledgeable person
- v. By reading agricultural newspapers or periodicals, books, journals, magazines and other learning materials, a worker can gain knowledge
- vi. Reading and collecting information by using internet, mobile apps and other ICT tools
- vii. Watching and listening to programmes on televisions and in radios
- viii. Visiting agricultural research centres
- ix. Joining suitable training courses of any NGO in own areas
- x. Personal practice and conducting one's own experiments or trials
- xi. Joining any group that tries to solve common problems.

The concerned manager of headquarter at district and upazila levels will ensure for all extension workers sufficient resources and opportunities for self-directed learning.

3. Informal Training

- a. This training is to provide any information or demonstrate techniques to any team of workers who have gathered for some other purposes
- b. When extension workers attend any meeting, chances of informal training are created

Example of informal training is given below:

- i. Discussing problem of productions and their solutions
- ii. Suggesting the workers about the controlling method of insects

- iii. Making farmers get acquainted with any new technology
- iv. Informing workers about new methods of marketing
- v. Displaying an agricultural equipment.

On-the-job training and supervised practice, self-directed learning and informal trainings are the low-cost or no-cost ways to significantly develop the competence of extension workers.

4. Formal Training

A formal training is most a effective means to develop competence levels, but it is not cost saving. The nature of formal training activities is:

- a. Presenting prepared lessons and exercising skills
- b. Formal training is expensive, if any significant lack is found regarding knowledge or skill of many workers, then formal training is appropriate
- c. Fortnightly training of SAAOs on extension messages is a regular formal activity; it will be conducted at a low cost or free.
- d. Prepared lessons and training materials, handouts are needed for formal trainings
- e. In a for maltraining which is conducted in project cost as part of development project scheme, the training activities will be determined as per the objective of project.

Formal Training of District Officers

- i. Training wing finances and manages official trainings centrally
- ii. Course may take place centrally or direction can be placed to regions or districts to arrange less training locally
- iii. Training guide or manual, materials, finance etc. are supplied generally from the headquarter
- iv. Training can take place in research organization, National Agricultural Training Academy or in any other training centre.

Formal Training of Upazila Officers

- i. Formal training may take place for Upazila officers as per direction of the headquarter
- ii. This training is also arranged as part of any particular development project
- iii. Regular monthly training on extension messages and other technical matters takes place at a low or without cost.

- iv. Apart from the official training directed by the headquarter, every district authority can arrange their own training course for its subordinate officers.

Training of Sub-Assistant Agriculture Officers

- i. The regular formal training for Sub-Assistant Agriculture Officers will be held once in every fortnight (14 days) at upazila
- ii. Regular monthly training on extension messages and other technical matters takes place in alow or without cost
- iii. SAAOs will discuss with supervisors about training needs; such suggestions will help determine the subject matter of formal training
- iv. Vocational or technical training can be arranged in district or Upazila offices, research organisation, ATI, NATA or in any other official organisation.

9.6 Role of DAE Headquarter in Developing Human Resources

To meet the food demand of the increasing population, DAE is helping farmers by transferring technologies though several activities to increase productivity production and productivity. For this, DAE is giving special importance to develop human resources by considering demand of farmers, different policies related to agriculture and national priority.

Training Wing will carry out overall responsibility regarding development of human resources or training activities. Other wings and projects will provide necessary assistance. The department will take the following measures:

- a. Preparing and implementing, reviewing and evaluating overall plans regarding capacity development of human resources of DAE
- b. Promulgating a yearly training plan for the extension workers of all levels in the light of training demand list from regions and districts
- c. Including all determined training activities for various projects of DAE in yearly training plans
- d. Publishing training manuals and guides centrally
- e. Taking necessary help in relevant fields from Field services Wing and other Wings
- f. Ensuring monitoring and evaluation of the fortnightly training activities of SAAOs to be held at Upazila levels by Training Wing and Field Services Wing of the headquarter
- g. Taking initiatives to collect, preserve records of all training activities, make a yearly report and to prepare a training database by using ICT of the training wing

- h. Arranging an induction training course after first appointment
- i. Arranging technical subjective training for Agricultural Extension Officers with the help of their own property of DAE or research organization
- j. Arranging seminars on e-extension service, impacts and adaptation of the change of climate, flower cultivation, fruit cultivation, safe production, commercial farming, firm mechanizing, town gradens, roof cultivation, marketing, etc.
- k. To ensure quality standard of any matter related training, arrangement of ToT course for trainers
- l. Making a standard training module on particular topics and ensuring training on them
- m. Selecting appropriate participants for the training arranged by various research organizations
- n. Creating opportunities for ensuring higher degree to develop professional knowledge and capacity of workers
- o. Arranging a foreign training or an excursion or study tour
- p. Updating the syllabus or curricula of an agriculture diploma course
- q. Encouraging and increasing the use and scope of a self-directed learning
- r. Communicating with various research organisations such as NATA and other training centres
- s. Arranging workshops or seminars on various issues.

As part of developing human resources, it is an important duty of DAE to arrange training for farmers (male and female) so that they can increase profitable crop production and their incomes by using improved farming systems.

- i. Training wing will promulgate a yearly farmer's training plan
- ii. All training activities for farmers under determined projects of DAE shall be included in to yearly farmer's training plan
- iii. Training wing shall take initiatives to collect record of farmer's training (male & female), preserve and make an annual report and will take measures to prepare database containing information of farmer's training at all levels.

9.7 Training Management at District Levels

The monthly training session and other formal trainings of upazila level officers take place in the district office. The deputy director will select the component of the training programme at the district level and will oversee overall management duties. He will distribute the duties of every competent task to appropriate persons for the training activities of districts. But the sole mentorship of training programme will be in the hand of the district training officer.

District Training Officer will Ensure

- i. Determination of the training need should be in combination with bottom-up extension planning processes
- ii. Extension programme plans should be determined in accordance with the SAAOs' fortnightly training time and subject matters
- iii. Arranging suitable training materials and encouraging all extension workers in the process of on the job training and self-directed learning.

Before every season, the District Training Officer will discuss with Additional Deputy Director and Upazila Officers about the finalization of training activities. If external help is needed to implement the training activity, that needs to be identified, such as to find places of training, guest speakers, equipments and training materials etc.

Matters Considered in District Training Activities

- i. In all training activities, the training procedure and guidelines of DAE must be followed
- ii. Ensuring the training session guide such as- objectives, subjects, training method and preparation of list of participants
- iii. Training of trainers and at every level training activities should be closely monitored and supervised
- iv. Reviewing and evaluating training activities.

Regular Monthly Training of Upazila Level Officers at District Offices

- i. Monthly training of upazila level officers will be in district and District Training Officers and Additional Deputy Directors will conduct the sessions
- ii. In the training, for fortnightly training session of SAAOs, the appropriate extension messages (impact points) related to improved agricultural technologies for next two weeks must be included
- iii. At the second half of the day, any other determined learning matters, current issues or the technical solution of field problems may be included as an opportunity of informal training
- iv. All Upazila Agricultural Extension Officers and Additional Agricultural Officers in district will participate in monthly trainings
- v. In training materials, real objects and live samples must be included and these should be exhibited during training session
- vi. At the training session, various modern audio-visual equipments including multimedia presentation will be used.

- vii. At the district level, before monthly training programme, the subject matters of extension messages and draft of prepared lessons sent from upazila will be finalized by District Training Officers and Additional Deputy Directors after certain amendments or corrections and will be sent at the upazila before the fortnightly training of SAAOs
- viii. The timing of the monthly training of upazila level officers will be finalized by Additional Director of the region in consultation with the concerned deputy director.

All the information of training at district levels has to be recorded and preserved in the register and training related database preparation should be followed. Deputy Director will regularly (monthly) send all information of districts and upazila level trainings to the Additional Director of the area. For all extension workers of districts, a letter for necessary trainings will to be sent within September every year to the Director of Training Wing. In a district training demand letter, the subject matters of the training, adjectives, time limit, its number of trainees, proposed time for arrangement of training, etc. should be mentioned.

9.8 Training Management at the Upazila Level

The upazila training unit is the primary level of conducting all kind of formal or informal training activities. Upazila Agriculture Officer will carry overall duties for fruitful training management by using local facilities. This requires the best use of existing facilities.

The fundamental requirements of upazila training units are-

- a. Arrangement of suitable training place
- b. Suitable sitting arrangement (U-shaped)
- c. Suitable light arrangement
- d. Facilities to use information booklets and other composed materials
- e. Arrangement for preservation of training equipments
- f. Arrangement of training related equipments such as multimedia projectors, flip boards, white boards etc. and necessary audio-visuals.

Activities Related to Training at the Upazila Level

- i. Conducting regular fortnightly trainings for Sub-Assistant Agriculture Officers
- ii. Preparing topics and lesson-sheets of extension messages for trainings considering extension program related matters, timely and local needs, weather information, land suitability of crops (crop zoning), production constraints, training needs of SAAO, etc.

- iii. Assessing training needs for SAAO's and for all officers or staffs of Upazila levels; assessing training needs of farmers is also another duty
- iv. Every year within July, assessing the training needs, mentioning the subject matter of training, number of trainees, training time etc. to sent the report of training needs to district offices
- v. Adjusting training needs in extension plans
- vi. Registering all descriptions of upazila training activities (day, date, subject, presence etc.) and making a computer database
- vii. Submitting periodicals and the monthly reports of all training information in district office.

Purpose of Training Activities of Sub-Assistant Agriculture Officer

- i. Providing training on agricultural practices which are recommended and suitable for the block
- ii. Giving training on any newly invented technology
- iii. Developing agriculture related knowledge and skills of SAAO's through regular trainings so that their capacity for suggesting the farmers in responding to the information needs for crop production and other subjects
- iv. Developing capacity of SAAOs to analyse the problems of farmers, understand the benefits of recommended farm practices, and to demonstrate those in the field
- v. Enhancing SAAOs' competence to implement extension activities as per plans
- vi. Enhancing capacity of SAAOs in using communication technics and alternative extension methods so that they can intimately work with the farmers
- vii. Reviewing present condition of the field, such as- problems of farmers, infestation of insects and diseases, work to do on availability of equipments and providing technical and departmental directions.

Management of Fortnightly Training for Sub-Assistant Agricultural Officers

- i. Upazila Agriculture Officer is responsible for fortnightly training of SAAOs
- ii. Agriculture Extension Officer will act as principal trainer, but if needed the research organization, BADC of other organisation's officers will be invited
- iii. To ensure the quality of training, an officer of the district office will be present in the training session for supervision
- iv. Main part of the training will be to present the prepared lessons of approved training messages
- v. The guidelines of formal training programmes such as- fixed time table, lesson presentation, evaluation etc. are to be followed in fortnightly trainings at upazila

- vi. Practical trainings can be arranged in local research centres or at BADC farms, Horticulture Centres, or farmers' fields
- vii. There must have arrangements for exhibiting read objects or live samples; SAAO's and SAAPO's will collect and bring live samples of infestation and other problems and read objects
- viii. The presentation must be attractive by using multimedia and other electronic media
- ix. Training sessions should be participatory and arranging performing exercises
- x. Composed copies of prepared extension messages need to be distributed to SAAO's
- xi. Arrangement of evaluation of effectiveness of training must be there at the end of the session
- xii. After the training session, general technical discussions will be made there, where SAAOs can ask for different suggestions and officers will provide technical directions
- xiii. SAAOs can help the upazila officers by informing training needs to formulate fortnightly training plans.

9.9 Learning Resource Centres at the District and Upazila Level

An extension worker has to acquire various knowledge and skills to complete demand based work for field levels. Self-directed learning plays a vital role here. In this learning, every extension worker should have access to use the learning resource centre. In every district and upazila, there should be development and extension of the learning centre. The duties of district and upazila level officers will be the collection, preservation and proper management of books, pamphlets, samples of documents in their own learning centres.

In a learning resource centre, creating scopes for identifying diseases and insects will be there and scopes of using necessary equipments will be there. The learning centre will be suitable for using as a museum.

The learning centre will have the following resource materials, such as

- i. Books, booklets and leaflets
- ii. Training materials
- iii. Technical reports
- iv. Newspapers, agriculture magazines (krishikatha) and periodicals
- v. Samples of harmful and beneficial insects
- vi. Samples of seeds and plant parts
- vii. Samples of various agricultural inputs
- viii. Part of diseases affected plants
- ix. Pots and other products for sample preservation

- x. Primary inputs and equipments for disease identification, such as magnifying glass, microscope, glass slides, glycerine etc.
- xi. Graphs, posters etc.
- xii. Computer disks with audio and video
- xiii. Scopes of ICT using.

Primary sources of Various References and Materials for Using in Training Activities and in Learning Resource Centres

- i. Agriculture research organizations and Agriculture Information Services
- ii. DAE wings
- iii. Development Projects
- iv. Donor organisations connected to DAE and other extension partners
- v. NGO and other extension organizations
- vi. Suppliers of agricultural equipments and inputs

There are many other sources of materials and information. Officers will look for useful items or information regularly.

Management of District Learning Centres

The notable points for management of district learning centres are:

- i. Taking suitable care of learning materials at the centre so that the users may have easy access to necessary the materials
- ii. There will be a separate room for a learning centres at district offices. The room will contain collected books and furniture for keeping materials, easily movable, books and other materials
- iii. District training officers will act as officer-in-charge, he will buy necessary materials and will check time to time the utility of existing materials and necessity of new materials
- iv. An office assistant will be appointed to help the district training officer for learning centre management
- v. Received learning materials from any source will be noted in a permanent register by the office assistant. There will be one distribution register. District training officers or other officers will sign during receipt and delivery of materials
- vi. After having receipt the assistant will give an index number at every book and will keep those in almirah or rack through catalogue
- vii. A list of all learning materials of the centre will be hung in the room, so that visitors can easily see the available materials in the centre

- viii. The assistant will provide certain books and other materials as per the user's request and will keep in proper places after getting back
- ix. The assistant will be careful enough and if any problem occurs, he will inform the duty officer.

Management of Upazila Learning Centres

The learning resource materials should be kept in an affixed room at upazila offices. These should be kept in such places where visitors will not disturb the officers. Like the district office, in the upazila office, there should be an officer to look after the learning centre and the similar controlling system will be there. Learning centres can be set up at unions or block levels with the help of upazila. The responsibility of management of learning centre will be carried by Sub-Assistant Agriculture Officer.

Use of Upazila and District Learning Resource Centre

All level workers of districts and upazilas, specially the SAAOs should be inspired for full use of learning centres. Some ways to encourage are

- i. To advice that use of a learning centre is an indicator of self-directed learning for continually increasing their overall of knowledge and skill
- ii. Ensure that all workers are aware of existing learning materials
- iii. Informing the workers about the use of a learning centre
- iv. The learning centre will open and close on time
- v. Ensure that workers can use the learning resource centre during the office time
- vi. Monitoring the centre and taking measures to publicize about the centre
- vii. Keeping the environment of the resource centre, pleasant.

Learning centres can provide important contributions for all level extension workers to enhance continually the knowledge and skill. Increasing the collection of learning centres and updating, efforts should be taken to create interest of workers for using more learning materials for self-directed learning.

9.10 Assets Needed at DAE Field Offices to Ensure Standard Services

To ensure desired work, there should have supply of supplementary materials, property and finances. There should be appointment or promotion of officers and staffs at all levels of DAE. Extension officers by using necessary property can provide fruitful service and as a result the aim of the department will be easily fulfilled. For areas, districts or block levels, the necessary property and equipment are listed below:

Regional Level

- i. Suitable infrastructure and necessary furniture
- ii. Necessary vehicles
- iii. Multimedia Projectors, Screens, Pico Projectors and related products
- iv. A generator or a solar system
- v. Laptops for additional director or deputy director each
- vi. More than one desktop and printer for official work
- vii. Internet connection facility
- viii. A scanner, a photocopier, a camera
- ix. Necessary number of display boards
- x. Necessary furniture and other materials for conducting various trainings.

District Levels

- i. Suitable infrastructure and necessary furniture
- ii. Necessary vehicles
- iii. Multimedia Projectors, Screens, Pico Projectors and related products
- iv. Almirahs, Book shelves, Display boards, furniture, tools and necessary resources
- v. A generator or a solar system
- vi. Laptops for Deputy Director, District Training Officer and Additional Deputy Director each
- vii. More than one desktop and printer for official work
- viii. Internet connection facility
- ix. A scanner, a photocopier, a camera
- x. Necessary amount of display boards
- xi. Necessary amount of furniture and other materials for conducting various training.

Upazila Levels

- i. Suitable infrastructure and necessary furniture
- ii. Necessary vehicles
- iii. A generator or a solar system
- iv. Laptops for every officer
- v. More than one desktop and printer for official work
- vi. Internet connection facility.

- vii. A scanner, a photocopier, a camera
- viii. Necessary amount of display boards
- ix. Necessary amount of furniture and other materials for conducting various trainings.
- x. Almirahs, book shelves, display boards, furniture for the training centres.

Block Level

- i. Necessary office furniture chairs, tables and Almirahs
- ii. Necessary vehicles
- iii. Almirahs, book shelves, display boards, furniture for learning centres

ATI (Agriculture Training Institute)

- i. Suitable infrastructure and necessary furniture
- ii. Necessary vehicles
- iii. A generator or a solar system
- iv. Computers, photocopiers, multimedia projectors, Pico projectors and other related equipments
- v. A scanner, a photocopier, a camera.

Horticulture Centre

- i. Suitable infrastructure and necessary furniture
- ii. Necessary vehicles
- iii. Computers, photocopiers, multimedia projectors, screens, pico projectors and other related equipments
- iv. A generator or a solar system
- v. A scanner, a photocopier, a camera.

9.11 Encouraging Extension Workers for Skill Development and Conducting Evaluation

- i. Managers should encourage workers to improve their overall competence through continuously acquiring relevant knowledge and skills.

- ii. Supervisors will take action to measure the capacity development level of extension workers in terms as low, medium and high
- iii. Everybody will be accountable and responsible for self-skill and ability development
- iv. Self-skill and ability development effort will be considered an important part of performance evaluation
- v. Every worker either single or with partners will regularly exercise his or her training or learning activities and will keep sharing discussions with the supervisor or colleagues
- vi. Supervisors will evaluate improvement of competence level of subordinate extension workers regularly based on performance appraisal including other different indicators
- vii. Additional Director of a region will monitor training activities of all levels under his supervision and will perform the technical audit as well
- viii. Supervisors will inspire more extension to acquire more knowledge and skill and will take effective measures suitable for them.

Chapter
10

Selecting Extension Methods



Selecting Extension Methods

10.1 Introduction

One of the principles of the 'revised extension approach' of the Department of Agricultural Extension is the use of a wide range of extension methods. According to various data and statistics, farmers depend highly on peer farmers, while input dealers come in second and agricultural extension workers come in third places respectively. Thus in order to increase the agricultural knowledge and skills of the farmers and input dealers, and to earn the farmers' trust on accepting extension service, it is very important to choose an appropriate method of extension.

In most of methods that the Department of Agricultural Extension uses, farmer's group or organizations are included directly; and printed media as well as audio or visual aids are used to strengthen the group or organization based extension events. The department currently doesn't emphasise on individual extension methods; however, it might prove effective in certain cases. A summary of the various methods used for extension is given below:

- i. Individual extension methods
- ii. Farmer's group or organization-based methods
- iii. Mass media and audio-visual aids.

10.2 Individual Extension Methods

DAE's principle is to work with farmer's groups however it can be quite useful to hold personal visits of individual farmers or farm-families. The main objective of a personal visit is to practically identify and analyse the main problems a farmer or a family faces, and choosing the most acceptable procedure to face them.

Individual visits might be necessary in cases such as:

- i. If a farmer or a farm-family requests advice on a particular problem
- ii. If the extension worker needs to determine a particular problem of an individual farmer in a particular area
- iii. To raise awareness among farmers the worker has previously visited and to motivate their active participation in extension programmes
- iv. If workers wish to introduce themselves with a certain farm or farm-family
- v. For an extension worker to learn about a new farm, or gain knowledge about on-farm research conducted by a particular farmer

- vi. If the extension worker and a farmer need to discuss the overall farming plan and management.

Regardless of the purpose of the visit, it is necessary to properly complete the whole range of activities. Farmers may need further explanation and information regarding a specific new practice, and it might need to show them how to do it through demonstration. Farmers may request technical information that field workers don't have.

Personal visit allow the field workers to present the agriculture policies of the government, discuss the current market system and supply information about the agricultural activities of the area. Some visits may be held urgently where it is needed to provide instant advice (such as about disease and insect-pest infestation or diseases of plants).

Personal visit also enables the worker to develop relationship with the other members of the farm-families. Different members might have different understandings and perceptions about problems and their possible solutions. Field workers should encourage all the family members to participate. This can increase the opportunity of women and youth to be actively involved in the local extension programmes.

Personal visit can be an important way to build a friendly relationship with local farmers and earn their trust and loyalty to the extension service. However, making an effective individual method and planning, arranging and implementing them are time consuming for reaching larger numbers of farmers. Individual visit is an expensive extension method and should be planned with care. The reason for personal visit must be justifiable. Field workers should also be careful not to visit the same farmer repeatedly, since it can limit the effect of the extension programme and create feelings of dissatisfaction among the other farmers. They might think the extension programme has nothing to offer them or that they are being neglected deliberately.

For planning a proper individual visit, the following checklist might be used:

1. Before the Visit

- i. Decide the time of visit if possible
- ii. Determine the purpose of the visit
- iii. Analyse data regarding previous visits
- iv. Prepare the technical information that might be needed
- v. Include the proposed visit into the programme scheme.

2. During the Visit

- i. Be punctual and talk with the farm-family in ordinary attire
- ii. Approach the farmer and his family with a friendly attitude
- iii. Ask questions regarding the farm
- iv. Listen to the farmer's problems as well as his opinions regarding how to solve them
- v. Explain the technical information or advice clearly and see if the farmer has understood them. Note down the problems the solutions of which you don't know and send them to superiors or colleagues
- vi. Discuss the activities that are progressing well
- vii. Write down notes regarding the farm and the visit
- viii. Decide the date and purpose of the next activity and visit (if needed) together.

3. After the Visit

- i. Check and ensure that the data collected from the visit are accurate
- ii. Make arrangements for the follow-up activity
- iii. Decide the date of the next visit and include it in the next work programme.

During the visit, field workers must speak in a language that everyone understands. For this, the SAAO must be a good listener as well as a good speaker. The farmers need to be encouraged to share their problems in their own words. The SAAO should ask the farmers suitable questions that would let him understand them. It is likely that many of the benefits of the visit will be lost if the discussions and conclusions are not written down.

The collected information should be noted down in a diary. The important points are:

- i. Date of the visit
- ii. Purpose of the visit
- iii. Conclusions that have been agreed upon
- iv. Other information or comments that the field worker might like to add.

It's important for the workers to take steps regarding the problems that could not be solved during the visit. They must not discourage or disappoint the farmers; otherwise the farmers could potentially lose trust in the services DAE provides. It takes years to build trust and reliability, and the field workers must protect them. If the worker agrees on another visit with the farmer, it should be written down in the SAAO diary and included in the concerned work programme.

10.3 Adopting New Technologies

Choosing what to do, when to do and how to do in a farm are complicated to make decisions. Some decisions are made based on information collected from the Department of Agricultural Extension. The process to decide whether to accept new thoughts and ideas is called the 'adoption process.'

There are five commonly acknowledged steps of the adoption process as follows:

- i. **Awareness or knowledge**
Increasing awareness of new ideas by constantly accumulating knowledge about new things
- ii. **Interest or Persuasion**
Seeking further information, forming and changing attitude towards accepting new ideas
- iii. **Evaluation and Decision**
Collecting information in details and making judgement whether to try or reject an idea
- iv. **Adoption or confirmation**
Reaching a decision for applying new ideas comprehensively replacing old ones
- v. **Reinforcement**
Collecting additional information about the success of adopting the new technology affirming the validity of the decision

Other Standards of Selecting a Method

Local extension workers have the responsibility of choosing any method to adopt in local extension projects. The worker should select the most efficient method. The steps of the acceptance process play an important role. A worker can use some certain standards. These would be:

- i. **Expense:** Choosing a method which is cost-effective and can be implemented through a planned budget, reducing the expense.
- ii. **Extent:** Choosing a group extension method that can reach a large number of farmers.
- iii. **Complication:** Choosing an easy method which won't require a large number of equipment or consume a lot of time to plan and implement.
- iv. **Skills:** If the extension workers do not possess the necessary skills to choose or implement a method, training might be needed.
- v. **Targeting:** Choosing methods that are particularly well-suited for specific types of farmers.
- vi. **Participation:** Choosing a method that will enable the farmers to participate in learning process.

Choosing a Method Depends on

- i. The message
- ii. The participants

- iii. Available resources and
- iv. Complementary elements

The Message

The extension method must be appropriate with regards to the topic or message it aims to spread. For example, the method for mango grafting might be best shown to a group of farmers through a visual demonstration.

The Participants

The extension method must be appropriate for the farmers or participants. For example, conducting a method of demonstration might be best suited for female farmers.

Available Resources

The extension method must be cost effective. Hiring necessary equipment or re-using the same things might help lessen costs.

Complementation

Regardless of the method used, it must complement other extension methods. For example, exhibitions and field days complement each other, using visual aids for formal training days complement each other as well.

Chapter 11

Extension Methods Based on Farmer's Groups or Organisations



Extension Methods Based on Farmer's Groups or Organizations

One of the principles of the 'Revised Extension Approach' that the Department of Agricultural Extension (DAE) follows is to work with farmer's group or farmer's organisations. The benefit of that is it allows the extension service to reach a large number of farmers at the same time. One of the conditions to provide the service in an efficient and effective way is to select and use the appropriate extension method. The following should be considered while selecting a suitable method for extension events with a farmer group or organisation:

- i. The method should create effective interaction between the workers and farmers
- ii. The method should be cost effective
- iii. The method should allow a large number of farmers to efficiently participate at the same time in the extension event
- iv. The method should be direct and practical
- v. The method should be easily understandable, appealing and technologically appropriate.

It is sufficient to use just one method for spreading the extension technology or message; however in some cases it is necessary to use more than one method for meeting a certain purpose. Whether to use more than one method depends on the type of the message intended to be disseminated.

Pre-planning and proper implementation of the extension method determine its true success and worth. Proper monitoring, evaluation and follow-up can help determine the level of success of each method, which can be helpful for determining methods in future. Therefore, the extension workers must put sincere effort to monitor, evaluate and follow-up after implementation of the extension method. The concerned higher authorities also must strictly oversee the procedure.

Group extension methods are at the centre of all the extension approaches of DAE. A short description of the potential extension methods to use for farmers' groups or organizations is given hereby:

1. Demonstration	7. Folk media
1.1 Result Demonstration	8. Meetings with farmers' groups or organization members (Group meetings)
1.2 Method Demonstration	9. Yard meetings
2. Field days	10. Farmers' conversations

3. District or upazila agricultural fair	11. Krishi Ziggasha
4. Farm walks	12. Participatory technology development
5. Farmers' rallies	13. Formal training days
6. Motivational tours	14. Farmers' Field School

11.1 Demonstration

Holding demonstration is a convenient way to transfer technologies and encourage trying out new ideas among farmers. Usually the technology or topic is chosen according to the context and based on the farmers' information-needs. The benefits of technology transfer through demonstrations are:

- i. This method is very efficient for places where people are mostly illiterate
- ii. The medium of learning, observing and doing through demonstrations is the best media for transfer of technology
- iii. Farmers can adopt to it easily through this method
- iv. It is one of the good ways of integrated approaches
- v. It fosters increased trust between extension workers and farmers
- vi. Builds leadership
- vii. Helps to build a positive relationship between extension workers and farmers
- viii. Lowers the cost of technology transfer.
- ix. Can be of assistance during farmer assemblies and field days' work.

Limitations

- i. Relatively time-consuming
- ii. Dependent on the skills of the extension workers
- iii. May face risk in any season (excessive rainfall or shortage of rain or flood or draught).

Result Demonstration

Result demonstration showcases the results of applying a certain technology in a field. Depending on the problems and demands of the farmers, DAE encourages various types of result demonstrations. These include:

- i. Cropping pattern demonstration
- ii. Block demonstration
- iii. Single season demonstration
- iv. Single technology demonstration
- v. Package demonstration.

Cropping Pattern Demonstration: This demonstration is carried out during three different seasons of the year. It exhibits crop sequence on a certain piece of land throughout the year. Example: cultivating Aman rice in Kharif-II season, Pulse oilseed Boro rice in Rabi season and Dhaincha in Kharif-I season. This type of demonstration is useful for teaching how to integrate and adapt to a new crop into their farm management (cropping pattern helps increase the fertility of soil).

Block Demonstration: Block demonstration is a large demonstration conducted in a farm. This demonstration is planned and carried out with a group of farmers who cultivate lands situated side-by-side. This demonstration can be a cropping pattern demonstration, a single season demonstration, a single technology demonstration or a package demonstration by nature.

Single Season Demonstration: This demonstration usually shows only one particular side of producing crops. Single season demonstrations last for only one season of the year such as Kharif-II, Rabi or Kharif-I.

Single Technology Demonstration: This type of demonstration compares a new technology with the current technologies farmers use. A single technology demonstration contains two plots, one is a control plot (variety or fertilizer or irrigation or pest and disease management) which is a plot of farmers, and the other is the demonstration plot. There is to be only one difference between the two plots. This is a demonstration that serves the purpose of clearly demonstrating the benefits of a certain change.

Package Demonstration: This demonstration is usually conducted to introduce a new crop to a farming area. This showcases information about when to cultivate a variety of crop, how much fertilizer should be used and when, what method to be used for irrigation, how to control pest infestation and diseases, and other aspects regarding producing the crops.

Planning

Planning a result demonstration might concern a combination of these aspects:

- i. Using upazila plans
- ii. Selecting a demonstration site
- iii. Planning a necessary inputs
- iv. Training farmers.

Using the Upazila Plan: The time and the types of demonstration to be conducted are decided during upazila planning workshop. This planning determines and chooses the best demonstration to be held from among single season demonstrations or cropping patterns, block demonstrations or single technology demonstrations. Then it proceeds to decide the schedule of the demonstration chosen.

Selecting Demonstration Site: The site of the demonstration should be easily visible and easily accessible, and should be situated on a representative land. The farmers chosen for the

demonstration should be representatives of targeted groups or organisations, who have determined their needs or problems and have interest. In case of a individual farmer exhibition, the farmer chosen must be a member of the main group or organisation with the demand or problem to solve.

Planning the Necessary Materials: Plans for necessary materials are made depending on the size of the plot and technology used. A signboard should be present containing the purpose of the demonstration, description of the technology and the schedule of the field day.

Farmer Training: The farmer moderating the demonstration is trained regarding the purpose and motivation behind the demonstration, what it aims to gain, and how to implement it.

Implementing: The necessary training and inputs should be provided to the farmers on the same day before setting the demonstration. To ensure successful implementation, a number of actions are to be taken after the demonstration is set. These are:

- i. Regularly inspecting the demonstration plot and meeting the farmer moderating it
- ii. Regularly holding extension programme of the group or organisation on the demonstration site
- iii. Preserving the data of the demonstration, keeping a written record of inputs, the application method, time of usage, problems, solutions and results in a register
- iv. Monitoring and evaluating the demonstration.

Method Demonstration

The method demonstration is a group extension method that may last one to two hours. This method demonstrates a certain skill step by step and helps the participants practise them. This method is participatory and enables farmer to learn through working practically.

Planning

The topic of method demonstration should be determined based on the farmers' needs or problems. The topics should be defined by consulting the farmers and the work should be analysed after reaching a point of agreement on a certain topic.

Once the analysis is done, a suitable time and place should be chosen. This should be done by consulting with the farmers' group or organisation, and the date and time should be convenient to the farmers while the venue should be nearby to their houses.

The check-list of the method demonstration should contain the following:

- i. Determining demands or problems and defining the topics for the method demonstration
- ii. Evaluating the current knowledge of the farmers as well as conducting the analysis of the work through consulting them

- iii. Choosing a suitable venue- field or house as well as a date and time
- iv. Demonstrating and practising the work
- v. Collecting necessary materials (multimedia, flip chart, live samples, machines, pens and paper etc.)
- vi. Training and briefing the farmers who will assist in demonstrating the method
- vii. Visiting the location chosen as the venue beforehand to ensure it is appropriate to hold the programme.

Implementation

The extension worker is the one responsible for managing the demonstration, so he or she must arrive at the venue beforehand with necessary materials and ensure everything goes smoothly. A successful implementation of the method demonstration needs:

- i. A formal environment where farmers can ask their questions comfortably
- ii. A proper explanation of the purpose of the method demonstration
- iii. Discussion about how to use the training materials
- iv. Demonstrating methods accordingly to the task analysis
- v. A detailed explanation about every step of the important learning points
- vii. Making a briefing at the end of the programme
- vii. Giving farmers time to practise the method
- viii. Providing encouragement and boosting self-confidence of every participant to apply the method in his or her own farm or homestead.

11.2 Field Day

A field day is a group extension method that's held on the venue of result demonstration. On field days, a large number of farmers are given the opportunity to visit the demonstration venue, learn the technology that's being demonstrate and ask questions regarding it, as well as testing it out by applying it in his or her own farm. A number of continuous field days create an opportunity for farmers, especially the ones who attend demonstrations that last a year such as cropping pattern demonstrations, to gather the farmers again.

Planning

Arranging field days on particular times during the demonstration, such time when certain management practices are done, or time that clearly showcases the benefits of demonstration. Field days should be held 3 or 4 times for demonstrating crop production.

- i. During sowing or planting the crops
- ii. When fertilizers or other inputs are applied
- iii. In the midst of the season when the difference of growth of the crops can be seen vividly
- iv. During harvesting and threshing crops when the harvest, cost and profit can be compared.

It is advised for field days to be held 2-3 times for seasonal demonstrations. Cropping pattern demonstrations require three successive seasons, so it is advised to hold two field days per season and therefore, six field days in total in a year.

The date and time of a field day must be decided beforehand and made known to the neighbouring farmers. The number of participating farmers should not be larger than 20-25. A small group would have a better opportunity to observe closely and listen to the explanations properly from fellow farmers and extension workers. To improve the quality of the field day, multimedia, audio-visual aids or printed materials should be used as much as possible. The check-list of a proper plan for successfully implementing a field day should contain:

- i. Deciding a suitable date and time through discussing the farmers conducting the demonstration
- ii. Collecting the equipment that might be necessary
- iii. Advertising news of the field day to neighbouring farmers and farmers who have participated in such events before, and bring farmers from the same socio-economic backgrounds if possible
- vi. Ensuring that the farmers conducting the demonstration can properly demonstrate and explain the purpose of the demonstration, how it was carried out, the expected profit, cost and harvest, etc.
- v. Assuring the convenience of transport as well as freely moving around in the field, and clear visibility for the field day by inspecting the demonstration plot beforehand
- vi. Open discussions regarding technologies are necessary to be held on the field day, and megaphone may be used if needed.

Implementation

SAAO or other extension workers in charge should arrive with all necessary materials beforehand and ensure that everything is progressing without a problem. For implementing a successful field day, the following are needed:

- i. Creating a formal environment that lets people ask questions comfortably and explain to farmers that the demonstration was established on the basis of their main demands.
- ii. The farmer conducting the demonstration should be encouraged to play an active role in explaining the purpose of the demonstration, what has been done in it, and expressing their opinions the benefits and cost of the technology.
- iii. Ways should be arranged for the farmers to thoroughly walk around the demonstration and watch the harvest closely. Farmers should be encouraged to observe the difference between a demonstration plot and a control plot if present.

- iv. Extension workers should hold a former discussion with farmers on if they have clearly understood the themes of the demonstration, their thoughts about the technologies and whether they would like to test them out in their own farms or not.
- v. Names and phone numbers of the participants should be kept written.

11.3 District or Upazila Fair

To create awareness about improved technologies among a large number of people within a short time and increase interest in agricultural and rural development by holding fairs is a useful method. Fairs play a valuable role in strengthening relationship amongst participants (partners) engaged in the extension work. A fair lets farmers observe various technologies presented by research institutes, private organisations, other government organisations, dealers who provide inputs, nursery owners, etc.; and hold informal lively discussions.

Planning

For planning, Upazila Agricultural Technical Coordination Committee (UTC), Upazila Parishad Coordination Committee and District Agricultural Technical Coordination Committee (DTC) should hold discussions so that everyone can share their thoughts. Planning for the fair should include the following actions:

- i. Discussing the topics, schedules and management materials in meetings held by various committees
- ii. Distributing duties amongst each participating extension organisation
- iii. Inviting NGOs, input supply companies or dealers, nursery owners, fruit merchants, etc. to set up demonstration stalls
- iv. Finalizing physical layout of the venue, setting up stalls, objects to be exhibited, arrangements to exhibit the technologies and other objects, organizing opening and ending ceremonies and arranging for awards etc.
- v. Ensuring wide publicity within districts and upazillas, for example: using mikes locally, publishing advertisement in newspapers, using personal contact and social media, putting up posters, and airing the news through dish cables and local radios.
- vi. Collecting high quality vegetables, flowers, fruits, fruit-bearing plants and agricultural commodities for demonstration from various areas of the district and upazillas
- vii. Making arrangements to exhibit technologies developed by local farmers
- viii. Selecting high quality technologies that local farmers can relate to carefully through consulting with other extension workers, and making arrangements to properly exhibit them in the fair
- ix. Arranging awards and awarding ceremonies
- x. Showing multimedia, documentaries and making instruction sheets and leaflets enough to distribute among the participants on shown or exhibited technologies.

Implementation

There are no specific rules or formats to arrange a fair. This should be planned and carried out as a combined effort by cooperating with other extension service providers locally. These fairs usually last for three to seven days. It is important to take sincere care of the objects exhibited so that they can appeal to the farmers.

The appeal of the fair depends on the width of extent it can reach; thus, it needs mass publicity. It would be a good idea to invite journalists and make a short briefing to give them beforehand. For example, the authority of the district and the upazilla could wish to spread a certain technology, or articles could be published about the farmers who have shown talent and played an important role in the fair through newspapers or television, web portals, websites and social medias.

11.4 Farm Walks

A farm walk is an occasion when a group of farmers visit a farm and walk around it to observe it. The host farmer and the extension workers should accompany them during the time.

The purposes of touring a farm could be:

- i. Creating an opportunity to observe how a neighbouring farmer tests or adopts a new technology
- ii. Creating an opportunity to see technologies developed by neighbouring farmers
- iii. Making a way to analyse a farming system and determining opportunities for improvement
- iv. It is a useful supplementary way to the problem census regarding farmers participation in the FINA process and one of the techniques of PRA.
- v. Providing the farmers with an opportunity to reach an agreement regarding how to tackle a certain problem or how to carry out plans on new technologies in groups or organisations.

Planning

The plan to walk a farm could include the following:

- i. Determining the appropriate purpose, topic and place
- ii. Making a walk to the location beforehand to ensure the place is appropriate and easily accessible via transport
- iii. Making sure that the farmers of the farm to be visited are prepared and able to explain their farm management such as problems, advantages, innovating and adopting new technologies etc.
- iv. Deciding the date and time by discussing with the participating farmers and agreeing to a meeting point to gather and start the walk together.

Implementation

SAAO should arrive in the selected place with necessary materials and equipment. Successful implementation should include the following issues:

- i. Creating a proper environment where people can ask questions comfortably
- ii. Explaining purposes of the walk and reminding farmers of the main topic of the walk
- iii. Briefly explain which road to use to access to the farm, and introduce the farmer who has cultivated and who would lead the participants
- iv. During the walk, proper explanation of the problems of farmers running the farm, the privileges they enjoy, the new technologies developed or tested or adopted, etc. must be ensured
- v. Keeping a written record of the names and phone numbers of the farmers
- vi. Briefing the main points learned at the end of the walk.

11.5 Farmer Rallies

A farmer rally is a large extension event that features a combination of extension activities centring a main topic. These should be held only to introduce successful technologies.

Planning

Farmer rallies can be held outside like a large field day. Since it is a single event with a combination of a variety of extension activities, it should be planned very carefully; however, this event will allow other extension service providers to work together. Some of the ideas for planning a successful farmers' rally is given below:

- i. Agreeing to a certain work schedule such as: opening, presentation, performance of folk songs, presentation of participants, performing a folk drama, and award ceremony.
- ii. Selecting and making supporting materials (such as banners, leaflets)
- iii. Selecting the venue carefully so it that a large number of people can sit, and decorate attractively. It should also be easily accessible to the farmers participating
- iv. Once finalised the date and the venue should be publicized. Putting up and distributing posters, cablesTV, radios etc. can serve as medias, and DAE may invite farmer groups to participate
- v. Partner organisations should be made involved where possible; this would allow the experiences and the assets to be shared for use.

Implementation

There are no specific rules for arranging farmer rallies. However, the following might be taken into consideration:

- i. Considering time necessary to set up, arrange and decorate the venue and making arrangements for people to sit
- ii. Ensuring that each participating organisation knows the schedule of the programme and their individual duties
- iii. Test out if all the hired machines and equipment are in working condition.

11.6 Folk Media

Folk media are a traditional form of entertainment from ancient times and a media of communication throughout the country. This can convey agricultural information through entertainment in a simple way, encourage discussions on local issues among farmers and make the extension events enjoyable. Folk medias are:

- i. Gambheera, Poth songs
- ii. Jaari songs, Shaari songs, Bhawaiya, Bhatiali, Baul songs, Murshidi, Ghetu songs
- iii. Jaatra (local stage dramas), Pathonatak (street dramas)
- iv. Telling stories
- v. Dance, puppet dance, 3D animation.

These methods are comparatively less expensive and useful, especially in areas where the rate of literacy is low. Folk media can be fun and enjoyable for both farmers and extension workers. These can also be appealing to the people of radio and television, So journalists could be invited to the programme.

Planning

A short folk media event can convey a message about an important local issue to a large audience in a short time. The topics can be use of organic matter, gardening in homesteads, production and use of seeds, etc. The following steps should be considered:

Deciding the Type of Folk Media to Be Use: The type of media to use should depend on the taste of the local people. Gambheera songs, which are a type of song that conveys educational message through musical dramas; other songs or drama's could be used in various ways in extension programmes.

Selecting Actors and Actresses: Having decided the type of media, the next step is to select actors and actresses. For example for Manipuri Cultural Academy in Kamalganj thana of Moulvibazar district, Gambheera group of Chapai Nawabganj district, etc. Other areas also have this kind of groups that could be contracted to perform in the programmes. Assistance could also be requested to Upazila Art Academy and Upazila Information Office.

Making a Story: The main point of planning the programme is making the script for the Gambheera song or the drama. This script would direct actors and actresses about what to say and when to say it. The script shouldn't be too long and detailed and should cover one or two topics. New technologies of agriculture should be presented through the script on social background, however it should be carried out carefully so that the dramatic elements cannot overshadow agricultural elements.

Planning Physical Logistics: A proper time, date and place should be arranged and made known to the concerned authority. The venue should be an open place in a village or a small bazar. The acting should be short and to the point.

Publicity: Using cable TV, community radios, local newspapers, posters, mikes, and leaflets, etc, would be good ways to invite farmers to the programme.

Implementation

Once the script has been made, the programme can be announced, people can be invited and the concerned local authority can be informed of the programme being held. The arrangers of the programme could use the following advice:

- i. Arriving beforehand and ensuring that everything is going right, necessary equipments and materials are ready, and actors and actresses are present.

11.7 Meetings with Members of Farmers' Groups or Organizations

This would be creating an opportunity for farmers and extension workers to get together and hold discussions and analyses on new technologies or ideas. Groups can be separated into two fundamental categories

Small Group Meetings: Small group or organisation meetings usually do not contain more than 20 members. These members are usually members of permanent groups, or temporary groups made based on mutual interest on a certain agricultural topic. Only one extension worker attends this type of meetings.

Large Group or Social Meetings: A number of extension workers and members of the local society would be involved in a meeting of this type. These meetings are very useful to convey urgent messages or valuable information and can be publicised through using mikes or putting up posters.

Meetings can serve various purposes, such as:

- i. **Information Meetings:** Farmers attend the meetings to receive important news or information from the extension workers.

- ii. **Planning Meetings:** Extension workers and farmers discuss a certain problem and decide on a possible solution and work plan together
- iii. **Groups of Particular Interest:** Farmers who share common interests gather together and discuss certain topics with the help of extension workers and learn about the topics discussed.

Meetings are an ancient media; however, they are still serving their purposes usefully.

Extension researchers speak of 05 (five) types of meetings:

- i. Temporary meetings that cover specific topics
- ii. Planned meetings
- iii. Training meetings
- iv. Discussion meetings on special procedures
- v. Public meetings called by social communities.

Discussion Guidelines

- i. An extension worker must not show an attitude that implies he or she can offer correct solutions to every problem
- ii. Old methods of a certain area should not be negatively criticised while introducing a new technology
- iii. The worker must not treat pre-taken decisions as absolutely correct and force people to accept them
- iv. Even if the extension work seems to have already failed from the beginning, the worker must not give up or lose patience.

Planning

The topics and sizes of the discussion should be decided based on the demands or the problems the farmers face. These include:

- i. Working together with existing farmers' groups or organizations where possible
- ii. Establishing partnership with other organizations that have related or approved farmers' groups or organizations of their own
- iii. Working with permanent as well as temporary farmers' organizations
- iv. Working with group members who come from the same socio-economical background and share the same interest

Three fundamental matters should be considered while arranging a training session or meeting with a farmers' group or organization. They are the size of the group or organization, formality and balance.

Size

Large meetings achieve less of their aims and manage to meet a very small portion of the demand of the participants and comparatively small groups serve better. By rules, having more than 20-30 people in a team can create a lot of problems, however this also depends on the situation.

Formality

Group meetings are successful when held in a formal way under relaxed rules and regulations. The extension workers in group meetings must ensure that everyone has the same opportunity to participate. If the meeting is extremely formal, it needs a chairperson, a discussion list and a formal description of work plans, especially when written decision on a certain topic is needed. While working with existing groups, for example, working with a group related to a private organization, it should be kept in mind that the group might have their own rules and regulations regarding meetings and they should be followed.

Balance or Equality

Balance should be kept during the meeting through presentation, discussion, providing information and encouraging participation.

To achieve the intended aim, group meetings should be lively, participation-based and open-spirited. Lecture-based discussions might bore people.

Necessary Topics to Plan Group Meetings

- i. Ensuring that every member has agreed on the necessity of the group meeting and why it has arisen
- ii. Inviting a small number of people who come from the same background and share the same interest or has already joined a group
- iii. Agreeing to a date, time and place acceptable to the farmers.

Implementation

The following should be followed to hold a successful meeting:

- i. Creating a proper environment where participants feel comfortable to ask questions
- ii. Sitting arrangement- the best way might be sitting in a circle on a carpet outside the house, this will let the participants see each other properly.

- iii. Explaining the purpose of the meeting and reminding the farmers of the main problem or demand for the discussion
- iv. Not prolonging it too much, one or two hours should be enough.

The extension worker can encourage farmers to regularly participate in meetings to discuss certain topics of their interest during the cropping season.

Building a group under a Village-Based Farmers' Organisation

Village-based farmer's organisation is a model that lets a large number of farmers gather together and carry cooperation-based activities.

Purposes

- i. Ensuring the best use of the limited asset available by building Village-Based Organisations (VBO) and help farmers become independent
- ii. Ensuring the highest possible income, safety of food and nutrition by crop diversification, cultivating fruits and planting vegetable gardens on yards of houses and schools
- iii. Setting a correct market connection between the producer and the receiver of the food
- iv. Helping the farmers increase their income by learning more about value addition, processing and post-harvesting management of agricultural goods.

Strategy

Various village organisation-based activities can be carried out aiming to improve the socio-economic status of the village people living in poverty. Building village-based organisations through the participation of all farmers of the village, setting principles, constitutions of the organisations, and electing a management committee must be done.

The shares and savings of the members of the organisation will build organisation fund. It will be treated as a rotating fund, and will grant loans as investments for income-generating activities such as producing crops, processing and distributing them, farming animals and fish, etc. and loans will be granted based on the applications of VBO members and decisions of the management committee. The management committee will bear the responsibility of giving the money, collecting the money and keeping account. This system will let the members living in extreme poverty increase their share and income by taking loans from the rotating fund and investing into income-generating activities. The Department of Agricultural Extension would conduct motivating tours, hold workshops, farmer field schools, various trainings, demonstrations on crop diversification and high-priced crops, provide equipment, build various seller groups on village levels to distribute products in the market and make connections to small scale and large-scale buyers.

An agricultural library could be set up in the village, which would provide various kinds of books on agriculture, leaflets, folders and other publications as well as regular agricultural magazines and local daily newspapers. Free evening school might be arranged with the help of local school-college students for the illiterate farmers. Notices on agricultural 'dos' and 'don'ts' issued from the DAE and the government at various points and other publications regarding useful advices on agriculture should be put up on the notice board of the library regularly.

Types of Farmers' Groups

A group on rice or cereal crops could be set up by gathering the farmers sharing mutual interest in areas with potential for rice or cereal crops producing. Similarly, vegetable cultivating farmers' group can be formed with farmers who share interest in cultivating vegetables using the portion of village with the potential to grow vegetables; and fruits cultivating farmers' groups could be formed in the same way.

Actions to Be Taken

- i. DAE should play necessary roles to register the village-based organisations
- ii. The organisations should be managed and known as DAE's own groups
- iii. The members of the farmers' organisations should be given priority to access the privileges and benefits, assistance with material providing, opportunities to receive training, etc, gained from various projects.
- iv. Involvement of DAE in regular meetings and issuing work plans should be ensured
- v. Opportunities to build connection with other organisations should be created
- vi. Annual reports should be issued
- vii. The organisations should have shares and savings
- viii. DAE should help the planning for production and distribution in market as well as providing follow-up for implementing it
- ix. The organisations should be involved in income-generating activities or businesses
- x. The organisations should be strengthened to be involved in marketing management
- xi. Transparency and show-cause within the organisation should be ensured.

When the time comes, the farmers of the villages of every block in every Upazila unites into organisations, gain knowledge and skills to learn about new and modern technologies and take correct decisions through the use of agricultural libraries and united agricultural equipments; farmers will hold the key to control their own fates. The brokers and the merchants will lose their hold over them and the cooperation based agricultural production and the marketing system will be possible to build, which will help the farmers earn the fair price.

11.8 Yard Meetings

Yard meetings can play an important role in agricultural extension activities. This allows:

- i. Open discussions to be held with the farmers in a homely environment of the house yard
- ii. The farmers may overcome their shyness and fear to the higher-ups
- iii. Farmers can have a better opportunity to express their thoughts
- iv. Agricultural problems on grassroot levels can be determined

11.9 Farmers' Clubs

Farmers' club programmes could be introduced for members of the civil society, social representatives, journalists of print and electronic media and other concerned people at upazila, district and regional levels. This could discuss topics such as gardening on the roof, farming honey bees, cultivating safe vegetables and fruits by organic methods in the homestead, good agricultural management, vermicomposting, pheromone traps, NPV, trichoderma harziana, organic pesticides, irrigation methods, nutrition, etc.

11.10 Inquiring about Agriculture or Krishi Ziggasha

Inquiry programmes about agriculture could be introduced among the students of schools, colleges and madrasa's for spreading modern agricultural technologies. If the programme is held on a certain day every month by discussing with the head teacher or principal, the students' need of knowledge about modern agricultural technologies would be fulfilled.

11.11 Motivational Tours

The motivational tour stands for a group of up to 30 interested members being taken to visit a different place or research institute from their own village or block. Usually motivational tours last for a day. It lets the farmers see the new technologies used or developments made by farmers of a different area or technologies developed in research centres, garden nurseries or activities that other extension organisations have carried out. NGOs help showcasing them to farmers of other areas through motivational tours. This tour creates a good opportunity for exchanging thoughts and ideas among farmers of different areas.

Planning

The topics of motivational tours are decided based on the problems farmers face and the needs they have for information. Once the topic is determined, the extension workers can search for data and source of data.

The following plan check-list can be used for a motivational tour:

- i. **Deciding the Technical Content and Place for the Tour:** There shouldn't be too many topics or places decided for the tour. If a programme contains a small number of topics and places, it enables the participants to observe, learn, practice and test out new technologies much more efficiently.
- ii. **If Involved with any Research Organisation Involved:** In that case the plan should be made accordingly by consulting them, through contacting them via letters, telephones or mobile phones or directly visiting them regularly.
- iii. **If Farmers of other Areas are Involved, the Formal Plan Should be Made After Discussing with Them:** for example visiting them, keeping in contact with them through the local extension worker and ensuring that they are able and prepared to show their farms to the touring farmers.
- iv. **Visiting the Venue of the Programme Beforehand:** Ensuring that the location of the programme is appropriate and easily accessible via transport, getting familiar with the local situations and meeting other farmers who might be involved.
- v. **Deciding the Route, Day, Time and Timeline of the Tour:** Making sure that the day and time is acceptable to everyone.
- vi. **Arranging Transport:** If DAE has sufficient vehicles then they should be used. If other organisations have them, they may be hired.
- vii. **Making Arrangements for Refreshments and Arrangements for Staying If Needed:** The farmers might agree to bear some of the cost, that would indicate true interest for the tour.
- viii. **Gathering or Arranging for the Farmers to Meet at a Convenient Place and Time:** This would be easy to do if it is decided beforehand through mutual agreement.

Implementation

If planned well, it is very easy to carry out a motivational tour. While arranging the tour, the following topics should be considered:

- i. Making sure that the farmers were picked up from one place accordingly to the plan and the planned route and the schedule are being maintained
- ii. The conductors of the tour should encourage the touring farmers to answer questions and explain topics of observation
- iii. Briefing the programme, answering any final questions while coming back and deciding on a possible succession procedure through discussion
- iv. Noting down a list of names and mobile phone numbers of the farmers before the tour is over.

11.12 Participatory Technology Development

Participatory Technology Development is a process of developing technologies conducted by farmers. The purposes of this process are:

- i. Testing the farmer's ideas on technologies
- ii. Locally testing out technologies that have been successful in other areas
- iii. Testing out partial changes made to the existing or recommended technologies or making arrangements for testing if they are more efficient in local environment
- iv. Enabling the farmers to solve their own problems by testing out new ideas or technologies.

Participation-based technology development process is different from demonstrations, because:

- i. Farmers are not shown tested or recommended technologies
- ii. Is run on the basis of participation of farmers and farmers are the complete stakeholders
- iii. Cannot be predicted, nothing can be told for sure and nothing is promised.

Participation-based technology development is a learning process for everyone including extension workers who have worked as service providers before. Farmers are actually active developers of a lot of technologies. Participation-based technology development is related to the revised extension programme which encourages participation from farmers in extension work.

Planning

Participatory Technology Development projects are carried out for testing out solutions to the problems of farmers or farmers' groups or organisations. The following steps can be followed for planning:

- i. **Deciding the Topic with the Farmer or Farmer's Organisation:** The farmer and the extension worker should decide the topic of the technology testing together. SAAO plays the main role here, however, the responsibility belongs to the Agricultural Extension Officer. This should be consulted with the Scientific Officer of the research centre.

When the farmers identify a problem, the process of testing out a new technology or idea is starts right away. At this stage farmers should be encouraged to ponder upon problems, privileges and ideas a lot. Regardless of the source of the idea, the farmer has the authority to take the final decision about what to do and how.

- ii. **Planning a Field for Testing:** Farmers or farmer's organisations and SAAOs, with the help of Agricultural Extension Officers, can discuss policies of technology testing, development and make proposals. The proposal must be regarding various ways of increasing production that farmers would be willing to test.

The proposal may contain the amount of fertilizer and the time to apply it, the amount and time of applying pesticides, distance of the planting, the level and timing of irrigation, etc. The fundamental principle is that the factors must have differences and be observed based on income, cost and benefit. Since participation-based technology development is a new process to DAE, it is better to keep it limited within one factor and two plots. Once the factors are decided, the farmer can decide what to do in which plot.

Participatory Technology Development can be successfully carried out by:

- i. Encouraging the farmer to talk about it to his neighbours and friends
- ii. Arranging field days on PTD locations. PTD should be a group process as much as possible and may be conducted along with group discussions, farm tours, motivational tours to research institutes and other extension programmes
- iii. Holding regular inspection to observe progress, give advices, learn and help solve problems
- iv. Inviting the Agricultural Extension Officer or Scientific Officer if there are problems that the SAAO cannot solve,
- v. Writing down the progress together the farmer and SAAO should write down the progress of field works, time, amount and price of materials, problems presented and steps taken together. The SAAO may write down all the data in his or her diary and the farmer can be encouraged to keep record of his own data.
- vi. The cost should be written down after the field work is done. With the assistance of extension staff, the farmer's cost, harvest (including by-product and other information) should be written down.
- vii. Holding field days to observe which technology is the most suited to this particular field and determining the proportion of cost to profit for each plot.

During the implementation of the plan, the extension worker should keep close contact with the research institute. This could be kept formally through the Agricultural Technical Coordination Committee or informally through personal contact with the extension worker and the local research worker. The plan of PTD is approved after examining it through a meeting.

11.13 Formal Training Day

A formal training day is a group extension method. This is a well-organized process that contains a written plan and purpose as well as training and training materials. It is a half-day or full-day programme held for 20-30 farmers. This could be held at any place in a district, upazila, union or block levels.

Fundamental Principles

Three principles are applicable for formal training days. These are: involving the participants, be relevant and practical and feedback.

11.13.1.1 Involvement of the Participants

The learning process of the participating farmers should be active and they should contribute actively to the process as well. The training should not be a one-way flow of information (from trainer to farmer). Farmers can learn much more efficiently if they participate actively. Knowledge can be gained through discussing, asking questions, encouraging the participants to ask questions and always relating the topics to the farmers' interests and situations. They should be given the opportunity to play a role as much as possible by giving opinions, advices, sharing experiences, asking questions and showing their capabilities.

11.13.1.2 Relevant and Practical

The topic of training should be related to the daily farm management and centred around related problems. Proper training should be built based on the learning needs, knowledge, experiences and the skills and abilities of the participants to learn properly. 'Practical' means the topics of the training should be of practical use. Thus, training processes should have more opportunities for learning by doing.

11.13.1.3 Feedback

The training system should encourage getting feedback from the farmers. It is possible to learn how much the farmers have managed to understand the topic through asking questions and inviting them to comment on the topic, as well as how relative their learning is to the topic. The programme may be coordinated to ensure that the participants are learning something and they will be able to use it later.

Planning

The topics of formal training days should be identified based on the demands and problems of the farmers. It is the best time to discuss those topics. It could be included in annual extension plans or carried out to meet demands on urgent basis. Necessary arrangements should be requested to the Upazilla Officers. This should include:

- a. Selecting an appropriate trainer
- b. Selecting place, date and time for the programme
- c. Making a training plan

- d. Preparing necessary training materials and multimedia slides
- e. Making budget and arrangements for the money needed.

a. Selecting an Appropriate Trainer

A trainer or a group of trainers who possess technical knowledge and necessary skills to train and help farmers learn about the topic should be selected.

b. Selecting Location, Date and Time of the Programme

The location should be chosen to meet the requirements of the participating farmers and trainers. If the trainer is local then the programme should be held at a block or union level. The location could be a local school, union parishad hall, government office or local NGO office.

c. Making a Training Plan

Determining a the objectives and making a written training plan is a must for a formal training day. The steps of making a training plan are given below:

- i. Deciding the learning objectives of the programme-1 the objectives would be the expected measurable learning result
- ii. Choosing a topic that would assist in achieving the objectives
- iii. Arranging the topics so that they are relative, logical and educational
- iv. Choosing a topic that would be efficient for achieving the objectives or encouraging farmers to participate
- v. Deciding which equipment or material would be needed to hold the programme
- vi. Allocating time necessary to carry out the programme or event.

Examples

Identifying beneficial insects might be the objective or title of an IPM programme.

Objectives: At the end of the programme participants should be able to identify benefiting insects and how they reside within a rice field.

It should be ensured that the participants have gained necessary skill to identify beneficial insects. The training plan may include the following:

- i. Showing pictures of the beneficial insects and their key identification features in flash cards

- ii. Showing preserved samples of beneficial insects and discussing their benefits and usefulness
- iii. Making a short walk in a field to search for and identify beneficial insects
- iv. Use a flip chart to explain which activities help the beneficial insects to reside in the cultivation fields

It is necessary to actively involve the participants in the formal training day, give them the opportunity to give back a message and make the programme realistic and practical. This means without limiting it to lectures and discussions, some of the following training methods should be used.

Discussions

Discussions initiate two way communication between the trainers and trainees as well as amongst the trainees themselves. It creates opportunities to dissolve misunderstandings, collect further information, exchanging opinions and test possibilities. There are various ways to assist a discussion, such as:

Question answer sessions: Requesting the trainees to write questions on the topic, collecting the questions and reading them one by one and asking the other group members to answer them. After receiving the answers, the trainer should add his or her own comments.

Brainstorming: The trainer would select a topic and ask the trainees to respond instantly. These responses would be quickly written to the board. This level of the process should not contain any discussions and only collect instant ideas and they should be written down regardless of the content. Once the board is filled, the trainer should present the ideas one by one and ask the trainees to comment on them.

The Response Providing Group After a lecture, multimedia presentation or field inspection, group members should be divided into teams of 4 or 5 and be asked to make a report on a particular side of the work done previously. One person should be chosen as the reporter who would read the report on behalf of his teammates after five minutes and answer any questions.

Group Exercise

Like discussions, group exercises should also include exchange of information amongst the trainees. It would also help the trainees to apply knowledge practically, increase their knowledge, understand the relevance of the knowledge and apply it in practical fields.

Preparing or Finding the Necessary Materials

The training method would help determine the training materials needed. These should be looked for or made beforehand. In the example of IPM we see that the materials needed are flash cards, boxes of preserved insects and flip charts.

Implementation

Training should be held in a relaxing environment. Adequate time should be given to discuss and explain the topics that has not been understood clearly. Time should be distributed carefully to each of the segments of the programme so that nothing has to be finished in a hurried manner. The words to speak should be one that every participant understands. The training should be made lively by using multimedia and various visual materials.

Roleplays

Roleplay initiates exchange of logics and counter-logics between trainees and farmers or farmers and extension workers. Roleplay cannot be used to gain actual knowledge, however they are great to use for making the farmers participate actively in educational programmes and an efficient way for extension workers to learn about the ideas, perceptions and knowledge of the farmers.

11.14 Farmer's Field School

Farmer's field schools are usually set up and run with the help of DAE headquarters. They are usually arranged to introduce a new technology as part of the national programme.

The FFS work method is field-centred and participatory, they help learning by doing. Training takes place over one cropping season and is coordinated with a combination of classrooms and field works. Training is holistic in that it follows the farming system adopted by the participants. This means training starts from the current state of agricultural knowledge and skills of the farmers.

Planning

Usually trainers are selected from the DAE main office and assigned various roles. For example, the duty of conducting the core training may be assigned to the Agricultural Extension Officer with the assistance of two SAAOs. The core trainer should receive training on the technology to be introduced and how to plan and direct FFS. Other officers might also play important roles. For example, the Additional Director or the Deputy-Director might be selected to monitor the process.

The Training of Trainers programme provides training to the core trainers about how to make FFS methods according to the technology. The course might last for quite a long time. This training usually includes:

- a. Selecting farmers
- b. Arranging training materials
- c. Selecting a location for field works and programmes
- d. Preparations for every session.

a. Selecting Farmers: The course designer would decide guidelines about how to select the participating farmers. This guideline may include the following:

- i. Ensuring that the training is open to both males and females, the number of targeted farmers or organisations would be included here
- ii. Selecting farmers according to their current agricultural practice , for example, IPM trainings would need a number of farmers who use pesticides in large amounts
- iii. Selecting the farmers who live nearby so that farmers' group formation can be encouraged during FFS and afterwards.

b. Arranging the Training Material: In case of training materials that are not kept in the resource centre, specialist training might be needed. There might be a long list of materials that must be arranged before each weekly training session.

c. Selecting the Location for Programmes and Field Works: Training sessions should be held in classrooms and on fields. Schools, UP office or NGO meeting rooms could serve as a classroom. It should be as near to the houses of the farmers as possible. Similarly, the land for fieldwork should also be near the farmer's houses so that the training can be held in an environment as natural as possible.

d. Preparations for Each Session: Weekly sessions are usually prepared by the senior technical officers and tested during the training of trainers. This process would actively involve the core trainers and train them on technologies and implementing FFS curriculums. The sessions should be flexible so that special local information can be coordinated into the curriculum.

Implementation

The main topic of the FFS would be pre-decided and the guidelines for implementation are most likely to come as a part of the trainers' training, however, the following is listed as some things to consider:

Preparing and Arranging a Course: Just as other training programme, FFS curriculum should also be well prepared and organised. FFS is a season-long process, so the training facilities should be kept prepared for the training and be maintained in an orderly manner. .

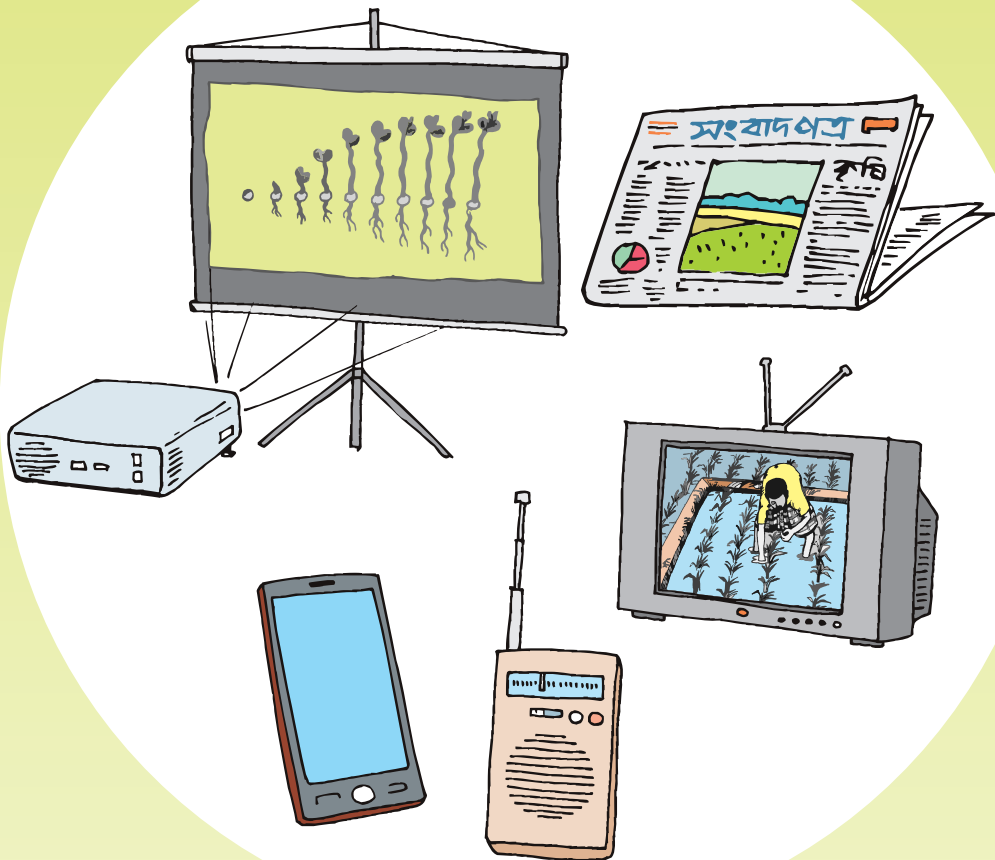
Maintaining Interest: The content of the next training sessions should be discussed with the participants when each training session will be approaching to end. For example, where the programme will be held, what the groups or organisations would be in charge of, how long the field work would last etc. FFS sessions should be as much participative and active as possible.

Farmer's Group or Organisation: The main focus of most FFS is to encourage the participants to work in groups or organisations. Some FFS intentionally include some activities in the course that would help forming groups.

Helping Two-way Learning: Both the trainer and the participants should learn together through the field work. This would support learning that is based on solving problems and actions, which is an important skill for every participant to possess for developing.

Chapter 12

Mass Media and Audio-Visual Aids



Mass Media and Audio-Visual Aids

The quickly expanding mass media and information technologies enable instant communication with large number of farmers at a lower cost. The medias required to meet the information-needs of the agricultural extension workers, mass media workers and the farmers are:

- a. Electronic media
- b. Print media and audio-visual aid.

12.1 Electronic Media

12.1.1 Television

Television plays a great role in communication. With the passage of time radios are becoming obsolete while television is spreading all over the country. Besides Bangladesh Television and many private channels are also broadcasting agriculture programmes. All television channels are also broadcasting news about agriculture. Nowadays, many community televisions have been set up to telecast the programmes like community radios.

Television is the most popular media for dissemination of information to mass people in Bangladesh. The number of television viewers will be greater than the television viewers in other places. Due to the penetration of cable TVs in rural areas, a vast population in rural areas watch satellite channels. The agricultural programmes that are being broadcasted by Bangladesh Television a few other satellite channels are-

- i. Bangladesh Television - Mati O Manush; Banglar Krishi; Krishi Dibadishi, Bangladesh Krishi; SAARC Krishi
- ii. Channell - Hridaye Mati O Manush; Hridaye Mati O Manusher Dak; Fire Chalo Matir Tane
- iii. Banglavision - Shyamal Bangla
- iv. ZTV - Shabuj Bangla
- v. Dipto TV - Dipto Krishi
- vi. ATN Bangla - Matir Shubash; Shonali Din
- vii. Ekattur TV - Krishi Jog
- viii. Mohona TV - Mohonar Krishi O Krishak
- ix. My TV - Khamarbari
- x. Bijoy TV - Krishi Karma

Besides these programmes, the television channels broadcast agricultural news in the national or local news segment. Reports to spread awareness, documentaries, advertisements, plays, animations, informative short programmes and movies are also broadcasted in television. The television channels have continued to broadcast new technological extensions, their usage and benefits the success of the farmers who already used them.

12.1.2 Radio

Radios were once considered a very popular medium of entertainment and an effective tool in extension work. With the passage of time, the situation has changed. However, radios are still an effective tool during times of disasters. Bangladesh Betar, FM channels and community radios are still in operation. In addition, radios are accessible through mobile phones nowadays.

Community radios are based within a community. These are small businesses where only a few people work to disseminate the radio programmes within a small geographic coverage. In this digital era, while many people in the urban areas have access to high speed internet, many in the rural areas have limited awareness and access to these facilities. Lack of information is a major hindrance in the development of rural areas. In this context, community radios broadcast information to these communities regarding their economic, social and behavioural aspects in their local dialect. This is precisely why radio is nicknamed ‘the voice of the voiceless’, or termed ‘my radio, my voice’.

Currently, there are 17 ongoing community radio programmes such as Radio Sagargiri (Sitakunda), Radio Nalta (Kaliganj), Radio Mukti (Bogra), Radio Pallikantha (Moulvibazar), Barendra Radio (Rajshahi) Radio Mahananda (Chapai Nawabganj), Radio Padma (Rajshahi), Radio Jhinuk (Jhinaidaha), Radio Bikrampur (Munsiganj), Radio Lakbetar (Borguna Sadar), Radio Chilmari (Kurigram), Radio Shundarban (Koyra), Radio Naf (Teknaf), Krishi Radio (Amtoli, Borguna), Radio Meghna (Vola), Radio Sagardip (Hatia), and Radio Sarabela (Gaibandha). Each of these are broadcasting programmes with importance on different issues such as rural and agricultural developments, uprooting extreme poverty and hunger, reducing infant mortality, child marriage, suicide, bringing gender equality and female empowerment, health and nutrition, women and children, and public primary education. They also play a meaningful role during natural disasters.

Agricultural programmes are broadcast at a national and regional levels by 11 centres of Bangladesh Betar:

- i. Dhaka - Krishi Shamachar; Desh Amar Mati Amar; Shonali Fashal; Amar Desh; Shasya Shyamal; Shabuj Prantar.
- ii. Chitttagong - Krishi Shamachar; Krishi Khamar
- iii. Khulna - Krishi Shamachar; Chashabad
- iv. Rangpur - Krishi Shamachar; Khet Khamar
- v. Rajshahi - Khet Khamar Shamachar; Shabuj Bangla
- vi. Syhlet - Ajker Chashabad, Shyamal Syhlet
- vii. Rangamati - Khamarbari
- viii. Barishal - Chashabash
- ix. Cox's Bazaar - Shonali Prantar
- x. Thakurgao - Kishan Mati Bangladesh
- xi. Comilla - Shujala-Shufala
- x. Krishi Radio (community radio) and Krishi radio (FM 98.8) broadcast from 9 am–11 pm and 3 pm–9 pm.

Working with Bangladesh Betar

Head Office

DAE's media cell and Agricultural Information Service work with Bangladesh Betar in the following ways:

- i. DAE makes a priority list for 'media cell working group' meetings for inclusion into radio schedules and submits it to the quarterly planning meetings of AIS and Bangladesh Betar
- ii. By submitting a complete script to Bangladesh Betar or by providing training materials which can be used to make a radio script
- iii. By providing the headlines of the more important subjects and the extension programmes' schedule to Bangladesh Betar and inviting them to record the programmes' activities for future broadcasting
- iv. The employees of Bangladesh Betar employees are taken to the fields for interviewing the farmers for broadcasting.

Region

The responsibility of coordinating with Bangladesh Betar's Local Radio Station is given to the Additional Director (region).

The following are included in this coordination:

- i. Participating in local Bangladesh Betar's planning meetings
- ii. Providing copies of the extension plan to Bangladesh Betar so that they can (a) broadcast it in the next program and (b) participate in the programme, and record the program.
- iii. Providing essential information for important subjects or inclusion in to the next month's schedule and the district bulletin
- iv. Inviting Bangladesh Betar to the District Agricultural Technical Coordination Committees at district level and to the Local Agricultural Technical Coordination Committees' relevant meetings at local levels. This is only possible if there is a Bangladesh Betar broadcasting centre in the district
- v. Inviting Bangladesh Betar employees to agricultural programmes or bringing them to record the farmers' interviews.

DAE must be present when Bangladesh Betar will be interviewing farmers or recording an agricultural extension programme. The checklist below will help to ensure a quality interview.

Instructions about How to Record Interviews

Before Recording

- i. Ensure that everyone is aware of the purpose and the subject to be learned.
- ii. Before the interview, hold a discussion about the topic of the interview with everyone so that the interviewees are not caught unprepared during interview.
- iii. Check if all aid such as battery cables and headphones are functioning properly.

During the Interview

- i. Ensuring that everyone is comfortable
- ii. Using easy to understand words
- iii. Repeating main learning points for listeners' convenience of understanding
- iv. Using precise examples when listeners cannot see so that they can listen
- v. Using 'What, Why, How' etc. to make precise and short questions
- vi. Providing practical advices about what the farmers can do.

After Recording

- i. Ensure proper editing
- ii. Learn when the programme will be broadcast on the radio
- iii. Encourage the farmers to listen to the radio programmes either alone or as a group.

12.1.3 District, Upazila and Block

Field workers may not have much influence over the content of the programmes but they can encourage farmers to listen to the radios. It can be done in different ways:

- i. Collecting the radio schedule's copy from Bangladesh Betar and informing the farmers
- ii. Listening to agricultural programmes and explaining new information to the farmers who did not or could not listen before.

12.1.4 Multimedia Projection

Multimedia projection is a great medium for extension communication. It can attractively present a message as well as conduct a training course through information-based entertainment. Necessary training materials can be downloaded from the internet and training materials can be created in visual media through multimedia projection.

12.2 Print Media, and Audio-Visual Aids

Print media and audio-visual aids can be used in many ways to communicate with a large number of people and at the same time to increase the extension programmes' quality and effect.

Awareness: By printing an enormous amount of print media and displaying it in public places or distributing it among people, awareness can be created about new ideas, technologies or problems- such as an epidemic or manifestation of insects and diseases in crops.

Print media includes newspapers, agricultural magazines, extension messages, agricultural diaries, agricultural technology-based books, booklets, journals, posters, leaflets, folders, flipcharts, stickers etc.

Interest: Photographs and images can make extension programmes more attractive. multimedia projectors, flash cards, photos and samples at extension events are used farmers will pay more attention than usually they do.

Memory: Presenting the same information in different ways leads to greater retention of the information in farmers' minds. Using touch, visual and audio tools is more effective than only listening.

Explanation: The usage of charts and photographs allow extension workers to explain new technologies and ideas more clearly and simply. As a result, the participants of the extension programme can also understand the subject much better.

Result: Photographs, models and flipcharts allow extension workers to show a farmer what would happen if a farmer adapts a new idea. For example, the photograph of a fish produced in a rice field will give farmers an idea of what types of fish can be produced there.

Structure: Print-media and audio-visual aids help extension workers design the programme. For example, A Power point slideshow for projecting the gist of any speech.

Participation: Live samples, models, photographs, flipcharts, flashcards and other print-media and audio-visual aids help the extension workers to increase participation of the farmers in the programme. A farmer can bring physical examples (like damaged crops) to give the programme a direct idea and influence the event.

12.2.1 Real Objects and Live Samples

Real objects and live samples such as crops, seeds, fertilizer, prepared food or insects can be aids. These can be used efficiently in the extension events with individual farmers or a group by letting them see, touch or use if necessary.

12.2.2 Newspapers

Newspapers are distributed nationwide and read widely by rural people. Newspapers have accurate and informative messages and can be used as a cost-effective medium to disseminate information. Current examples of newspapers which print agricultural messages are: Prothom Alo (Khet Khamar), Jugantar (Krishi Katha), Naya Diganta (Chashabad), Kaler Kantha (Chashbash), Ittefak (Hridaye Mati O Manush), Jay Jay Din (Krishi O Shamvabana) etc. Newspapers can be encouraged to cover the following agricultural subjects.

Extension workers may use the following advice to encourage newspapers to include agricultural information:

- i. Invite journalists to large-scale extension programmes such as upazila and district fairs
- ii. Invite journalists to important events such as agricultural rehabilitation or incentive programmes and activities
- iii. Send copies of the district bulletin and other locally published print-media (leaflets and folders) to newspapers
- iv. Send copies of received materials from the head office to the local journalists

- v. Print press notifications in the local newspapers about successful technologies, problems and new innovations
- vi. Keep an informal relation with local newspapers.

12.2.3 Standard Method for Press Notices

The following should be taken into consideration in publishing agriculture-related information:

- i. Using the right terminologies. There are some common mistakes found in newspapers such as printing “Agricultural Extension Department” instead of ‘Agricultural Extension Department or in some articles, it has been said that land has brought about farming. This is not justifiable because the owner of the land is farmer and it’s farmer who have farmed lands.
- ii. How they view the new agricultural extension law such as designing programmes based on farmers’ needs. Copies of printed articles and press notices must be kept in the office for future use. They can be stored in the press cutting file.

12.2.4 Whiteboard

Whiteboards are used extensively for extension events with less than 20 participants. When using the whiteboard, suggestions given below can be followed.

- i. The board must be well-cleaned and firmly attached
- ii. The board must be attached in a way that every participant has a clear view of the board
- iii. Short sentences and large fonts should be used
- iv. The facilitator must stand beside the board
- v. The facilitator should avoid talking while writing on the board
- vi. Multiple colours can be used to highlight the importance of necessary words.

Increasing Participation: The ideas of the participants are important, so their ideas can be written down on the whiteboard. So that the participants can brainstorm and do many things using information related to the IPM’s important principles and related activities. The extension workers will write down the participants’ ideas. Brainstorming questions can also be included like- ‘Write down the main problems of implementing IPM’, or ‘What kind of extension activities can be planned to follow up after displaying this method?’. Brainstorming questions are usually open questions and help the conversation keep lively.

Summary of the Key Points: The extension worker can write down key-words or sentences on the board while the speech or presentation will be going on to help the participants remember the main points.

Drawing Easy Photographs or Designs: A drawing or design can easily summarize many words. Photographs or designs drawn on the board must be large and clear and different colours should be used.

12.2.5 Flipchart

Large paper-sheets are used to make flipcharts. These can be attached to whiteboards or flipchart stands. Flipcharts are used to help extension programmes of farmer organisations. Flipcharts are very helpful in summarizing the main learning, brainstorming, writing questions, and drawing simple illustrations and designs. Flipcharts are also useful because the main text and designs can be made prior to the events, and a single flipchart can be used in multiple programmes or preserved for later use.

Presenting Ready Flipcharts

In this case, the main texts and designs must be made prior to the extension events. The main text must be written in large letters (with a height of at least 5 cm) and the design must be very clean. Many bright and contrasting colours (such as blue, black and red) can be used either to make the extension programme more attractive or to highlight the main points. While using a ready-made chart for presentation, every sheet should display different subjects or illustrations. Flipcharts can be used to help the presentation. During brain storming, flipchart papers can be attached to the board in front of the group. This paper can be used by the extension worker to write down the ideas of the participants.

Usage of Flipcharts

The points below are helpful when using ready flipcharts:

- i. The flipchart stand, including the flipchart paper must be placed in a way so that all participants have a clear sight of the stand
- ii. The facilitator should not stand with his back to the participants
- iii. The facilitator should try to stand beside the board
- iv. The facilitator should turn the page after finishing discussion on the page.

If the flipchart paper is used to assist brainstorming sessions during the extension event, the points below should be followed:

- i. Asking the participants clear and open questions
- ii. Writing down the participants' answers correctly and simply to summarize their ideas
- iii. Using large fonts and small sentences.

Using Flipchart Paper for Group Work

If participants receive flipchart papers during an extension event, the extension workers need to be more helpful than the trainers. The following should be considered:

- i. The participants must be given clear instructions about what they should write and the time given for the task. For example: “Please write down the problems you have faced while using organic fertilizer in the next 10 minutes”
- ii. The participants can use simple illustrations
- iii. Group exercises can be considered. For example- 20 participants can be divided into groups of four consisting of five people in each group. This increases the opportunity for every member to participate. Two members can be nominated from each team; one to write on the flipchart and another to present the ideas to the rest of the team
- iv. The facilitator should move around the teams to see what they’re doing, clear up their thoughts and ideas and give advices if needed when they are discussing with each other, writing their thoughts and drawing.

12.2.6 Flashcard

Flashcards are visual aids which are used to develop the thoughts and ideas of small groups of farmers and to start discussions about certain subjects. These are usually very easy explanations drawn on small cards. These can be used in different ways, like:

- i. Showing a photograph to develop discussion on a certain subject such as a healthy eggplant tree
- ii. A series of cards which have the necessary information about a particular subject or present important issues for discussion can be used in sequence to explain a story or an event
- iii. Flashcards can make learning much easier as seeing a card will help people establish connection between the illustration or image and idea.

These are suitable for field-works because these are very simple to use. These are comparatively cheap and can be made locally. These can be taken to rural group discussions, and can be made for a specific targeted group. They are easy to plan and can be given to members of agricultural organisations for careful examination. Besides, they can be displayed at a place where all the members of an organisation can collectively look at them.

Preparation

The type of extension programme will determine how the flashcards will be planned. The easiest ways to plan flashcards are:

- i. Thinking about the subject and the target group or organisation and relating these to key points to be emphasized for making basis of flashcard
- ii. Listing everything and deciding what kind of common photographs can be used to explain and describe it.
- iii. Deciding if the cards will be used serially
- iv. Deciding how many cards are needed based on the topic and number of points in the discussion.
- v. Planning the cards. Every card will have either illustrations or simple explanations. The photographs should be made more attractive by using as many colours and as few words as possible
- vi. The flashcards should not be bigger than the size of an A4 paper
- vii. The cards should be displayed to some people before using to ensure that the cards are easily understood.

Use of Flashcards

Flashcards usually augment and empower the farmer's groups and organisations. Some advice is given below regarding the usage of flashcards:

- i. If the cards have to be used serially, they must be arranged one after another before the discussion of the groups or organisations. The cards can be easily arranged by using serial numbers behind the cards.
- ii. The facilitator must ensure that everyone in the group or organisation can see the cards. The best sitting arrangement would be for the participants to make them sit in a circle on a carpet instead of sitting on chairs.

12.2.7 Photographs

Photographs can be used to explain different subjects. An easy way of using, preserving and making it accessible to many viewers at once is to put it on a display board.

Photographs can be used to explain printed materials such as district bulletins, training handouts or posters.

Preparation: While taking photographs, we must decide what they will be used for. The main subject of the photograph should be written behind the photograph after selecting it. The writing should contain the details of the photograph.

The points below can be considered when using photographs as supplementary materials:

For Displaying

- i. Using clean backgrounds while displaying the photograph. For example, wrapping a board in white paper.
- ii. Select good photographs for displaying and pinning them to the board in a logical order
- iii. Avoiding too many photographs. People usually get more information if the photographs are simple and attractive
- iv. A headline must be written to explain the main point in each photograph. Use easy words and phrases that the farmers can easily understand the headline
- v. The display-board must be of a suitable height so that the people can easily see the photographs.

Usage of Photographs

Photographs can be used in the following ways:

- i. Photographs can be used to show farmers what the extension workers are doing
- ii. It can be used to initiate discussions on certain technologies, like displaying the photographs to the participants in the training session
- iii. Using photos in bulletins, leaflets and posters as example to explain publishing
- iv. To explain the continuity of time, for example, by using monthly photos of the same crop over a single season.

12.2.8 Posters

Posters are large sheets of paper which send message to a large number of people. Posters can be used to communicate with as people about advertisements for extension events to be taken place, or for publicity, etc. Ideally, they should be:

- i. Colourful and attractive
- ii. Displayed in an easily accessible place, for example, marketplace or social meeting places
- iii. All information should be simple
- iv. Poster Should be kept in the Agricultural Expansion Department
- v. Posters should cover 75% description and 25% main subjects.

Preparation

The advices below will be helpful when making posters:

- i. The outline should be simple and attractive.

- ii. If the poster is used for serving simple messages, (for example- rat control) a photograph must be selected so that they can easily be understood
- iii. If words are used, try to minimize the number of words and make the font large and clean
- iv. The poster design should be shown to others before printing
- v. If a poster is used to publicize an extension event, the poster must include all relevant information (for example- date, place and time)
- vi. Diagrams or drawings can be copied from photographs and design-books or image banks.

Usage of Posters

Since posters are mainly used to create awareness about a specific event or technology, deciding where to display it is very important.

The place where the poster is displayed needs to be clean so that everyone can see the message. Posters must always be displayed at an appropriate height so that it is visible to almost everyone.

12.2.9 Leaflets and Folders

Leaflets and folders are printing papers which provide necessary information about the subject, demonstration, important topics or issues of interest. They are a relevant information source for people to remember.

Leaflets are small pieces of paper, almost the size of an A5 paper, with both pages printed on, and folders are large papers, almost the size of an A4 paper, with both pages printed on.

Preparation

The topic of the leaflets and folders are based on the information-needs of the farmers and the context in which it will be used.

Distributing in Extension Programmes: The printed materials are supplied to farmers as part of the extension programme events. Distributing leaflets and folders related to field days, formal training days or empowerment tours can make the programme more effective.

Distributing Outside Extension Programmes: The printed materials are distributed to farmers through bazars, schools, input dealers, or other channels that do not depend on the

farmer joining the DAE's extension event. In this case, leaflets and folders are the only sources of information to the farmer. The material used here usually increases awareness about new ideas, serious problems or information about an epidemic of disease or insects.

The following advice will be helpful for making a leaflet or folder:

- i. Leaflets and folders should only have the main points. Leaflets should contain information and events that are hard to remember, like the names of chemicals and their dosage.
- ii. Their lists should have headlines. If related training materials are not complex then farmers can use it in future.
- iii. Use words that the farmers can understand. Difficult words and quotes should be avoided and the local names of crops and aids should be used.
- iv. All measurements should be in metric units (for example- hectare and ton).
- v. Using photographs and designs when possible. They can be copied from book and image banks.

Usage of Leaflets and Folders

These can be distributed to the groups participating in the extension programmes, or given to fertilizer or seed or pesticide aid dealers to distribute among farmers.

Chapter 13

Monitoring and Evaluation



Monitoring and Evaluation

13.1 Introduction

The purpose of the agricultural extension programme is determined with the farmer's information-needs as the primary focus. Fulfilling the determined objectives are the criteria of success and different indicators are used to determine the level of success.

- i. Monitoring is the process of documenting the completed stages of a process after determining the indicators, which can be done through direct observation of the work process or by compiling data of the work process during the period of implementation. It, in fact, is a process of observing indicators of progress for any ongoing work
- ii. On the other hand, evaluation is the analysis of the indicators and the data gathered in order to determine the ways to improve the quality and rate of future work which is done later after implementation
- iii. The implementation of the DAE's extension programmes accordingly to the plan can be measured by monitoring and evaluation tools and the farmer's needs being met can be ensured
- iv. Effective monitoring and evaluation supply accurate and relevant information to the right people, at the right time in the right formats so that the timely decisions can be made.

13.2 Role of Monitoring and Evaluation in Planning Processes

- i. Monitoring and evaluation are tools used for the improvement of efficiency and quality of the work done by working officers and employees in district and upazila levels by the DAE
- ii. Monitoring and evaluation are respectively conducted during and after the implementation. Monitoring is only useful when the data gathered from monitoring are analysed and used to take necessary future steps
- iii. Farmer's information-needs assessment and evaluation– these two sources provide the data necessary to prepare the plans for extension programmes. Lack of sufficient data from either source leads to a low quality planning.

13.3 Rules of Monitoring

- i. The process must be simple yet informative
- ii. The main focus of monitoring is reduction of complexities in field work
- iii. Monitoring must be performed in due time
- iv. Monitoring must be relevant and pertinent to the aim of the programme.

- v. The information gained through monitoring must be logically accurate so that it can be assured for use in management work
- vi. The process must be participation-based and all people related to the extension must participate
- vii. The process must be flexible as monitoring can be repeated and its result will be changed with the passage of time
- viii. Monitoring must be activity-based, there is no need to collect insignificant data
- ix. The process must be cost and time efficient; simple, timely, relevant and accurate monitoring is cost effective
- x. Monitoring should be initiated from the top management
- xi. The requirements of top management must be kept in mind while designing the blueprint of the monitoring proposal
- xii. The monitoring unit should provide specialized service instead of staying limited to data-collection and analysis, such as identification of problems and finding solutions to the identified problems.

13.4 SAAO Diary

A SAAO Diary is an important tool used in the extension approach of DAE. It also assists the monitoring and evaluation processes. The SAAO records the details of their daily work in their diaries which include what is done, with whom and the response received etc. Especially while visiting individual farms, the problems faced by the farmers, their names, and their response towards participation in the events are noted down in the diary. A diary is an important source of detailed block level information about what is working well and why, and what is not working well and why.

13.5 Mobile Monitoring

If the extension workers are at a field or away from office, mobile phones can be used to gain whereabouts and an overview of the work progress and to provide necessary instructions to them. If farmers face problems while implementing or applying certain advices, they can contact the relevant personnel by phone and come up with a solution.

13.6 Monitoring Field Work through Telephone or Mobile Phone or Mobile Apps

Usually field work is monitored and managed by personnel present in the field, but that's limited to the easily accessible fields, causing most of the rest of the area to be left untended to. For the fields that cannot be supervised in flesh, monitoring and supervision may be done through the use of telephones, mobile phones and mobile apps so as to speed up the field work.

For speeding up the work processes, the DAE's practical wing, area, district and upazila offices will have databases that hold records for the most advanced and successful farmer who received modern technology earlier than everyone else. The working officers must contact at least 3-4 farmers listed in the database from different blocks and note down in the respective register various information regarding the progress of the farmers' implemented programmes (exhibitions or incentive or rehabilitation) and whether they are facing any problems regarding the use of the equipment supplied under the programme. In case of such problems coming to light, the concerned extension worker must be instantly notified to visit the field in person and find a solution.

The Deputy Director of the region, ADD (Crop) of the district and an AEO of upazila will ensure the preservation of data in the register and respective follow up. If one of the positions is vacant, another officer of equivalent position may be temporarily given the charge.

Officers in the region or district levels may present the results of their monitoring and evaluation process in the monthly meetings, discuss them and take necessary steps if required. Monthly region or district level reports must be sent to the Director, Field Services Wing through the control room.

It must be ensured that every block comes under monitoring and supervision procedures through telephone or mobile at least once per month. The block to be monitored can be chosen randomly.

13.7 Technology Extension Monitoring System (TEMS)

TEMS is proposed in order to ensure recording progress indicators of extension programmes that would properly assist in the planning and decision making of future projects.

Indicators Used in TEMS

The primary indicators of TEMS are as follows:

Contact or Presence: The number of farmers (male, female, large and small) attending the extension event and the cost per farmer.

Understanding or Gaining the Ability to Independently Use Technologies: The number of farmers who understand the concepts (technologies) contained in the extension event or are able to utilize the technology suggested by the extension event and cost per farmer.

Testing: The number of farmers who have decided to test out the extension event's technology in the following year and the cost per farmer.

13.7.1 Decisions Made by Using the TEMS Indicators

Monitoring and Evaluation help in decisions regarding better management. The management decision which can be made with the help of TEMS may be as follows:

Technology Selection: What agricultural technologies should be included into the extension programmes.

Method Selection: Which of the extension methods should be included in the extension programme.

Area Selection: Those areas (region or upazila or district) require special supervision or support. TEMS helps in determining which technologies and extension methods are the most or least successful as well as in recognizing the areas where the extension programme see the most or least success. Based on this information, various decisions can be made for constant improvement of the extension services provided to the farmers.

Some of the steps that can be taken for improving less efficient technologies, extension methods and areas are as follows:

Poor Technology

- i. Upgrading the technology with the help of researchers and farmers who have tested it.
- ii. Change the extension method; For example, providing training instead of demonstration results.

- iii. Improvement of the extension event; Proper advertisement, choice of a suitable time and place to hold the event.
- iv. Reduction of budget and asset for the this technology in the next extension event.

Defective Methods

- i. Changing the extension method
- ii. Training the extension workers for better implementation of the method
- iii. Using the method in combination with other extension methods. For example, adding an increased number of field days alongside result demonstration
- iv. Eliminating the extension method from future programmes.

Poor Area

- i. Arranging extra training for extension workers in the area.
- ii. Increasing of supervising and monitoring in the area, including the use of technical audits.
- iii. Providing further advice regarding selection of suitable technologies and extension methods to use in the programme.
- iv. Scaling down the programme and reducing budget for the area until the quality and amount of performance improves.

Data accumulated by TEMS on contact, understanding and testing helps in enhancing the quality of extension programmes. In case of deficiency in any of the three aspects, the following steps can be taken:

Low Contact

- i. Providing more profitable technologies
- ii. Putting emphasis on advertisement so that more farmers can attend the extension event
- iii. Organizing the event in the right time
- iv. Reviewing the farmer selectin for the event
- v. Hosting the event in a convenient location.

Low Understanding

- i. Improving the presentation of new concepts by using simple language, audio-visual aids and live samples, etc
- ii. Providing more training for the extension workers so as to carry out the event better
- iii. Training extension workers on teaching skills.

Lower Number of Testing

- i. Improving quality of the extension event at which the technology is discussed.
- ii. Acquiring feedback from farmers for researchers to use in improving the technology suitably for the farmer's situation and needs.

Decisions must be taken in consideration of the type of farmers. For example, in case of the time and location of the event being changed, the new time and location should be decided depending on whether the targeted audience is male or female, as the suitable time or location may vary for the two types of farmers.

13.7.2 Technology Extension Monitoring System (TEMS)

Regardless of the sources of funds or projects, TEMS is applicable for all activities of the DAE. TEMS has four forms: TEMS forms 1, 2, 3 and 4. TEMS forms 2, 3 and 4 are compiled from the written data of TEMS form 1. The UAEs must fill out TEMS forms 2, 3 and 4 each and submit them to the district Deputy Director. Similarly, the district Deputy Director will submit it to the Additional Director of Region, who will submit it to the Director of Field Services Wing and the Director of Planning, project implementation, and ICT Wing.

TEMS forms 1, 2, 3 and 4 are shown in appendix 7 (1, 2, 3, and 4).

TEMS Form 1: Primary Monitoring Form

TEMS Form 1 is an individual form and used for all kinds of extension events. Regardless of the funding sources, every SAAO or the senior officer responsible for implementing the event must fill out a TEMS Form 1 for each of their events. UAOs will fill out a TEMS Form 1 for each upazilla level events such as upazilla fairs, training days. The same applies for district level events such as district training days. For the same type of events, district and upazilla level information must be unified or combined and summarised.

The TEMS Form 1 must be filled out in the spot, at the time of extension event takes place so that the following indicators can be collected:

- i. **Contact:** Number of attending farmers.
- ii. **Understanding:** Number of attending farmers who think they understand the shown technology.
- iii. **Testing:** Number of farmers who think they will utilize the technology.

At the end of the season, all TEMS Forms 1 must be collected and sorted through and a

technology or event or area based stack (whichever is applicable) must be made for forms 2, 3 and 4 to be filled. Finally, the average of the indicators should be calculated.

TEMS Form 2: Technology Summary Form

TEMS Form 2 is an individual form which is used to summarize various types of data related to the same technology. For example, data from all the events regarding use of balanced fertilizer for rice production (meaning, summary of data of the same kind of technology and event) is compiled and recorded in a TEMS Form 2. At the end of the season, the UAO will use a TEMS Form 2 to summarize all the events. The required sections such as contact, understanding and testing must be filled out properly.

With the help for TEMS Form 2, various technologies can be compared and the relatively successful and unsuccessful ones can be identified.

TEMS Form 3: Extension Event Type Summary Form

TEMS Form 3 is used to summarise information about extension methods conducted in a season. For every extension method, a TEMS Form 3 should exist, for example, one form for result demonstrations, one for upazila training day, and so on. This way, summary of each extension method is prepared.

The quality and rate of performance of extension methods can be determined and compared using TEMS Form 3.

TEMS Form 4: Area Based Extension Event (Upazila or District or Region) Summary Form

Extension programmes are conducted in block, upazila, district and regional levels. TEMS Form 4 summarizes the performance of the extension programmes in these areas. One TEMS Form 4 must be filled out for each upazilla, district and region. At the end of each season, upazila, district and region level officers should complete one TEMS Form 4 for each upazila, district and region respectively. TEMS Forms 2 and 3 are used to fill out TEMS Form 4s.

After filling TEMS Form 4, the overall performance of events executed in upazila, districts and region can be determined and compared between areas. For example, during the comparing, farmers willing to test ideas of one area might turn out to be using abnormally high resources leading to higher cost per farmer than that in another area, which indicates that the area in question requires additional support, training or supervision.

13.8 Knowledge, Attitude and Practices Survey (KAP)

- i. Knowledge, Attitude and Practices (KAP) Survey is a Monitoring and Evaluation technique
- ii. Through this, actual reaction of farmers after being introduced to new concepts can be known
- iii. Changes in agricultural techniques are apparent from KAP survey results
- iv. The incidents occurring throughout extension events can be known from Extension Monitoring Procedures
- v. The effects of the results following the implementation of extension events can be known through KAP survey
- vi. Upazilla and district officers use KAP survey to increase the effectiveness of extension work
- vii. KAP survey is used to determine whether farmers have truly embraced the new concepts.

When the correct season returns, KAP survey must be held to determine the following factors:

- i. Whether the farmers have remembered knowledge of the technology (K)
- ii. Whether the farmers have positive Attitude (A) towards the technology
- iii. Whether the farmers have put the technology to practice (P).

By interviewing a sample number of the farmers who had seen the technologies, their knowledge, attitude and practice levels can be determined. The names and addresses of those who had participated in previous DAE programmes can be found in the demonstration register or SAAO diary.

13.8.1 Utilization of KAP Survey Results for Improvement of Performance Quality and Quantity

If farmers do not take to using the new cultivation technology, it should be assumed that they are experiencing negative effects. This indicates a problem that must be dealt with. The reasons behind such non-adoption of new ideas can be divided into three categories:

- i. The farmers are not aware of the new concepts or ideas; they have no knowledge on it.
- ii. The farmers are aware of the new concepts but choose to reject them if they hold a negative ATTITUDE towards the concepts.
- iii. The farmers are aware and favourable in attitude but due to some other problems (for example, lack of tools, etc.) prevent them from practising the new techniques they do not PRACTISE.

Responsibilities

- i. KAP survey can be performed at any level of DAE
- ii. Usually KAP survey is performed in district or upazila levels since most planning decisions are taken at this level.

- iii. Agricultural Extension Officer at upazilas and Additional Deputy Director (Crops) at districts are responsible for planning KAP surveys in every season
- iv. On a national scale, the Implementation and Evaluation section of Planning, Project Implementation and ICT wing can arrange, conduct and report the survey.

13.8.2 Implementing KAP Survey

There are 6 steps of conducting a KAP survey:

- i. Selection of technologies and compilation of their key components
- ii. Collection of documents of the participants and creating sample
- iii. Creation and pre-testing of survey form
- iv. Holding interviews
- v. Summarisation and analysis of results
- vi. Compiling a report on the obtained results.

13.9 Selection of Technologies and Compilation of Key Points of the Technology

While selecting technologies, the ones exhibiting the following characteristics should be prioritised:

- i. The technology which has been emphasized by the Extension Programme depending on the time and resources allotted to the workers.
- ii. The technology which has been developed for majority of the targeted groups.
- iii. The technology which utilises modern techniques.
- iv. As KAP is a follow-up-technique, the proper time to evaluate the technologies adapted which was in the extension programme for the corresponding season one year ago. For example, proper time to evaluate the adoption rate of transplanting aman by farmers in the previous Kharif-II season should be the current Kharif-II season
- v. The goal of the K part of KAP is to determine whether the extension activities have been effective in providing farmers with information about new technology.

13.10 Collection of Participant's Records and Selection of Samples

- i. KAP survey is basically looking up certain participants of previous extension events and interviewing them to find out whether they have used the exhibited technology
- ii. Selection of samples must be done randomly by a method where all the farmers will have equal chance of getting selected
- iii. Selection of samples of farmers should be done randomly.

13.11 Creation of Survey Form and Pre- testing.

KAP questionnaires have no rigid formats or structure as it depends on the number and type of key components of the technology. The questionnaire should be made as simple and understandable as possible to make the interviewing process smooth. A sample survey form on rice variety technology is given below. It is divided into three sections.

Section A holds the detailed description of identification, technology, season, name, gender and location of farmers and farmer groups according to the size of their farm. This data help determining whether the DAE's targeting principle is effective.

Section B holds information regarding the farmer's participation and whether they actually were present in the process of the extension event.

Section A: Detailed description of the identification			
Crop or Variety	Transplant Amon, BRR1 Dhan- 62	Technology	Varietal Demonstration
Season	Kharif-II, 2016	Season under evaluation	Kharif-II, 2016
Extension Approaches			
Farmer's name:		Father/Husband:	
Village:		Block:	
Upazilla:		District:	
Agriculture environment category:		Farmer's mobile number:	

Section B: Ensuring the evidence of participation in extension work
Farmers themselves will ascertain their participation with Yes/No (fill up circles)

Section C: Knowledge, Attitude and Practice				
a. KAP related to the key points of technology				
Information	Gist of the approved technology	Respondent's knowledge of the key points	Respondent's practice (in this year)	Respondent's attitude towards the main/key points
Name of variety	BRR1 dhan-62			
Properties	Tall, lean and rich in zinc			
Season	Transplant Aman			
Life span	100 days			

Crop	3.5-4.5 MT/Hectare			
Resistance to pest / disease	Locality prone to 'Khol-Pora' disease may lead to outbreak			
b. Detailed description of farmer's attitude				

Section C is the actual KAP assessment. The farmer's knowledge of, attitude towards and actual practice in using the technology is described in this section. There is a space specified where farmer's attitude towards the technology for recording in details. Especially, negative attitudes of farmers towards the technology are the most important as they're vital to any correction to the technology required to make it acceptable.

As such, the attitudes of the farmers who reject the technology despite understanding the key components of the technology are the most valuable.

13.12 Interviewing the Farmers

The techniques for interviewing farmers are very important. Rules to abide by in order to hold a successful interview:

- i. The interviewee must be made clear about the purpose behind the interview
- ii. The interviewer must remain neutral
- iii. The interviewer must not tell the farmer what to answer. He must not hint at which answer is preferable
- iv. Actual data about the problems are always the most valuable; the interviewers must not advise biased answers out of the farmer
- v. The interviewer must not express in any way his dissatisfaction with the farmer's answer
- vi. The interviewer must be knowledgeable about the topic and purpose of the interview.

13.12.1 The Interviewer has to Follow Order of Sequence

The items in the questionnaires must be gone through in proper sequence. In special cases, extra-questions may be asked but no existing question can be skipped.

13.12.2 Discarding Partiality

The goal of KAP survey is to find out the real response of the targeted farmers' group towards the extension. Therefore, crafting false results through partial interviews should be prohibited.

Partiality can arise due to many reasons. But it can be avoided by following the rules of conducting interviews properly. All interviewers and participants has to follow the instructions of interview. Some ways to avoid partiality are listed below:

- i. Randomly chose samples must be retained
- ii. Sequence should be maintained throughout the interview
- iii. The farmers must not be discriminated against and be approached with a simple, friendly manner
- iv. The interview should be conducted in a place and time the farmer is comfortable with
- v. General instructions are to be maintained in all kinds of participatory discussions
- vi. SAAO are not to be given information of the chosen farmers beforehand
- vii. No SAAO should be sent to scout farmers to interview before extension workers in charge
- viii. Farmers must not be bribed
- ix. No hints regarding which answer is preferable to another should be given to the farmers.

13.12.3 Compiling Reports on the Result Obtained

- i. Data analysis and report compilation: If possible, it should be done by the interviewer, as he can have observed and noted many things outside the main questionnaire
- ii. The report must be concise and simple
- iii. A briefing including KAP's proposals should be summarized within 1 page.

Segments to Include into KAP Report

- i. Abstracts
- ii. Introduction
- iii. Results
- iv Analyses
- v Recommendation and necessary work-plans

Abstract: A brief description of the key points of introduction, analysis and recommendation. Any mentioned result will be thoroughly chosen and only explanatory. No topics outside the main report should be present here.

Introduction: includes names of the districts and upazillas sarveyed unders the KAP survey, names, of technology, the season and the year when the technology was extended and the dates when KAP survey will start and end.

Result: Columns of the numerical result including brief topics:

- i. Percentage of the targeted farmer's groups
- ii. Percentage of farmer using the technology
- iii. Percentage of the farmers who understand all the key components
- iv. Summary of viewpoints of the farmers who practise things otherwise in spite of being aware of the technologies.

Analysis: To determine whether the adaptability of technology is satisfactory or not regarding the works done, other activities and the excellence of technologies, its possible benefits for the farmers and so on. If it is not satisfactory, what are the problems? Does it concern knowledge or any other reasons and what sort of steps are to be taken to solve the problems? Whether to change the methods of extension work or to exclude the programme, etc., is to be mentioned.

Utilization of KAP Results in Making Decisions or Planning Schemes or Programme

- i. Clear recommendations in regards to necessary measures to be taken towards improvement of the evaluated technology must be present
- ii. KAP results are required to be used in making annual upazilla proposals
- iii. Data regarding varying demands and necessity of different technologies and how successfully they have been provided should be taken into consideration by the officers.

Before composition of the annual upazilla proposal, if extension workers under DAE receive the opportunity to read and discuss the KAP result and report, effective measures would further become possible. This way, any difference in opinion on the obtained results can be dealt with and various ideas from the workers about how to solve the problems can be synthesized.

After each KAP survey, a half-day "Opinion Exchange Session" should be planned. Meetings like these will provide workers with opportunities to exchange experiences regarding KAP performances and will open a way for improved KAP surveys to be conducted in future.

13.13 Impact Assessment System (IAS)

IAS is an evaluation process of the benefits gained by the farmers from the extension service provided by the extension workers and its impact in the field. Through an analysis of results obtained throughout this process, effective measures to improve quality and amount of extension service can be taken.

Through this evaluation process, progresses of the annual performance agreement process, e-Extension service and other extension programmes are inspected and the impact of the extension service can be determined.

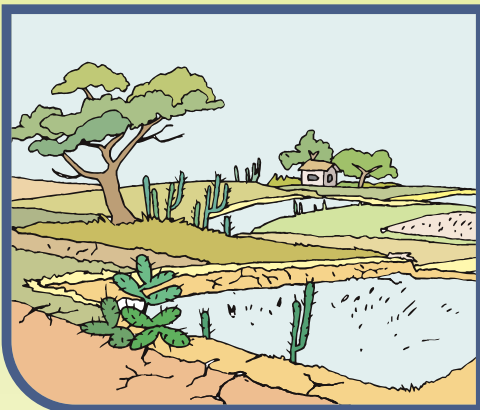
The Impact Assessment System (IAS) Report: Form 1 and Impact Assessment System (IAS) Report: Form 2, which are used in the IAS evaluation process are attached in appendix 8 (1,2).

The following procedures can be followed to manage and compile an IAS report:

- i. IAS report management will be bi-monthly and year-long
- ii. SAAOs, on a fortnightly basis up will submit a filled, IAS form 1 in the Upazilla Agriculture Office and Agriculture Extension Officers will examine them, sign them and add comments
- iii. Upazilla Agricultural Officers will send the targeted bi-monthly report through e-mail to the Deputy Director's office after verifying them in person
- iv. Additional Deputy Director (Crop) will examine the received bi-monthly report, verify them, unite all the upazilla reports in IAS form 2 and assure sending them to the Additional Director (region) in due time
- v. The Deputy Director working under Additional Director will compile the IAS reports received from districts and submit them to the Field Services Wing
- vi. Based on the problems specified in the report, officers in DAE central office, at regional, district and upazilla levels will take realistic measures to strengthen the extension procedure.

Chapter 14

Agricultural Extension Strategies in Haor, Hill, High Barind, Char and South and South-Western Regions



Agricultural Extension Strategies in Haor, Hill, High Barind, Char and South and South-Western Regions

14.1 The Haor Region

It cannot be confirmed exactly when the evolution of haor area and the development of agriculture in Haor area happened. However, it is estimated that the agricultural developed in this region in the beginning of the seventh century, although agricultural development in India was prevailed long ago.

Characteristics of Agriculture and Public Life in Haor

- i. Haor is a unique land of Bangladesh, some special areas of different types or wetlands
- ii. Haor is such more or less round low land which has its own water drainage basin
- iii. Round lowland surrounded by rivers
- iv. In the dry season, the lower part of the haor contains one or more beels
- v. The beels are connected to the river through canals
- vi. Haor areas are lower than the surrounding area
- vii. This area goes under 10-15 feet deep water in the rainy season,
- viii. The average height of Haor is 2.00 metres to 4.00 metres from sea level.

Boundary of Haor Region and the Situation in Rainy Season

- i. Kishoreganj and Netrakona stand in the western boundary of the haor region, the mountainous region of India in the north, the higher region of Sylhet in the east and the higher region of Comilla and Bhairab in the south
- ii. In the rainy season Haor areas go down under the water long before the high ground is flooded
- iii. Usually this area is flooded twice; the first takes place in between April-June
- iv. The north borders are flooded with hill water due to unusual flooding; this flood is known as flash flood
- v. Almost every year only the boro crops are damaged in the rainy season
- vi. Secondly, haor areas are flooded with usual flooding.

Affluence of Rice: The First Rice Research Centre in the Subcontinent

Bangladesh In one-fifth of the total rice production comes from the haor region. The haor region used to be a source of multiple varieties of rice. This is why the first rice research

institute of the subcontinent focusing on the deep-water rice variety was established here. Named 'Nagura Farm', the research centre was established in Habiganj district back in 1934. It is now a sub-station of the Bangladesh Rice Research Institute. Most of the deep-water varieties of rice native to this land are no more.

However, the haor still boasts of having enough varieties of rice. Agricultural Extension Department and other sources say that except Brahmanbaria, the rest six districts still nurture at least 72 varieties of rice.

Table 5: Local Variety of Rice in the Haor Region

Aush	Aman	Boro
Murali, Chingri or Chengri, Arai, Dhumai, Shaitta, Kashia Binni, Dharial, Kotkotara, Hasikolmi (9 varieties)	DudhLaki, DudhSagor, Guarshail, Gootki, Goair, Beti, Dholā Amon, Aguni, Asha Mura, Akhnish ail, Nāgrashāil, Boguralāki, Badāl, Bālām, Bānshful, Bagdār, Moynashāil, Lalbadāl, Lotishāil, Kālisefri, Kālijira, Kārtikshail, Kārtiavog, Godalāki, Jāmaibhog, Zāria, Beeroi, Binni, Meehee, Kheeloi, Chinigurā, Chhirmoin (33 varieties)	Gochi, Shāil, Lātlee, Abul, Hashem, Māloti, TulshiMāla, Bānshful, Āhsān, Lākhāi, Akhoni, Shāil, Ratashāil, KhoiyaBoro, DhulāBoro, Gachhmālā, BeechiBoro, Dholmegh, Deuri, Konyashāil, Jamir, Gultihī, Lolatepi, Pāikichuri, Lyatha, Forāsh, Tepiboro, Rataboro, Poshushāil, Binni, Jāgoli, Hāsherdim (30 varieties)

Agricultural Extension Strategies in Haor Region

- i. In the Haor region it is not possible to do simple tasks like in area with normal communication management access to digital media such as community radio, mobile apps, television etc. is needed to get access to agricultural services
- ii. In addition to innovative technologies in the area, small programmes should be adopted on the basis of local demand
- iii. Newly invented varieties of crops need to be introduced in this region
- iv. Emphasis should be given on new technology-based modern training system
- v. Floods and water logging or submergence tolerant varieties should be cultivated
- vi. Vegetable cultivation in floating methods should be increased
- vii. Use of varieties must be increased
- viii. Short-term hybrid varieties cultivation should be advised.

14.2 Hill Region

Agricultural Extension Strategies in the Hill Areas

Rangamati, Khagrachari and Bandarban districts constitute Bangladesh's Hill region which is one-tenth of the country's total area. Many of the minority ethnic groups (Chakma, Marma, Tripura, Rakhain, Garo, and Tanjunga) are residing in these regions along with Bengali people. Each tribe has its own language and culture. Although "jhum" is their original agricultural profession but modern agriculture has also attracted them. The cultivation of improved varieties of mango, litchi, malta, pineapple, lemon fruit and local varieties of Bangla banana and jackfruit gardens have made the hill areas a huge agricultural resource. There is a great lack of plain agricultural land here. Various crops, including rice and vegetables are planted on the land in between hills and on the plain land of the river side.

However, jhum, aus, ginger, turmeric and many other fruits are cultivated on the slopes of hills and on the lower hills.

Extension strategies must be devised considering the culture in agriculture of the tribal people, their life styles, social systems, ecology, land utilization and agricultural environment to take the agricultural extension service to the poor tribal people living in the remote hills.

Most tribal people live in groups in the remote hills in various areas (Chakma para, Marma para, Tripura para). Head of the area is called headman or Karbari. The leading elder of the Garo is called Songnokma.

The people of the respective community obey their leader and follow the laws/code. They also obey the UP chairman or member as well as the headman or Karbari.

- i. In this case, relevant SAAOs have to ensure accommodation and office for their permanent stay in the block and to offer effective agricultural extension services in the hill areas with the current manpower of DAE.
- ii. Agricultural blocks of the districts in Hill tracks are huge in size where it is hard to reach due to lack of communication. On the other hand, the people living in the blocks are also scattered and grouped. It is rugged and time-consuming to reach the fastest extension service. Therefore, it is necessary to post the Tribal SAAO as far as possible in tribal into blocks after reducing the block area and increasing manpower.
- iii. Headman or Karbari or Songnokma from related blocks or wards should be included into the extension programme and in addition the UP chairman or ward members should also be involved in the extension activities.
- iv. In collaboration with the Hill District Council, UNDP has set up a PDC in the form of associations in most of the areas for assistance of the tribal population in the fields of healthcare, education, agriculture and social development in all unions of the Hill District which are run by the Zila Parishad's own manpower in a limited way. Besides, some NGOs and health departments are using these PDCs to implement vaccination, malaria

- eradication, maternity services and other healthcare related programmes. SAAOs can use these PDCs to reach the farmers' doorstep for agricultural extension services.
- v. Communication between farmers and SAAOs will increase if the SAAOs names, addresses, visit-days, places, times and cell numbers are displayed in the public places like PDC, Union Parishad Bhavan, Krishak Samity or Club and Fertilizer or Seed Markets and Pesticides Dealer Stores.
 - vi. Tribal women are more efficient in agricultural activities; the offices have to emphasize the participation of women in training, demonstration and field day programme
 - vii. Most tribal women or men do agricultural work in the field in the morning; to provide their extension services, SAAOs will have to visit fields and provide services in the morning
 - viii. Extension programmes should be set up considering tribal population's agricultural culture, living conditions and daily needs
 - ix. Transport facilities are required to facilitate the transportation of SAAO in the block
 - x. There should be regular monitoring of SAAO activities
 - xi. Tribal people are more interested in cultivating different kinds of fruits and vegetables; so training programmes should be designed to increase their knowledge and skills in this regard
 - xii. The initiatives for developing horticulture ,i.e. making fruit gardens are to be taken
 - xiii. Private nursery owners should be trained to make seedlings or cuttings using improved methods
 - xiv. Appropriate measures for expansion of turmeric and ginger production must be taken
 - xv. Drip irrigation system should be initiated
 - xvi. Conservation of trough water should be encouraged for irrigation
 - xvii. The forest area should be increased in the bared lands.

14.3 High Barind Regions

Agricultural Extension Strategies in High Barind Regions

The agriculture system in Barind areas is dependent on rain. The main problem for crop production is the drought due to irregular rain in the month of Aswin. The average rainfall of Godagari upazila of Rajshahi district is 1285 mm and 1402 mm in Nitpur village of Porsha upazila of Naogaon district on the south (FAO). The maximum temperature in May is 45°C And the minimum temperature in January is 6°C. 90 percent of the rainfall occurs from the middle of the month of Jaistha to the middle of Aswin. The soil moisture starts to decrease at the end of Aswin and most of the land does not have moisture at all in December. Soil becomes very hard as it is muddy and the rain water flows over the soil instead of entering deep because of rough or Barind land. In the Rabi season only 150-197 mm water is stored in the depth of 1 metre. Therefore, it is good to cultivate deep rooted and less water-loving crops in the Barind region and it will be beneficial. The land of the Barind region is comparatively barren or

unfertile. There is only 0.8-1.2 percent organic matter in the soil which is very less compared to the required 2 percent. The most important nutrient elements of the crops such as nitrogen, phosphorus, potassium, sulfur, zinc, boron, molybdenum are very low here. The upper layer is clay-loamy but the low level is normal clay and acetic (pH 4.8-6.9). The drainage system of the soil in this area is not good and the water retention capacity is low.

Various types of Transplant Aman like rain-fed long-duration Shorna 5, Gutishorna, Mamun shorna, Hutra etc. are generally cultivated in the upper Barind area. In some seasons, if the rainfall is late or little, the soil moisture falls before the rice grain filling which might reduce the crop production. In some seasons, the soil does not have enough moisture to cultivate robi crops and crops like wheat, gram, mustard and lentil can't be sown on time. 55% of 1 lac 60 thousand hectares of land in the higher Barind region is still fully dependent on rain even after the Barind Multipurpose Development Authority developed irrigation system by gradually installing deep tube wells to lift ground water and reforming ponds and kharis to preserve water. Many of these areas are less likely to be under irrigation because the level of water is very low.

Moreover, the level of water in the region is gradually reducing due to the arbitrarily extraction of ground water by deep tube well, making water of irrigation water and with low rainfall for irrigation dependent boro cultivation. There was water in shallow tube-wells twenty years ago, but in many cases, it is not possible to lift the water now. Most of the land in Sapahar, Nachole, Godagari, Niamatpur, Porsha, Patnitala and Dhamurhat upazilas remains fellow after harvesting of Aman. In these areas, it is possible to cultivate three crops by selecting drought-tolerant crops and land and increase production by proper management.

The On-farm Research Division of Bangladesh Agricultural Research Institute invented alternative and improved cropping pattern with the financial and technical help of Krishi Gobeshona Foundation (KGF) by implementing research projects in Godagari of Rajshahi district, Nachol of Chapai Nawabganj district and Safahar upazila of Naogaon district for last 3 years (2011-2014).

Cropping patterns are as follows:

- i. Transplant Aman (BINA-7 or BRRIdhan-57) – BARRIGom26 or BARICHola-9 or Potato – Mung (BARRIMung-3)

According to the developed cropping pattern, BINA-7 or BRRIDhan-57 with relatively less life span is planted at the right time. The BRRIdhan-57 variety does not face any damage even if it does not get rainfall for 14-21 days in the breeding phase. The demand of this variety is more than the Shorna variety and the value of the rice is at least 100-150 taka more in per maund as this type of rice is similar to the Jirasail and miniket. It is more tolerant of the kholpora disease than the Shorna. The labour for harvesting crops is cheaper than peak season.

It is possible to sow potato or heat-tolerant BARRI Gom-26 or BARI Chola-9 at the right time after harvesting the BRIdhan-57 and BINAdhan-7 varieties of transplant aman rice in the first

week of Kartik. Potato is a major tuber crop in Bangladesh. The area of potato cultivation and the rate of increasing the production in the higher Barind region is relatively less than other parts of the country. The area of potato cultivation is increasing on the basis of leasing land in business purposes with the increasing number of cold storage, although the average yield in the higher Barind region is less.

After harvesting wheat or potato in the high Barind region, DAE will adopt motivational programmes on BARI-6 varieties of Moogdal production from the last week of Falgun to the first week of Chaitra in kharif-I season. The quantity of organic matter will increase in the soil if the plant sare mixed with the soil after harvesting the pods of mungbeans and the urea fertilizer will be saved in the next aman cultivation. It is possible to increase the intensity of crops through the cultivation in seasonal fallow land and create workplace for indigenous, unemployed women and children in pod harvesting. Production of 150 to 180 kg can be obtained in 33 decimal lands if 6 Kg of BARI Chola-9 can be sown in the right time, between the second week and the third week of Kartik while still there is moisture in land, after being soaked into 0.05% Zinc Sulphate solution for 12 hours in 33 decimals after harvesting short-duration BRRI dhan-57 variety of T. Aman.

Supplementary irrigation can be done to wheat and short-duration aman rice by storing the rain water in the pond or water channels in the high Barind region.

For reducing pressure on groundwater DAE will play an effective role in the development of technology for the commercial cultivation of early hybrid tomatoes, Thai year- Round Guava, Apple kul, dragon fruit, BARI malta, Bell, Kathbel, late variety Mango (eg BARI mango-3, BARI mango-4, Gouromoti), Sazina, Gladiolas flowers etc.. The amount of organic fertilizers will increase in soil if the thorn-less Mimosa (*Mimosa invisa*) seeds can be sown in higher Barind fallow land which is out of irrigation facility after soaking in hot water at 52° temperature for 5 minutes following the first rain in March-April and mixing them with soil in July before transplanting man rice. In Thailand, thorn-less Mimosa with maize as a mixed crop is cultivated in maize seed production farms to increase soil fertility, keep moisture and controlling weed.

14.4 Char Areas

- i. There is more than 16 percent areas of 110 upazilas and 8-15 percent areas in the 106 upazilas in 31 districts that have char land which is about 1722 km²
- ii. Chars are formed as a by-product of hydro-morphological activity of the river or soil erosion and accretion of river side. Chars are of two types, - Island char and attached char. The Island char is made of sand in the river, which is surrounded by water all the year. This type of char is called temporary char. The attached char is connected to the main land along with the river. This type of char is called permanent char.

- iii. Cropping intensity in Char areas is up to 150-185% (BBS, 1997). The temporary char is generally less productive than the main land. One of the main reasons is that the crop production is hampered by the collapse of the land of char, covered with sand or soil erosion due to the sudden flood. According to satellite image experts, about 75% of the chars last for one to nine years and only 10% of the chars last for 18 years or more
- iv. The use of char areas is increasing day by day due to human settlement and cultivation. Although there are adequate river water and underground water in char areas, but there are very few areas with irrigation facilities. Year-round vegetables and fruit production programme is being implemented through the Char Livelihoods Programme (CLF) in homesteads of Kurigram, Gaibandha, Bogra, Sirajganj and Jamalpur districts with the help of DFID over the past few years following the Gayeshpur vegetable production model invented by the On-farm Research Division of the Bangladesh Agricultural Research Institute. It is to be noted that vegetables and fruits can be produced all over the year according to the Gayeshpur model for Pabna and Natore Char areas and the Palima Model for Manikganj.
- v. Farmers are getting low yield of crops due to not using the required balanced fertilizers, not selecting the suitable high yielding varieties for the area, not using improved production techniques in the existing cropping pattern of the char areas. Crop production materials are not available in char area and the farmers lack technical knowledge. Considering these factors, it is possible to increase the production and improve the socio-economic conditions of the farmers through the application of balanced fertilizers in the crop, cultivating high yielding varieties for the area and applying improved production technologies of crop.
- vi. The number of people living in the char is very low. Over 5-6 million people live in chars including island and costal char areas. Nearly 10 percent of the total land of Bangladesh are char lands. Parts of more than 100 upazilas from 32 districts in the country are char areas. People in chars have to survive by fighting with severe river erosion, floods, droughts, various natural disasters and unemployment. Char areas are identified as highly poverty prone areas of Bangladesh.
- vii. There are many problems and possibilities in char lands. Chars have vast lands and large population. People are self-sufficient in char lands. However, although we have made great progress in agriculture, a large proportion of char land is still not utilized for cultivation. Crop production is very low in chars compared to the other lands due to lack of appropriate modern agricultural technologies. In order to produce more crops in char lands, there is no alternative to providing various types of agricultural assistance, training and agricultural technologies to the farmers.

Agricultural Extension Strategies in Char Areas

- i. Arranging seasonal Assistance or Support Programmes by identifying the crops suitable for the sandy soil
- ii. Emphasizing crop selection in the production of ground nut, sesame, sweet pumpkin, sweet potato, black gram, khesari, mungbean, sugarcane, maize, onion and garlic
- iii. Increase use of low-input technologies
- iv. Arrange small irrigation system
- v. Take Initiatives to encourage solar irrigation systems
- vi. Help in improving the marketing system
- vii. Use of floating methods
- viii. Use of short-duration aman rice varieties
- ix. Using early variety crops
- x. Providing frequent training on new technologies
- xi. Arranging technology extension to the farmers through establishing contact through mobile phones
- xii. Placing special focus on rabi crops
- xiii. Creating skilled assisting or supportive farmer groups
- xiv. Shifting to e-extension service.

List of Main Suitable Cropping Patterns for Char Areas

*Mustard	- Boro Rice	*Ground nut	- Broadcast Aman
*Mustard	- Broadcast Aus	*Lentil - Jute	- T. Aman
*Mustard	- Jute	*Blackgram	- Sesame + B. Aus
*Wheat	- B. Aus	*Sweet Potato	- B. Aus
*Wheat	- Jute	*Lentil	- B. Aus
*Maize	- B. Aus	*Gram	- B. Aus
*Ground nut	- B. Aus	*Aman	- Potato –Mungbean
*Ground nut	- Blackgram		

14.5 South and South-Western Regions

- i. The total area of riverine and agriculture-based Bangladesh is 1,47,570sq km, 20% of it is coastal areas and 30% is net cultivable areas. There are about 0.85 million hectares of cultivable land among 2.85 million hectares of coastal areas. The density of coastal population is less than the other parts of the country (750/km). The amount of per capita land in the country is 0.79 acres but the amount of per capita land on the coastal area is 0.72 acres (BBS, 2010). Apart from this, the amount of land for homestead in the coastal area (0.07 acres) is less than that of the national level (0.08 acres). Life at

the coast is mainly dependent on agriculture. At present, the intensity of crops in Bangladesh is 191% and in coastal areas it is 133%, which is relatively low. It is possible to increase the intensity of crops by proper planning and suitable agricultural technologies on the coast.

- ii. Ten coastal districts of southern Bangladesh Khulna, Satkhira, Bagerhat, Barguna, Patuakhali, Bhola, Chittagong, Cox's Bazar, Noakhali and Lakshmipur are very promising in agriculture in spite of having natural disasters and other risks. According to the 2011 Census, the total population of coastal districts is 24.6 million, which is about 6 percent of the total population of the country. The coastal districts adjacent to the Bay of Bengal are under the agro-ecological zone 13, 18 and 23 and mainly saline prone areas. According to the survey of Soil Resource Development Institute, approximately 10.56 lakh hectares of coastal areas of the country are affected by salinity. Of the ten districts, the total land area is 22.90 lakh hectares of which cultivable land is 17.04 lakh hectares with the net crop cultivable 15.80 lakh hectares of land. The cultivable fallow land is 1.31 lakh hectares.

Potential Aspects in the South and South-West

It will be possible to increase the intensity of the crops through the proper use of fallow land in those districts by following some activities such as seed production, preservation and distribution of saline tolerant crops through contact farmers, cultivation of fruits and vegetables in gher-ail and homestead areas, cultivation of less water loving crops, making of gardens of suitable fruits (coconut, guava, sapheda, aamra etc.), expanding the cultivation of high value crops and improving management of local crop varieties. There is a potential for development in the agricultural system of the districts through the activities of the development of soil health, irrigation system, marketing system, increase use of the fallow land and the intensity of the crop, the increase of Aus cultivation, the expansion of the cultivation of pulses and oil crops etc.

Major Cropping Patterns in the South and South-West

Among the Main Cropping Patterns are:

- i. Boro-fallow-T. Aman relay khesari / mung / felon / chilli / diblingaus-T. mung aman
- ii. Fallow - fallow-T. Aman
- iii. Fallow -T.aush-T. aman relay khesari / mung / pepper / wheat sweet potato / potato / lentil / cholas / maize-aus / jute / mesta / sesame -T.Aman
- iv. Boro-fallow -fallow potato / sweet potato / chilli / pumpkin / data / sweet pumpkin / lady's finger / brinjal / cabbage / water melon / fallow-T. Aman
- v. Fallow - mixed aus + B.Aman
- vi. Relay fellon / moog -T. Aus-T. Aman
- vii. Fallow - diblingAus-T.Aman.

Due to geographical location, agriculture in south and south-western Bangladesh is different from other plain lands; These areas are far behind in development. Crop production is also less in this region, the reasons are:

- i. Salinity intrusion
- ii. Lack of salinity-tolerant crop variety
- iii. Mismanagement of protecting soil fertility
- iv. Unregulated irrigation water
- v. Lack of modern technologies and inadequate use
- vi. Similar crop cultivation year after year
- vii. Crop damage by natural disaster
- viii. Lack of improved seed and balanced fertilizer
- ix. Low market management.

South-Western Agricultural Extension Strategies

- i. Using advanced or local sustainable technologies through enhancing cropping intensity and crop diversification
- ii. Finding ways to make every farmer attracted to increase the areas of fruits and vegetables cultivation
- iii. Planting lots of trees through environment friendly agricultural extension management; in particular, taking steps to reduce natural disasters by planting fruit trees
- iv. Taking attempts to increase the fertility of land through balanced management of chemical and natural fertilizers
- v. Encouraging crop production techniques, processing and marketing to help poor peasants in particular
- vi. Focusing on agricultural mechanization
- vii. Enhancing the training system on the appropriate crop for the extension workers all over the year
- viii. Using digital media like community radio, mobile apps, television etc. to deliver agricultural extension services to remote areas
- ix. Innovating the salinity-tolerant varieties and spreading them to the farmers quickly
- x. Collecting local seeds (Sathamota / Lalmota) and improving their quality
- xi. Taking steps to increase cultivation by controlling saline water
- xii. Emphasizing on fruit and vegetable cultivation
- xiii. Teaching the farmers about climate change adaptation techniques.

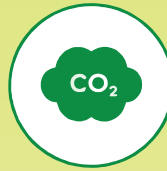
- xiv. Establishment of Community Collection and Marketing Centres
- xv. Providing training for women on income generation in agriculture-based issues
- xvi. Taking activities for cultivating vegetable, rice and fish farming following Sorjan method
- xvii. Increasing cultivation of submergence-tolerant varieties in the Aman season
- xviii. Providing training to farmers about climate adaptation strategies
- xix. Taking steps to inform the farmers about bad weather forecasts regularly by E-Extension Service (mobile call or messaging)

Proposed Components for Agricultural Extension in the South-West

- i. Production, preservation and distribution of seeds of saline-tolerant varieties (rice, wheat, mung, sesame, mustard etc.)
- ii. Fruit and vegetable cultivation extension programme on the boundary of fish farm Gher and Homestead
- iii. Extension Programmes for the obsolete fruit plant (Kaufol, Daoya, Latkon, Lemon, Sharifa` etc.)
- iv. Gardening programme for coconut, amra, guava, malta, shafeda
- v. High value crops (summer tomatoes and beans, kul, papaya, soybean, coconut, sunflower etc.) cultivation Extension Programme
- vi. Vegetable and fruit production programmes through the Sorjan method
- vii. Crop Production Technology Extension Programmes, regarding the cultivation of crops through zero tillage, pits and mulching practices
- viii. The palm, dates and Sajina gardening programme on both sides of the road
- ix. Vegetable seed production programme in floating bed through modern technologies
- x. Programmes to meet the demand of emergency irrigation through reforming the water reservoirs or Khas ponds and other ponds for the conservation of rain water
- xi. Increase use of renewable energies by establishing solar irrigation pumps
- xii. AWD, SRI, raised bed (in rice field) demonstration setting programmes
- xiii. Decrease irrigation waste and reduce irrigation costs by establishing Burried Pipe
- xiv. Placing drip irrigation demonstration in fruit gardens
- xv. Distribution programmes of rice transplanter, ripper, power thrasher etc among the farmers with subsidy cost for agricultural mechanization
- xvi. Take supportive activities for post-harvest management and marketing activities of crop or fruit-vegetables.

Chapter 15

Role of Agricultural Extension in Climate Change



Role of Agricultural Extension in Climate Change

Bangladesh is prone to natural disasters. The repercussions of these disasters are very severe due to the geographical location of Bangladesh, population density and agriculture-based economy. Developing countries like Bangladesh are most vulnerable to the adverse effects of climate change. Rise in global warming lead to increasing sea levels and causing an imbalance in the climate of the region. Climate change, rising of sea level and climatic disasters can be identified as effects caused by human actions. Climate change is closely related to crop production. Climate change affects agriculture output. Bangladesh is also at risk of extreme weather conditions such as droughts and floods. At this pace, there might be more damage to agriculture in future if disaster-reduction measures are not taken up at all levels of agricultural extension and applied at the right time. Although natural disasters cannot be avoided, it is possible to reduce their impact on the agriculture sector by adopting proper planning and implementation of protective measures.

15.1 Causes of Climate Change

Global climate is changing gradually and continuously. There are two main reasons for climate change:

- a. Natural causes
- a. Man-made causes

15.1.1 Natural Causes

- i. Changes in the relationship between the sun and the earth
- ii. Fluctuations of energy produced from the sun
- iii. Changes in energy stored in seawater and oceans
- iv. Volcanic erosion
- v. Impact of El Niño and La Niño.

15.1.2 Man-made Causes

- i. Adverse effects on the environment due to pollution caused by factories, transport and vehicles
- ii. Increasing consumption of fossil fuels.

- iii. Increasing emission of greenhouse gases in the atmosphere
- iv. Increasing emission of poisonous methane gas from swage and city waste
- v. Nitrous oxide gas emission in various agricultural activities
- vi. Use of CFC Halon, Freon gas in freezers, refrigerators and industrial factories
- vii. Increasing density of methane and Ozone gas in the atmosphere
- viii. Carbon-dioxide emission from coal mines.

15.2 Effects of Climate Change in Bangladesh

- i. Rise in annual temperature
- ii. Increasing salinity or decreasing soil fertility
- iii. Unpredictable rainfall
- iv. Crop damages due to flash floods
- v. Droughts throughout the country, especially in the northern part
- vi. Changes in temperature and duration of winter
- vii. Increasing sea levels
- viii. Increasing frequency and intensity of natural disasters
- ix. Changes in seasonal cycles (exceptions in times when the season starts).

15.3 Emergency Disaster Management Actions for Extension Workers

Extension workers will undertake the following activities in the face of a disaster:

- i. Develop a pre-disaster strategy
- ii. Develop a preventive strategy
- iii. Develop ways to mitigate the effects of the disaster
- iv. Develop an emergency relief system
- v. Prepare and implement emergency rehabilitation programmes.

15.4 Keeping Emergency Support Functional During Disasters

Step-1: Early Warning

Disaster precautions means sending out messages or information about the following topics to individuals or groups in order to deal with possible disasters in the light of past experience:

- i. Information regarding the risks of disaster, what to do in an alarming situation
- ii. What to do to avoid or reduce danger
- iii. Information regarding prevention and preparation.

Step-2: Determination of Needs and Losses

- i. Assess the situation, set the objective
- ii. Prepare alternative arrangements
- iii. Implement activities based on objectives and viability
- iv. Determine the demand of materials in the affected areas and prioritize the activities.

Step-3: Emergency Agricultural Rehabilitation Programme

The agricultural rehabilitation programme will be taken up as part of short and long-term activities for the people in disaster-prone communities. The Department of Agricultural Extension will take immediate initiatives to assist people of the area in collaboration with other concerned departments and NGOs. In addition, the government will also take measures for income generating activities for the affected people.

15.5 Reduction of Disaster Risks and Climate Change Impacts on Agriculture via Adaptation Techniques and Management

Natural disasters caused by climate change such as heavy rainfall, floods, flash floods, drought, increased water salinity, cyclone etc. are causing damages to the agricultural sector. It is possible to reduce the risk by adopting different types of agricultural techniques that can adapt to the adverse climatic conditions.

15.6 Actions Required During Pre- and Post-Disaster Times

It is possible to reduce crop loss if appropriate measures can be taken during, before and after the disaster caused by climate change.

15.7 Necessary Actions for Agriculture During Drought

Climate change is increasing day by day. Alongside this, adverse effects on agriculture are also increasing. Rice and jute seeds cannot be sown on time due to delays in preparing the land in

drought of April-May. Additionally, aman seeds cannot be sowed on time if rainfall is low in June-July. The drought in October-November reduces the rice production severely. In this situation, crop loss can be reduced if suitable measures can be taken before, during and after the drought period.

15.7.1 Crop Cultivation before Drought

- i. Making use of appropriate irrigation equipments- such as doun and shauti etc.
- ii. Preparing organic fertilizer ahead of time which improves the soil's water holding capacity
- iii. To raise the land boundary, so that it can hold more rain water
- iv. To reform canals and ponds and dig mini-ponds for alternative irrigation
- v. To select suitable crops and varieties of crops.

15.7.2 Crop Cultivation During Drought

- i. After harvesting *Aman* rice, cultivating *Rabi* crops such as gram, linseed, barley, Foxtail millet etc., while the land is still wet.
- ii. Provide necessary irrigation to crops
- iii. Use ribbon pipes to prevent the waste of irrigation water
- iv. Repair and elevate the land boundary
- v. Take care of vegetable gardens in the homestead
- vi. Provide regular irrigation following the AWD method
- vii. Produce seedlings on dry seed bed in time
- viii. Produce seedlings using the pond water in a suitable place
- ix. Apply mulching to save moisture.

15.7.3 Crop Cultivation after Drought

- i. Evaluate previous work
- ii. Prepare the next plan at the community level.

15.8 Actions Necessary in the Event of Flood and Flash Flood

Sometimes, due to the advance flooding, there takes place huge loss of boro, aus, jute, and transplant *aman* seed bed, broadcast *aman* and other vegetables in the field. Although remedy is not possible but damages due to floods can be reduced by taking effective measures.

15.8.1 Crop Cultivation before Flood and Flash Flood

- i. If there are aus or boro rice in the field during floods and flash floods, harvest the crops and store in the house after threshing when 80 percent of the crops are ripened
- ii. Cultivate early or short-duration rice varieties (e.g BINA-7, BRRIdhan 28, BRRIdhan 33 and BRRIdhan 39) which can be harvested before flood comes.

15.8.2 Crop Cultivation during Floods and Flash Floods

- i. In flooded areas, sow seeds of late varieties such as Binashail, BR 22, BR 23 or local aman on flood free high land till the end of August
- ii. Collect seedlings from flooded area and plant those in flood free high land in very high density. This is known as 'Bolan' method
- iii. Make floating seedbed with mud on banana tree or mat and sow the seeds and prepare for the next time
- iv. If there is shortage of dry land during the flood, raise seedling of winter vegetables in advance on tub, soil pot, wooden box, drum, floating water hyacinth and banana rift.

15.8.3 Crop Cultivation after Flood and Flash Flood

- i. If the seedlings survive the flood wash clay soil lain on the leaves, by sprinkling water or cutting the leaf
- ii. Fill the blank or empty spaces of the land by the seedlings from other side, specially in partially damaged lands
- iii. As soon as the flood water goes down, broadcast seeds of different varieties of grass, including maskalai, khesari, and corn on the banks of the river, on the banks of the dams and fellow land in the char areas.

15.9 Measures to be Taken for Agriculture in Saline-Prone Region

Duration of Salinity: Soil salinity increases due to sinking of the land directly in saline water during monsoon (June to October) and saline water under the soil flows to the surface through capillary in the dry season (November to May) which damages the soil fertility. Generally, the level of salinity increases in the beginning of the dry season in November. The amount of salinity increase on the surface is due to lack of soil moisture and it is the highest in April-May.

The southern regions of the country are prone to salinity. Tides, increased salinity, rise in temperature, irregular rainfall, etc. affect the agriculture in this area. It is still possible to produce profitable crops all over the year by fighting the salinity through planned cultivation and care.

15.9.1 Action Required in Crop Cultivation before Salinity

- i. Cultivate salt-tolerant aman rice such as BRRIdhan 47, BRRIdhan 53, and BRRIdhan 54
- ii. Production of 'Sadamota' variety of local rice seedlings in the first week of Shravana
- iii. Store rainwater in ponds and canals
- iv. Use PVC and ribbon pipes for supplementary irrigation
- v. Keep the soil moisture by placing mulching on the top of the soil with straw, leaf, weed, water hyacinth so that the capillary rise of saline water can be prevented.
- vi. Cultivation of mustard and blackgram without tillage
- vii. Prepare the beds for cultivating vegetables and fruits using in the “Sorjan” method where the water is stored.
- viii. Early sowing of watermelon, pumpkin, and cucumber, ridge gourd, bitter gourd etc. in holes so that it doesn't get damaged due to drought.

15.9.2 Action Required in Crop Cultivation During Salinity (November to May)

- i. The land should be cultivated after harvesting the Aman rice, by this time the soil moisture will dry less and the soil will be less saline affected, broadcast Khesari before cutting Aman in coastal region
- ii. Cultivate mustard, mungbeans, khesari, soybean, gram, felon beans
- iii. Preserve water in different reservoirs to prevent salinity
- iv. Irrigation through the tape pipe through the LLP
- v. Weaving wheat till mid-November
- vi. Planting maize on sandy-loamy or clay-loamy soil
- vii. Cultivating tomatoes, and sweet pumpkin in the boundary
- viii. Sow watermelon, pumpkin, and cucumber, gourd, etc. in advance in crop holes so that it doesn't get damaged from salinity
- ix. Reduce the waste of stored water, cultivate mada crops such as bitter gourd gourd, watermelon etc.
- x. Keep rainwater in ponds and canals
- xi. Use mulching by straw, leaves, weeds, water hyacinth to keep the soil moist
- xii. Preserve water by making holes in one corner of the ground.

15.9.3 Crop Cultivation after Salinity

- i. Prepare seedbeds of aman rice, vegetables and other crops at high levels to protect seeds from tide or rain water
- ii. Grow seeds on floating seed beds if there are no other places to prepare the seed beds of T. Aman due to the tidal or rain water, Dapog method can also be used
- iii. As the crop can be cultivated within Kartik-Agrahayan months, cultivate Transplant Aman (BRRI 33, BRRI 39, BRRI 40, BRRI 41, BRRI 44) instead of the late Aman to reduce the crop loss.
- iv. Collection and use of PVC and tape pipe for supplementary irrigation
- v. Early varieties of Aus or Jute should be cultivated so that the crop can be harvested before the tide or rain water comes.

15.10 Effects of Flood, Drought, Salinity and other Calamities on Agriculture

Generally, there are four types of floods in Bangladesh

- i. Due to Extreme rain: the water coming from the upstream country
- ii. Seasonal flood: caused by the big river
- iii. Flash flood: caused by mountainous water
- iv. Coastal winds: Cyclones and tidal waves.

15.10.1 Effects of Floods on Agriculture

- i. Crops and seeds are destroyed due to floods
- ii. Farmers are forced to sell land, animals and other resources due to flood
- iii. Farmers are forced to take extra loans due to loss of livestock.

15.10.2 Impact of Drought on Agriculture

- i. Disruption in growth and stunted growth in rice during October
- ii. Problem in preparing land for cultivation, increased salinity of lands
- iii. The shallow bunch varieties are more damaged due to the drought
- iv. Impact on sandy soil
- v. Lack of irrigation water.

15.10.3 Damaging Effects of Increasing Salinity on Agriculture

Salinity is a big problem in agriculture in the southern part of the country. Soil salinity is increasing due to climate change and decreasing of the flow of Monsoon Rivers. In coastal districts like Barguna, Patuakhali, Bhola, Pirojpur, Jhalokati and Barisal, plane lands are influenced with high and low tides. The northern parts of these places have saline water. The intrusion of salt water is a serious problem.

Harmful impacts on agriculture are given below:

- i. Increasing salinity is harming the industries and factories in coastal areas, residents of the area lack necessary drinking water
- ii. In future, the salinity of water and soil in the coastal areas will increase; more water will enter the islands in river estuaries and the adjoining areas
- iii. Increasing salinity in water and soil will harm total coastal environment, the coastal economy will be harmed, lives of the local people of the area will be hampered
- iv. Increasing salinity of soil through entering saline water has created a serious problem in the southern part of the country
- v. In the dry season, saline water mixes with fresh water through regular marine tidal flows and making the river water ineligible for irrigation to aus and other advance Kharif crops.

15.10.4 Harmful Effects of Increased Global Warming and Cold Wave on Agriculture

In the last 25 years of record on weather temperatures, it is seen that the average temperature of Bangladesh didn't increase. It is however feared that the average temperature may rise by 1 degree Celcius in 2030, 1.40 degrees Celcius 2050 and 2.40 degrees Celcius in 2100. The warm and cold waves increased even though the temperature did not increase in recent times. Winter period is gradually diminishing in Bangladesh.

Hazardous Effects on Agriculture:

- i. Growth of most of the Rabi crops will be hampered and their yields will be affected. In addition, more sensitive crops such as wheat production fall if it is not sufficiently cold during the winter season. Wheat production will become non-profitable

- ii. For rice production, if the temperature is 35°C Celsius or higher during flowering or pollination, the rice grain will be unfilled and production will reduce, which would ultimately reduce total production
- iii. If the temperature decreases below 12°C at night, and below 25°C during the day immediately after the “Kaich Thor” of the paddy field and it continues for 4/5 days, the rice will be partially or completely unfilled
- iv. Rice cultivation is affected when the average temperature of the air falls below 20°C in the breeding phase
- v. There are adverse effects on the crops such as mustard, lentil, gram etc. if there is a sudden drop in temperature causing pollination to not take place properly
- vi. Many crops, especially wheat, are affected partially or total in pollination and fertilization due to long standing fog with cold wave. Insect attacks might also increase
- vii. Increasing heat causes increased transpiration of the trees, which results in lack of irrigation water. Mango buds are spoiled and coconut production is hampered as a result of the cold wave
- viii. Cultivation of Rabi crops is hampered.

Chapter
16

Participation of Women in Agricultural Extension



Participation of Women in Agricultural Extension

16.1 Introduction

About half of the population in Bangladesh are women. Women empowerment is a precondition for national development. It is necessary for establishment of equal rights and opportunities for women in every sphere to ensure the national development. However, women have always been subjugated through suppression, lack of knowledge, social superstitions and religious orthodoxy in a male dominated social system. Women receive little acknowledgment for their contributions in their households. They lag behind access to nutrition, health services, educational opportunities, and finances. In order to reduce the gender gap, steps have been taken to fight gender discrimination in every sphere of institutional structures. In line with this view, planning is done to ensure women participation in economic activities. Department of Agricultural Extension acknowledges participation of women in agricultural activities. Only by recognizing the role of women in agriculture, tangible development in agriculture can be ensured and that's hunger and poverty can be eliminated.

16.2 Gender Discrimination: Global and Bangladesh Perspectives

Gender inequality is a major set-back for countries that are striving for sustainable economic development. Gender inequality leads to more economic, social and ecological inequality which hinders a country's overall development.

a. Gender Discrimination

Gender discrimination takes place in the context of culture, caste, religion and class. It generally occurs in two fields:

- i. Gender-based labour distribution: daily work, responsibilities, etc.
- ii. Disgraceful situation: no right to wealth, choice, empowerment, decision making etc.

b. Situation in Gender Discrimination

- i. In most countries, women work twice more than their male counterparts without wage or payment
- ii. Women in developing countries work 31-42 hours a week without being paid
- iii. For labour intensive work women get three-fourths of the wages in comparison with the male workers.
- iv. For less labour intensive work women make 50% less than males.

- v. Parliamentary seats for women are about 10-13, although half of the total number of voters are women
- vi. In most African countries women do 80% of the total agricultural work
- vii. A staggering population of women in the world are illiterate and live in extreme poverty
- viii. 80% workers in the South East Asian export processing zone are women
- ix.
- x.
- xi. Household works that are done by women are not considered as the economic activities; invisible contribution worth eleven trillion dollars is lost from the world economy in this way
- xii. Despite having many progressive laws in many countries to protect women's interest, they are still deprived of basic rights and opportunities

c. The Lifestyle of Bangladeshi Women

- i. Women do unpaid household chores
- ii. Women are financially dependent on the male members of the household
- iii. Women are devoid of equal calorie intake from a very early age
- iv. Women are restricted to the house
- v.
- vi. Women's well-being depend on their husbands after their marriages
- vii. Women have limited mobility
- viii.
- ix. Women have no say in family planning
- x. Polygamy is reserved for male members only
- xi. Women are tortured for dowry
- xii. Female get moharana late and males get dowery readily
- xiii. Property inheritance favours the male members of the family (though an exception in the Garo ethnic community)
- xiv. Equal rights to divorce laws are there but not practised

From the above situation, it is evident that subjugation of women is limiting their ability to contribute to the development of the country at their fullest potential. In a recent publication by World Bank it was stated that special opportunities have to be given to women for greater development of a country. Investment in women's education and health positively impacts the economy of a country. There are scopes for women to play a major role in the agriculture sector.

16.3 National Agriculture Policy and Female Farmers

Women's participation in the agricultural sector is important in the context of socio-economic development of Bangladesh. The following activities can be adopted to ensure greater participation of women in agriculture and reduce their need to migrate to the cities in search of work:

- i. Post-harvest activities, nursery business, homestead vegetable cultivation, production of fruits-flowers and vegetables seeds, etc. Necessary training and availability of funds to enable women to start their business
- ii. To take separate extension activities for women farmers in the light of the national agriculture extension policy
- iii. Undertake research activities to understand the obstacles women face and to take necessary steps to remove the marked inconveniences.

16.4 Policy for Advancement of Women in the Agriculture Sector

There are some references interrelated to agricultural and women development in the article 30, 31, 36, and 37 of women development policy.

Article 30: Foods Support for Women

- 30.2: To ensure the participation of women in food support attainment process planning, maintenance and distribution.
- 30.3: To evaluate and recognize their contributions, roles and labour in ensuring the food support.

Article 31: Women and Agriculture

- 31.1: The role of agriculture is important in ensuring economic growth, employment and food security in the agro-based economy. Women labour and participation in agriculture is evident all over the world. Women's participation in agriculture should be recognized nationally.
- 31.2: To assist all the women in agriculture in removing obstacles due to the climate change and calamities.
- 31.3: To ensure the equal wages for women and to remove discrimination for the women wages in agriculture.
- 31.4: To take necessary steps to ensure the equal opportunities for the women labourers in agriculture for the support of agricultural materials, fertilizer, seeds, farmer cards and credit facilities.

Article 36: Women and Environment

36.3: To give equal rights and encourage women in agriculture, fisheries, rearing livestock, and forestation.

Article 37: Protection for Women and Children Prior to the Event of and After Calamities

37.3: To take necessary steps to prioritize and ensure safety of women during rehabilitation after calamities and preparing them for challenging the calamities

16.5 Extension Approaches for Strengthening Women's Participation in Agriculture

Department of Agricultural Extension will determine service recipient (target group), select proper technology or extension service and transfer technology through appropriate methods.

Female Farmers: All the interested Female farmers related to crop production and work (from the crops cultivation to the collection, preservation, processing and commercialization of crops) will be recognized.

Services for Women: Women's participation to the activities of agricultural extension, marketing and production has to be ensured to increase empower their decision making in the economic activities. With this in view, women have to be assisted with training on agricultural extension technologies, information related to market, agricultural productive skills and methods. Women extension workers can play a vital role in these activities. Therefore, the opportunities for participation of women extension workers have to be increased.

Distribution of crop production inputs have to be ensured for women farmers in the field levels. All the female farmers can be taken under the agricultural extension service.

16.6 Extending Services to Female Farmers

Formation of Women's Organization: Formation of women's organizations or strengthening of existing groups helps to reach a collective group of farmers at a time. This allows the fast and smooth dissemination of information through the extension workers. The SAAO needs to facilitate the formation of women's groups and assess the requirements of the female farmers. Women's access to these services needs to start from the grassroots (village tier) while ensuring that the existing resources are properly utilised to reach specific development

strategies. In this way, groups or organisations can be formed gradually in the upazila, district and regional levels. The flowchart below shows the extension services catered to women:

Flow chart: Process of enabling services to women



Leadership Selection: To strengthen women’s participation activities, the extension workers at the root level have to consider the following aspects:

- i. To consider the farm size, cropping patterns social position of the selected leaders
- ii. To foster a kind and cooperative relationship among leaders and extension workers so that mutually agreed goals can be fulfilled
- iii. The individuals who are interested in the extension work have to be skilled to understand the problems of female farmers
- iv. The individuals who are interested in the extension work have to be made aware of new technologies that make farming more comfortable
- v. The individuals who are devoid of various facilities geographically should be targeted
- vi.
- vii. Leaders have to be willing to take part in trainings
- viii. Evaluate the standard of the work periodically to ensure the effectiveness of the system.

Increasing Capacity of Women's Organization: The first step towards building capacity is to locate women’s groups already formed by various NGOs. It is likely to find the groups not very familiar with modern methods or techniques in agriculture. The agricultural extension worker has a crucial role to play here. Instead of forming new groups, the extension worker can focus on the existing groups and training them on modern techniques and practices. Efforts must be made in facilitating the dissemination of practical knowledge in this rural level. The main areas of focus at this stage would be to list down what inputs would they need in case of farming or domestic work, what qualities a person needs to possess to lead a group, and how best to drive towards results in a democratic way.

Linking Female Farmer Groups and Other Organisations: A coordinating environment has to be created by the female farmer groups and the other organisations where the skills of women will be enhanced and a positive attitude towards their participation will be created through trainings and individual development. As a result, women will be more involved in crop production, processing and business. Recently, many organisations have added target female farmers in their mainstream activities. Here, there is scope for agricultural extension workers to make a link between these organisations and female farmer groups.

Taking integrated actions

- i. Development programmes have to be made targeting women by considering their necessities and capabilities
- ii. Training courses have to be made pertaining to agricultural aspects
- iii. It will not be appropriate only to tell or teach them scientific and technical knowledge in the training; rather emphasis should be given on the needs and interests of rural women.
- iv. Emphasis has to be given on the training based on agricultural technologies
- v. Women's access to the labour market and income generating activities have to be made easy
- vi. Social safety has to be increased and possible risks have to be decreased.
- vii. Technologies and services have to be improved, assessing the role of the government, non-government and individual sectors to remove the impediments existing in the agricultural sectors.

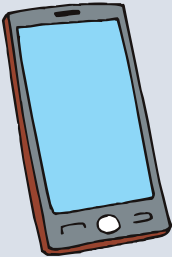
To conclude, it can be said that emphasis should be given on the following by agricultural extension workers to ensure better livelihood of women involved in agriculture:

- a. Proportion to income of men-women
- b. Wages of men-women in agriculture
- c. Per head food availability of men-women
- d. Per head standard of nutrition of men-women
- e. Participation of men-women in agriculture.

The above aspects aim to establish equal rights for women to do their professional duties. Extension workers can do the work of a social worker in this context. In this way, participation and activities of women in the agricultural sectors will go up and at the same time the possibilities for sustainable development will be created.

Chapter 17

e-Extension Services



e-Extension Services

17.1 Introduction

The population of agrarian Bangladesh is increasing rapidly. There is no alternative to increasing the production in the agriculture sectors to meet all the demands for nutrition and feed the rising population. The contraction of the agricultural land and the gradual decrease of land fertility are the main impediments. The imbalance of season cycling due to the climate change is another problem. As a result, irregular rainfall, unnatural mode of temperature and other adverse aspects are making the situation more complex. To meet these complex problems, new technologies are invented for agricultural development. The prime challenge for the Department of Agricultural Extension is to provide the farmers of all levels with these technologies. To meet the challenge, the Department of Agricultural Extension is determined to spread and apply all the invented technologies and to popularise the extension service establishing a close relationship with farmers.

ICT has helped in the rapid spread of activities. The government is also determined to take the country ahead in the field of ICT. Keeping this in mind, the Access to Information (a2i) programme is strengthened in every field of development in the country. As a part of this programme, e-extension services are being improved gradually. Now, it is universally acknowledged that proper implementation of e-extension services are needed to meet the demands of the increasing population. A radical change can be observed in the growth of crop production through the proper e-extension services.

Radio and TV are wellknown for broadcasting extension news since a very long time. These are tools of extension work. The use of audio and video has made e-extension services easier and more useful. Owing to the advanced technological development, live communication system has been added to the e-extension service, such as live conversation, live video, video conference through mobile phones, etc. Recently, mobile apps, social network sites (such as Facebook) and off-line internet features have played a significant role for developing the standard of e-extension. In near future, an unprecedented advancement will come into light in case of agricultural development along with acquiring greater efficiency in e-extension service programmes.

17.2 Necessity of e-Extension

Department of Agricultural Extension (DAE) provides services to farmers. DAE promotes technology-based agriculture for the development of farmers. One of the major responsibilities of DAE is to give proper solution to farmers regarding production and proper application of the new technologies all across the country. Agricultural families are increasing with increasing population in the country. The necessity of e-extension service is given below:

- i. At present, the proportion between extension workers and farmers' families is 1:2500.
- ii. It is difficult for one extension worker to serve 2500 farmers' families
- iii. It is very difficult to travel due to the poor communication system and the existing transportation system especially for extremely remote areas
- iv. It is difficult to inform all classes of farmers of the extension message, especially in the remote areas
- v. In the present context, there are no alternatives to expand without e-extension
- vi. Many farmers are unable to maintain contact with the Agriculture Information Centre and or the Agriculture Consultant Centre
- vii. There are circumstances where there are no proper ways to inform the farmers of the natural calamities immediately.

In the aforementioned context, proper and fruitful extension services can be ensured only through the e-extension service.

17.3 Benefits of e-Extension Services

Digitization has opened the doors to numerous possibilities. Many opportunities in the field of agriculture have been created through the e-extension service ensuring effective services to the farmers.

The benefits of the e-extension service are given below:

- i. It is possible always to serve a good number of farmers within a short period of time
- ii. e-extension service is cost effective
- iii. It is possible to give the service in remote areas easily
- iv. It is possible to provide effective solution to farmers because of live samples and direct communication
- v. Farmers can get the service of the e-extension service from the e-extension workers any time
- vi. Farmers can have an opportunity to get cooperation of extension workers at any time.
- vii. It is possible to send farmers important news pertaining to natural calamities
- viii. It is helpful in case of knowing proper price for the agricultural products in the market
- ix. Farmers can get solution for any problems using internet and mobile applications.

- x. Farmers can improve their from skill enriching their knowledge with the help of interest, on-line, off-line and mobile apps.
- xi. The development of mutual interaction is created among the farmers through social network groups (such as Facebook).

17.4 DAE's Considerations for e-Extension

DAE has given emphasis on the proper delivery of e-extension services. DAE will be ready to conduct activities concerning the following aspects for the development of e-extension services:

- i. Skilled manpower creation and recruitment at the headquarter of DAE for the development of e-extension service activities
- ii. Empowerment for all concerned aspects and arrangement of necessary equipment useful for e-extension services at the headquarter
- iii. Supplying necessary equipment pertaining to proper e-extension services at the field level
- iv. Skill development related to the e-extension service of the extension workers
- v. Selecting farmers and developing their skills for e-extension services
- vi. Chalk out programmes to popularize e-extension services
- vii. Encourage farmers to use existing facilities of e-extension service
- viii. Encourage the farmers to use the existing facilities of e-extension services.

17.5 The Existing e-Extension Services

The area of the extension service is being gradually extended and the interests of the farmers and extension workers are increasing day by day. Enterprising role for the extension programme is being played by many institutions besides DAE. Description of the existing facilities related to the e-extension service is given below.

Use of Radio and TV

Radio and TV broadcast various farmers' need based and recreational agricultural programmes for a long time. At present, national and local agricultural programmes are being broadcasted from the radio stations of Bangladesh. Besides these centres, there are 17 community radio programmes. With the increasing popularity of TV, the listenership of radio

has reduced. Agricultural programmes and news of various natural calamities broadcasted in radios play an important role in the activities of e-extension service. The popularity of TV is very high. The number of TV channels is also increasing day by day. Every channel broadcasts agricultural programmes and contributes to the extension service. TV channels also broadcast agriculture news. Extension workers will play a role to attract and inform farmers of agricultural programmes of TV and radio.

Use of Audio or Video

The use of audio or video in the extension service activities has been done for a long time. Use of audio clip of information on important agricultural message or information in seminars and farmers training is being expanded.

Use of Mobile or Smart Phone

Now-a-days, mobile phones are an important and popular means of communication. Nearly 100 per cent of the population has access to mobile phones. In recent times, the usage of mobile phones has increased due to their falling prices. Also, affordable internet is helping smart phones gain increased popularity.

Direct Communication: Many farmers use mobile phones to reach extension workers and take their suggestions and support relating to agriculture. The extension workers also make use of the mobile phones to reach farmers to inform farmers about the use of new technologies and provides them required advice. This direct communication is beneficial for quick access to services and during emergencies such as natural disasters.

Information through SMS: Dissemination of short message through SMS is very popular. In giving or receiving extension services, both the extension workers and farmers can use SMS. Besides text message, voice messages can also be sent carrying important messages.

Real-life sampling, live video message etc. through mobile or smart phones can give effective and tangible leverage to e-extension works.

Use of Tablet PC

The use of tablet PC is limited to the e-extension service programme. The use of tablet PC and mobile phones are the same. The service of tablet PC will be very helpful to serve farmers in groups.

Tele or Video Conference (Conversation)

Effective extension service can be provided through tele or video conference (conversation) with the farmers groups. High officials of the DAE also can take part in the service of the extension programme by using tele or video conference at the head quarter.

Benefits of the Internet

Due to the introduction internet data services, internet can be accessed from anywhere. As a result, anyone can access websites, mobile apps, etc. from any place and at any time and can acquire the knowledge of the agricultural extension activities.

Social Media

Recently, social networks especially Facebook have earned popularity among the people of every age and level in Bangladesh. Through these networks, posting, writing, picture and video sharing, individual thinking can be expressed and shared with others.

The use of social media by farmers and officials of the Department of Agricultural Extension in their service can be very effective to disseminate agricultural information. Farmers will be benefitted if agricultural information or advice is posted from the Facebook accounts of the extension officers. As a result, the extension of technology in agriculture will be faster.

Meanwhile, a Facebook account has been launched from the head quarter of the Department of Agricultural Extension. The account will be accessible from the website of DAE. An opportunity for sending and receiving the extension service has been created from the account. The Facebook groups among the farmers of their respective areas at upazila and

district levels under DAE will play a conducive role for expanding the service. The number of YouTube users is increasing. YouTube can be considered as a tool for the extension service.

Agriculture Call Centre

Call centre is a medium by which a mutual communication can take place between the serving institutions and their consumers. To expand the latest technologies in agriculture, a call centre called “Krishi Call Centre” operated by Agriculture Information Service has been established under the Ministry of Agriculture in 2012.

It is located at the head quarter of Agriculture Information Service in Khamarbari in Dhaka.

The activities of the centre have formally been introduced anew from the month of June, 2014. The call centre hotline is 16123 and the call rate per minute is 25 paisa (excluding VAT and tax) according to the regulations of BTRC. There are 5 executives specializing on agriculture, fisheries and livestock at the call centre. Farmers can get immediate advice from specialists on agriculture, fisheries and livestock by dialling 16123 from any mobile phone operator. The call centre is open every day except Friday and other government holidays from 9 am to 5 pm.

Agriculture Information and Communication Centre (AICC)

AICC is an ICT based information service centre run by farmers. At the village level, AICC is run by the members of Agriculture Information Service. Use modern and latest information technology is introduced in these centres. Farmers themselves provide and collect information service in the AICCs established at the village level. In these centres, various ICT devices like desktop computers, laptops, printers, internet modems, multimedia components have been provided. Besides, training of the members of AICC has been provided side by side. From the Agriculture Information Service, the advice of the specialist is given to the receivers through online video conference. As a result of this, an opportunity has been created to expand the information technology among the marginal farmers. Now, information service activities are being run by 499 centres all over the country.

Touch-Screen Kiosk

Touch-screen kiosk is one of the media where a lot of agricultural information, audio, video content etc can be shared with farmers. A user can get his or her desired content from the kiosk without anybody’s help. In the software, various e-books, video contents, audio

contents, AICC data base etc. have been installed. Besides these features, high speed internet connection has been given to these kiosks. The interested farmers or any user can get the necessary information on agriculture from these kiosks. If needed, they can also print them out. Kiosks are being used at the local offices and the head quarter of Agriculture Information Service.

Union Digital Centre (UDC)

Union Digital Centres are established at all the unions of the country. They provide an opportunity for the common people for accessing diversified government services. Farmers can get their desired services from the UDC entrepreneurs responsible for the centres. In the service activities, SAAO helps the UDC entrepreneurs with their utmost efforts.

e-Farmer

e-farmer (www.ekrishok.com) is an attempt to provide e-extension services. e-farmer service is based on information technology in the context of agricultural extension and market management. Farmers can get service from the local “Batighor” centre or e-farmer service centre through a local enterprise on dialling 16250 directly.

Digital Krishi Katha

The oldest and historical magazine of Bangladesh is “Masik Krishi Katha”. The magazine, since 1939, publishes articles related to the field of agriculture, horticultural agriculture, fisheries, livestock, forest, nutrition, environment, processing, marketing, storage etc. The magazine has been turned into an e-book to spread it among all the people. Now anyone can read the magazine like the printed one.

Multimedia e-Book

To present the methods of crops cultivation technology of various types in the form of the pictures on audio video, a multimedia e-book has been created by AIS. The benefit of this service is that anyone can store the information in a pen drive and read them digitally. At the same time, they can see them in the form of video.

Use of Websites

Agricultural institutions have their own websites. Each website is a storehouse of knowledge on technology. They are an important source of extension service. The extension worker can increase the interest of the farmers by using their websites. The web addresses of some important institutions related to agriculture are given below:

- i. Department of Agricultural Extension (DAE): www.dae.gov.com
- ii. Agriculture Information Service (AIS): www.ais.gov.com
- iii. Bangladesh Agricultural Development Corporation (BADC): www.badc.gov.com
- iv. Bangladesh Agricultural Research Council (BARC): www.barc.gov.com
- v. Bangladesh Agricultural Research Institute (BARI): www.bari.gov.com
- vi. Bangladesh Rice Research Institute (BRRI): www.brri.gov.com
- vii. Bangladesh Institute of Nuclear Agriculture (BINA): www.bina.gov.com
- viii. Soil Research Development Institute (SRDI): www.srdi.gov.com
- ix. Bangladesh Jute Research Institute (BJRI): www.bjri.gov.com
- x. Seed Certification Agency (SCA): www.sca.gov.com
- xi. Bangladesh Sugar Corps Research Institute (BSRI): www.scri.gov.com
- xii. Barendra Multipurpose Development Authority (BMDA): www.bmda.gov.com
- xiii. Cotton Development Board (CDB): www.cdb.gov.com
- xiv. Department of Agricultural Marketing (DAM): www.dam.gov.com
- xv. Hortex Foundation: www.hortex.org
- xvi. Department of Fisheries: www.dof.gov.bd
- xvii. Livestock Department: www.dls.gov.bd

Some more website addresses related to agriculture:

- i. www.knowledgebank.irri.com
- ii. www.riceworld.org
- iii. www.plantproduction.co.nz
- iv. www.pestweb.com
- v. www.maize.gov
- vi. www.fao.org
- vii. www.agroatlas.ru
- viii. www.ag.ndsu.edu

17.6 Website of Department of Agricultural Extension (DAE): www.dae.gov.bd

There are some important service boxes in the website of DAE and a link has been added for the information pertaining to crops production. These boxes can contribute to the extension service to the farmers by giving them information on the latest technologies.

The services of the boxes are given below:

- i. Due to the update system for the service box information, appropriate and updated information can be learnt
- ii. An attempt to understand the subject matter explaining the real situation through pictures and video specifically
- iii. Extension workers can enrich their knowledge at the ease of their home
- iv. Provide necessary information any time
- v. If the farmer is not able to use these websites, they can take the help of NGO workers, sellers or dealers of fertiliser or pesticides, UDC entrepreneurs or any person knowledgeable in this aspect
- vi. Its use is inexpensive and time consuming
- vii. Service boxes are open to all always. As a result, many extension workers will be benefitted by the service
- viii. It is very useful to get full service sitting home at the backward areas
- ix. It will be convenient to get the standard service
- x. The necessity of printing will be decreased
- xi. The opportunity for crops diversification will be increased
- xii. It will protect nature and environment.

Description of these aspects of getting extension service from the Department of Agricultural Extension websites is given below.

17.6.1 e-Extension Service

The subjects included in the e-extension service box are the followings

Farmer Digital Address

- i. Farmer Digital Address is an android mobile application, an offline software and a web portal (xavier.itreatise.com/evqais/ml). In this service, there are production and management systems of 120 kinds of crops, use of advanced technology in

agriculture, information on insect and disease management and control. All the information from sowing the seeds to harvest has been put in Farmer Digital Address. Subsequently, a detail description of post-harvest management system has also been given to the address.

a. Crops Production System

- i. Various kind of information based on variety of crops and seasons with pictures that will be considered for the selection of farmers desired crops and variety
- ii. Technology or technique for plantation and sowing
- iii. Application method and dosage of fertilisers immediately through auto calculator
- iv. Intercultural operations of crops
- v. Crop harvesting and post-harvest management.

b. Insects and Disease Management of Crops

- i. Real pictures of insects and diseases of crops and symptoms of the attack and damage so that they can be controlled
- ii. Controlling system for insect and diseases of crops by applying the IPM method
- iii. Chemical control methods– introduction to insecticides, proper prescription and application of insecticides.

c. Introduction and Application of Advanced Technology of Crops

- i. Information concerning the advanced technology of crops
- ii. Description of technology with pictures and videos.

Farmers' Window or Krishaker Janala)

'Farmers' Window' is a digital platform that attempts to give immediate and proper solution of problems related to deficiency of fertilisers, diseases and insect attacks on crops. At present, there are more than thousands of problems in over 120 different kinds of crops. Real and representational pictures based on crop problems have been logically arranged in Farmers' Window. By seeing these pictures, farmers can identify the primary problems in their crops. By referring to the pictures of identified problems and observing their symptoms, farmers can mark the actual problems. The farmers can understand the solution and take the right steps to solve their problem.

The special benefit of using Farmers' Window is its user-friendliness. The software presents precise information. It uses pictures to help farmers easily identify their problems. Besides this, it has other features such as frequently asked questions, news, etc.

The website can be accessed through smart phones by visiting-
<http://www.infokosh.gov.bd/krishokerjanala/home.html>

e-Prescription on Pesticides

A pesticide prescription application (software) has been developed incorporating all the types of pesticides approved in Bangladesh. For the treatment of any disease or insect-infested crop, the agricultural extension worker can easily issue the right prescription by accessing the application using their mobile phones and accessing the webpage. Farmers can benefit from the application by using it themselves.

The pesticide prescription application offers several effective pesticide options or groups upon entering the names of the specific pest and affected crop. From there, the application gives information on the commercial names of the pesticide options and their producing company. From there the farmers can choose their pesticide. The effective use of the application in controlling crop pests is expected to enforce the use of right pesticide in right amount and minimize the use of adulterated pesticides.

The application can be used through other means besides the website of DAE. The application can be downloaded from the google play store using a smart phone. The application must be regularly updated as the information database is updated frequently. The website address of the application is pest2bengalsols.com.

17.6.2 Crop Production Technology

The aspects of crop production technology services are given below:

- i. Cereal crops
- ii. Crops related to pulse, oil and spices.
- iii. Vegetables and tuber crops.
- iv. Fruits, flowers, and cash crops.

The production technology of cereals, pulse, oil and spices, fruits, flowers and cash crops have been given in detail in the service box.

17.6.3 Assistance for Agricultural Decision

The aspects included in the box of assistance for agricultural decision are the following:

i. Online Fertiliser Recommendation Software

The online Fertiliser Recommendation Software is developed by SRDI. The software provides recommendation on fertilizers and its usage based on required information. The recommendation can be printed out. It is easy to use and farmers themselves can get fertiliser recommendation through the software.

ii. Rice Crops Manager

The software 'Rice Crop Manager' is developed by the partnership of BIRRI and IRRI. In this software, farmers get fertiliser recommendation by entering the required data into the software. There is an opportunity to give the farmers a print copy of fertiliser recommendation too. Farmers themselves can get their prescription because of the easy use of the software.

iii. Rice Doctor

'Rice Doctor' is developed by an international team of IRRI. It is an application related to the control and identification of diseases and insects of rice. It is useful for students, researchers and others. The software can be used through any kind device. There is an opportunity to download the app in an android mobile phone from the google play store.

iv. Storehouse for Rice Production Technology

The store house of rice production technology prepared by BIRRI is a special kind of store house of information. The significance of the store house has been increased by adding the modern rice cultivation, 18th edition, 2015 to it. The description of the latest varieties of rice invented by BIRRI and its production technology is added to the app. The store house has been enriched with a database programme with a lot of information.

The names of pesticides and fertiliser approved and registered by the government can be learnt from the website of DAE. The list is regularly updated. Users can find the link of the website in other concerned institutions' websites.

17.7 Increase of Farmers' and SAAO's Ability for Successful e-extension Service

Farmers will be devoid of the benefits of the e-extension service until their capabilities of ICT knowledge increase. Therefore, training activities have to be arranged to increase the capabilities of farmers and SAAOs from DAE. The training activities will run in two parts; the first part will be basic training and the other part will be training on advanced ICT.

The following aspects will be included in the fundamental training.

- i. Use of computer
- ii. Internet browsing
- iii. Introduction and use of websites
- iv. Use of Microsoft Office software
- v. Use of Android software
- vi. Use of smart phone or tablet PC.

Bangladesh is an agriculture based country. Technology is the main force in the growth of production in agriculture. New technologies are invented to meet the needs of farmers. These technologies have to be extended among farmers. Popularisation of the e-extension services and expanding technologies extensively, are required to include more farmers in modern agriculture. For this reason, greater participation of all extension service workers is required. DAE considers the e-extension service activities very important and it will be taken as the basic tool for the extension service activities in near future.

Chapter
18

Challenges in Agricultural Extension



Challenges in Agricultural Extension

18.1 DAE's Measures in Addressing Challenges and the Present Scenario of the Development of the Agriculture Sector

Climate change, adverse weather conditions and depletion of natural resources poses a huge challenge to feed the 16 crore people of the country. Alongside this, there are other challenges such as guarantee of safe food and nutrition, poverty alleviation, employment of men and women in agriculture sector etc. DAE has addressed these challenges and has created a unique record in agricultural sector. A glimpse of the progresses in agricultural development and success is as follows:

18.1.1 In last 44 years' (1971-2015) rice cultivation land has decreased by 18%, although production of rice increased 3.16 times; land for potato cultivation increased 5.5 times and the production increased 10.9 times; the production of wheat and maize increased respectively 12.25 and 7.57 times respectively; land for jute cultivation has reduced by 15%, the production increased by 15%. (BBS).

18.1.2 In the last one and a half decade (1995-2010), the agricultural production capacity of Bangladesh has reached the highest among the countries of South and South-East Asia. Total Factor Productivity (TFP) of Bangladesh is 2.7% which is more than that of China, India, Indonesia, Malaysia, Sri Lanka, Pakistan, Philippine, Vietnam (Source: World Bank report).

18.1.3 The contribution of the agriculture sector to rural employment is not remarkable. In the last ten years (2000-2010) employment in agriculture sector has increased by 21.6%. In the year 2000, employment was 1 crore 87 lakh and in 2010 it increased by 2 crore 27 lakh. According to the data, in 2013, 39.6% of rural employment was from agriculture (Source: World Bank report).

18.1.4 At present, agriculture is the income source of 87% of rural households. If the income in agriculture sector increases by 10%, income in non - agriculture sector increases by 6%. In the last decade (2000-2010) income of rural families from agriculture sector has increased about two times, in 2000 it was 61,330 crore and in 2010, it rose up to 91,365 crore. (Source: World Bank report).

18.1.5 In the last era, involvement of women in agriculture has increased manifold. According to a survey of IFPRI 42% of pumpkin and water gourd farmers and 38% of tomato peasants are women. And 58-71% of paddy threshing, drying, collecting and storing seeds are

done by women. Moreover, with women empowerment and their involvement in agriculture, the nutrition level of family and children have developed and the number of disabled children has decreased.

18.1.6 In the last five years, annual income of families in the manga-affected areas increased by 120%. In 2008, their income was BDT 35400 which increased to BDT 78000 in 2013. Within only five years the picture of *monga*-affected areas has improved and people are able to afford three meals a day. (Source: PKSF)

18.1.7 Bangladesh is recognized in the eye of the world as a lower middle-income country by reducing the disrepute of developing or low-income country. Here, development in the agriculture sector has a big contribution.

18.1.8 DAE has succeeded in dealing with natural disasters. Implementation of agricultural rehabilitation or incentive programme with the activities of precaution before and motivation after disaster has helped to recover the damages of disasters.

18.1.9 Success of Bangladesh in the production of fruits is unprecedented. According to the report of FAO, production of fruits increased by 11.4% and production increased by 10% per hectare of land between 2000-10. Fruit production rate of Bangladesh is the highest in the world.

18.1.10 According to Pesticide Technical Advisory Committee, reduction of the use of insecticides and production of safe food through biological and natural management is a big step forward of DAE. Due to this progress, pesticide imports have been declined nearly by one third in the last three years.

18.1.11 In "Global Hunger Index- 2015" published by IFPRI, the present success of Bangladesh in eradicating hunger is double than that of 1990.

18.1.12 Success of Bangladesh in agriculture sectors is imitative in the world. In spite of comparatively smaller land areas, huge population and insufficient resources, Bangladesh has gradually increased its food production and increased food security (Source: FAO).

18.2 Future Challenges in the Development of Agriculture

With the objective of tackling the challenges, DAE has ensured continued development in agriculture. In the meantime more issues such as climate change has added a new dimension of challenges in extension activities. By capitalizing on past experiences, DAE will be working hard to firmly face the challenges of future. A brief discussion on main challenges of agricultural development or extension is as follows.

18.2.1 Prevention of Agricultural Land From Converting into Non-agriculture Sector

From a statistical standpoint, it can be said that in 1976 agricultural land of the country was 97,61,450 hectares which was decreased by 94,39,541 hectares in 2000 and by 87,51,937 hectares in 2010; that is to say, from 1976 to 2000 annual reduction rate of agricultural land was 13,412 hectares or 0.137% and from 2000 to 2010 it was 68,760 hectares or 0.728% (SRDI).

This is a great challenge in the field of agricultural development. Effective measures should be taken to prevent agricultural lands from converting to non-agriculture sectors by motivating agricultural activities and formulating necessary policies. DAE will play a leading role in this matter.

18.2.2 Guarantee of Food and Nutrition for Increasing Population from Gradually Decreasing Arable Land

Population growth rate of Bangladesh is 1.37%, which means every year food and nutrition has to be ensured for more 22 lakh people. DAE has to make appropriate plans and programmes to ensure food and nutrition for these large number of extra population from annually 0.724% decreasing land.

18.2.3 Changed Climate Risk Management

Bangladesh is prone to natural disasters due to its geography. Due to climate change crop seasons for many crops are affected by various kinds of disasters such as floods, droughts, variation of seasonal temperature and rain, etc. Efficiency of the employees of DAE in climate change adaptation and disaster management has to be ensured. DAE has to play an effective role in preventing and managing increased climate risk through formulating and implementing appropriate plans or programmes.

18.2.4 Turn Southern Region into the Crops Storage by Resisting the Risk of Salinity

Areas of land in the southern region are 27 per cent of total land and one third of arable land of the country. According to SRDI, the amount of saline land in the southern region was 833000 hectares in 1973 which reduced to 10 lakh 56 thousand hectares in 2009. That is, salinity is travelling upstream. Generally salinity appears in dry season (February - May). In addition to salinity in the southern region, irrigation water crisis is bad. All extension workers of DAE have to be active in plan formulation and their implementation regarding

selection and extension of salinity tolerant crops and crop varieties, introduction of appropriate cropping patterns, making saline land fit for cultivation through management, creation and development of irrigation systems, introduction and extension of region wise specialized cultivation systems, emphasis on cultivation of aus rice and strengthening of its extension programmes, assortment of large fallow land under plantation in robi season, floating agriculture etc. And they also have to be promised in making the southern region of the country as new crops storage.

18.2.5 Preservation and Management of Agricultural Soil Fertility

Gradual reduction of organic matters in the soil is a threat to agriculture. Within limited arable lands of the country, in 3668000 hectares or in 42% of land areas, the amount of organic matters is very low. Moreover, due to continuous cultivation of high yielding crops, there is nutrient shortage of soil and it is a marked crisis in agriculture sector. Already the amount of land with very low level of phosphorus, potassium, sulphur, zinc, boron, calcium and magnesium is increased respectively by 37 lakh hectares (about 37% of agricultural land), 27 lakh 20 thousand hectares (about 31% of agricultural land), 33 lakh 1 thousand hectares (about 38% of agricultural land), 27 lakh 55 thousand hectares (about 32% of agricultural land), 24 lakh 90 thousand hectares (about 28% of agricultural land), 3 lakh hectares (about 4% of agricultural land) and 3 lakh hectares (about 4% of agricultural land) (Source: SRDI).

On the other hand, acidity of soil of almost every region except Ganga Basin is gradually increasing and the amount of extreme acidic soil is marked about 39 lakh 58 thousand hectares which is about 27% of total areas. Excessive acidity obstructs the availability of most of the soil nutrients on the one hand and on the other it makes metal ions more available on the soil as well as increases availability of harmful heavy metal. Entering into crops these heavy metals will reduce the quality of the crops and will appear as a threat to public health (SRDI).

So, fertility of soil is gradually decreasing due to the depletion of organic matters, nutrient, and acidity in the soil. Extension workers have to be active in conservation and management of fertility as well as to recover the decaying fertility of soil.

Another reason of losing fertility of soil is an unbalanced use of chemical fertilizers. In every district, there is a soil testing lab of SRDI. The real condition of soil can be known by testing in lab and measures can be taken for preservation of soil fertility and increasing total productivity of land by using the recommended balanced dose of fertilizers. Fertilizer Recommendation Guide published by BARC, online recommendation of using fertilizer from "Service Box" of DAE website can be helpful in using fertilizer at a balanced dose.

It is noticed that some farmers sell top-soil of the land for financial gain or due to the pressure of corrupt gangs associated with brick kiln which reduces soil fertility notably along with crop

productivity. DAE has to play an active role through administrative management and motivational programmes to prevent this.

18.2.6 Introducing 'Crop-Zoning' Based Crop Production System

Though the land area of Bangladesh is not large, its landscape, climate and usefulness of land in crop production, quality of soil, availability of irrigation water etc. differ from area to area. Moreover the sea coast of southern regions, the Barind of North-West, Haors of North-East and hills of South-East are different in characteristics from other regions. For these differences, all areas are not suitable for cultivating all types of crops. For this reason, extension of the 'Crop-Zoning' based crop production system is needed. The booklet 'Land Suitability Assessment and Crop Zoning in Bangladesh' published by Bangladesh Agricultural Research Council (BARC) can be used as a helpful guideline. DAE will take special initiatives to introduce the 'Crop Zoning' based crop production system.

18.2.7 Production of Safe Food Crops

For crop production, the unbalanced use of fertilizer, pesticide, fungicide etc. has become a common practice. These chemicals are very often adulterated. In many cases, farmers are not aware of quality, application levels and rules and regulations, duration of residual effect etc. of these chemicals. Farmers apply these chemicals at high dosages without proper knowledge. Use of these chemicals without following rules and regulations is a threat to public health and the environment. Food safety should begin at the farm. In this regard, DAE has to take effective measures to ensure safe food crop production.

18.2.8 Taking Good Agricultural Practice (GAP)

In crop production, all activities from sowing seeds to storage or preservation have to be of good standard. Seed borne diseases are big threats to public health. Food grains can be polluted by the germs of bacteria, fungus, virus in times of crop production, processing, packaging and marketing. Although the risk of food intake in the process of cooking is somewhat lower, the risk is very serious in all cases where food is consumed directly. This is a big problem in case of exporting produced food grains and cash crops. It will be considered as a big issue in future activities of DAE.

18.2.9 Emphasising the Use of Surface Water Source for Irrigation by Reducing Dependency on Ground Water and Efficient Irrigation Management

From statistics it is seen that the number of irrigation equipment used for irrigation in the year of 2014 - 2015 is - 36500 deep tube-wells, 1549700 shallow tube-wells, 167200 power pumps (BBS). That is to say, the number of power pumps used for irrigation from surface water sources is only 10.54% of total number of irrigation equipment. The combined number of deep tube-wells and shallow tube-wells used for lifting underground irrigation water is 10.75 per square kilometre on average.

From statistics it is also seen that only in Boro season, the source of 80% of irrigation water is from underground and in extreme dry season (peak time) that is, in the month of March - April, 63% of total irrigation water comes from underground (BADC). The amount of ground water used all the year for household and other works is not negligible. Lifting large amount of water from underground every year may cause extreme threats to protect natural balance in near future.

Every year only 94%, that is, 50 billion cubic metre of 53 billion cubic metre lifted water from underground is recharged (BADC). As a result, the groundwater level is gradually decreasing every year. Groundwater level in extreme dry season (March - April) is very low. As of 2004, shallow tube-wells within 6300 square kilometre radius are unable for irrigation. In 2010, this increased by 45% to 9700 square kilometres. This has also caused the level of salinity in southern region to increase. Experts have warned that quick decreasing of groundwater level can endanger the security of food and water resources of Bangladesh. In order to get rid of this situation and surface water irrigation resources should be adopted and dependency on groundwater should be reduced.

Pressure on groundwater can be reduced by changing the cropping pattern and making efficient use of irrigation water. Water consumption can be reduced from 5000 litres/kg of rice to 2000 litres/kg. Use of irrigation water has to be reduced by efficient irrigation management. DAE will play an active role to preserve groundwater as well as use efficient irrigation management and ensure the security of food and water resources.

18.2.10 Crop Production in Char Regions and Increasing of Productivity

There are over 230 large and medium sized rivers in the country, most of which are distressed (Ministry of Water Resources, December 2003) and vast areas of the two sides are *chars*. These *char* regions are suitable for agriculture and because of silty soil layers, fertility of the land is at an acceptable rate. Agricultural works in these areas are taking place. However there is indifference and negligence of agriculture in *char* areas. Application of technologies and innovation of new technologies suitable for *char* area can play an important role in agricultural development and multiplying the production and productivity of crops of *char* regions. Keeping this goal in front, DAE can provide specialised extension services in *char* regions.

18.2.11 Converting Women's Power into Agricultural Extension Resources

Women have been in agricultural activities since the beginning of creation. Multi-dimensional activities continued for a long time for including women at a very large scale with agriculture and enriching them with the knowledge of modern technologies, still women's participation in agriculture is not satisfactory in that sense. Wherever women's participation is confirmed, it proves that women can play very pivotal roles in agricultural sectors by expanding their power. And this is very helpful in agricultural development. DAE will take effective measures to convert women's power into agricultural extension resources.

18.2.12 Commercialisation of Agriculture

At present, the world is striving for "commercialization of agriculture ". The main goal of commercial agriculture is growing market oriented extra production and converting agriculture into profitable business. According to FAO, commercial farmers are those who are able to sell 50% of their production.

Recently most of the farmers have taken up the market oriented production system. Competition among the farmers regarding production is increasing. The farmers who cannot survive in the competition, are leaving agricultural activities. For this reason, the number of large and middle farmers in Bangladesh are gradually decreasing . Use of modern and improved technologies are mostly needed to make agriculture profitable and commercial. Failure of making agriculture profitable and commercial by using modern and improved technologies can gradually increase the number of disinterested farmers in agriculture. This can cause negative impact on the economy of this agricultural country.

In agricultural extension, the field of commercialisation is very large. Recently among different activities of extension, market linkage, value addition, value chain, supply chain etc. play important roles. DAE will strengthen the base of agricultural development by developing appropriate strategies in agricultural commercialisation.

18.2.13 e-Extension Services

New applications, use and popularisation of e-extension services are the demands of changing times. Various techniques are used to provide e-extension services throughout the country and abroad. In Bangladesh, its use is still limited. DAE is gradually going forward in providing e-extension services. By the application and popularisation of e-extension services, DAE could build a good relationship with the farmers of the country, especially with farmers of backward areas. Thus the farmers will be helped in any agriculture related matters and their efficiency will be increased. At present, all the extension workers of DAE encourage farmers to apply and use all facilities of e-extension services. And in future, they will also take initiatives in popularising e-extension services.

18.2.14 Strengthening Monitoring and Supervision in Extension Activities

There is scope to strengthen monitoring and supervision of the activities implemented by DAE. Extension workers and their supervisors are aware of the weaknesses of DAE in monitoring and supervising their activities. To improve this, senior officials can use their hierarchal power. This will improve monitoring and supervision. In future, activities of monitoring and supervision will be taken as challenges in every level of DAE.

18.2.15 Replacing Improved Varieties of Fruit in Homestead

It is noticeable that most of the fruits cultivated in homestead are not improved varieties. Fruits are a source of nutrition and financial gain. DAE will play an active roles in replacing improved varieties of fruits in homestead and in increasing productivity of fruits by proper management to supply money and nutrition. Thus, there will be scope for more money and nutrition supply and particular example of DAE's qualified and stable activities will be established.

DAE will take initiatives in replacing improved varieties of fruit in homestead and rejuvenation of old mango trees.

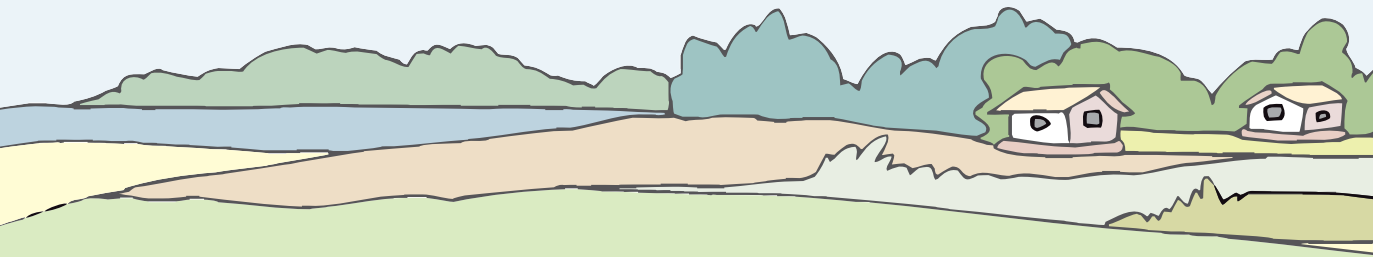
18.2.16 Urban Agricultural Development

In Bangladesh, there are many large and small cities and towns. These cities or towns are gradually expanding. Many permanent buildings and infrastructures are developed. DAE will play a vital role in involving women for utilizing fallen town or city areas or rooftops and will strengthen modern agricultural activities.

18.2.17 In Addition to the Challenges Mentioned above, DAE has to go Forward with other Challenges that are as Follows:

- i. Encourage increased productivity and diversification of crops in hostile environment
- ii. Take actions in rapid extension of new invented technologies
- iii. Resist depletion of natural resources
- iv. Provide assurance of nutrition security and production of quality and safe food crops
- v. Strengthen PPP (Public Private Partnership) in case of technology transfer, distribution of quality inputs, agricultural market linkage etc.
- vi. Integrate sustainable agricultural production systems with changed climate
- vii. Popularisation of stress tolerant crop varieties to save productivity in hostile environment
- viii. Take actions in decreasing the post-harvest losses of crops and emphasize on agro-processing
- ix. Undertake an efficient agricultural market management
- x. Strengthen the links of extension between research, education, government or semi-government or non-government or private organisations, farmers and market
- xi. Support agricultural mechanization
- xii. Promote efficient use of agricultural inputs such as seeds, fertilizers and pesticides
- xiii. Informing the farmers about crops cultivation coherent to weather and advance forecast of aggressive or adverse weather
- xiv. Extension of need based and location specific technologies
- xv. Popularization of crop production using floating technologies in the southern and haor region
- xvi. Create awareness of rain water harvesting or saving in the Southern region and crop production by avoiding salinity through mulching
- xvii. Emphasize on preserving soil moisture by mulching or green-covered (*Mimosa*) systems to produce crops in drought-prone and mountainous areas etc.

APPENDIX



APPENDIX 1

COMPARISON OF VARIOUS EXTENSION APPROACH¹

Axinn mentioned in 1988 different types of 'Extension Approaches' those are adopted by various Organizations and Institutions around the world. DAE's 'Revised Extension Approach' is a combination of a number of these approaches. A brief outline of each approach is provided below:

1. General Agricultural Extension Approach

Assumption	: Technology Transfer (classical approach)
Purpose	: Increase production
Programme Planning	: Controlled by Government (Top-down)
Implementation	: Large number field staff throughout country
Resources Required	: High amount necessary in terms of salaries
Measure of Success	: Increase in national production
Advantages	: Can interpret national government policy. Covers whole country. Continuity. Rapid communication
Disadvantages	: Lack of two-way flow of information. Expensive and inefficient. Smaller numbers of more competent staff more cost effective than larger numbers of incompetent staff.

2. The Commodity Specialized Approach

Assumption	: Focus on one commodity, most effective if. Research, Extension, Marketing and Loans all dealt with by one dynamic body
Purpose	: Increase production of specific commodity. Less complex and more straightforward. Also ensure quality is appropriate.
Programme Planning	: Controlled by commodity organisation
Implementation	: Instructions easily available (sometimes printed)
Resources Required	: Highly trained personnel and equipment to generate sharply focused extension messages
Measure of Success	: Increased production of crop at desired quality
Advantages	: Messages tend to fit problems. Organization small and dynamic and easier to monitor. Relatively cost effective.
Disadvantages	: Lack of attention to total farming system or other crops.

¹ Based on the work of Axinn, G (1988), Guide on Alternative Extension Approaches, FAO, Rome.

3. The Training And Visit System

Assumption	:	Field personnel are not properly trained, out of date, don't visit farmers and are not adequately supervised. Discipline and structure are needed.
Purpose	:	Induce farmers to increase production of specific crops
Programme Planning	:	Disciplined, patterned, fixed schedules with training. In-service training for staff. Two-step flow of communication. Centralised
Implementation	:	Face to face contact. Training from Subject Matter Specialist to Village Extension Workers.
Resources Required	:	Very high cost -usually from International loans. High transport cost.
Measure of Success	:	Increase in yield and agricultural production
Advantages	:	Officers meet farmers. Discipline . Spirit of service
Disadvantages	:	High longterm cost. Lack of two way flow of information. Social structure often prevents this lack of flexibility. Messages often don't fit. Shortage of subject matter specialists.

4. The Agricultural Extension Participatory Approach

Assumption	:	Farmers have much knowledge but could improve much by access to more information. Active participation of farmers is a prerequisite to success. Use veteran farmers
Purpose	:	Increase production, increase consumption and enhance quality of life of rural people.
Programme Planning	:	Controlled locally by farmers groups, farmers club etc. Relevance to local needs.
Implementation	:	Many meetings, farmer to farmer visits.
Resources Required	:	Extension workers who are catalysts or facilitators. Less cost than that of other approaches.
Measure of Success	:	Continuity of local extension organisation and benefits to the community.
Advantages	:	Messages and activities likely to fit needs. less cost. Caters to human as well as technical side of extension promise.
Disadvantages	:	Lack of Government control. Raised expectations from farmers.

5. The Project Approach

Assumption	: Large Government bureaucracies are ineffective. Better to focus resources and activities at specific locations. Successful results may be replicated.
Purpose	: To demonstrate technique, to set out a variety of approaches to input to a large project e.g. to provide extension information
Programme Planning	: Usually controlled by 'Donor' Agency and Central Government.
Implementation	: Often an uneasy alliance between local Government and Donor agency
Resources Required	: Allowances to field staff, transport, facilities, equipment, housing, foreign advisors. Staff usually assigned to project. Disruption of staffing and vehicles.
Measure of Success	: Change at project site. Change in Target group behaviour. Increase in desired crop production
Advantages	: Focus, quick results, ease of evaluation, testing and experimentation. Lasting of lessons to agricultural extension systems.
Disadvantages	: Too short in time, too much money. Usually unsustainable. Disruption to personnel. Double standard for staff. High cost per unit of achievement. Always reliance of external funding and short project life time. A way of 1st world personnel researching and getting exposure in 3rd world.

6. The Farming System Development Approach

Assumption	: Technology which fits the needs of small farmers is not available and needs to be generated locally
Purpose	: To provide extension personnel with research results tailored to meet needs and interest of the farmers in local conditions.
Programme Planning	: Controlled jointly by Farmers, Extension and Researchers so it fits needs of geographical location (holistic). Similar to participatory approach.
Implementation	: Interdisciplinary system approach. Researcher must listen to farmers and understand their system.
Resources Required	: Time and Staff

Measure of Success	: Extent to which farmers adopt technology developed by programme.
Advantages	: Relevance and fit of messages generated. Linkages between extension, research and farmers. This approach depends on these linkage
Disadvantages	: High cost of forming interdisciplinary team. Slow results. Difficult to monitor effectiveness

7. Cost Sharing Approach

Assumption	: Better fit if beneficiaries are contributing something. A subsidy from outside because farm 'people are too poor'. Local community may be asked to pay for housing and goods for extension officers. Agricultural extension agents must serve interest of community. Learning and sharing from farmer to farmer
Purpose	: Help farm people improve their lives and increase productivity. Make agricultural extension affordable and sustainable. Promising in terms of financing agricultural extension services.
Programme Planning	: Local farm people have strong voice and can refuse to pay their dues, therefore, quite democratic.
Measure of Success	: Willingness of farm community to provide their share of costs. They must be satisfied that the extension is useful to them.
Advantages	: Relevance, better adoption, influence on selection of extension personnel. Lower cost to Central Government.
Disadvantages	: Central Government can't easily control programme or monitor and report on them.

8. The Educational Institution Approach

(Indirectly involved by training students who later join extension services)

Assumption	:	School and colleges have technical knowledge relevant to farm people. Technical staff need interaction with real farmers.
Purpose	:	Help rural people learn science. Help teachers learn adopt actual farm practices.
Programme Planning	:	Those who control educational institutions curriculum
Implementation	:	Usually information flows down from education institution to school extensionist to farmers. Sometimes support through massmedia and producing extension information packs.
Measure of Success	:	Audience size and rate of adoption.
Advantages	:	Cost effective. Skilled personnel can service both education institutions and extension service. Curriculum kept more down to earth. It builds the practical into the classroom and the scientific into the field extension programme
Disadvantages	:	Lecturers can be too academic. Sometime competition between extension personnel and lecturers or between Ministry Agriculture and Ministry of Education.



**NEW
AGRICULTURAL
EXTENSION POLICY
(NAEP)**

**GOVERNMENT OF THE
PEOPLE'S REPUBLIC OF
BANGLADESH**

MINISTRY OF AGRICULTURE

1996

Minister
Ministry of Agriculture, Food and
Disaster Management & Relief
Government of the People's
Republic of Bangladesh



মন্ত্রী
কৃষি, খাদ্য এবং দুর্ভোগ
ব্যবস্থাপনা ও ত্রাণ মন্ত্রণালয়
গণ প্রজাতন্ত্রী বাংলাদেশ সরকার



Foreword

MESSAGE

The rapid population growth and expansion of industry in the country creates a continuous demand for more food and commercial crops.

In order to support the food production drive, Extension Services will play an increasingly important role. They should motivate, educate and assist farmers to adopt improved farming practices leading to increased farm production and income. The Government of Bangladesh has given top priority to agricultural development as a means of poverty alleviation.

I am pleased that the Ministry of Agriculture is publishing the New Agricultural Extension Policy duly approved by the Government.

I hope the New Agricultural Extension Policy will encourage all extension providers (both GO's and NGOs) to render efficient and effective services to increase the efficiency and productivity of agriculture in Bangladesh.

Matia Chowdhury
8.8.96
(Matia Chowdhury)



Foreword

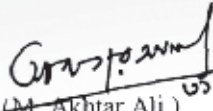
The Government is committed to the continuous development of agriculture and its sustainability. With the objective of improving the quality of rural life, the Department of Agricultural Extension, along with other extension providers is playing a vital role in assisting farmers to improve productivity and increase their incomes by promoting appropriate farming practices.

The diffusion of new technology requires development of local institutions and farmers organisations.

The new agricultural extension policy of the Government describes a co-operative and supportive environment among all extension providers. The policy "seeks to ensure that effective co-ordination is established to increase the efficiency of agricultural extension". The policy concentrates on decentralised and demand-driven extension to meet farmers needs and encourages effective links between research and extension. The new agricultural extension policy has set the principles for the effective functioning of the New Extension System. The key to successful implementation of the policy lies in forging a broad-based understanding amongst extension providers and farmers.

I believe that the policy will enable all extension providers and agencies to work more closely with farmers and other organisations for agricultural development in the country.

I hope that a sound implementation strategy will be formulated and sent to all concerned within a very short time to guide the development of cost effective, technically sound extension systems. It will also specify the procedures and structures through which interagency co-ordination will be promoted.


(M. Akhtar Ali)
Secretary

The Government of the People's Republic of Bangladesh
Ministry of Agriculture
Section-2


No.Ag-2/Ex-5/94/216(a)

Dated : 04-07-96.

Sub:- Approval of NAEP.

Undersigned is directed to inform you that Government has approved the proposed New Agricultural Extension Policy (NAEP).

All concerned are requested to take necessary action for the implementation of the NAEP.


4.7.96
(Ataul Karim)

Senior Assistant Secretary

Director General
DAE,Dhaka.

CC:

1. Secretary, Rural Development & Co-operative Division.
2. Secretary, Ministry of Water Resources.
3. Secretary, Ministry of Fisheries & Livestocks.
4. Secretary, Ministry of Commerce.
5. Secretary, Ministry of Industries.
6. Addl. Secretary (Input/PPC),MOA
7. Executive Vice-Chairman, BARC
8. Chairman, BADC.
9. Chairman, BWDB
10. Director General, BRDB
11. Director General, BARI
12. Director General, BRRl
13. Director General, BJRI
14. Director General, Directorate of Livestock
15. Director General, Directorate of Fisheries.
16. Director General, Directorate of Environment
17. Chief Conservator of Forest.
18. Joint Secretary (Extn.), MOA
19. Joint Chief (Planning), MOA
20. Divisional Chief (Ag.) Planning Commission.
21. Director General, Seed Wing, MOA
22. Director, Agriculture Information Service.
23. Director, ADAB, Dhaka.
24. Mr. Tom Barret, First Secretary, Natural Resource Division, British High Commission, Dhaka.
25. Mr. Jan Weigenburg, World Bank Resident Mission, Dhaka.
26. Mr. Petter Ross, Team Leader, ASSP
27. P.S.to the Minister, MOA
28. P.S.to the Secy, MOA.

NEW AGRICULTURAL EXTENSION POLICY

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NEW AGRICULTURAL EXTENSION POLICY

1 Introduction

1.1 Agriculture in Bangladesh

The economy of Bangladesh is predominantly agrarian, with the agriculture sector accounting for about 35 per cent of Gross Domestic Product (GDP). In the past decade, the agriculture sector contributed about three per cent annum to the annual economic growth rate.

The natural environment is generally favourable for crop production, and there are estimated to be about nine million hectares of land suited for cultivation. Over 80 per cent of the population of Bangladesh, or roughly 15 million households, live in rural areas, and the agriculture sector employs around 62 per cent of the labour force. The crop sector alone accounts for 57 per cent of employment in Bangladesh. The agriculture sector comprises crops, forests, fisheries and livestock. Of the agricultural GDP, the crop sub-sector contributes 71 per cent, forests 10 per cent, fisheries 10 per cent, and livestock 9 per cent.

Through the contribution of agriculture to the national economy and employment may diminish further, it will remain the single largest contributor to income and employment generation and a vital element in the country's challenge to achieve self-sufficiency in food production, reduce rural poverty and foster sustainable economic development. The Government has the responsibility to ensure that the necessary conditions exist to enable the country to meet these challenges, and for this purpose, a sound agricultural policy is essential.

1.2 Agricultural Policy and Priorities

The Government is committed to the continued development of agriculture in order to maintain food supplies for the growing population, provide income and employment for rural people, and protect the environment. Because land is scarce in Bangladesh, the key to agricultural development is the efficient, productive and sustainable use of all firm land. This will depend on the farmers who decide what to produce, what technology and inputs to use, how much to sell, and how much care to take in looking after their crops, livestock, fish and trees.

The broad objective of the agricultural policy is to facilitate and accelerate technological transformation with a view to becoming self-sufficient in food production and improve the nutritional status of the population. The specific short and mid term policy objectives as stated in the perspective plan (July 1995 to June 2010) are as follows:

- to attain self-sufficiency in food grains and increase production of other nutritional crops;
- to ensure sustainable agricultural growth through more efficient and balanced use of land water and other resources;
- to increase foreign exchange earnings through agricultural exports;
- to increase per hectare rice output in order to release more land for other crops, especially legumes and fodder crops;
- to introduce high value cash crops;
- to improve the quality and availability of seeds;
- to reduce environmental degradation;
- to increase fish, livestock and forestry production;
- to conserve and develop forest resources.

Broader long term policy objectives as stated in the perspective plan (July 1995 to June 2010) are as follows:

- to ensure sustainable agricultural development;
- to introduce high quality, appropriate agricultural technology;
- to maintain the ecological balance in the natural environment;
- to reduce rural poverty;
- to establish export-oriented agro-processing industries;
- to sustain and balance production, consumption and income.

The strategies adopted to attain these objectives are to:

- establish macro-economic policies that enable farmers to be responsive to domestic and international market opportunities;
- provide high quality infrastructure and government services that will enable farmers produce and market products at low cost;
- encourage private sector involvement in the supply of inputs and rely on competitive markets to supply agricultural inputs at low cost;
- establish policies, regulations and project assistance that will ensure sustained agricultural production;
- ensure that research concentrates on the key technical and socio-economic constraints to production;
- provide appropriate technical and farm management advice and information to all farmers through continued improvements in extension and other support services.

Agricultural extension is a key component of the strategies and objectives of the Government's agricultural policy. As part of the Government's responsibility for the establishment of policies, regulations and projects that will ensure sustained agricultural production, the need for developing a New Agricultural Extension Policy was felt.

In order to develop an effective extension policy, a Task Force was constituted under the chairmanship of the Secretary, Ministry of Agriculture. The Task Force comprised representatives from three sectors: the private sector, the non-government organisation sector and the public sector. The Task Force made full use of the experience and expertise of all three sectors, prepared a draft New Agricultural Extension Policy which was circulated the draft for comment, and finally prepared this document.

2 New Agricultural Extension Policy

2.1 The Role of Agricultural Extension

Agricultural extension is a difficult term to define precisely. It has different meanings at different times, in different places, to different people. The role of agricultural extension is to help farmers make efficient, productive and sustainable use of their land and other agricultural resources, through the provision of information, advice education and training.

In the context of Bangladesh the following definitions have been adopted:

- agricultural extension is a service or system which assists farm people, through educational procedures, to improve farming methods and techniques, increase production efficiency and income, better levels of living, and lift the social and educational standards of rural life (Maunder, 1973, Agricultural Extension Manual, Rome, FAO);
- agricultural extension is assistance to farmers to enable them identify and analyse their production problems, and to increase their awareness of the opportunities for improvements.

Clearly, agricultural extension is an extremely important process which can accelerate technological, social and economic development. In particular, effective extension:

- helps farmers identify and overcome production, farm management and marketing problems at farm level through the exchange of information among farmers, extension staff, input suppliers, credit agencies and marketing agents;
- helps farmers make better use of existing technology, for example, through more efficient use of feed, fertiliser or irrigation, etc.;
- introduces new technology to farmers, such as new breeds, new varieties, new crops and new equipment;
- provides information to agricultural research institutions on farmer's production constraints so that appropriate basic, applied or adaptive research can be carried out to address them;
- helps in the successful creation of opportunities or situations in which farmers gain the abilities and skills necessary to meet their needs and interests in such a way as to attain continuous improvement and self-satisfaction;
- helps farmers learn to put information into use in ways that result in improvements in their living standards;
- helps farmers gain a clear vision of what can and should be done and encourages farmers to improve their pattern of living and helps them develop the necessary skills to so.

2.2 The National Agricultural Extension System

There are many agencies which provide extension support to the farmers of Bangladesh. These include government agencies, for example, the Department of Agricultural Extension, Bangladesh Rural Development Board, Bangladesh Water Development Board, Bangladesh Agricultural Development Corporation, Forest Department, Department of Livestock Services and Department of Fisheries. There are also many non-government organisations, commercial traders and input suppliers (manufacturers, wholesalers, and retailers) operating in rural areas of the country. Together, all these partners can be seen as comprising the National Agricultural Extension System.

2.3 The Goal and Components of the New Agricultural Extension Policy

2.3.1 Goal

The goal of the New Agricultural Extension Policy is to:

encourage the various partners and agencies within the national agricultural extension system to provide efficient and effective services which complement and reinforce each other, in an effort to increase the efficiency and productivity of agriculture in Bangladesh.

To achieve this goal the policy includes the following key components:

- extension support to all categories of farmer;
- efficient extension services;
- decentralisation;
- demand-led extension;
- working with groups of all kinds;
- strengthened extension-research linkage;
- training of extension personnel;
- appropriate extension methodology;
- integrated extension support to farmers;
- co-ordinated extension activities;
- integrated environmental support.

Each of these components is discussed in the following sections.

2.3.2 Extension Support to all Categories of Farmer

Extension recognises the rural household and its farm as the basic unit of production. All members of rural households contribute to agricultural activities and household welfare. It therefore seeks to ensure that all members of all types of rural households have access to the extension services they need. This is done by targeting particular activities to meet the needs of particular categories. Extension programmes will therefore include specific activities for:

- women farmers and other women household members, in support of homestead production and post-harvest activities as well as their roles in field crop production;
- young people, who are the farmers of the future;
- small and marginal farmers;
- large and medium farmers;
- landless households, who have no farmland but may have homestead areas.

2.2.3 Efficient Extension Services

The efficiency of agricultural extension services will be improved through training, skill development, institutional strengthening and logistical support. Trained extension agents will be provided to work effectively with all categories of farmers, and with all members of households, and to solve basic production, management and marketing problems in a wide range of crop, fishery, livestock, forest and household enterprises. The focus of outreach activities is to provide the most cost-effective services to farmers.

The extension agencies in the three sectors (government, non-government organisation and private) will continue to work within their own organisational structures and procedures, but the policy seeks to ensure that effective co-ordination is established to increase the efficiency of agricultural extension.

2.3.4 Decentralisation

Farming systems, household economic activities, agro-ecological conditions, input availability, credit and marketing opportunities and many other factors in the farmers' decision making environment vary from place to place. Those involved in extension at the field level need to be able to plan their programmes to fit the circumstances of the area and its farm households. The New Agricultural Extension Policy seeks the devolution of much of the responsibility, especially in the government sector, for key aspects of the planning and implementation of extension programmes. These key aspects will include:

- identifying and responding to information needs: selecting appropriate information for farmers according to their needs;
- collecting information about local resources: basing extension programmes on a clear understanding of the availability of local resources, and the prevailing social and physical environment;
- programme planning: details of work schedules and extension activities planned at local level, by field staff in consultation with their immediate supervisors;
- training: farmer and extension personnel training plans drawn up at local level, to reflect local needs;
- media: radio and television programmes, bulletins, leaflets, posters and folders produced locally (and nationally) to provide farmers with appropriate information.

2.3.5 Demand-led Extension

Extension programmes concentrate on meeting the information needs of farm households, in particular helping them solve the key problems they face in their farming activities. All extension activities and research priorities are to be based on the needs, problems and potential identified at farm level. This may lead to the involvement of extension agencies in local on-farm participatory research in order to identify appropriate solutions to farmers' problems. Extension staff will work closely with farmers to identify agricultural problems, using participatory methods and techniques such as Rapid Rural Appraisal, Participatory Rural Appraisal and Problem Censuses. Farmers' problems will set the extension agenda, and in this way, extension services will be demand led, and based local situations and resources.

2.3.6 Working with Groups of all Kinds

For the extension services to provide individual attention to the more than 10 million farm families is beyond the resources available to Bangladesh. A group approach to extension offers the opportunity for more effective use of limited extension resources for problem identification and solution, sharing of information and cost-effective choice of extension methodology. A group approach to extension also has the advantage of providing a forum for participation, an area in which many non-government organisations have considerable expertise.

The New Agricultural Extension Policy endorses the principal that extension staff should work with groups of all kinds, in order to bring maximum benefit to farmers. It recognises that a very wide range of mutual interest groups already exists in the field. These groups range from extremely temporary, such as a seasonal pest control group, to virtually permanent, such as the Krishok Shomobay Shomittee, and may be affiliated to a wide variety of agencies, including those responsible for input supply, credit extension and marketing. These existing groups would be the focus of extension activity. New groups will be encourage where there are none at present or where key target farmer categories are not included in the membership of existing groups. Extension staff from different agencies will work with groups to:

- bring extension staff into contact with more farmers;

- help all categories of farmers (men, women, large, small and marginal) to benefit from extension;
- improve the learning and spread of knowledge among the farming population;
- enable farmers to fully participate in the planning of extension programmes;
- provide a forum where decisions can be taken for farmers to take co-ordinated action leading to self-reliance (for example, on pest management, forest management, livestock grazing and soil conservation);
- promote a closer, participatory working relationship between staff and farmers.

2.3.7 Strengthened Extension-Research Linkage

The development of close co-operation between extension agencies and formal research institutes is essential if farmers are to be provided with the services they require. Research institutes require information from extension about the problems farmers are facing, for which there are no available solutions, in order to conduct research programmes both on research stations and on-farm with farmers. Extension requires the findings from research programmes, in order to provide farmers with the most appropriate advice.

Effective mechanisms to ensure that there is a free flow of information between extension and research will be institutionalised. The main institutional mechanisms will be:

- A National Technical Co-ordination Committee, comprising extension representatives from the government, non-government organisation and private sectors, and representatives from research;
- Agricultural Technical Committees, each covering a number of districts in similar agro-ecological zones and comprising local representatives of extension agencies and research institutes;
- research-extension review workshops between staff of the Department of Agricultural Extension and local research institutes.

A contract research system will be set up to enable extension agencies to help develop and fund specific research programmes with specific research institutes. The New Agricultural Extension Policy also recognises that farmers themselves are actively engaged in their own experimentation, as part of their daily agricultural lives. Efforts to learn from and strengthen such informal research will be made.

2.3.8 Training of Extension Personnel

Training is a fundamental feature of the extension approach supported by the New Agricultural Extension Policy. All providers of extension services need to be confident in their ability to solve farmers problems and supply many of their information needs. Training will also be necessary to provide extension agents with the skills necessary to deal with the needs of particular clients, such as women and landless households. Special attention will be required to encourage referral to other agencies or individuals better suited to deal with particular problems or opportunities, for example in livestock production, fisheries, forestry, farm management, credit and marketing. Government policy is for training opportunities and funds to be made accessible to all extension service providers. Training resources and facilities will be optimally utilised and strengthened, and higher education encouraged. The training needs of extension staff, based on the service requirements of farmers, will set the training agenda.

2.3.9 Appropriate Extension Methodology

There is a wide range of extension methods which agencies can use in their work with farmers and rural households. No single method is suitable for all purposes and occasions. Extension agencies and personnel will select appropriate methods in order to meet specific extension objectives with their various categories of farmers. These methods are likely to include:

- Farm visits: meeting individual farmers at their farm gives extension personnel a unique view of the potentials and problems of their farm. Where other farmers are present, the impact of the visit can be felt widely within the farming community;
- Media: the impact of extension programmes can be increased considerably by a co-ordinated use of media, including mass media, folk media and visual/audio-visual aids. Media are an efficient means of disseminating information rapidly, at low cost, to a large number of people. They can support the work of extension staff by publicising extension activities, reinforcing technical messages, spreading awareness of new ideas and telling people of the success of other farmers and groups;
- Training: in many situations, farmers need to learn new skills or develop new knowledge before they can effectively adopt new ideas and practices. Training can take place in a village, at a farmers field or demonstration plot, or in a training centre;
- Demonstrations: these are useful tools for the transfer of technology and encouraging farmers to try out new ideas, provided they concentrate on technology which is widely relevant within the local area and based on farmer information needs;
- Fairs: these help to create awareness about improved technology among a large number of people within a short period of time. They provide an opportunity for farmers to see a range of technologies and inputs, displayed by other farmers, dealers, non-government organisations and government agencies, and to discuss them in a lively and informal atmosphere;
- Visits and motivational tours: visits to research establishments and to other areas give farmers and extension staff an opportunity to interact directly with other farmers who have been successful in solving their own problems, and with research scientists conducting research programmes of interest of farmers;
- Participatory methods: the use of highly participatory extension methods, including Rapid and Participatory Rural Appraisal, provide an opportunity for extension staff and farmers to work together to analyse current situations and problems, and determine appropriate courses of action for self-reliance.

2.3.10 Integrated Extension Support to Farmers

The policy of the Government is to provide farmers with advice on all aspects of agriculture. Among the government organisations, the Department of Agricultural Extension is the largest, and provides services to farmers for increasing production of crops, including vegetables, fruits and homestead crops and to develop other homestead agricultural activities. At present, the Department has extension agents at grassroot level. One extension agent is primarily responsible for approximately 1000 farm families.

The Department of Livestock Services and Department of Fisheries have extension staff at thana level. The Department of Forestry has staff mainly at District level, although their extension services are mostly based on the nurseries established at thana level. At present, these departments have no grassroots extension agents. Until such departments can develop their own facilities, the Department of Agricultural Extension may offer appropriate information to farmers in the areas of livestock, fisheries and forestry, with the support of the other departments, as decided in the Agricultural Technical Committee.

Appropriate advice, as requested, will be made available to non-government organisations, from all

these departments, to enable them to offer high quality integrated extension support, including farm management, production, credit and marketing for their target groups and area. Many non-government organisations are engaged in integrated farming advice, and it is the policy of the Government to ensure that these agencies are provided with appropriate advice and technical assistance from the various ministries and departments of the Government of Bangladesh.

2.3.11 Co-ordinated Extension Activities

The extension services of the various providers within the national agricultural extension system will be co-ordinated in order to optimise the use of the recourses within the system. This implies the sharing of information and expertise among the agencies involved, and participation where appropriate in each others extension activities. The New Agricultural Extension Policy recognises that different agencies working in the same areas often have complementary expertise and that where this is brought together the effectiveness of all agencies in their services to the nation's farmers can be enhanced. The extension services of various providers within National Agricultural Extension System will be co-ordinated at five levels:

- at local level, with the various extension services co-operating in working with and meeting the needs of the wide variety of farmers groups that exist in rural areas, and through the exchange of information and experience among farmers, farmers groups and extension agents working with different organisations at field level. Local level co-operation will also be enhanced though the participation of different extension agencies in the meetings of Union Councils, under the chairmanship of the Union Council Chairman;
- at thana level, through direct contact between extension personnel at thana level through the Thana Agricultural Development Committee, which comprises representatives from government, non-government and private sectors, including women farmers and women representatives of these organisations;
- at district level, through the Department of Agricultural Extension, District Extension Programming Committee and the District Development Co-ordination Committee;
- at regional level, through the Agricultural Technical Committee, where government and non-government organisation staff and research institute staff come together seasonally to discuss technical issues relating to extension programmes;
- at national level through the National Technical Co-ordination Committee, where representatives of all agencies come together to discuss research co-operation and technical research issues relating to extension work. There are also other national apex bodies, such as the Department of Agricultural Extension - Non-Government Organisation Liaison Committee and other such committees, which have an important co-ordination role.

2.3.12 Integrated Environmental Support

The lives of more than 70 percent of the population are almost totally dependent upon the natural resource base which supports agricultural production. However, it is recognised that this critical resource base is under threat. Among the concerns are deforestation, water scarcity caused by over-abstraction, and an increased incidence of pest damage due to introduction of monoculture and inappropriate use of pesticides. To maintain the ecological balance in the natural environment, the Government's environmental objectives are to:

- control and prevent pollution and degradation related to soil, water, and air;
- promote environment-friendly activities;
- strengthen the capabilities of public and private sectors to manage environmental concerns as a basic requisite for sustainable development;
- create opportunities for people's participation in environmental management activities.

The strategies adopted to attain these objectives are as follows:

- integration of the environment into the overall agricultural policy to ensure a policy of sustainable agricultural development;
 - environmental impact assessment as an integral part of the development and testing of innovations by agricultural research institutes, universities, non-government organisations and the private sector;
 - promotion of environmentally sound agricultural practices, such as Integrated Pest Management, and active discouragement of damaging and hazardous agricultural practices;
 - monitoring the impact of agricultural practices by environmental agencies, and the use of findings to stimulate a continuous improvement of agricultural technologies and agricultural policies.

The New Agricultural Extension Policy therefore supports extension programmes which seek to support and encourage farmers and farmers groups to apply sustainable agricultural practices. Through the sharing of information among all the agencies in the national agricultural extension system, it is expected that the capacity of agencies to promote sustainable agricultural development will be enhanced. It is recognised that farmers own Indigenous Technical Knowledge is often environmentally sustainable, and efforts should be made to support and learn from farmers, as well as the formal research system.

The policy recognises that, inevitably, with increasing demand for higher agricultural output due to a rapidly increasing population, there may be a negative effect upon the natural environment. However, the policy will support extension efforts aimed at balancing the demands for increasing production and environmental preservation. of this effort will be integrated extension support for the whole farm system.

3. Implementation Strategy for New Agricultural Extension Policy

The National Task Force which has been charged with the preparation of this New Agricultural Extension Policy is also responsible for the development of an Implementation Strategy. This Implementation Strategy will establish:

- clear definitions of the roles for the various extension agencies;
- effective mechanisms for collaboration and information exchange among extension agencies and among farmers;
- effective mechanisms for the supply, management, and monitoring of resources to support the activities of extension agencies;
- mechanisms to provide extension agents at all levels with the skills and training appropriate to their job requirements;
- effective linkage for three way information flow between farmers, extension agents and research institute staff.

While this New Agricultural Extension Policy has set the principles for the effective functioning of the National Agricultural Extension System, the Implementation Strategy will set the mechanisms by which these principles are put into place.

APPENDIX 3

SOME PARTICIPATORY RURAL APPRAISAL (PRA) TECHNIQUES

Technique: Physical Maps

Use: To know the various physical conditions of a village or area through observing and drawing a physical map. Thus, to establish relationships between natural resources and farmers' activities. To identify problems and opportunities for proper planning extension activities

Procedure:

- ④ Select an area- Farmer's group or Village
- ④ Ask farmers to prepare an outline of what the area look like
- ④ Ask them to mark roads, fields, river, important building etc. in the map
- ④ Ask them to identify what is grown where, and why
- ④ Ask how things have changed? What might the map look like in the past five years? Why? What do the farmer want the map to look like in next five years? What help from extension do they need to develop and change the area.

Technique: Social Maps

Use: To know the population size, number of house hold, social pattern, family relation type and community facilities (water sources, health centers etc. of a village or area using social maps in order to identify issues to be tackled through extension service by DAE.

Procedure:

- ④ Select an area- Village/ Word/ Farmer's Group
- ④ Ask local farmers to identify who live in this area and to include the followings:
 - How many households?
 - How do they classify households? As male or female headed? By family profession, farm size or income?
- ④ Ask farmers to prepare an outline map of selected the area with road, river and fields
- ④ Ask them to identify where each household lives. Is there a pattern? Do smaller farmers

live near the river? Do larger farmers live by the market? Do female headed households live near the land with low or high productivity? Why? What is the implication for local extension programmes?

Technique: Transect Walk

Use: Provide firsthand information about an area. Establishes relationships between different resources and to identify problems and opportunities for extension to build on and address. Provide informal scope to know the villagers.

Procedure:

- ③ Select an area- Village/ Ward/ Farmer's Group
- ③ With a small group of farmers, choose a route to walk through the area.
- ③ Make list of things to look for - trees, crops, livestock, land quality, problems, opportunities
- ③ Walk the route together
- ③ Observe changes in land use, problems and opportunities during the walk, and ask questions
- ③ Make a diagram at the end of walk

Technique: Wealth Ranking

Use: To identify target groups and their different needs, and how they can be supported by extension programmes. It provides an idea about the financial conditions of the villagers.

Procedure

- ③ Select an area- Village/ Para/ Farmer's Group
- ③ Ask farmers to make a list of all the households. Write individual household in separate piece of paper/card
- ③ Ask farmers How do they categorise households?
 - By occupation- farming, business, government/nongovernment job?

- By farm size- large, small, landless?
- By income -high medium, low?

Try linking this technique to technique -Social Maps

- ④ Ask farmer to select one categorization that they prefer
- ④ Ask the farmer to sort the cards of households into their categories and note how many fall into each category
- ④ Ask why distribution is as it is
- ④ Ask what different extension support each category needs
- ④ Ask what different problems each category has
- ④ Ask whether there are specific opportunities that extension should recognise.

Technique: Problem Census

Use: To identify farmers' information needs for designing responsive extension activities.

Procedure

- ④ Work with a group of 20-to 30 farmers operating similar farming system
- ④ Define topic to discuss, such as soil management, seed preservation
- ④ Divide the group into smaller groups of 5-6 people each, provide them with paper and pen, and ask them to brain storm a list of problems faced with respect to the topic
- ④ When list is made, each group should present them to a plenary
- ④ A master list of problems is made, and five most important problems that DAE can directly assist with are selected
- ④ Ask the group whether they have tried to solve these problems. What experiences they have in doing so?
- ④ Record the discussion in the SAAO diary
- ④ Explain that DAE will plan one activity for this group to address one of these problems.

APPENDIX 4(A)

DETERMINATION OF OBJECTIVES FOR ANNUAL EXTENSION PROGRAMME PLANNING FORM

Financial Year:

Upazila:

District:

Date:

Target Group of Farmers	Group Similar Core Problems to Generate Objectives		Determination of Objectives
	Similar Core Problems	Frequency of Problems	
	1		Objective 1:
	2		
	3		
	4		
	1		Objective 2:
	2		
	3		
	4		
	1		Objective 3:
	2		
	3		
	4		

Determine objectives for all target group in the same way.

APPENDIX 4 (B)

ANNUAL EXTENSION PROGRAMME PLANNING FORM

Season: Kharif 2/Rabi/Kharif 1, Financial Year:

Upazila:

District:

Date:

Objective-1:

Serial No.	Description of Activities	Target Group of Farmers	Schedule	No. of Event	Source of Funds (Related Project/ Program)	No-cost/Follow-up/ Motivation	Remarks
1	*** Project Activities						
2							
3							
1	*** Follow-up Activities						
2							

Objective-2

Serial No.	Description of Activities	Target Group of Farmers	Schedule	No. of Event	Source of Funds (Related Project/ Program)	No-cost/Follow-up/ Motivation	Remarks
1	*** Project Activities						
2							
3							
1	*** Follow-up Activities						
2							

Use same form to plan for achieving every objective of each season

Appendix 5(A)



দপ্তর/সংস্থাসমূহের বার্ষিক কর্মসম্পাদন চুক্তি সংক্রান্ত নীতিমালা, ২০১৬-১৭

মন্ত্রিপরিষদ বিভাগ
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

* This policy document is not available in English

সূচিপত্র

বিয়য়

পৃষ্ঠা

- ১ প্রেক্ষাপট
 - ২ বার্ষিক কর্মসম্পাদন চুক্তির কাঠামো
 - ২.১ দপ্তর/সংস্থার কর্মসম্পাদনের সার্বিক চিত্র
 - ২.২ উপক্রমণিকা
 - ২.৩ সেকশন ১: রূপকল্প, অভিলক্ষ্য, কৌশলগত উদ্দেশ্যসমূহ এবং কার্যাবলি
 - ২.৪ সেকশন ২: কার্যক্রমসমূহের চূড়ান্ত ফলাফল/প্রভাব (Outcome/Impact)
 - ২.৫ সেকশন ৩: কৌশলগত উদ্দেশ্য, অগ্রাধিকার, কার্যক্রম, কর্মসম্পাদন সূচক এবং লক্ষ্যমাত্রাসমূহ
 - ২.৬ সংযোজনী ১: শব্দসংক্ষেপ (Acronyms)
 - ২.৭ সংযোজনী ২: কর্মসম্পাদন সূচকসমূহ এবং পরিমাপ পদ্ধতি
 - ২.৮ সংযোজনী ৩: অন্যান্য দপ্তর/সংস্থার নিকট সুনির্দিষ্ট কর্মসম্পাদন চাহিদা
 - ৩ বার্ষিক কর্মসম্পাদন মূল্যায়ন পদ্ধতি
 - ৪ বার্ষিক কর্মসম্পাদন চুক্তি সম্পাদন প্রক্রিয়া ২০১৬-১৭
 - ৫ বার্ষিক কর্মসম্পাদন চুক্তির সময়সূচি ২০১৬-১৭
 - ৬ বার্ষিক কর্মসম্পাদন চুক্তি দাখিল প্রক্রিয়া
- পরিশিষ্ট ক: বার্ষিক কর্মসম্পাদন চুক্তির কাঠামো
- পরিশিষ্ট খ: ২০১৬-১৭ অর্থ-বছরের আবশ্যিক কৌশলগত উদ্দেশ্যসমূহ

দপ্তর/সংস্থার বার্ষিক কর্মসম্পাদন চুক্তি সংক্রান্ত নীতিমালা, ২০১৬-১৭

১. প্রেক্ষাপট

রূপকল্প ২০২১-এর যথাযথ বাস্তবায়নের জন্য একটি কার্যকর, দক্ষ এবং গতিশীল প্রশাসনিক ব্যবস্থা একান্ত অপরিহার্য বলে সরকার মনে করে। এ পরিপ্রেক্ষিতে স্বচ্ছতা ও দায়বদ্ধতা বৃদ্ধি, সম্পদের যথাযথ ব্যবহার নিশ্চিতকরণ এবং প্রাতিষ্ঠানিক সক্ষমতা উন্নয়নের জন্য ২০১৪-১৫ অর্থ-বছরে ৪৮টি মন্ত্রণালয়/বিভাগের সঙ্গে বার্ষিক কর্মসম্পাদন চুক্তি স্বাক্ষরের মাধ্যমে কর্মসম্পাদন ব্যবস্থাপনা পদ্ধতি চালু হয়েছে। ২০১৫-১৬ অর্থ-বছরে ৪৮টি মন্ত্রণালয়/বিভাগ এবং আওতাধীন দপ্তর/সংস্থাসমূহের সঙ্গে বার্ষিক কর্মসম্পাদন চুক্তি স্বাক্ষরিত হয়েছে। ২০১৬-১৭ অর্থ-বছরে ৪৮টি বার্ষিক কর্মসম্পাদন চুক্তি সম্পাদনের সিদ্ধান্ত গ্রহণ করা হয়েছে। সংশ্লিষ্ট সকল দপ্তর/সংস্থা তাদের আওতাধীন মাঠপর্যায়ের কার্যালয়সমূহকে বার্ষিক কর্মসম্পাদন চুক্তি প্রণয়ন এ বাস্তবায়নে প্রয়োজনীয় সহায়তা প্রদান করবে।

উল্লেখ্য, মাঠ পর্যায়ের কার্যালয়সমূহের বার্ষিক কর্মসম্পাদন চুক্তি প্রণয়নে সহায়তা করার জন্য পৃথক একটি নীতিমালা প্রণয়ন করা হয়েছে। এই নীতিমালা কেবল দপ্তর/সংস্থার চুক্তি প্রণয়ন, বাস্তবায়ন পরিবীক্ষণ ও মূল্যায়নের ক্ষেত্রে অনুসরণ করতে হবে।

২. দপ্তর/সংস্থার বার্ষিক কর্মসম্পাদন চুক্তির কাঠামো

বার্ষিক কর্মসম্পাদন চুক্তিতে সংশ্লিষ্ট দপ্তর/সংস্থার বার্ষিক কর্মসম্পাদনের সার্বিক চিত্র, উপক্রমণিকা এবং নিম্নবর্ণিত সেকশন ও সংযোজনীসমূহ অন্তর্ভুক্ত থাকবে:

সেকশন ১: রূপকল্প, অভিলক্ষ্য, কৌশলগত উদ্দেশ্যসমূহ এবং কার্যাবলি

সেকশন ২: বিভিন্ন কার্যক্রম চূড়ান্ত ফলাফল/প্রভাব (Outcome/Impact)

সেকশন ৩: কৌশলগত উদ্দেশ্য, অগ্রাধিকার, কার্যক্রম, কর্মসম্পাদন সূচক এবং লক্ষ্যমাত্রা

সংযোজনী ১: শব্দসংক্ষেপ (Acronyms)

সংযোজনী ২: কর্মসম্পাদন সূচকসমূহ এবং পরিমাপ পদ্ধতি

সংযোজনী ৩: কর্মসম্পাদন লক্ষ্যমাত্রা অর্জনের ক্ষেত্রে অন্যান্য দপ্তর/সংস্থার নিকট সুনির্দিষ্ট চাহিদা

বার্ষিক কর্মসম্পাদন চুক্তির একটি কাঠামো পরিশিষ্ট-ক এ সংযোজিত হল। উক্ত কাঠামো অনুসরণ করে প্রত্যেক দপ্তর/সংস্থা বার্ষিক কর্মসম্পাদনে চুক্তি প্রস্তুত করবে।

২.১ দপ্তর/সংস্থার কর্মসম্পাদনের সার্বিক চিত্র

সংক্ষেপে দপ্তর/সংস্থার কর্মসম্পাদনের একটি চিত্র তুলে ধরার লক্ষ্যে বার্ষিক কর্মসম্পাদন চুক্তিতে এই অংশটি সংযোজন করা হয়েছে। এতে সংশ্লিষ্ট দপ্তর/সংস্থার গত ৩ বছরের প্রধান অর্জনসমূহ, কর্মসম্পাদনের ক্ষেত্রে যে সকল সমস্যা বা চ্যালেঞ্জ রয়েছে সেগুলি এবং ভবিষ্যতে দপ্তর/সংস্থা কী কী প্রধান প্রধান লক্ষ্য অর্জন করতে চায় তার পরিকল্পনা সম্পর্কে সংক্ষেপে আলোকপাত করবে। তাছাড়া, ২০১৬-১৭ অর্থ-বছরের সম্ভাব্য প্রধান অর্জনসমূহ এ অংশে সংক্ষেপে বর্ণনা করতে হবে।

২.২ উপক্রমণিকা

বার্ষিক কর্মসম্পাদন চুক্তির শুরুতে একটি উপক্রমণিকা থাকবে, যাতে এই চুক্তি সম্পাদনের উদ্দেশ্য, চুক্তির পক্ষসমূহ এবং চুক্তিতে বর্ণিত ফলাফলসমূহ অর্জনের বিষয়ে তাদের সম্মত হওয়া সম্পর্কে উল্লেখ থাকবে।

২.৩ সেকশন-১: রূপকল্প (Vision), অভিলক্ষ্য (Mission), কৌশলগত উদ্দেশ্য (Strategic Objective) এবং কার্যাবলি (Functions)

রূপকল্প (Vision)

রূপকল্প মূলত একটি দপ্তর/সংস্থার ভবিষ্যত আদর্শ অবস্থা (idealized state) নির্দেশ করে। একটি দপ্তর/সংস্থাকে তার নেতৃত্বে ভবিষ্যতে কোন অবস্থায় দেখতে চায় রূপকল্পে তার একটি বৃহত্তর চিত্র পাওয়া যায়। রূপকল্প সাধারণত ৫-১০ বছর মেয়াদের জন্য নির্ধারণ করা হয়। ফলে কোন দপ্তর/সংস্থার কাঠামোগত পরিবর্তন না হলে বা কাজের ধরনে ব্যাপক পরিবর্তন না হলে রূপকল্প বছর বছর পরিবর্তন হবে না।

অভিলক্ষ্য (Mission)

দপ্তর/সংস্থার অভিলক্ষ্য সংক্ষেপে উপস্থাপন করা বাঞ্ছনীয়। সুস্পষ্টভাবে অভিলক্ষ্য ব্যক্ত করার লক্ষ্যে দপ্তর/সংস্থাকে নিম্নবর্ণিত বিষয়সমূহ বিবেচনায় রাখতে হবে:

- দপ্তর/সংস্থার মৌল উদ্দেশ্য কী অর্থাৎ দপ্তর/সংস্থা কী অর্জন করতে চায়;
- কীভাবে অর্জন করতে চায়; এবং
- কার জন্য অর্জন করতে চায়, অর্থাৎ এর সম্ভাব্য উপকারভোগী কারা।

অভিলক্ষ্য অবশ্যই রূপকল্পের সঙ্গে সামঞ্জস্যপূর্ণ হতে হবে। রূপকল্প মূলত বৃহত্তর কল্পনা এবং অভিলক্ষ্য রূপকল্প অর্জনের জন্য গৃহীত কার্যক্রমসমূহ নির্দেশ করে।

কৌশলগত উদ্দেশ্য (Strategic Objectives)

কৌশলগত উদ্দেশ্য বলতে নির্দিষ্ট সময়ে - স্বল্প মধ্য ও দীর্ঘমেয়াদী দপ্তর/সংস্থার নির্দিষ্ট নীতিমালা এবং কর্মসূচি বাস্তবায়নের মাধ্যমে তার অধিক্ষেত্রে যে সকল উন্নয়ন লক্ষ্য অর্জন করতে চায় সেগুলিকে বুঝাবে।

সরকার রূপকল্প ২০২১, ৭ম পঞ্চবার্ষিক পরিকল্পনা, অন্যান্য কৌশলগত দলিল, সংশ্লিষ্ট দপ্তর/সংস্থার নীতি সংক্রান্ত দলিলসমূহ এবং বাজেট কাঠামোর আলোকে বিদ্যমান কৌশলগত উদ্দেশ্যসমূহ পর্যালোচনাপূর্বক কৌশলগত উদ্দেশ্যসমূহ নির্ধারণ করতে হবে। দপ্তর/সংস্থার পক্ষে অর্জন করা কষ্টসাধ্য কেবল এরূপ বিবেচনায় বা সহজে অর্জযোগ্য বিবেচনায় কোন কৌশলগত উদ্দেশ্য বিয়োজন বা সংযোজন করা সমীচীন হবে না। দপ্তর/সংস্থার রূপকল্প, অভিলক্ষ্য এবং কার্যাবলীসমূহ এবং কৌশলগত উদ্দেশ্যসমূহের মধ্যে একটি সংযোগ থাকতে হবে। তাছাড়া দপ্তর/সংস্থার রূপকল্প এবং অভিলক্ষ্য সংশ্লিষ্ট মন্ত্রণালয়/বিভাগের রূপকল্প ও অভিলক্ষ্য-এর সঙ্গে সামঞ্জস্যপূর্ণ হতে হবে, যাতে দপ্তর/সংস্থার কাজক্ষিত লক্ষ্যমাত্রা অর্জনের মাধ্যমে মন্ত্রণালয়/বিভাগের কাজক্ষিত লক্ষ্যমাত্রা অর্জন সম্ভব হয়।

কার্যাবলি (Functions)

দপ্তর/সংস্থার প্রধান কার্যাবলী এই সেকশনে লিপিবদ্ধ করতে হবে। দপ্তর/সংস্থার কার্যক্রম লিপিবদ্ধকরণের ক্ষেত্রে সংশ্লিষ্ট দপ্তর/সংস্থা কর্তক প্রদত্ত সেবা এবং উক্ত দপ্তর/সংস্থার কর্মবন্টনে উল্লিখিত বিষয়সমূহ বিবেচনায় নিতে হবে।

২.৪ সেকশন-২: কার্যক্রম সমূহের চূড়ান্ত ফলাফল/প্রভাব (Outcome/Impact)

একটি সুনির্দিষ্ট লক্ষ্য অর্জনের জন্য দপ্তর/সংস্থার প্রতিটি কৌশলগত উদ্দেশ্য নির্ধারণ করা হয়। কৌশলগত উদ্দেশ্য অর্জনের জন্য দপ্তর/সংস্থা যে সকল কার্যক্রম বাস্তবায়ন করে থাকে সেগুলির ফলাফল (output) এক বা একাধিক চূড়ান্ত ফলাফল (Outcome) অর্জনে সহায়তা করে। সেকশন-২ এ দপ্তর/সংস্থা বিভিন্ন কার্যক্রম বাস্তবায়নের মাধ্যমে যে সকল চূড়ান্ত ফলাফল (end result or outcome) অর্জন করতে চায় সেগুলি উল্লেখ করবে। তাছাড়া, সেকশন-২ এ প্রতিটি চূড়ান্ত ফলাফলের বিপরীতে এক বা একাধিক কর্মসম্পাদন সূচকসহ প্রাসঙ্গিক অন্যান্য তথ্যাদি প্রদান করতে হবে। রূপকল্প এবং অভিলক্ষ্যের ন্যায় চূড়ান্ত ফলাফলও বছর বছর পরিবর্তন করা সমীচীন হবে না।

২.৫ সেকশন ৩: কৌশলগত উদ্দেশ্য, অগ্রাধিকার, কার্যক্রম, কর্মসম্পাদন সূচক এবং লক্ষ্যমাত্রা

কলাম ১: দপ্তর/সংস্থার কৌশলগত উদ্দেশ্যসমূহের তালিকা

সেকশন ৩-এর কলাম ১-এ বর্ণিত কৌশলগত উদ্দেশ্যসমূহ এবং সেকশন ১-এ বর্ণিত কৌশলগত উদ্দেশ্যসমূহ একই হতে হবে। উল্লেখ্য যে, দপ্তর/সংস্থার কৌশলগত উদ্দেশ্য ছাড়াও কতিপয় আবশ্যিক কৌশলগত উদ্দেশ্য সেকশন ৩-এ অন্তর্ভুক্ত থাকবে। সংশ্লিষ্ট অর্থ-বছর সমাপ্ত হওয়ার পর দপ্তর/সংস্থার প্রকৃত কর্মসম্পাদন সর্বমোট ১০০ মান (weight)-এর ভিত্তিতে পরিমাপ করা হবে। এই ১০০ মানের মধ্যে দপ্তর/সংস্থার কৌশলগত

উদ্দেশ্যসমূহের জন্য ৮০ নম্বর এবং আবশ্যিক কৌশলগত উদ্দেশ্যের বিপরীতে ২০ নম্বর নির্ধারিত থাকবে। আবশ্যিক কৌশলগত উদ্দেশ্যসমূহ সরকারি কর্মসম্পাদন ব্যবস্থাপনা সংক্রান্ত জাতীয় কমিটি কর্তৃক অনুমোদিত এবং সকল দপ্তর/সংস্থার জন্য সমভাবে প্রযোজ্য হবে। পরিশিষ্ট খ-এ আবশ্যিক কৌশলগত উদ্দেশ্যের তালিকা সংযোজন করা হল।

কলাম ২: কৌশলগত উদ্দেশ্যসমূহের আপেক্ষিক মান বরাদ্দকরণ

কৌশলগত উদ্দেশ্যসমূহ গুরুত্ব ও তাৎপর্যের ক্রমানুসারে উল্লেখ করতে হবে। সেক্ষেত্রে, অধিকতর গুরুত্বসম্পন্ন উদ্দেশ্যের মান বেশি হবে এবং কম গুরুত্বপূর্ণ উদ্দেশ্যের মান কম হবে। কৌশলগত উদ্দেশ্যসমূহের মধ্যে মান বণ্টনের ক্ষেত্রে ভারসাম্য রক্ষা করতে হবে।

কলাম ৩: দপ্তর/সংস্থার কৌশলগত উদ্দেশ্যসমূহ অর্জনের লক্ষ্যে কার্যক্রম সুনির্দিষ্টকরণ

প্রতিটি কৌশলগত উদ্দেশ্য পূরণের লক্ষ্যে দপ্তর/সংস্থা কর্তৃক উক্ত উদ্দেশ্যের বিপরীতে প্রয়োজনীয় কার্যক্রম নির্ধারণ করতে হবে। কখনো কখনো একটি কৌশলগত উদ্দেশ্যের বিপরীতে এক বা একাধিক কার্যক্রমও থাকতে পারে। উল্লেখ্য যে, বার্ষিক কর্মসম্পাদন চুক্তিতে বর্ণিত সকল কার্যক্রম বাজেট বরাদ্দের আলোকে গ্রহণ করতে হবে। উন্নয়ন অথবা অনুন্নয়ন বাজেটে সুনির্দিষ্ট বরাদ্দ নেই বা বরাদ্দ পাওয়ার সম্ভাবনা নেই এমন কোন কার্যক্রম এতে অন্তর্ভুক্ত করা যাবে না।

কলাম-৪: কর্মসম্পাদন সূচকসমূহ এবং তার এককসমূহ সুনির্দিষ্টকরণ

কলাম ৩-এ বর্ণিত প্রতিটি কার্যক্রমের জন্য দপ্তর/সংস্থাকে এক বা একাধিক কর্মসম্পাদন সূচক নির্ধারণ করতে হবে, যা দ্বারা বছর শেষে উক্ত কার্যক্রম বাস্তবায়নের অগ্রগতি পরিমাপ করা যাবে। কর্মসম্পাদন সূচকসমূহ নির্ধারণের ক্ষেত্রে যে কোন রকম দ্বৈততা পরিহার করা সমীচিন হবে।

কলাম-৫: কর্মসম্পাদন সূচকের লক্ষ্যমাত্রা পরিমাপের একক এই কলামে উল্লেখ করতে হবে।

কলাম-৬: কর্মসম্পাদন সূচকসমূহের বিপরীতে আপেক্ষিক মান বরাদ্দকরণ

কোন কৌশলগত উদ্দেশ্যের বিপরীতে একাধিক কার্যক্রম থাকলে প্রতিটি কার্যক্রমের বাস্তবায়ন- অগ্রগতি মূল্যায়নের জন্য এক বা একাধিক কর্মসম্পাদন সূচক থাকবে এবং প্রতিটি কর্মসম্পাদন সূচকের একটি নির্ধারিত মান থাকবে। বিভিন্ন কর্মসম্পাদন সূচকের মান এমনভাবে নির্ধারণ করতে হবে যাতে সবগুলি সূচকের মোট মান সংশ্লিষ্ট কৌশলগত উদ্দেশ্যের বিপরীতে বরাদ্দকৃত মানের সমান হয়।

কলাম-৭ ও ৮: এই কলামদ্বয়ে যথাক্রমে ২০১৪-১৫ এবং ২০১৫-১৬ অর্থ-বছরে প্রকৃত অর্জন উল্লেখ করতে হবে।

কলাম-৯-১৩: কর্মসম্পাদন সূচকের লক্ষ্যমাত্রা সুনির্দিষ্টকরণ

লক্ষ্যমাত্রা হচ্ছে কর্মসম্পাদন উন্নয়নের চালিকাশক্তি। সুতরাং লক্ষ্যমাত্রা একইসঙ্গে অর্জনযোগ্য এবং উচ্চাকাঙ্ক্ষী হওয়া উচিত। লক্ষ্যমাত্রাসমূহকে নিম্নরূপ ৫ দফা স্কেলে বিন্যস্ত করতে হবে:

অসাধারণ	অতি উত্তম	উত্তম	চলতি মান	চলতি মানের নিম্নে
১০০%	৯০%	৮০%	৭০%	৬০%

উল্লেখ্য, কোন কর্মসম্পাদন সূচকের লক্ষ্যমাত্রার বিপরীতে প্রকৃত অর্জন ৬০%-এর নিচে হলে প্রাপ্ত মান ধরা হবে ০ (শূন্য)।

বার্ষিক কর্মসম্পাদন চুক্তিতে রূপকল্প ২০২১, ৭ম পঞ্চবার্ষিক পরিকল্পনা, SDG এবং মধ্যমেয়াদি বাজেট কাঠামোর সঙ্গে সামঞ্জস্যপূর্ণ হতে হবে। সেক্ষেত্রে, দপ্তর/সংস্থার প্রধান প্রধান কার্যক্রম, কর্মসূচি এবং সকল উন্নয়ন প্রকল্পের লক্ষ্যমাত্রা বার্ষিক কর্মসম্পাদন চুক্তিতে প্রতিফলিত হওয়া বাঞ্ছনীয়। লক্ষ্যমাত্রা নির্ধারণের ক্ষেত্রে পূর্ববর্তী দুই বছরের প্রকৃত অর্জন ও অর্জনের প্রবৃদ্ধি, দপ্তর/সংস্থার সক্ষমতা এবং বিরাজমান বাস্তবতা বিবেচনা করতে হবে।

কলাম ১৪-১৫: ২০১৫-১৬ অর্থ বছরের প্রকৃত অর্জন এবং ২০১৬-১৭ অর্থ বছরের লক্ষ্যমাত্রার ভিত্তিতে ২০১৭-১৮ এবং ২০১৮-১৯ অর্থ-বছরের প্রক্ষেপিত লক্ষ্যমাত্রা কলাম ১৩ ও ১৪-এ প্রদর্শন করতে হবে।

২.৬ শব্দসংক্ষেপ (Acronyms)

বার্ষিক কর্মসম্পাদন চুক্তিতে ব্যবহৃত বিভিন্ন শব্দসংক্ষেপের পূর্ণরূপ সংযোজনী ১-এ সন্নিবেশিত করতে হবে।

২.৭ কর্মসম্পাদন সূচকসমূহ এবং পরিমাপ পদ্ধতি

বার্ষিক কর্মসম্পাদন চুক্তিতে সংযোজনী ২-এ সেকশন ৩-এর কলাম ৪-এ উল্লিখিত বিভিন্ন কর্মসম্পাদন সূচক, প্রতিটি সূচকের বিবরণ এবং পরিমাপ পদ্ধতি উল্লেখ করতে হবে।

২.৮ অন্যান্য মন্ত্রণালয়/বিভাগের নিকট সুনির্দিষ্ট কর্মসম্পাদন চাহিদা

কতিপয় ক্ষেত্রে কোন কোন দপ্তর/সংস্থার সফলতা অন্য এক বা একাধিক দপ্তর/সংস্থার কর্মসম্পাদনের ওপর নির্ভর করে। অন্য দপ্তর/সংস্থার নিকট প্রত্যাশিত সহায়তা এবং কতিপয় নির্ধারিত কর্মসম্পাদন সূচকের সফলতার ক্ষেত্রে অন্য দপ্তর/সংস্থার ওপর নির্ভরশীল বিষয়টি সংযোজনী ৩-এ উল্লেখ থাকবে। তবে, যেক্ষেত্রে নির্ভরশীলতার মাত্রা শতকরা ২০ ভাগের অধিক কেবল সে সকল দপ্তর/সংস্থার নাম উল্লেখ করতে হবে। এই

নির্ভরশীলতার মাত্রা সুনির্দিষ্ট ও পরিমাপযোগ্য হতে হবে। যেহেতু এই নির্ভরশীলতা সংশ্লিষ্ট দপ্তর/সংস্থার সঙ্গেও সম্পৃক্ত হবে, সেহেতু নির্ভরশীলতার মাত্রা নির্বাচনের ক্ষেত্রে সতর্কতা অবলম্বন করা সমীচীন হবে।

৩: বার্ষিক কর্মসম্পাদন মূল্যায়ন পদ্ধতি

বার্ষিক কর্মসম্পাদন চুক্তিতে ধার্যকৃত লক্ষ্যমাত্রার বিপরীতে দপ্তর/সংস্থাসমূহের প্রকৃত অর্জনের ভিত্তিতে মোট স্কোর (composite score) নির্ধারণ করা হবে। বার্ষিক কর্মসম্পাদন চুক্তিতে ধার্যকৃত লক্ষ্যমাত্রার বিপরীতে প্রকৃত অর্জন মূল্যায়নের জন্য যথাসময়ে একটি পৃথক নির্দেশিকা জারি করা হবে।

৪: বার্ষিক কর্মসম্পাদন চুক্তি প্রক্রিয়া ২০১৬-১৭

৪.১ বার্ষিক কর্মসম্পাদন চুক্তি প্রণয়ন ও অনুমোদন

- সকল দপ্তর/সংস্থা রূপকল্প ২০১১, ৭ম পঞ্চবার্ষিক পরিকল্পনা, SDG, দপ্তর/সংস্থা কর্তৃক গৃহীত নীতিমালা/দলিল, সরকারের অন্যান্য কৌশলপত্র, নির্বাচনী ইশতেহার এবং সময়ে সময়ে সরকার কর্তৃক ঘোষিত কর্মসূচির আলোকে বার্ষিক কর্মসম্পাদন চুক্তি প্রস্তুত করবে।
- কৌশলগত উদ্দেশ্যের সঙ্গে মিল রেখে কাজিফল ফলাফল অর্জনের জন্য সংশ্লিষ্ট দপ্তর/সংস্থা সংশ্লিষ্ট অর্থ-বহরের বাজেট বরাদ্দের আলোকে বার্ষিক কর্মসম্পাদন চুক্তির কার্যক্রমসমূহ চিহ্নিত করবে।
- দপ্তর/সংস্থার কর্মসম্পাদন ব্যবস্থাপনা টিম বার্ষিক কর্মসম্পাদন চুক্তির প্রথম খসড়া প্রণয়ন করবে এবং দপ্তর/সংস্থার প্রধান বার্ষিক কর্মসম্পাদন চুক্তির খসড়া অনুমোদনপূর্বক সংশ্লিষ্ট মন্ত্রণালয়/বিভাগে প্রেরণ করবে।
- মন্ত্রণালয়/বিভাগের সংশ্লিষ্ট অনুবিভাগ খসড়া বার্ষিক কর্মসম্পাদন চুক্তির ওপর মতামত (feedback)/সুপারিশ প্রদান করবে।
- মন্ত্রণালয়/বিভাগের কর্মসম্পাদন ব্যবস্থাপনা সংক্রান্ত বিশেষজ্ঞ পুল চুক্তির খসড়া পর্যালোচনা করবে।
- কর্মসম্পাদন ব্যবস্থাপনা সংক্রান্ত বিশেষজ্ঞ পুলের সুপারিশ অন্তর্ভুক্ত করে বার্ষিক কর্মসম্পাদন চুক্তি সংশোধন/পরিমার্জনপূর্বক কর্মসম্পাদন ব্যবস্থাপনা টিমের অনুমোদন সাপেক্ষে মন্ত্রণালয়/বিভাগের বাজেট ব্যবস্থাপনা কমিটিতে উপস্থাপন করতে হবে।
- মন্ত্রণালয়/বিভাগের বাজেট ব্যবস্থাপনা কমিটি কর্তৃক অনুমোদিত হওয়ার পর দপ্তর/সংস্থা প্রধান এবং মন্ত্রণালয়/বিভাগের সচিবের মধ্যে বার্ষিক কর্মসম্পাদন চুক্তি স্বাক্ষরিত করতে হবে।
- স্বাক্ষরিত বার্ষিক কর্মসম্পাদন চুক্তি স্ব স্ব দপ্তর/সংস্থার ওয়েবসাইটে প্রকাশ করতে হবে।

৪.২ কর্মসম্পাদন পরিবীক্ষণ

কর্মসম্পাদন লক্ষ্যমাত্রার বিপরীতে প্রকৃত অর্জন ত্রৈমাসিক ভিত্তিতে সংশ্লিষ্ট দপ্তর/সংস্থার বাজেট ব্যবস্থাপনা কমিটি কর্তৃক পর্যালোচনা করা হবে। লক্ষ্যমাত্রার বিপরীতে অর্জন নিশ্চিত করতে এ সংক্রান্ত টিম প্রয়োজনীয় নির্দেশনা প্রদান করবে।

৪.৩ কর্মসম্পাদন মূল্যায়ন

- অর্ধ-বছরের ছয় মাস অতিক্রান্ত হওয়ার পর প্রত্যেক দপ্তর/সংস্থা নির্ধারিত লক্ষ্যমাত্রার বিপরীতে ছয় মাসে অর্জিত ফলাফলসহ একটি অর্ধ-বার্ষিক মূল্যায়ন প্রতিবেদন স্ব স্ব মন্ত্রণালয়/বিভাগে প্রেরণ করবে।
- প্রস্তুতকৃত কর্মসম্পাদন মূল্যায়ন প্রতিবেদন কর্মসম্পাদন ব্যবস্থাপনা সংক্রান্ত কারিগরী কমিটির নিকট উপস্থাপন করা হবে।
- বৎসরান্তে দপ্তর/সংস্থার কর্মসম্পাদন ব্যবস্থাপনা টিম প্রতিটি দপ্তর/সংস্থার নির্ধারিত লক্ষ্যমাত্রার বিপরীতে অর্জিত ফলাফল উল্লেখপূর্বক কর্মসম্পাদন চুক্তির বার্ষিক মূল্যায়ন প্রতিবেদন প্রস্তুত করবে।
- প্রস্তুতকৃত মূল্যায়ন প্রতিবেদন সংশ্লিষ্ট দপ্তর/সংস্থা নির্ধারিত তারিখের মধ্যে স্ব স্ব মন্ত্রণালয়/বিভাগে প্রেরণ করবে।

৫. বার্ষিক কর্মসম্পাদন চুক্তির সময়সূচি ২০১৬-১৭

সময়সীমা	বিষয়	বাস্তবায়নকারী কর্তৃপক্ষ
ক. বার্ষিক কর্মসম্পাদন চুক্তি প্রণয়ন ও অনুমোদন		
২১ এপ্রিল ২০১৬	বার্ষিক কর্মসম্পাদন চুক্তি প্রস্তুতের জন্য দপ্তর/সংস্থাকে অনুরোধ জ্ঞাপন	মন্ত্রণালয়/বিভাগ
২৮ এপ্রিল ২০১৬	দপ্তর/সংস্থার কর্মসম্পাদন ব্যবস্থাপনা টিম গঠন	দপ্তর/সংস্থা
০২ মে ২০১৬	বার্ষিক কর্মসম্পাদন চুক্তি সংক্রান্ত নীতিমালার ওপর প্রশিক্ষণ	মন্ত্রণালয়/বিভাগ
১৫ মে ২০১৬	বার্ষিক কর্মসম্পাদন চুক্তির ১ম খসড়া প্রণয়ন	দপ্তর/সংস্থার কর্মসম্পাদন ব্যবস্থাপনা টিম
১৭ মে ২০১৬	বার্ষিক কর্মসম্পাদন চুক্তির ১ম খসড়া অনুমোদন	দপ্তর/সংস্থার প্রধান
১৯ মে ২০১৬	বার্ষিক কর্মসম্পাদন চুক্তির চূড়ান্ত খসড়া সংশ্লিষ্ট মন্ত্রণালয়/বিভাগের সংশ্লিষ্ট অনুবিভাগে প্রেরণ	দপ্তর/সংস্থা
২২-২৬ মে ২০১৬	খসড়া বার্ষিক কর্মসম্পাদন চুক্তির ওপর ফলাবর্তক (feedback)/সুপারিশ প্রদান	মন্ত্রণালয়/বিভাগের সংশ্লিষ্ট অনুবিভাগ
০৫-০৯ জুন ২০১৬	দপ্তর/সংস্থার বার্ষিক কর্মসম্পাদন চুক্তির খসড়া পর্যালোচনা	কর্মসম্পাদন ব্যবস্থাপনা সংক্রান্ত বিশেষজ্ঞ পুল
১৬ জুন ২০১৬	কর্মসম্পাদন ব্যবস্থাপনা সংক্রান্ত বিশেষজ্ঞ পুলের সুপারিশ অন্তর্ভুক্ত করে বার্ষিক কর্মসম্পাদন চুক্তি চূড়ান্তকরণ	কর্মসম্পাদন ব্যবস্থাপনা টিম
২১-২৩ জুন ২০১৬	দপ্তর/সংস্থার বার্ষিক কর্মসম্পাদন চুক্তি অনুমোদন	মন্ত্রণালয়/বিভাগের বাজেট ব্যবস্থাপনা কমিটি
২৬-৩০ জুন ২০১৬	বার্ষিক কর্মসম্পাদন চুক্তি স্বাক্ষর	মন্ত্রণালয়/বিভাগ
৩০ জুন ২০১৬	দপ্তর/সংস্থার ওয়েবসাইটে বার্ষিক কর্মসম্পাদন চুক্তি প্রকাশ	মন্ত্রণালয়/বিভাগ ও দপ্তর/সংস্থা

সময়সীমা	বিষয়	বাস্তবায়নকারী কর্তৃপক্ষ
কর্মসম্পাদন পরিবীক্ষণ		
মধ্য-অক্টোবর ২০১৬	কর্মসম্পাদন লক্ষ্যমাত্রার বিপরীতে ত্রৈমাসিক অগ্রগতি পর্যালোচনা	দপ্তর/সংস্থার বাজেট ব্যবস্থাপনা কমিটি
মধ্য-জানুয়ারি ২০১৭		
মধ্য-এপ্রিল ২০১৭		
মধ্য-জুলাই ২০১৭		
কর্মসম্পাদন মূল্যায়ন		
১০ জুলাই ২০১৬	২০১৫-১৬ অর্থবছরের বার্ষিক কর্মসম্পাদন চুক্তির বার্ষিক মূল্যায়ন প্রতিবেদন প্রস্তুতকরণ	দপ্তর/সংস্থার কর্মসম্পাদন ব্যবস্থাপনা টিম
১৪ জুলাই ২০১৬	২০১৫-১৬ অর্থবছরের বার্ষিক কর্মসম্পাদন চুক্তির বার্ষিক মূল্যায়ন প্রতিবেদন মন্ত্রণালয়/বিভাগে দাখিল	দপ্তর/সংস্থা
২২ জানুয়ারি ২০১৭	২০১৬-১৭ অর্থবছরের অর্ধবার্ষিক মূল্যায়ন প্রতিবেদন প্রণয়ন	দপ্তর/সংস্থার কর্মসম্পাদন ব্যবস্থাপনা টিম
২৪ জানুয়ারি ২০১৭	২০১৬-১৭ অর্থবছরের অর্ধবার্ষিক মূল্যায়ন প্রতিবেদন সংশ্লিষ্ট মন্ত্রণালয়/বিভাগে দাখিল	দপ্তর/সংস্থা

৬: বার্ষিক কর্মসম্পাদন চুক্তি দাখিল প্রক্রিয়া

সকল বার্ষিক কর্মসম্পাদন চুক্তির ০৩ (তিন) কপি নির্ধারিত তারিখে স্ব স্ব মন্ত্রণালয়/বিভাগে প্রেরণ করতে হবে।

Appendix 5(B)



মাঠ পর্যায়ের কার্যালয়সমূহের বার্ষিক কর্মসম্পাদন চুক্তি সংক্রান্ত নীতিমালা ২০১৬-১৭

মন্ত্রিপরিষদ বিভাগ
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

* This policy document is not available in English

সূচিপত্র

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- ১ প্রেক্ষাপট
- ২ বার্ষিক কর্মসম্পাদন চুক্তির কাঠামো
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সেকশন ১: কৌশলগত উদ্দেশ্য, কার্যক্রম, অগ্রাধিকার, কর্মসম্পাদন সূচক এবং লক্ষ্যমাত্রাসমূহ
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- ৪ বার্ষিক কর্মসম্পাদন চুক্তি সম্পাদন প্রক্রিয়া ২০১৬-১৭
- ৫ বার্ষিক কর্মসম্পাদন চুক্তির সময়সূচি ২০১৬-১৭
- ৬ বার্ষিক কর্মসম্পাদন চুক্তি দাখিল প্রক্রিয়া
পরিশিষ্ট ক বার্ষিক : কর্মসম্পাদন চুক্তির কাঠামো
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মাঠ পর্যায়ের কার্যালয়সমূহের বার্ষিক কর্মসম্পাদন চুক্তি সংক্রান্ত নীতিমালা, ২০১৬-২০১৭

১. প্রেক্ষাপট

সরকার রূপকল্প ২০২১-এর যথাযথ বাস্তবায়নে দৃঢ়প্রতিজ্ঞ এবং সুশাসন সংহতকরণে সচেষ্ট। এ জন্য একটি কার্যকর, দক্ষ এবং গতিশীল প্রশাসনিক ব্যবস্থা একান্ত অপরিহার্য বলে সরকার মনে করে। এ পরিপ্রেক্ষিতে স্বচ্ছতা ও দায়বদ্ধতা বৃদ্ধি, সম্পদের যথাযথ ব্যবহার নিশ্চিতকরণ এবং প্রাতিষ্ঠানিক সক্ষমতা উন্নয়নের জন্য সরকারি দপ্তর/সংস্থাসমূহে কর্মসম্পাদন ব্যবস্থাপনা পদ্ধতি প্রবর্তনের সিদ্ধান্ত গ্রহণ করা হয়। ২০১৪-১৫ অর্থ-বছরে ৪৮টি মন্ত্রণালয়/বিভাগের সঙ্গে বার্ষিক কর্মসম্পাদন চুক্তি স্বাক্ষরের মাধ্যমে কর্মসম্পাদন ব্যবস্থাপনা পদ্ধতি চালু হয়। ২০১৫-১৬ অর্থ-বছরে ৪৮টি মন্ত্রণালয়/বিভাগ এবং আওতাধীন দপ্তর/সংস্থাসমূহের সঙ্গে বার্ষিক কর্মসম্পাদন চুক্তি স্বাক্ষরিত হয়েছে। ২০১৬-১৭ অর্থ-বছরে ৪৮টি মন্ত্রণালয়/বিভাগ, আওতাধীন দপ্তর/সংস্থাসমূহ ছাড়াও এ সকল দপ্তর/সংস্থার বিভাগীয়/আঞ্চলিক ও জেলা পর্যায়ের কার্যালয়সমূহের সঙ্গে বার্ষিক কর্মসম্পাদন চুক্তি স্বাক্ষরের সিদ্ধান্ত গ্রহণ করা হয়েছে। এই নীতিমালা অনুসরণ করে বিভাগীয়/আঞ্চলিক ও জেলা পর্যায়ের কার্যালয়সমূহ বার্ষিক কর্মসম্পাদন চুক্তি প্রণয়ন ও বাস্তবায়ন পরিবীক্ষণ করবে।

২. বিভাগীয়/আঞ্চলিক ও জেলা পর্যায়ের কার্যালয়সমূহের বার্ষিক কর্মসম্পাদন চুক্তির কাঠামো

বিভাগীয়/আঞ্চলিক ও জেলা পর্যায়ের কার্যালয়সমূহের বার্ষিক কর্মসম্পাদন চুক্তিতে সংশ্লিষ্ট কার্যালয়ের কর্মসম্পাদনের সার্বিক চিত্র, উপক্রমণিকা এবং নিম্নবর্ণিত সেকশন ও সংযোজনীসমূহ অন্তর্ভুক্ত থাকবে:

সেকশন ১: রূপকল্প (vision), অভিলক্ষ্য (mission), কৌশলগত উদ্দেশ্য (strategic objectives), কার্যাবলী (functions)

সেকশন ২: কৌশলগত উদ্দেশ্য, কার্যক্রম, কর্মসম্পাদন সূচক এবং লক্ষ্যমাত্রা

সংযোজনী ১ : শব্দ সংক্ষেপ (Acronyms)

সংযোজনী ২ : কার্যক্রম, কর্মসম্পাদন সূচকসমূহ, বাস্তবায়নকারী ইউনিট/শাখা এবং পরিমাপ পদ্ধতি

সংযোজনী ৩ : কর্মসম্পাদন লক্ষ্যমাত্রা অর্জনের ক্ষেত্রে অন্যান্য কার্যালয়সমূহের উপর নির্ভরশীলতা

বিভাগীয়/আঞ্চলিক ও জেলা পর্যায়ের কার্যালয়সমূহের বার্ষিক কর্মসম্পাদন চুক্তির একটি কাঠামো পরিশিষ্ট-ক এ সংযোজিত হল। উক্ত কাঠামো অনুসরণ করে সংশ্লিষ্ট কার্যালয় বার্ষিক কর্মসম্পাদন চুক্তির খসড়া প্রস্তুত করবে।

২.১ কর্মসম্পাদনের সার্বিক চিত্র

মাঠ পর্যায়ের কার্যালয়সমূহ মূলত সরাসরি নাগরিকদের সেবা প্রদান করে থাকে বিধায় তাদের বার্ষিক কর্মসম্পাদন চুক্তিতে কার্যক্রমের সার্বিক তথ্যাদিসহ সংক্ষেপে কার্যালয়ের কর্মসম্পাদনের একটি চিত্র তুলে ধরা প্রয়োজন। এ অংশে সংশ্লিষ্ট কার্যালয়ের গত ৩ বছরের প্রধান অর্জনসমূহ, কর্মসম্পাদনের ক্ষেত্রে যে সকল সমস্যা বা চ্যালেঞ্জ রয়েছে সেগুলি এবং ভবিষ্যতে এ কার্যালয় কী কী প্রধান লক্ষ্য অর্জন করতে চায় তার পরিকল্পনা সম্পর্কে সংক্ষেপে আলোকপাত করবে। তাছাড়া, ২০১৬-১৭ অর্থ বছরের সম্ভাব্য প্রধান অর্জনসমূহ-এ অংশে সংক্ষেপে বর্ণনা করতে হবে।

২.২ উপক্রমণিকা

বার্ষিক কর্মসম্পাদন চুক্তির শুরুতে একটি উপক্রমণিকা থাকবে, যাতে এই চুক্তির উদ্দেশ্য, পক্ষসমূহ এবং চুক্তিতে বর্ণিত ফলাফলসমূহ অর্জনের বিষয়ে তাদের সম্মত হওয়া সম্পর্কে উল্লেখ থাকবে।

২.৩ সেকশন ১: রূপকল্প (vision), অভিলক্ষ্য (mission), কৌশলগত উদ্দেশ্য (strategic objectives), এবং কার্যাবলি (functions)

মাঠ পর্যায়ের কার্যালয়সমূহ মূলত সংশ্লিষ্ট অধিদপ্তর/সংস্থার রূপকল্প (vision), অভিলক্ষ্য (mission), কৌশলগত উদ্দেশ্যসমূহ বাস্তবায়নের জন্য কাজ করে বিধায় সংশ্লিষ্ট অধিদপ্তর/সংস্থার রূপকল্প, অভিলক্ষ্য এবং কৌশলগত উদ্দেশ্যসমূহ মাঠ পর্যায়ের কার্যালয়ের বার্ষিক কর্মসম্পাদন চুক্তিতে উল্লেখ করতে হবে।

কার্যাবলি (functions)

মাঠ পর্যায়ের কার্যালয়সমূহ স্ব স্ব মন্ত্রণালয়/বিভাগ অথবা সংশ্লিষ্ট অধিদপ্তর/সংস্থা কর্তৃক তাদেরকে যে সকল কাজের দায়িত্ব প্রদান করা হয়েছে তার ভিত্তিতে তাদের কার্যাবলীর তালিকা প্রস্তুত করবে। কার্যাবলীর তালিকা সংক্ষিপ্ত হওয়া বাঞ্ছনীয়।

সেকশন ২: কৌশলগত উদ্দেশ্য, কার্যক্রম, কর্মসম্পাদন সূচক এবং লক্ষ্যমাত্রা

কলাম ১: কৌশলগত উদ্দেশ্যসমূহের তালিকা

মাঠ পর্যায়ের কার্যালয়সমূহের জন্য সেকশন ১-এ বর্ণিত কৌশলগত উদ্দেশ্য ছাড়াও কতিপয় আবশ্যিক কৌশলগত উদ্দেশ্য অন্তর্ভুক্ত থাকবে। মাঠ পর্যায়ের সংশ্লিষ্ট কার্যালয়ের কর্মসম্পাদন সর্বমোট ১০০ মানের ভিত্তিতে পরিমাপ করা হবে। এই ১০০ মানের মধ্যে মাঠ পর্যায়ের স্ব স্ব কার্যালয়ের কৌশলগত উদ্দেশ্যসমূহের জন্য ৮৫ নম্বর এবং আবশ্যিক কৌশলগত উদ্দেশ্যের বিপরীতে ১৫ নম্বর নির্ধারিত থাকবে। আবশ্যিক

কৌশলগত উদ্দেশ্যসমূহ সরকারি কর্মসম্পাদন ব্যবস্থাপনা সংক্রান্ত জাতীয় কমিটি কর্তৃক অনুমোদিত এবং মাঠ পর্যায়ের সকল কার্যালয়সমূহের জন্য সমভাবে প্রযোজ্য হবে। পরিশিষ্ট 'খ'-এ আবশ্যিক কৌশলগত উদ্দেশ্যের তালিকা সংযোজন করা হল।

কলাম ২: কৌশলগত উদ্দেশ্যসমূহের আপেক্ষিক মান বরাদ্দকরণ

কৌশলগত উদ্দেশ্যসমূহ গুরুত্ব ও তাৎপর্যের ক্রমানুসারে উল্লেখ করতে হবে। সেক্ষেত্রে অধিকতর গুরুত্বসম্পন্ন কৌশলগত উদ্দেশ্যের মান বেশি হবে এবং কম গুরুত্বপূর্ণ উদ্দেশ্যের মান কম হবে।

কলাম ৩: কৌশলগত উদ্দেশ্যসমূহ অর্জনের লক্ষ্যে কার্যক্রম সুনির্দিষ্টকরণ

প্রতিটি কৌশলগত উদ্দেশ্য পূরণের লক্ষ্যে উক্ত উদ্দেশ্যের বিপরীতে প্রয়োজনীয় কার্যক্রম নির্ধারণ করতে হবে। কখনো কখনো একটি কৌশলগত উদ্দেশ্যের বিপরীতে এক বা একাধিক কার্যক্রমও থাকতে পারে। উল্লেখ্য যে, বার্ষিক কর্মসম্পাদন চুক্তিতে বর্ণিত সকল কার্যক্রম বাজেট বরাদ্দের আলোকে গ্রহণ করতে হবে। উন্নয়ন অথবা অনুল্লয়ন বাজেটে সুনির্দিষ্ট বরাদ্দ নেই এমন কোন কার্যক্রম এতে অন্তর্ভুক্ত করা যাবে না।

কলাম ৪: কর্মসম্পাদন সূচকসমূহ এবং তার এককসমূহ সুনির্দিষ্টকরণ

কলাম ৩-এ বর্ণিত প্রতিটি কার্যক্রমের জন্য মাঠ পর্যায়ের কার্যালয়সমূহকে এক বা একাধিক কর্মসম্পাদন সূচক নির্ধারণ করতে হবে যা দ্বারা বছর শেষে উক্ত কার্যক্রম বাস্তবায়নের অগ্রগতি পরিমাপ করা হবে। কর্মসম্পাদন সূচকসমূহ নির্ধারণের ক্ষেত্রে যে কোন রকম দ্বৈততা পরিহার করতে হবে।

কলাম ৫: কর্মসম্পাদন সূচকের লক্ষ্যমাত্রা নির্ধারণ

কর্মসম্পাদন সূচকের লক্ষ্যমাত্রা পরিমাপের একক এই কলামে উল্লেখ করতে হবে। সূচকসমূহ পরিমাপের লক্ষ্যে যথাযথ একক ব্যবহার করতে হবে।

কলাম ৬: কর্মসম্পাদন সূচকের বিপরীতে মান (weight) বণ্টনকরণ

কোন কৌশলগত উদ্দেশ্যের বিপরীতে একাধিক কার্যক্রম থাকলে প্রতিটি কার্যক্রমের বাস্তবায়ন-অগ্রগতি মূল্যায়নের জন্য এক বা একাধিক কর্মসম্পাদন সূচক থাকবে এবং প্রতিটি কর্মসম্পাদন সূচকের একটি নির্ধারিত মান (weight) থাকবে। বিভিন্ন কর্মসম্পাদন সূচকের মান এমনভাবে নির্ধারণ করতে হবে যাতে সবগুলি সূচকের মোট মান সংশ্লিষ্ট কৌশলগত উদ্দেশ্যের বিপরীতে বরাদ্দকৃত মানের সমান হয়।

কলাম ৭ ও ৮: এই কলামদ্বয়ে যথাক্রমে ২০১৪-২০১৫ এবং ২০১৫-২০১৬ অর্থবছরের প্রকৃত অর্জন উল্লেখ করতে হবে।

কলাম ৯-১৩: এ কলামগুলোতে কর্মসম্পাদন সূচকের লক্ষ্যমাত্রা উল্লেখ থাকে। সুনির্দিষ্ট লক্ষ্যমাত্রা হচ্ছে কর্মসম্পাদন উন্নয়নের চালিকাশক্তি। সুতরাং লক্ষ্যমাত্রা একইসঙ্গে অর্জনযোগ্য এবং উচ্চাকাঙ্ক্ষী হওয়া উচিত। লক্ষ্যমাত্রাসমূহকে নিম্নরূপ ৫ দফা স্কেলে বিন্যস্ত করতে হবে:

অসাধারণ	অতি উত্তম	উত্তম	চলতি মান	চলতি মানের নিম্নে
১০০%	৯০%	৮০%	৭০%	৬০%

উল্লেখ্য, কোন কর্মসম্পাদন সূচকের লক্ষ্যমাত্রার বিপরীতে প্রকৃত অর্জন ৬০ এর নিচে হলে প্রাপ্ত মান ০ (শূণ্য) ধরা হবে।

বার্ষিক কর্মসম্পাদন চুক্তির লক্ষ্যমাত্রা নির্ধারণের ক্ষেত্রে সংশ্লিষ্ট কার্যালয়ের সঙ্গে সম্পৃক্ত টেকসই উন্নয়ন লক্ষ্যমাত্রা, ৭ম পঞ্চবার্ষিক পরিকল্পনা এবং মধ্য-মেয়াদী বাজেট কাঠামোয় বর্ণিত লক্ষ্যমাত্রায় বিধৃত বিষয়সমূহ বিবেচনা করা যেতে পারে। লক্ষ্যমাত্রা নির্ধারণের ক্ষেত্রে পূর্ববর্তী দুই বছরের প্রকৃত অর্জন ও অর্জনের প্রবৃদ্ধি, সংশ্লিষ্ট কার্যালয়ের সক্ষমতা এবং বিরাজমান বাস্তবতা বিবেচনা করতে হবে।

কলাম ১৪-১৫: ২০১৬-১৭ অর্থ-বছরের লক্ষ্যমাত্রার ভিত্তিতে ২০১৭-১৮ এবং ২০১৮-১৯ অর্থ-বছরের প্রক্ষেপিত লক্ষ্যমাত্রা ১৪ ও ১৫-এ উল্লেখ করতে হবে।

২.৬. শব্দসংক্ষেপ (Acronyms)

বার্ষিক কর্মসম্পাদন চুক্তিতে ব্যবহৃত বিভিন্ন শব্দসংক্ষেপের পূর্ণরূপ সংযোজনী ১-এ সন্নিবেশ করতে হবে।

২.৭. কর্মসম্পাদন সূচকসমূহ, বাস্তবায়নকারী কার্যালয়সমূহ এবং পরিমাপ পদ্ধতির বিবরণ

বার্ষিক কর্মসম্পাদন চুক্তির সংযোজনীয় ২-এ সেকশন ২-এ উল্লিখিত কর্মসম্পাদন সূচকসমূহ, বাস্তবায়নকারী কার্যালয়সমূহ এবং পরিমাপ পদ্ধতি ও উপাত্তসূত্র উল্লেখ করতে হবে।

২.৮. মাঠ পর্যায়ের অন্যান্য কার্যালয়ের নিকট সুনির্দিষ্ট চাহিদা

মাঠ পর্যায়ের অন্য কার্যালয়ের নিকট প্রত্যাশিত সহায়তা এবং কতিপয় নির্ধারিত কর্মসম্পাদন সূচকের সফলতার ক্ষেত্রে মাঠ পর্যায়ের অন্য কার্যালয়ের ওপর নির্ভরশীলতার বিষয়টি সংযোজনী ৩-এ উল্লেখ থাকবে। এই নির্ভরশীলতার মাত্রা সুনির্দিষ্ট ও পরিমাপযোগ্য হতে হবে। যেহেতু এই নির্ভরশীলতা মাঠ পর্যায়ের অন্য কার্যালয়ের কর্মসম্পাদনের সঙ্গে সম্পৃক্ত হবে সেহেতু নির্ভরশীলতার মাত্রা নির্বাচনের ক্ষেত্রে সতর্কতা অবলম্বন করা সমীচীন হবে।

৩. মূল্যায়ন পদ্ধতি

বৎসরান্তে সকল কার্যালয়ের ২০১৬-১৭ অর্থ-বছরের বার্ষিক কর্মসম্পাদন চুক্তিতে উল্লিখিত কার্যক্রমের বিপরীতে স্ব স্ব কার্যালয় বার্ষিক মূল্যায়ন প্রতিবেদন প্রস্তুতপূর্বক সংশ্লিষ্ট দপ্তর/সংস্থায় প্রেরণ করবে। নিয়ন্ত্রণকারী দপ্তর/সংস্থা কর্তৃক তা যাচাই করা হবে।

৪. বার্ষিক কর্মসম্পাদন চুক্তি সম্পাদন প্রক্রিয়া ২০১৬-১৭

৪.১ বার্ষিক কর্মসম্পাদন চুক্তি প্রণয়ন ও অনুমোদন

- মাঠ পর্যায়ের কার্যালয়সমূহ সংশ্লিষ্ট মন্ত্রণালয়/বিভাগের বার্ষিক কর্মসম্পাদন চুক্তি, দপ্তর/সংস্থার বার্ষিক কর্মসম্পাদন চুক্তি, রূপকল্প ২০২১ এসডিজি (SDG), ৭ম পঞ্চবার্ষিক পরিকল্পনা, মন্ত্রণালয়/বিভাগ কর্তৃক গৃহীত নীতিমালা/দলিল, এবং সময়ে সময়ে সরকার কর্তৃক ঘোষিত কর্মসূচির আলোকে কর্মসম্পাদন চুক্তি প্রণয়ন করবে।
- কৌশলগত উদ্দেশ্যের সঙ্গে মিল রেখে কাজিক্ত ফলাফল অর্জনের জন্য মাঠ পর্যায়ের কার্যালয়সমূহ সংশ্লিষ্ট অর্থ-বছরের বাজেট বরাদ্দের আলোকে বার্ষিক কর্মসম্পাদন চুক্তির কার্যক্রমসমূহ, কার্যক্রমের বিপরীতে কর্মসম্পাদন সূচকসমূহ এবং লক্ষ্যমাত্রাসমূহ নির্ধারণ করবে।
- সংশ্লিষ্ট কার্যালয়ের কর্মসম্পাদন ব্যবস্থাপনা টিম বার্ষিক কর্মসম্পাদন চুক্তির ১ম খসড়া প্রস্তুত করবে। প্রস্তুতকৃত বার্ষিক কর্মসম্পাদন চুক্তির খসড়া কার্যালয় প্রধান অনুমোদন করবেন এবং সংশ্লিষ্ট দপ্তর/সংস্থায় প্রেরণ করবেন।
- মাঠ পর্যায়ের কার্যালয় হতে প্রাপ্ত বার্ষিক কর্মসম্পাদন চুক্তিসমূহ সংশ্লিষ্ট দপ্তর/সংস্থার কর্মসম্পাদন ব্যবস্থাপনা সংক্রান্ত টিম কর্তৃক পর্যালোচনা করতে হবে।
- সংশ্লিষ্ট দপ্তর/সংস্থার কর্মসম্পাদন ব্যবস্থাপনা সংক্রান্ত টিমের সপারিশসমূহ অন্তর্ভুক্ত করে বার্ষিক কর্মসম্পাদন চুক্তি চূড়ান্ত করে সংশ্লিষ্ট দপ্তর/সংস্থায় প্রেরণ করতে হবে।
- সংশ্লিষ্ট দপ্তর/সংস্থার বাজেট ব্যবস্থাপনা কমিটি মাঠ পর্যায়ের কার্যালয়সমূহের বার্ষিক কর্মসম্পাদন চুক্তিসমূহ অনুমোদন করবে। অনুমোদিত বার্ষিক কর্মসম্পাদন চুক্তি নীতিমালায় বর্ণিত সময়ের মধ্যে স্বাক্ষর করতে হবে।
- স্বাক্ষরিত বার্ষিক কর্মসম্পাদন চুক্তি স্ব স্ব কার্যালয়ের ওয়েবসাইটে প্রকাশ করতে হবে।

৪.২. কর্মসম্পাদন পরিবীক্ষণ

- সংশ্লিষ্ট দপ্তর/সংস্থা মাঠ পর্যায়ের কার্যালয়সমূহের কর্মসম্পাদন লক্ষ্যমাত্রার বিপরীতে প্রকৃত অর্জন ত্রৈমাসিক ভিত্তিতে পরিবীক্ষণ করতে হবে। লক্ষ্যমাত্রার বিপরীতে অর্জন নিশ্চিত করতে সংশ্লিষ্ট দপ্তর/সংস্থা প্রয়োজনীয় নির্দেশনা প্রদান করবে।

৪ ৩. কর্মসম্পাদন মূল্যায়ন

- অর্থ-বছরের ছয় মাস অতিক্রান্ত হওয়ার পর মাঠ পর্যায়ের কার্যালয়সমূহ নির্ধারিত লক্ষ্যমাত্রার বিপরীতে ছয় মাসে অর্জিত ফলাফলসহ একটি অর্থ-বার্ষিক মূল্যায়ন প্রতিবেদন স্ব স্ব দপ্তর/সংস্থায় প্রেরণ করবে।
- বৎসরান্তে মাঠ পর্যায়ের প্রতিটি কার্যালয় নির্ধারিত লক্ষ্যমাত্রার বিপরীতে অর্জিত ফলাফল উল্লেখপূর্বক কর্মসম্পাদন মূল্যায়ন সংক্রান্ত বার্ষিক প্রতিবেদন প্রস্তুত করে নির্ধারিত তারিখের মধ্যে সংশ্লিষ্ট দপ্তর/সংস্থায় প্রেরণ করবে।
- সংশ্লিষ্ট দপ্তর/সংস্থা সমন্বিত মূল্যায়ন প্রতিবেদন সংশ্লিষ্ট মন্ত্রণালয়/বিভাগে দাখিল করবে।

৫. বার্ষিক কর্মসম্পাদন চুক্তির সময়সূচি ২০১৬-২০১৭

সময়সীমা	বিষয়	বাস্তবায়নকারী কর্তৃপক্ষ
ক. বার্ষিক কর্মসম্পাদন চুক্তি প্রণয়ন ও অনুমোদন		
২৮ এপ্রিল ২০১৬	বার্ষিক কর্মসম্পাদন চুক্তি প্রস্তুতের জন্য মাঠ পর্যায়ের অফিসসমূহকে অনুরোধ জ্ঞাপন	সংশ্লিষ্ট দপ্তর/সংস্থা
০৫ মে ২০১৬	বার্ষিক কর্মসম্পাদন চুক্তি সংক্রান্ত নীতিমালার ওপর মাঠ পর্যায়ের কর্মকর্তাদের প্রশিক্ষণ	সংশ্লিষ্ট দপ্তর/সংস্থা
১০ মে ২০১৬	বার্ষিক কর্মসম্পাদন চুক্তির ১ম খসড়া প্রস্তুতকরণ	সংশ্লিষ্ট কার্যালয়ের কর্মসম্পাদন ব্যবস্থাপনা টিম
১৭ মে ২০১৬	বার্ষিক কর্মসম্পাদন চুক্তির ১ম খসড়া অনুমোদন	সংশ্লিষ্ট কার্যালয়ের প্রধান
২২ মে ২০১৬	বার্ষিক কর্মসম্পাদন চুক্তির চূড়ান্ত খসড়া সংশ্লিষ্ট দপ্তর/সংস্থায় প্রেরণ	সংশ্লিষ্ট কার্যালয়
০৫-০৯ জুন ২০১৬	মাঠ পর্যায়ের অফিসসমূহের বার্ষিক কর্মসম্পাদন চুক্তির চূড়ান্ত খসড়া পর্যালোচনা	সংশ্লিষ্ট দপ্তর/সংস্থার কর্মসম্পাদন ব্যবস্থাপনা টিম
১৬ জুন ২০১৬	সংশ্লিষ্ট দপ্তর/সংস্থার কর্মসম্পাদন ব্যবস্থাপনা টিমের সুপারিশ অন্তর্ভুক্ত করে বার্ষিক কর্মসম্পাদন চুক্তি চূড়ান্তকরণ	সংশ্লিষ্ট কার্যালয়ের কর্মসম্পাদন ব্যবস্থাপনা টিম
২১-২৩ জুন ২০১৬	মাঠ পর্যায়ের অফিসসমূহের বার্ষিক কর্মসম্পাদন চুক্তি অনুমোদন	সংশ্লিষ্ট দপ্তর/সংস্থার বাজেট ব্যবস্থাপনা কমিটি
২৬-৩০ জুন ২০১৬	বার্ষিক কর্মসম্পাদন চুক্তি স্বাক্ষর	দপ্তর/সংস্থা
৩০ জুন ২০১৬	স্ব স্ব কার্যালয়ের ওয়েবসাইটে বার্ষিক কর্মসম্পাদন চুক্তি প্রকাশ	সংশ্লিষ্ট কার্যালয়
কর্মসম্পাদন পরিবীক্ষণ		
মধ্য-অক্টোবর ২০১৬	কর্মসম্পাদন লক্ষ্যমাত্রার বিপরীতে ত্রৈমাসিক অগ্রগতি পর্যালোচনা	সংশ্লিষ্ট দপ্তর/সংস্থা
মধ্য-জানুয়ারি ২০১৭		
মধ্য-এপ্রিল ২০১৭		
মধ্য-জুলাই ২০১৭		

সময়সীমা	বিষয়	বাস্তবায়নকারী কর্তৃপক্ষ
কর্মসম্পাদন মূল্যায়ন		
১৫ জানুয়ারি ২০১৭	২০১৬-১৭ অর্থ-বছরের অর্ধ-বার্ষিক মূল্যায়ন প্রতিবেদন প্রণয়ন	সংশ্লিষ্ট কার্যালয়ের কর্মসম্পাদন ব্যবস্থাপনা টিম
১৬ জানুয়ারি ২০১৭	২০১৬-১৭ অর্থ-বছরের অর্ধ-বার্ষিক মূল্যায়ন প্রতিবেদন সংশ্লিষ্ট দপ্তর/সংস্থায় প্রেরণ	সংশ্লিষ্ট কার্যালয়
২২ জানুয়ারি ২০১৭	২০১৬-১৭ অর্থ-বছরের অর্ধ-বার্ষিক মূল্যায়ন প্রতিবেদন পর্যালোচনা	সংশ্লিষ্ট দপ্তর/সংস্থা
২৬ জানুয়ারি ২০১৭	২০১৬-১৭ অর্থ-বছরের সমন্বিত মূল্যায়ন প্রতিবেদন সংশ্লিষ্ট মন্ত্রণালয়/বিভাগে দাখিল	সংশ্লিষ্ট দপ্তর/সংস্থা

৬. বার্ষিক কর্মসম্পাদন চুক্তি দাখিল প্রক্রিয়া

২০১৬-১৭ অর্থ-বছরের সকল বার্ষিক কর্মসম্পাদন চুক্তি এ সংক্রান্ত নীতিমালায় বর্ণিত সময়ের মধ্যে সংশ্লিষ্ট দপ্তর/সংস্থায় দাখিল করতে হবে।

Appendix 5(C)



গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

[দপ্তর/সংস্থা প্রধানের পদবী], [দপ্তর/সংস্থার নাম]

এবং

সচিব, কৃষি মন্ত্রণালয়ের এর মধ্যে স্বাক্ষরিত

বার্ষিক কর্মসম্পাদন চুক্তি

১ জুলাই ২০১৫- ৩০ জুন ২০১৬

* This policy document is not available in English

সূচিপত্র

কর্মসম্পাদনের সার্বিক চিত্র

উপক্রমণিকা

সেকশন ১: রূপকল্প (Vision), অভিলক্ষ্য (Mission), কৌশলগত উদ্দেশ্যসমূহ এবং কার্যাবলী

সেকশন ২: বিভিন্ন কার্যক্রমের চূড়ান্ত ফলাফল/প্রভাব (Outcome/Impact)

সেকশন ৩: কৌশলগত উদ্দেশ্য, অগ্রাধিকার, কার্যক্রম, কর্মসম্পাদন এবং লক্ষ্যমাত্রাসমূহ

সংযোজনী ১: শব্দসংক্ষেপ (Acronyms)

সংযোজনী ২: কর্মসম্পাদন সূচকসমূহ, বাস্তবায়নকারী উইং/অফিস/ইউনিট/প্রকল্প এবং পরিমাপ পদ্ধতি

সংযোজনী ৩: কর্মসম্পাদন লক্ষ্যমাত্রা অর্জনের ক্ষেত্রে অন্যান্য দপ্তর/সংস্থার উপর নির্ভরশীলতা

কর্মসম্পাদনের সার্বিক চিত্র
(Overview Performance)

সাম্প্রতিক অর্জন, চ্যালেঞ্জ এবং ভবিষ্যৎ পরিকল্পনা:

- সাম্প্রতিক বছরসমূহের (৩ বছর) প্রধান অর্জনসমূহ
- সমস্যা এবং চ্যালেঞ্জসমূহ
- ভবিষ্যৎ পরিকল্পনা
- ২০১৫ - ২০১৬ অর্থবছরের সম্ভাব্য প্রধান অর্জনসমূহ

উপক্রমণিকা (Preamble)

কৃষি মন্ত্রণালয়ের আওতাধীন [প্রতিষ্ঠানের নাম.....] এর [প্রতিষ্ঠানের প্রধানের পদবী.....]
এবং

গণপ্রজাতন্ত্রী বাংলাদেশ সরকারের কৃষি মন্ত্রণালয়ের দায়িত্বে নিয়োজিত মাননীয় মন্ত্রীর প্রতিনিধি হিসেবে সচিব,
কৃষি মন্ত্রণালয় এর মধ্যে ২০১৫ সালের.....মাসেরতারিখ
এই

বার্ষিক কর্মসম্পাদন চুক্তি স্বাক্ষরিত হল।

এই চুক্তিতে স্বাক্ষরকারী উভয়পক্ষ নিম্নলিখিত বিষয়সমূহে সম্মত হলেন:

সেকশন ১

মন্ত্রণালয়ের রূপকল্প (Vision), অভিলক্ষ্য (Mission), কৌশলগত উদ্দেশ্যসমূহ এবং কার্যাবলী

১.১ রূপকল্প (Vision):

১.২ অভিলক্ষ্য (Mission):

১.৩ কৌশলগত উদ্দেশ্যসমূহ (Strategic Objectives):

১.৪ কার্যাবলী (Functions):

সেকশন ২

মন্ত্রণালয়/বিভাগের বিভিন্ন কার্যক্রমের চূড়ান্ত ফলাফল/ প্রভাব (Outcome/Impact)

চূড়ান্ত ফলাফল/প্রভাব (Outcome/ Impact)	কর্মসম্পাদন সূচকসমূহ (Performance Indicators)	একক (Unit)	ভিত্তি বছর ২০১৩- ১৪	প্রকৃত* ২০১৪- ১৫	লক্ষ্যমাত্রা ২০১৫- ১৬	প্রক্ষেপণ (Projection)		নির্ধারিত লক্ষ্যমাত্রা অর্জনের ক্ষেত্রে যৌথভাবে দায়িত্বপ্রাপ্ত মন্ত্রণালয়/বিভাগ/ সংস্থাসমূহের নাম	উপাত্তসূত্র [Source(s) of data]
						২০১৬- ১৭	২০১৭ - ১৮		

*সাময়িক (Provisional) তথ্য

সেকশন ৩

কৌশলগত উদ্দেশ্য, অগ্রাধিকার, কার্যক্রম, কর্মসম্পাদন সূচক এবং লক্ষ্যমাত্রাসমূহ

কৌশলগত উদ্দেশ্য (Strategic Objectives)	কৌশলগত উদ্দেশ্যের মান (Weight of Strategic Objectives)	কার্যক্রম (Activities)	কর্মসম্পাদন সূচক (Performance Indicators)	একক (Unit)	কর্মসম্পাদন সূচকের মান (Weight of Performance Indicator)	ভিত্তি বছর (Base Year) ২০১৩-১৪	প্রকৃত অর্জন* ২০১৪ - ১৫	লক্ষ্যমাত্রা/নির্ণায়ক ২০১৫ - ১৬ (Target/Criteria value for FY 2015-16)					প্রক্ষেপণ (Projection) ২০১৬-১৭	প্রক্ষেপণ (Projection) ২০১৭-১৮	
								অসাধারণ	অতিউত্তম	উত্তম	চলতিমান	চলতিমানের নিম্নে			
								১০০%	৯০%	৮০%	৭০%	৬০%			
মন্ত্রণালয়/বিভাগের কৌশলগত উদ্দেশ্যসমূহ															
১। ফসলের উৎপাদন ও উৎপাদনশীলতা বৃদ্ধি		১.১ বিভিন্ন ফসলের উচ্চফলনশীল জাত ও প্রযুক্তি উদ্ভাবন	১.১.১ উদ্ভাবিত জাত	সংখ্যা											
			১.১.২ উদ্ভাবিত প্রযুক্তি	সংখ্যা											
		১.২ লবণাক্ততা, খরা এবং জলমগ্নতাস হিষ্টি জাত ও প্রযুক্তি উদ্ভাবন	১.২.১ উদ্ভাবিত জাত	সংখ্যা											
			১.২.২ উদ্ভাবিত প্রযুক্তি	সংখ্যা											
		১.৩ কৃষকের নিকট উদ্ভাবিত জাত এবং প্রযুক্তির সম্প্রসারণ			১.৩.১ প্রশিক্ষিত ব্যক্তি/কৃষক	সংখ্যা (লক্ষ)									
					১.৩.২ গবেষণা প্রতিষ্ঠান কর্তৃক প্রশিক্ষিত সম্প্রসারণ কর্মকর্তা/কর্মী	সংখ্যা									
১.৩.৩ স্থাপিত প্রদর্শনী	সংখ্যা (লক্ষ)														
১.৩.৪ আয়োজিত সেমিনার/ওয়ার্কশপ	সংখ্যা														
১.৩.৫ কৃষি সম্প্রসারণ অধিদপ্তরের নিকট হস্তান্তরিত জাত	সংখ্যা														

কৌশলগত উদ্দেশ্য (Strategic Objectives)	কৌশলগত উদ্দেশ্যের মান (Weight of Strategic Objectives)	কার্যক্রম (Activities)	কর্মসম্পাদন সূচক (Performance Indicators)	একক (Unit)	কর্মসম্পাদন সূচকের মান (Weight of Performance Indicator)	ভিত্তি বছর (Base Year) ২০১৩-১৪	প্রকৃত অর্জন* ২০১৪ - ১৫	লক্ষ্যমাত্রা/নির্ণায়ক ২০১৫ - ১৬ (Target/Criteria value for FY 2015-16)					প্রক্ষেপণ (Projection) ২০১৬-১৭	প্রক্ষেপণ (Projection) ২০১৭-১৮
								অসাধারণ	অতিউত্তম	উত্তম	চলতিমান	চলতিমানের নিম্নে		
								১০০%	৯০%	৮০%	৭০%	৬০%		
		৪.৩ কৃষি উদ্যোক্তাদের প্রযুক্তি ও কারিগরী সহায়তা প্রদান এবং এম্ব্রোসেসিং ও কৃষি ব্যবসায় বিনিয়োগ উৎসাহিত করা	৪.৩.১ সহায়তাপ্রাপ্ত কৃষি ব্যবসায় উদ্যোক্তাসহায়তা প্রাপ্ত কৃষি ব্যবসায় উদ্যোক্তা	সংখ্যা										

বাধ্যতামূলক কার্যক্রম ও কর্মসম্পাদন সূচক

কৌশলগত উদ্দেশ্য	কৌশলগত উদ্দেশ্যের মান	কার্যক্রম	কর্মসম্পাদন সূচক	একক	কর্মসম্পাদন সূচকের মান	ভিত্তি বছর ২০১৩-১৪	প্রকৃত অর্জন* ২০১৪ - ১৫	লক্ষ্যমাত্রা/নির্ণায়ক ২০১৫ - ১৬					প্রক্ষেপণ ২০১৬-১৭	প্রক্ষেপণ ২০১৭-১৮
								অসাধারণ	অতিউত্তম	উত্তম	চলতিমান	চলতিমানের নিম্নে		
								১০০%	৯০%	৮০%	৭০%	৬০%		
[১] উদ্ভাবন ও অভিযোগ প্রতিকারের মাধ্যমে সেবার মানোন্নয়ন	৫	[১.১] পরিবর্তিত ফরম্যাটে মন্ত্রণালয়/বিভাগ এবং মাঠ পর্যায়ের দপ্তরসমূহে সিটিজেন চার্টার প্রণয়ন	[১.১.১] পরিবর্তিত ফরম্যাটে মন্ত্রণালয়/বিভাগের সিটিজেন চার্টার ওয়েবসাইটে প্রকাশিত	তারিখ	১.০০			৩০/৯/২০১৫						
		[১.১.২] মাঠ পর্যায়ের দপ্তরসমূহে সিটিজেনস চার্টার প্রণীত ও প্রকাশিত	তারিখ	১.০০			৩০/১১/২০১৫							
		[১.২] অভিযোগ প্রতিকার ব্যবস্থা বাস্তবায়ন	[১.২.১] অভিযোগ নিষ্পত্তিকৃত	%	১.০০			৯০	৮০	৭০	৬০	৫০		
		[১.৩] সেবা প্রক্রিয়ায় উদ্ভাবন কার্যক্রম বাস্তবায়ন	[১.৩.১] মন্ত্রণালয়/বিভাগ অধিদপ্তর/সংস্থা সমূহে কমপক্ষে একটি করে অনলাইন সেবা চালুকৃত	তারিখ	১.০০			৩০/১১/২০১৫						

কৌশলগত উদ্দেশ্য	কৌশলগত উদ্দেশ্যের মান	কার্যক্রম	কর্মসম্পাদন সূচক	একক	কর্মসম্পাদন সূচকের মান	ভিত্তি বছর ২০১৩-১৪	প্রকৃত অর্জন* ২০১৪ - ১৫	লক্ষ্যমাত্রা/নির্ণায়ক ২০১৫ - ১৬					প্রক্ষেপণ ২০১৬-১৭	প্রক্ষেপণ ২০১৭-১৮	
								অসাধারণ	অতিউত্তম	উত্তম	চলতিমান	চলতিমানের নিম্নে			
															১০০%
			[১.৩.২] মন্ত্রণালয়/বিভাগ ও অধিদপ্তর/সংস্থাসমূহে কমপক্ষে একটি করে একটি করে সেবা প্রক্রিয়া সহজীকৃত	তারিখ	১.০০			৩০/০৯/২০১৫							
[২] দফতার সঙ্গে বার্ষিক কর্মসম্পাদন চুক্তি বাস্তবায়ন	৪	[২.১] খসড়া বার্ষিক কর্মসম্পাদন চুক্তি দাখিল	[২.১.১] প্রশিক্ষণ সমাপ্তির পর নির্ধারিত সময়সীমার মধ্যে খসড়া চুক্তি দাখিলকৃত	দিন	১.০০			৫	৪	৩	২	১			
		[২.২] বার্ষিক কর্মসম্পাদন মূল্যায়ন প্রতিবেদন দাখিল	[২.২.১] নির্ধারিত তারিখে মূল্যায়ন প্রতিবেদন দাখিলকৃত	তারিখ	১.০০			৩১/৮/২০১৫							
		[২.৩] বার্ষিক কর্মসম্পাদন চুক্তি বাস্তবায়ন পরিবীক্ষণ	[২.৩.১] অর্ধবার্ষিক ও ত্রৈমাসিক প্রতিবেদন দাখিল	সংখ্যা	১.০০				৫						
		[২.৪] আওতাধীন সংস্থার সংগে বার্ষিক কর্মসম্পাদন সংক্রান্ত সমঝোতা স্মারক স্বাক্ষর	[২.৪.১] সমঝোতা স্মারক স্বাক্ষরিত	তারিখ	১.০০				৩০/৯/২০১৫						
[৩] প্রশাসনিক সংস্কার ও নৈতিকতার উন্নয়ন	২	[৩.১] জাতীয় শুদ্ধাচার কৌশল বাস্তবায়ন	[৩.১.১] শুদ্ধাচার বাস্তবায়ন পরিবীক্ষণ কাঠামো (monitoring framework) প্রণীত	তারিখ	১.০০			৩০/১১/২০১৫							
			[৩.১.২] জুন/২০১৬ এর মধ্যে শুদ্ধাচার কর্মপরিকল্পনার কার্যক্রম বাস্তবায়িত	%	১.০০			১০০	৯০	৮০	৭০	৬০			

আমি, [পদবী], [প্রতিষ্ঠানের নাম] গণপ্রজাতন্ত্রী বাংলাদেশ সরকারের কৃষি মন্ত্রণালয়ের সচিবের নিকট অঙ্গীকার করছি যে এই চুক্তিতে বর্ণিত ফলাফল অর্জনে সচেষ্ট থাকব।

আমি, সচিব, কৃষি মন্ত্রণালয়, গণপ্রজাতন্ত্রী বাংলাদেশ সরকারের মাননীয় কৃষি মন্ত্রীর সচিব হিসেবে [প্রতিষ্ঠানের নাম], [প্রধানের পদবী] নিকট অঙ্গীকার করছি যে এই চুক্তিতে বর্ণিত ফলাফল অর্জনে প্রয়োজনীয় সহযোগিতা প্রদান করব।

স্বাক্ষরিত

.....
[পদবী]
[প্রতিষ্ঠানের নাম]

.....
তারিখ

.....
সচিব
কৃষি মন্ত্রণালয়

.....
তারিখ

সংযোজনী- ২: কর্মসম্পাদন সূচকসমূহ, বাস্তবায়নকারী মন্ত্রণালয়/বিভাগ/সংস্থা এবং পরিমাপ পদ্ধতি এর বিবরণ

ক্রমিক নম্বর	কর্মসম্পাদন সূচকসমূহ পরিমাপ	বিবরণ	বাস্তবায়নকারী ইউনিট/প্রকল্প	পদ্ধতি এবং উপাত্তসূত্র	সাধারণ মন্তব্য
১					
২					
৩					
৪					
৫					
৬					
৭					
৮					

সংযোজনী ৩: অন্যান্য প্রতিষ্ঠানের/.....বিভাগের/নিকট প্রত্যাশিত সুনির্দিষ্ট কর্মসম্পাদন সহায়তাসমূহ

প্রতিষ্ঠানের ধরন	প্রতিষ্ঠানের নাম	সংশ্লিষ্ট কর্মসম্পাদন সূচক	উক্ত প্রতিষ্ঠানের নিকট সংশ্লিষ্ট মন্ত্রণালয় বিভাগের /প্রত্যাশিত সহায়তা	প্রত্যাশার মৌজিকতা	উক্ত প্রতিষ্ঠানের নিকট প্রত্যাশার মাত্রা উল্লেখ করণ	প্রত্যাশা পূরণ না হলে সম্ভাব্য প্রভাব

APPENDIX 6

Annual Competence Assessment Form

Technical Area of Extension Assistance	Activities	No Competence	Partial Competence	Moderately competent	Mostly Competent	Competent (training not required)	Expert (Training not required)
1.1.Cereal Crop Production							
1.1 Boro Rice Production							
	a.Cultivation methods (land preparation, sowing/transplanting)						
	b. Fertilizer management						
	c. Disease identification and management						
	d. Insect pest identification and management						
	e. Post-harvest management						
1.2 Transplant Aman rice production							
1.3 Aus rice production							
1.4							
1.5							
2.Oilseed crops production							
2.1							
2.2							
2.3							
2.4							
3.Pulse crops production							

Technical Area of Extension Assistance	Activities	No Competence	Partial Competence	Moderately competent	Mostly Competent	Competent (training not required)	Expert (Training not required)
3.1							
3.2							
3.3							
3.4							
4. Root and Tuber crops production							
4.1							
4.2							
4.3							
4.4							
5. Vegetable production							
5.1							
5.2							
5.3							
5.4							
6. Spice crops production							
6.1							
6.2							
6.3							
6.4							
7. Fruit crops production							
7.1							
7.2							
7.3							
7.4							
8. Flower production							
8.1							
8.2							
8.3							
9. Sugarcane production							
9.1							
9.2							

Technical Area of Extension Assistance	Activities	No Competence	Partial Competence	Moderately competent	Mostly Competent	Competent (training not required)	Expert (Training not required)
9.3							
9.4							
10. Corps production in homestead							
10.1							
10.2							
10.3							
10.4							
11. Fiber crops production							
11.1							
11.2							
11.3							
11.4							
12. Other crops production							
12.1							
12.2							
12.3							
13. Nursery management							
13.1							
13.2							
14. Urban agriculture							
14.1							
14.2							
15. Post-harvest management of crops							
15.1							

*** Crops suitable to region are to be incorporated. Main and Cash crops will receive importance

APPENDIX 7(1)

TECHNOLOGY EXTENSION MONITORING SYSTEM (TEMS): TEMS FORM 1- PRIMARY MONITORING FORM

(Applicable for District/Upazila/Block, one form should be completed for every event separately)

District: Upazila: Block:

Crop: Season: Year:

Extension method or Event type: Target group of farmers:
Large (male)/Small(male)/Large(female) Small(female)/All/Others

Technology name: Funding source: Total cost of event

Venue of event: Date:

Duration of event (hour/day):

Was publicity adequate for the event?		Was timing appropriate?		Was venue appropriate?	
yes	no	yes	no	yes	no

(****) No. of farmers who attended the event:

Small (up to 1 hectare)			Large (over 1 hectare of land)			All farm sizes (Small + Large)		
Male	Female	Total	Male	Female	Total	Male	Female	Total

No of farmers who now think they know how to use the technology/ideas					No of farmers who indent to test the technology				
Male		Female		Total	Male		Female		Total
No.	%	No.	%	No.	%	No.	%	No.	%

Reason for poor event performance:

A) Reason for poor attendance (less than 75% of target):

.....
.....

B) Reason for poor no. of farmers who now think they know how to use the technology/ ideas (under 50% of total attending farmer):

C) Reason for poor number of farmers who intend to test the technology (under 25% of total attending farmer):

Result demonstration plot information:

AEZ no. **Land Type:** High/Medium High/Medium/medium low/Low

Demonstration farmer's category: (Large (male)/Small(male)/Large (female)/ Small(female)/ All/Others

Plot size: Demonstration Plot-sq. m, Control Plot: sq.m

Date of establishment: Demonstration Plot: Control Plot:

Was demo. site appropriate? Yes/No. If no, mention the reason:

Was demo. timing appropriate? Yes/No. If no, mention the reason:

A. How many farmers attended in the 1st field day

Small (up to 1 hectare)			Large (over 1 hectare of land)			All farm sizes (Small + Large)		
Male	Female	Total	Male	Female	Total	Male	Female	Total

B. How many farmers attended in the 2nd field day?

Small (up to 1 hectare)			Large (over 1 hectare of land)			All farm sizes (Small + Large)		
Male	Female	Total	Male	Female	Total	Male	Female	Total

C. How many 1st field day participants also attended in the 2nd field day?

Small (up to 1 hectare)			Large (over 1 hectare of land)			All farm sizes (Small + Large)		
Male	Female	Total	Male	Female	Total	Male	Female	Total

D. How many farmers actually participated in both 1st and 2nd field days? $\{(A + B) - C\}$

Small (up to 1 hectare)			Large (over 1 hectare of land)			All farm sizes (Small + Large)		
Male	Female	Total	Male	Female	Total	Male	Female	Total

Demonstration and Control Results:

Plot type	Input Cost (Tk.)	Yield (kg)	Value per Kg (Tk.)	Total value (Tk.)	Date of Harvest	Duration of rop
Demonstration Plot (A)	C	D	E	F		
Control Plot (B)						
Difference (A-B)						
Profit(+)/Loss (-) = (F-C)			Benefit –Cost Ratio = (F : C)			

Will the demonstration farmer use this technology next year? YES / No.

Mention reason if No :

Responsible Officer	Name	designation	Signature
Supervising Officer	Name	designation	Signature

APPENDIX 7(2)

TECHNOLOGY EXTENSION MONITORING SYSTEM (TEMS): TEMS FORM 2- TECHNOLOGY SUMMARY FORM(BASED ON TECHNOLOGY) (For summarizing relevant data of Region/District/Upazila level)

Name of Region/District/Upazila: Extension method or event type:

Crop: Season:

Year:

Technology name:

Total event number of this technology held at concerned Region/District/Upazila:

Total farmers who attended the events of this technology held at concerned Region/District/Upazila: (For Result Demonstration use section 'D'and for other event use(*****)ofTEMS Form1)

Small (up to 1 hectare)			Large(over 1 hectare of land)			All farm sizes (Small + Large)		
Male	Female	Total	Male	Female	Total	Male	Female	Total

No of farmers of all classes who now think they know how to use the technology/ideas

Male		Female		Total	
No.	Percentage (%)	No.	Percentage (%)	No.	Percentage (%)

No of participating farmers of all class who indent to test the technology

Male		Female		Total (Male + Female)	
No.	Percentage (%)	No.	Percentage (%)	No.	Percentage (%)

Reason for poor event performance:

A) Reason for Poor attendance (less than 75% of target):

.....

B) Reason for poor no. of farmers who now think they know how to use the technology/ideas (under 50% of total attending farmer):

C) Reason for poor number of farmers who intend to test the technology (under 25% of total attending farmer):

Cost effectiveness of extension outreach (Tk.):

Total cost of the event (add up cost for same technology as in form 1)	Cost per farmer Attending	Cost per farmer understanding (who think they know how to use the technology/ideas)	Cost per farmer intending to test the technology

Complete this section for Result Demonstration only

Average difference between Demonstration and Control:

Average Cost Difference	Average yield Difference	Average Total Value Difference	Average Profit/Loss	Cost – Benefit Ratio
(F)	(Q)	(H)	(I)= {(H) – (F)}	(J)= {(H): (F)}

Note: To complete column ‘F’ add up all results of same technology demonstration and control plots as in ‘C’ of TEMS Form 1 and divide by the number of TEMS form 1 or events of same technology. For column ‘G’ & ‘H’, follow the same procedure.

Demonstration farmer by group:

Male			Female			Grand Total
Large (over 1 hectare of land)	Small (up to 1 hectare)	Total	Large (over 1 hectare of land)	Small (up to 1 hectare)	Total	

Demonstration farmers who intend to use the technology next year:

Farmers’ number & %	Male			Female			Grand Total
	Large (over 1 hectare of land)	Small (up to 1 hectare)	Total	Large (over 1 hectare land)	Small (up to 1 hectare)	Total	
No. of Farmer							
Percentage (%)							

Comments & Recommendations:

Signature:

Designation:

Upazila/District/Region:

APPENDIX 7(3)

TECHNOLOGY EXTENSION MONITORING SYSTEM (TEMS): TEMS FORM 3– EXTENSION
EVENT TYPE SUMMARY FORM(BASED ON EVENTS)
(For summarizing relevant data of Region/District/Upazila level)

Name of Region/District/Upazila: Extension method or
Event type:

Crop: Season:

Year:.....

Total events of this type conducted at concerned Region/District/Upazila :

Total farmers who attended the event of this type held at concerned Region/District/Upazila:

Small (up to 1 hectare)			Large(over 1 hectare of land)			Total of All Classes (Small + Large)		
Male	Female	Total	Male	Female	Total	Male	Female	Total

Number of attending farmers of all classes who think they know how to use the technology/ideas

Male		Female		Total of all classes (Male+Female)	
Number	Percentage (%)	Number	Percentage (%)	Number	Percentage (%)

Number of participating farmers of all classes who indtent to test the ideas/technology

Male		Female		Total (Male + Female)	
Number	Percentage (%)	Number	Percentage (%)	Number	Percentage (%)

Cost Effectiveness of Extension Outreach/Event(Tk.):

Total cost of all event of this type (add up costs for same technology as in form 1)	Cos per contacted farmer	Cost per farmer who think they know how to use the technology/ ideas (understand)	Cost per farmer intending to test ideas/technology (Tk.)

Appropriateness of Publicity/Timing /Venue in Conducting Extension Event:

Events where publicity was adequate		Events where timing was appropriate		Events where venue was appropriate	
Number	Percentage (%)	Number	Percentage (%)	Number	Percentage (%)

Complete this section for Result/Method Demonstration only

Breakdown of Demonstration farmers by Target Group:

Large (over 1 hectare of land)		Small (up to 1 hectare)		Total Farmers (Large+Small)	
Number	Percentage (%)	Number	Percentage (%)	Number	Percentage (%)

Appropriateness of Timing /Site in Establishing Demonstration

Demonstrations with appropriate timing		Demonstrations with appropriate site	
Number	Percentage (%)	Number	Percentage (%)

Signature:

Designation:

Upazila/District/Region:

Date:

APPENDIX 7(4)

TECHNOLOGY EXTENSION MONITORING SYSTEM (TEMS): TEMS FORM 4– EXTENSION AREA SUMMARY FORM

(For summarizing relevant data of Region/District/Upazila level)

Name of Region/District/Upazila:

Season: Year:

Summary of Main Technologies Promoted within the Region/District/Upazila

Sl. No.	Name of technology	Number of events	Sl. No.	Name of technology	Number of events
1			6		
2			7		
3			8		
4			9		
5			10		

Summary of Main Events Held within the Region/District/Upazila:

Sl. No.	Event type	Number of events	No. of farmers attending	Farmers intending to test new ideas/technology	
				Number	Percentage (%)
1	Result Demonstrations & Field Days				
2	Method Demonstrations				
3	Farmers' Training Courses				
4	Motivational Tours				
5	Other		1		
	Total of all Event Types				

Number of Farmers Attending in all Events:

Small (up to 1 hectare)			Large (over 1 hectare of land)			Total of all classes (Small + Large)		
Male	Female	Total	Male	Female	Total	Male	Female	Total

Number of farmers within all classes who indent to test the ideas/technology

Male		Female		Total (Male + Female)	
Number	Percentage (%)	Number	Percentage (%)	Number	Percentage (%)

Total cost of the extension events	Cost per farmer attended	Costper farmer indenting to test the ideas/technology

Comments/Recommendations:

Signature, Designation, Date

APPENDIX 8(1)

IMPACT ASSESSMENT SYSTEM: IAS FORM 1

(To be used at Block level for collection of primary information)

..... Season., Date From To

Block Upazila District

1.0 Annual Performance Agreement Activities (APA):

1.1 Transfer of Developed Varieties and Technologies to Farmers:

1.1.1 No. of person/farmers trained: Male Female

1.1.2 Technology of the established demonstration: No.

Date of establishment, Production

Benefit -Cost Ratio, Framers who intend to adopt this technology next time?

Yes/No. If No. Why/reason

1.1.3 No. of disseminated new varieties and technologies

1.1.4 No. of field days/farmers rally arranged No. of motivational tour:

No. of farmers participated: Male, Female, Technology

Percentage of farmers intend to use the demonstrated technology next time

1.2 E-Extension Service on Agriculture:

1.2.1 No. of farmer group/farmers' club formed:

1.2.2 Online service at Union No. of service provided to farmer through Mobile

1.2.3 No. of farmer to whom service provided at FIAC/AICC/Union Digital Centre b SAAO:

Male, Female

1.3 Awareness building about Food-Value and Nutrition:

1.3.1 No. of person/farmers trained: Male, Female

1.4 Seed Production, Preservation and Distribution:

1.4.1 Foundation seed distributed (only for demonstration) m. ton

1.4.2 Distributed seeds of stress tolerant variety m. ton

1.4.3 Seed preserved following improved method at farmer level: Crop

Variety Quantity (m. ton)

1.4.4 No. of Agricultural equipment distributed under development assistance

No. purchased personally

- 1.5 Promotion of Organic Fertilizer, Green Manuring and Microbial Fertilizer
- 1.5.1 No. person/farmers trained: Male Female
- 1.5.2 No. of compost heap/vermicomposting Quantity used in the field m.ton
- 1.5.3 No. of established demonstration on green manuring Area of landha.
- 1.5.4 Use of microbial fertilizer- Crop..... Landha.

2.0 Other Activities:

- 2.1 Visited by SAAO to Farmers' group/CIG/SFG/IANEP farmer group/ISSRBP farmer group/IFM-FFS group/IPM-FFS group/village based organization/Club/Producer Organization:
No. No of group meeting attended..... No. of farmers attended in the meeting-Male Female
- 2.2 No. of individual farm visit: Large
Medium Small Marginal Tenant
- 2.3 Distribution of fruit saplings- No., Variety No of fruit garden, Area of land
- 2.4 Use of pheromone trap -No Land under Bio-Pesticidesha
- 2.5 Land under safe-vegetable cultivation ha. Land under Good Agricultural Practices (GAP) -.....ha.
- 2.6 Perching in the rice fieldha. Percentage
- 2.7

3.0 Area and Production under Crop Cultivated

Crop	Main varieties	Area (ha)	Production (m. ton)	Sample Crop Cutting done with BBS/DAE officials	
				No.	Assessed yield per hectare m. tn
Rice					
Wheat					
Maize					
Potato					
Vegetables					
Jute					
Pulses					
Oil crops					
Spices					
Fruit					
Others					

4.0 Pest Surveillance on Brown Plant Hoppe/New Pest/Diseases;
 Affected Area ha.

5.0 Natural Disaster, /.....,Pest Affected - Completely Damaged Cropped
 Area ha.,Production Loss M. Ton

6.0 Fertilizer Reserve by BCIC/BADC Dealers: Urea, TSP MoP m.ton

7.0 Statement of Partnership Activities with other Extension Service Providing Organization/
 Research Instructions:

8.0 Problem Found on Implementation of Agricultural Activities and
 Advice/Recommendations to resolve the Problems

9. Follow-up by Higher Authority: Name,
 Designation Mobile.....,
 e-mail.
 Name of Sub-Assistant Agricultural Officer.....
 Mobile.....
 Signature.

Name of Supervising Officer:,
 Designation Mobile,
 e-mail Remarks,
 Signature.

APPENDIX 8(2)

IMPACT ASSESSMENT SYSTEM: IAS FORM 2 (Information Summary Form for using at Upazila/District/Regional level)

..... Season, Date From To
Block Upazila, District
Region

1.0 Annual Performance Agreement Activities (APA):

1.1 Transfer of Developed Varieties and Technologies to Farmers:

1.1.1 No. of person/farmers trained: Male Female

1.1.2 Technology of the established demonstration: No.

Date of establishment, Production,

Benefit -Cost Ratio, Framers who intend to adopt this technology next time?

Yes/No. If No. Why/reason

1.1.3 No of disseminated new varieties....., and technologies

1.1.4 No. of field days/farmers rally arranged No. of motivational tour:

No. of farmers participated: Male, Female, Technology

Percentage of farmers intend to adopt the demonstrated technology next time

.....

1.2 E-Extension Service on Agriculture:

1.2.1 No. of farmer group/farmers' club formed:

1.2.2 Online service at Union No. of service provided to farmer through
Mobile

1.2.3 No. of farmers to whom service provided at FIAC/AICC/Union Digital Centre by SAAO:
Male, Female

1.3 Awareness building about Food-Value and Nutrition:

1.3.1 No. of person/farmers trained: Male, Female

1.4 Seed Production, Preservation and Distribution:

- 1.4.1 Foundation seed distributed (only for demonstration) m. ton
- 1.4.2 Distributed seeds of stress tolerant variety m. ton
- 1.4.3 Seed preserved following improved method at farmer level: Crop
Variety Quantity (m. ton)
- 1.4.4 No. of Agricultural equipment distributed under development assistance
No. purchased personally

1.5 Promotion of Organic Fertilizer, Green Manuring and Microbial Fertilizer

- 1.5.1 No. person/farmers trained: Male Female
- 1.5.2 No. of compost heap/vermicomposting Quantity used in the field m.ton
- 1.5.3 No. of established demonstration on green manuring Area of land ha.
- 1.5.4 Use of microbial fertilizer- Crop..... Land ha.

2.0 Other Activities:

- 2.1 Visited by SAAO to Farmers' group/CIG/SFG/IANEP farmer group/ISSRBP farmer group/IFM-FFS group/IPM-FFS group/village based organization/Club/Producer Organization:
No. No. of group meeting attended No. of farmers attended in the meeting-Male Female
- 2.2 No. of individual farm visit: Large Medium
Small Marginal Tenant
- 2.3 Distribution of fruit saplings- No., Variety
No. of fruit garden, Area of land
- 2.4 Use of pheromone trap -No. Land under Bio-Pesticides ha
- 2.5 Land under safe-vegetable cultivation ha.
Land under Good Agricultural Practices (GAP) -ha.
- 2.6 Perching in the rice field ha. Percentage
- 2.7

3.0 Area and Production under Crop Cultivated

Crop	Main varieties	Area (ha)	Production (m. ton)	Sample Crop Cutting done with BBS/DAE officials	
				No.	Assessed yield per hectare m. tn
Rice					
Wheat					
Maize					
Potato					
Vegetables					
Jute					
Pulses					
Oil crops					
Spices					
Fruit					
Others					

4.0 Pest Surveillance on Brown Plant Hoppe/New Pest/Diseases;
 Affected Area ha.

5.0 Natural Disaster, /....., Pest Affected - Completely Damaged
 Cropped Area ha., Production Loss M. Ton

6.0 Fertilizer Reserve by BCIC/BADC Dealers: Urea, TSP MoP m.ton

7.0 Statement of Partnership Activities with other Extension Service Providing Organization/
 Research Instructions:

8.0 Problem Found on Implementation of Agricultural Activities and
 Advice/Recommendations to resolve the Problems

9. Follow-up by Higher Authority: Name, Designation.....
 Mobile, e-mail

Name of Sub-Assistant Agricultural Officer Mobile
 Signature

Name of Supervising Officer:, Designation
 Mobile, e-mail

Remarks

Signature.

