

Draft for Comments Only

Agrarian Transition and Livelihoods Of the Rural Poor: Agriculture Extension Services



**Agrarian Transition and Livelihoods Of
the Rural Poor: Agriculture Extension Services**

Author

Jabin Tahmina Haque

Acknowledgement

The manuscript is an output of a research programme of Economic Policy Unit (EPU), undertaken by the Unnayan Onneshan- The Innovators, a center for research and action on development, based in Dhaka, Bangladesh. The report has immensely benefited from insights shared by people at grassroots from the villages of Comilla and Tangail during fieldwork. It has also gained from the contribution of officials from various government offices and NGOs and private organisations. The report has benefited from funding of Oxfam International, managed by Oxfam GB Bangladesh Programme.

© Copyright: **Unnayan Onneshan – The Innovators**

The content of this publication may be reproduced for non- commercial purposes with proper citation (please send output to the address mentioned below). Any other form of reproduction, storage in a retrieval system or transmission by any means for commercial purposes, requires permission from the Unnayan Onneshan – The Innovators.

Cover Concept and Design:

Printed by:

For orders and request please contact
Unnayan Onneshan – The Innovators

House: 19A, Road: 16 (New), Dhanmondi, Dhaka-1209, Bangladesh

Tel: + (880-2) 815 82 74, 911 06 36; Fax: + (880-2) 815 91 35

E-mail: info@unnayan.org; Web: www.unnayan.org

Contents

	Page
CHAPTER 01	6
<i>1.1. Introduction</i>	<i>6</i>
<i>1.2. Objective of The Study</i>	<i>6</i>
<i>1.3. Obstacles to Agricultural Extension Services</i>	<i>7</i>
<i>1.4. Scope of Agricultural Extension Policy</i>	<i>7</i>
CHAPTER 02	9
<i>2.1. Agricultural Extension Services in Bangladesh:</i>	<i>9</i>
<i>2.2. Overview of the Department of Agricultural Extension (DAE)</i>	<i>12</i>
<i>2.3. Agricultural Extension Workers:</i>	<i>16</i>
<i>2.4. NGOs Participation in extension services</i>	<i>16</i>
<i>2.5. Participation of the Private Sectors</i>	<i>19</i>
CHAPTER 03	19
<i>3.1. The Issues in the Agricultural Extension Services</i>	<i>19</i>
<i>3.1.1 Manpower</i>	<i>20</i>
<i>3.1.2 Lack of Involvement of the Farmers in decision making</i>	<i>21</i>
<i>3.1.3 Weak linkage between extension and research</i>	<i>21</i>
<i>3.1.4 Private Sector Involvement in Agricultural Extension Services</i>	<i>22</i>
<i>3.1.5 Women's Participation</i>	<i>22</i>
<i>3.1.6 ICT initiatives in Agriculture</i>	<i>23</i>
<i>3.2 Producers and service providers' view about extension services:</i>	<i>25</i>
CHAPTER 04	27
<i>4.1 Policy option</i>	<i>27</i>
<i>4.1.1 Efficient dissemination of farm management knowledge in order to raise crop production with efficient use of inputs</i>	<i>27</i>
<i>4.1.2 Increasing manpower of DAE</i>	<i>28</i>
<i>4.1.3 Increasing the efficiency of the Extension Workers</i>	<i>28</i>
<i>4.1.4 Farmers Participation in agricultural extension</i>	<i>29</i>
<i>4.1.5 Improving extension linkage with research</i>	<i>29</i>
<i>4.1.6 Reaching services to the women-introducing women extension workers</i>	<i>30</i>
<i>4.1.7 Strengthening participation of NGOs and private sector in extension services</i>	<i>31</i>
<i>4.1.8 Increased use of information and communication technologies in extension</i>	<i>32</i>
<i>4.2 Advocacy Agenda</i>	<i>33</i>

<i>4.3 Conclusion</i>	35
<i>References</i>	37
Annex (I-IV)	

Executive Summary

An agriculture based country, Bangladesh deserves high priority in this sector with a view to augment agricultural productivity resulting the increase of agricultural as well as economic growth. This straightly indicates the necessity of improvement in extension for agricultural services to all categories of farmers including small, marginal and landless. However, there are not numerous agricultural extension services in Bangladesh. The levels of inadequate and uncoordinated extension services at the grassroots level are tantamount to lower outputs and confusion at the expenses of the farmers. This calls for coordination and collaboration to augment effectiveness, keep away from duplication and wastage of scarce resources. This study seeks to examine the contemporary status of the national extension system and to develop a collaborate strategy to ensure an effective and efficient extension system.

In Bangladesh, the effectiveness and efficiency of the local agricultural extension system remains questionable till now. Department of Agriculture Extension (DAE), which is the principle extension agency of the Government, remains the largest public agency with the representative at national, divisional, district, Upazila and village levels. However, there is not sufficient information within DAE of how many farmers are actually reached and serviced by this organisation. This responsible public authority offer a blanket public good service and the producers are expected to avail themselves of the service. Large scale farmers perceive DAE as generally not competent enough to provide advisory services to the sub-sector. On the other hand, adoption of available technologies has not reached expected levels within the smallholdings.

Along with DAE, different types of stakeholders are involved in providing the extension services around the country. These include public research cum extension organisations, donor supported rural development program, non-government organisations, private agro-chemical input suppliers, public community development and agricultural extension service providers, etc. The services provided by these stakeholders are not enough in the context of farmers' benefit. Especially in the area of char, haor and river bank area, the farmers are mostly deprived of getting the facilities of extension services.

The research report is conducted to analyze the strength, weakness, opportunities and threats in agricultural extension services in Bangladesh. To see the real picture of extension services at the block level some field visits were arranged through which it was possible to get a clear depiction of accessibility of extension services to the farmers. The study would help to understand the current level of extension services and the shortcomings of agricultural extension services from the point of view of producers as well as from that group working on behalf of the producers. It would also facilitate to assess what farmers and other relevant actors deserve from the agricultural service departments.

The study has identified several issues that can be taken up for further reserach. Given more time and resources, more concentrated efforts could focus on

the identification of additional actors that could turn out to be more significant contributors in the local extension system. In addition, although an attempt is made to review both successful and abortive interventions in this study, the researcher's feeling is that not enough justice is done in this area. Therefore, there is a need to look further at cases representing successful intervention and those that are treated as failure.

One highlight of this study has been proposals of a number of collaboration strategies that could be used to improve co-ordination and linkages between various service providers. However, in practical terms, making sure that the recommended policies remain effective could be an uphill task. This calls for a thorough understanding of institutional politics. With a view to bringing a radical improvement in the agricultural growth, there is no alternative to upgrade the existing extension services in Bangladesh. It is keenly expected that the policy makers would give an urgent look on priority basis in this segment for the well being of the farmers' livelihoods.

Chapter 01

1.1. Introduction

The well being of the rural people worldwide is invariably linked to the performance of the agriculture sector and to the sector's ability to cope with the challenges that result from rising population pressure, changing demand for foods and agricultural products, resource scarcity, climate change and greater production uncertainty. Agricultural extension is an important development intervention for increasing the growth of the agriculture sector in the light of rising demand and supply side pressure and promoting sustainable, inclusive and pro-poor agriculture and hence economic development. Increasing efficiency of agricultural extension services is at present important when the agricultural land is decreasing under urbanization and platitude of the productivity and growth potential of the agriculture sector for development poses a severe threat for achieving food security and further reducing rural poverty.

The Agricultural Policy of the government aims to increase foreign exchange earnings through agricultural exports, introduce high value cash crops, improvement of the quality and availability of seeds, expand diversification of agricultural production and increase fish, livestock and forestry production, establish export-oriented agro processing industries and reduce environmental degradation and conserve forest resources.

As part of the government's strategy to attain these and other goals, it seeks to adopt macro-economic policies that enable farmers to better respond to market opportunities, provide the infrastructure and services that enable farmers to produce and market their products, encourage private sector involvement in the supply of inputs and technology, and adopt policies and regulations that will ensure the sustainability of a productive agricultural sector. Agricultural extension is a crucial component of rolling out the above agenda. Through the provision of information, advice, education and training, the New Agricultural Extension Policy (NAEP) of 1996 aims to facilitate the productive, efficient and sustainable use of land by and for farmers.

1.2. Objectives of the Study

The key purpose of Agricultural Extension Services (AES) is to put out latest technical know-how to farmers. Besides, the AESs also focuses on enhancing farmers' knowledge about crop techniques and helping them to increase productivity. This is made through providing training courses, farm visits, on farm trials, krishi melas (agricultural fair), advisory bulletins and the like. The main objective of the research is to have an overall understanding of the Agricultural Extension Services in Bangladesh. The specific objectives are -

- to gain an understanding of neo-liberal reform in extension services and their implications for the livelihoods and production of farmers;

- to understand the current level of services and the shortcomings of agricultural extension services from the point of view of producers as well as from the point of view of group working on behalf of producers ;
- to assess what farmers and other relevant actors want from the agricultural services departments;
- A synthesis of the relevant literature, the views of small farmers and assessment from relevant actors to inform potential policy base for improving design and implementation of extension services.

1.3. Obstacles to Agricultural Extension Services

The success of extension under decentralized conditions may be undermined by the structural-adjustment and induced budget cuts that have left government extension services at reduced strength. A weakened public sector extension service has produced an "institutional vacuum" that has left many farmers, and especially small-scale farmers, without access to government services. ¹This decentralized approach also goes hand in hand with a demand-driven strategy, a key component of the NAEPs policy, which is touted as being more responsive to farmers' needs. The success of demand driven services depends largely on the ability of farmers to access information on services, and the freedom to choose between service providers. It is also assumed that farmers have the knowledge, the time, and the capacity to voice their demands and that well functioning institution exists to hear these demands and relay them to service providers who will then act upon the demands.

Another laudable aim of the NAEP is to protect and promote environmental sustainability. However, the research related tasks of the extension services and the focus on the advancement of new technology suggest that these goals may be in conflict in ways that may carry serious threats to the sustainability of farmers' way of life. It will also look more closely at the role of the NAEP in the promotion and usage of agricultural research, which is carried out by partner research organizations such as the National Agricultural Research System (NARS) and the Bangladesh Agricultural Research Council (BARC).

1.4. Scope of Agricultural Extension Policy

In many countries, the problems of establishing or maintaining an effective agricultural extension service can be traced back to the lack of a realistic policy or an unstable policy framework for charting the mission of the extension system. Lack of agreement on the functions of extension, the clientele to be served, how extension will be financed, frequent changes in organizational structure and programme priorities, rapid turnover of the extension staff, and the proliferation and lack of coordination between different organizations that undertake extension work are some of the common problems that highlight the issue of extension policy. In

¹ L.Van Crowder,Decentralized Extension : Effects and Opportunities,September 1996, Extension, Education and Communication Service (SDRE); FAO Research, Extension and Training Division

addition, extension must be responsive to changes in the agricultural sector, the drive toward market reforms, and shrinking government budgets.

Extension is very much a part of what Rölöing refers to as the agricultural development mix. He notes that extension is a weak instrument when it stands alone, but it becomes powerful when combined with price incentives, input supply, credit, seed multiplication, and so forth (Rölöing in Jones, 1986, p. 110). The Global Consultation on Agricultural Extension concluded that agricultural extension policy should be consistent with and supportive of national agricultural development policy and goals (Swanson, 1990, p. 11). Agricultural extension policy is a part of national development policy in general and of agricultural and rural development policy in particular. Hence, agricultural extension is one of the policy instruments which governments can use to stimulate agricultural development (Van Den Van in Jones, 1986, p. 91).

Each country should have a comprehensive agricultural extension policy which provides for coordination with research, education, input supply, and credit and marketing systems, as well as some flexibility to reflect the dynamic nature of the agricultural sector. The policy should include the mission and goals for agricultural extension, the responsible agencies and personnel, the clientele to be served, the broad programmatic areas to be addressed, and other relevant guidelines. In developing national agricultural extension policies, representatives of all major groups of farmers should be directly involved and other relevant agricultural organizations should be consulted. "By pursuing a comprehensive policy," the Global Consultation noted, "countries can expect the extension system to contribute to increasing agricultural productivity and farm income, and to improving the quality of life of most rural farm households in pursuit of the general goal of growth with equity. In addition, such a policy should help maintain and conserve the natural resource base for sustained agricultural development and enhance food security" (Swanson, 1990, p. 11).

In Bangladesh, agriculture is regarded as one of the key part of the National Agriculture Policy. To ensure appropriate utilization of agricultural land and to increase the productivity, the agricultural extension services are required to be strengthened. The present agriculture extension set-up is sufficiently broad-based and bolstered by efficient manpower. There does not exist proper monitoring to check the supply and availability of seeds, fertilizers, irrigation, pesticides, etc to smooth the progress of the cultivation of different crops. For rapid extension of agricultural technologies the use of public mass media is necessary but this is not adequate here. Again every year allocation of ADP to local government is not used appropriately. There are lackings of strong visit to demonstrations farms and interaction with the farmers by the extension workers at an important time of the respective cropping season, facilitations of multiple extension approaches as agriculture fair, field day, farmers' rally, campaign, etc²

² National Agriculture Policy, Ministry of Agriculture, Government of Bangladesh

Chapter 02

2.1. Agricultural Extension Services in Bangladesh:

The history of agriculture extension in Bangladesh goes as long back to the ninetieth century. However, with the preface of green revolution in 1960s the role of agricultural extension service (AES) had become important due to proliferation of the knowledge of cultivation method of High Yielding Variety (HYV) rice used as input. The farmers were unaware about the cultivation method of modern varieties of rice. Thus the role of extension service had turned out to be important with the introduction of modern technology in agriculture. The present structure of agricultural extension service was reformed in early 80s with a view to motivating and helping farmers in adopting improved production practices to increase their productivity, meet national consumption requirements, maximize export and minimize import. It aimed to introduce farmers with the latest results of research and farm techniques in order to increase their productivity.

The extension services in Bangladesh are increasingly being influenced by the donors. The base of extension service is founded on Training and Visit (T&V) system³. This system was introduced during the 1970s and 1980s by the World Bank in collaboration with Food and Agricultural Organization (FAO).⁴ The system envisaged a rise in agriculture production through continuous dissemination of extension messages. It gave emphasis on improving farm and agriculture management practices, better land preparation, improved seed bed and nursery maintenance, use of good and quality seeds, need and use for seed treatment, timely field operation, proper space of plants, etc. The T&V system followed top down approach in order to introduce modern variety to the farmers. However, this system proved ineffective in Bangladesh by the Bank's own evaluations.⁵

The Training and Visit System (T&V) for agricultural extension was introduced to Bangladesh through the support of the World Bank Extension and Research Projects I and II (ERP), from 1977 to 1991. Prior to this, there was one Union Agricultural Assistant providing a service to 2- 3,000 farm families (1:2,500).

Edward Mallorie⁶ has depicted a sharp picture about the following key attributes of T&V system existed in Bangladesh which are as below:

(a) Make contact with farmers:

Block Supervisors (field extension agents) would work with 80 Contact Farmers directly in a block, who would extend messages to 10 other farmers each - giving a BS: Farmer ratio of 1:800. ERPII supported the recruitment of 2,270 extension agents to reach this ratio. Thus, at the end of 1991, there were 12,640 BS in Bangladesh. There was a focus on individual direct contact, and few other extension methods were used.

³ Training and Visit System was introduced by Daniel Banor, A World Bank Consultant.

⁴ Rehman Sobhan, 1995, Experience with Economic Reform –A Review of Bangladesh Development 1995, Center for Policy Dialogue, Dhaka

⁵ ibid

⁶ Edward Mallorie (Impact of IFAD supported agricultural projects on poverty and policy)

(b) Impact Points:

T&V comprised a doctrine of continuous training and regular field visits. Each fortnight, BSs would be taught 2-3 recommendations (impact points) to teach their Contact Farmers. A regular fortnightly schedule was to be maintained.

(c) Single Line of Command:

ERP supported the merging of six mono-crop extension agencies into one - DAE, and established a unified line of command.

The final evaluation of ERP concluded that T&V had produced results, but there were weaknesses:

(i) Farmers found only 30% of impact points useful - most were traditional recommendations that did little to meet farmer needs.

(ii) Diffusion was limited as 45-55% of Contact Farmers failed to pass messages to other farmers, though again, conversely, the same proportion of Contact Farmers did extend messages – a relatively good performance.

(iii) The block supervisors could not maintain the fixed visit schedule and generally met 20-25 farmers each fortnight, rather than the targeted 80.

(iv) Contact Farmers were, by vast majority, male and resource-rich (having more land than other farmers)

(v) Research-extension linkages were extremely weak, with DTCs and the NATCC largely nonfunctional. In 1993-1995 the government, with donor assistance, drew up its New Agricultural Extension Policy (NEAP). This aims to address some of the shortcomings of the T&V system, and place a much greater emphasis on poverty reduction and participation.

A numbers of government and non-government organizations are involved in agriculture extension services in Bangladesh. The Department of Agriculture Extension (DAE) is the frontier department of the Ministry of Agriculture which provides extension services to the farmers. This has large country wide network and operational staff to provide extension services to the farmers. There are organizations such as Bangladesh Rural Development Board (BRDB), Bangladesh Water Development Board (BWDB), Cotton Development Board (CDB), and Tea Board, having their own way of extension system to serve their target groups. Besides DAE other government agricultural organizations have their own extension services (**Annex - II**). Non-government organizations (NGOs) and private sectors also provide extension services to serve their own purposes.

The DAE primarily concentrate on crop sector extension services. Beside DAE, other specialized organizations like livestock, forest, and fisheries departments have their extension services. In the late 1970s the NGOs started to provide their own extension services in order to disseminate knowledge among their targeted people. In recent private sector companies like seed companies have started to provide extension services to the farmers in order to promote their products. So over the last three decades the agriculture sector has observed intervention of different quarters from the donors to NGOs as well as private sectors. This situation had been described by Abdullah et al (1995) as

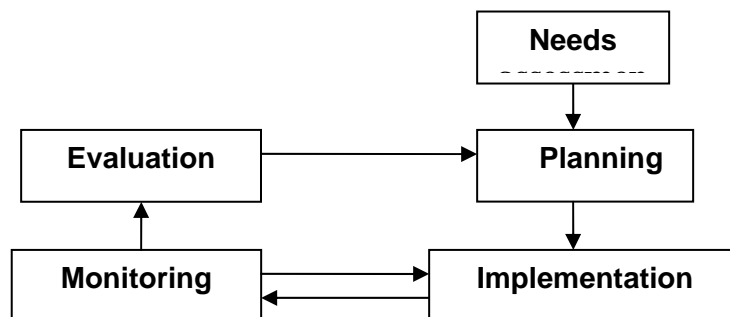
“Bangladesh agriculture has thus over nearly two decades been exposed to a rather weakly managed, eclectic, often conflicting, system of agriculture extensionwhich has failed to meet the needs of the farmers. This situation prevailed in spite of heavy investments of aid and expatriate technical advice which has made out agriculture into experimental station for imported ideas.”⁷

The T&V system was rigid and applied from top to down. The needs of the farmers were ignored and their participation was not ensured. Although there were provisions of field demonstration it was neglected and as a result messages did not reach to the farmers properly. Besides, the farmers were considered as a homogenous group; as a result the need of the poor and marginal farmers was overlooked. The linkages between research and development were not established properly. It takes long time to reach an innovation from research institution to the farmers at the field.⁸

Under the T&V system the extension services were targeted to the group of farmers instead of individuals. The DAE has ‘contact farmers’ to whom it transfers technology. However, these ‘contact farmers’ failed to create desired impact on other farmers. In most of the time DAE has targeted farmers who come from elite class of the rural Bangladesh. These well of farmers could not or reluctant to effectively transfer knowledge to the poor and marginal farmers.

Recently, DAE has introduced new extension method called Revised Extension Approach (REA) in order to increase the efficiency of the previous T&V approach.⁹ However, the new REA approach retained the primary elements of the T&V approach added with elements developed by local extension partners. This is largely demand driven and its success depends on client participations. It prefers to work within groups rather on individual basis in order to cut the cost of service.¹⁰

Figure 01: The Extension Planning Cycle



The revised extension approach consists of five principles – decentralization, targeting, responsiveness to farmer needs, the use of a range of extension methods, and working with groups. This new approach has ensured the partnership of the NGOs and private sectors. The REA is implanted through, at first, identifying

⁷ Ibid

⁸ Country Study: Bangladesh-Farm Management in Agriculture extension and advisory services.

⁹ Agricultural Extension Manual, Department of Agricultural Extension 1999, MoA

farmers' needs, then preparing local extension programs, then implantation of the programs and monitoring and, at last, evaluation of the outcome.¹⁰

Decentralization is the one of the basic features of the new REA. The design of the programme varies according to the regional needs. It is envisaged that farming systems, household economic activities, agro-ecological conditions, credit and marketing opportunities vary in different places. In order to ensure decentralization in the extension program responsibilities for the planning, budgeting, implementation, monitoring and evaluation of extension programs is given to staff at block, upazila, district and regional levels. The upazila is the basic unit for planning, implementing, monitoring and evaluating local extension programs.¹⁰

2.2. Overview of the Department of Agriculture Extension (DAE)

Agricultural extension in Bangladesh has followed an evolutionary process of experimentation with components of several recognized extension approaches. The Training and Visit (T&V) Approach, which was established in the late seventies, had formed the backbone of DAE's extension practices. However, to increase its effectiveness and efficiency of extension service, DAE has sought to develop its own more significant approach, which will specifically hold the Mission of DAE within the context of the New Agricultural Extension Policy.

As an agency within the Ministry of Agriculture, the overall purpose of the Department of Agricultural Extension (DAE) is the effective implementation of government policy. There are relevant policies precise to the agricultural sector as well as cross cutting commitments such as those concerning environmental management, social development or gender. DAE's revised extension approach (REA) specifically embraces the department's mission within the context of the New Agricultural Extension Policy (NAEP). The principles of the NAEP have been incorporated into the DAE Mission Statement and the Revised Extension Approach (REA). They provide a framework for this Strategic Plan which presents a structure of objectives designed to further implementation of the NAEP.¹⁰

The present Department of Agriculture Extension was established in 1982 integrating the following organizations:

- Directorate of Agriculture (Extension and Management)
- Directorate of Agriculture (Jute production)
- Directorate of Plant Protection
- Horticulture Development Board
- Central Extension Resources Development Institute
- Tobacco Development Board

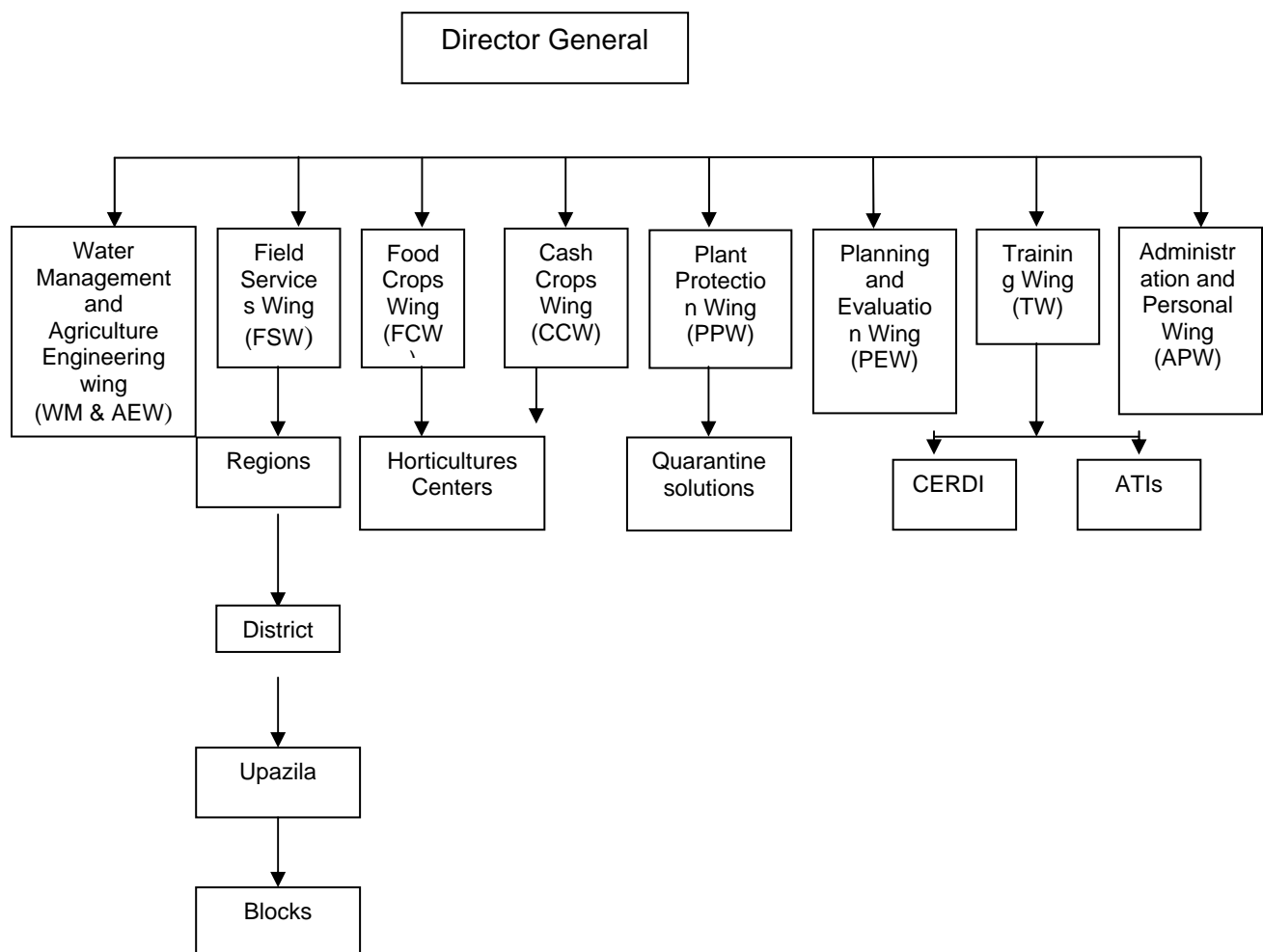
At present the DAE is comprised with eight wings (**figure – 02**)¹¹. The largest wing of DAE is the field service wing which provides field level extension services to the farmers. Its training wing provides training to its large number of staff. The food crop

¹⁰ Country Paper prepared for Regional Workshop on Operationalizing Reforms in Agricultural Extension in South Asia, to be held on 6 -8 February, 2003 at New Delhi, India

¹¹ Department of agriculture extension, ministry of agriculture, Bangladesh

wing provides support to the farmers' knowledge, information about food crop. Besides, it has cash crop wing for development of cash crop production and income generations. The plant protection wing is dedicated to monitor the condition of outbreak of diseases of plants and to take remedial measures. It also controls the pesticide production, sales, and supply through its pesticide administration. For planning and evaluation it has Planning and Evaluation wing which externally monitor the works of the extension services at the field level. The focus of the DAE primarily goes to crops –food grains, pulse, oilseeds, fruits and vegetables. Livestock, sugarcane, tea, cotton, sericulture have their own organizations. The major activities and duties of the Department of Agriculture Extensions are to –

Figure – 02: Organizational structure of the Department of Agriculture Extension (DAE)



Source: DAE, Bangladesh

- motivate and help farmers in adopting improved production practices to increase their productivity
- Meet national consumption requirements,
- maximize export and minimize import;

- provide farmers with the latest results of research and farm techniques for their socio-economic betterment;
- help develop self-reliance and cooperation by training local leadership for organized group action;
- provide channels for service and information from the MoA and its different departments to the farm people and in turn relay the problems and needs of the farmers that require national level intervention;
- provide an effective linkage between the various research institutes and the farmers so that along with the flow of technology to the farmers, the farmer's level problems are also brought to the relevant research institutes for investigation and solution, and
- serve as liaison agency between farmers and other organizations, both public and private concerned with over-all socioeconomic development of rural people, including the credit giving and input supply agencies.¹²

The major modes of extension method involved group extension, individual methods and mass media and audio visual aid. Group extension was introduced in 1960s by the directorate of agriculture under Comilla model introduced by Bangladesh Academy for Rural Development (BARD). The group extension method includes demonstrations, field visits, group meetings, motivations tours, trainings, and farmers' field school. **(Annex – III)**

Mass media and audio visual programs are essential part of the extension program. The Agriculture Information Service (AIS) mainly responsible for this program that works under the direct control of Ministry of agriculture (MoA).¹³ The Agriculture Information services undertake wide range of methods in order to disseminate information. They have programs in electronic media as well as printed material for dissemination among the farmers. During the visit at AIS office, it had been found that the team working there performed several works for designing booklet, folder, leaflet and poster with a view to disseminating agricultural technology towards farming community using print and electronic media. Citizen charter by AIS introducing updated technology use in agriculture was found in Upazila Agriculture Office of Chandina and Delduar.

In electronic media they have both radio and television programs. In radio there are daily 25 minutes radio programs on Bangladesh Betar (national radio channel of Bangladesh). Besides, it broadcast a total of 270 minutes radio program through Bangladesh Betar's 10 local stations. In the television the AIS broadcast a 25 minute program on agriculture issues named *Mati O Manush*. It is being broadcast in evening for two days a week and in afternoon for two days. *Krishi-Dibanishi* is another program of Bangladesh Television that is watched by the farmers. The farmers of the villages of Nischintpur told about their getting facilities from this program. They first came to know about the leaf chart through this program.

¹² Department of Agriculture Extension, MoA, Bangladesh

¹³ Ibid

Table 02: Media Services by Agricultural Information Services of the Ministry of Agriculture

Media	Publication/ Program	Duration
Print	<ul style="list-style-type: none"> • <i>Krishi Kotha</i> • <i>Samprasaron Barta</i> • Leaflet • Booklet • Folder • Poster 	<ul style="list-style-type: none"> • Bimonthly
Radio	• National Program	• daily 25 minutes
	• Regional Program (from 10 stations in the evening)	• weekly 270 minutes
Television	<ul style="list-style-type: none"> • Bangladesh Television : <i>Mati O Manus</i> Weekly Time Every Sunday & Wednesday 7.05 to 7.30 PM for 25 minute Every Saturday, Monday, Tuesday from 1:05 AM to 1:30PM for 25 minutes • BTV : <i>Krishi Dibanishi</i> 	<ul style="list-style-type: none"> • Weekly 100 minutes, four days a week

Source: AIS, MoA¹⁴

The AIS publish two bimonthly regular publications namely *Krishi Kotha* (Agriculture Tales) and *Samprasaron Barta* (Extension News). Besides, it publishes leaflet, booklet, folders and posters occasionally on contemporary agricultural issues that are disseminated through the agricultural extension offices and block supervisors. In addition to the regular responsibility the DAE takes other initiatives also. These include soil preparation like compost preparation, use of bio-fertilizers, establishment of upazila level soil testing laboratory, tree plantation, dissemination of environment friendly technologies, seed exchange program among the farmers, promotion of export oriented high value crops etc.¹⁵

The largest service the DAE provides is the field level extension service and knowledge transfers to the farmers. The lowest operating area of DAE is called block which is being supervised by a block supervisor. He is responsible for regular contact with the farmers at the field. The DAE has 12,832 extension workers and 2000 extension personnel throughout the country who are engaged in providing extension services to the farmers.¹⁵

Training Wing largely conducts human Resources Development activity in DAE. Identification and dissemination of appropriate technology needs skilled manpower together with an open eye of the farmers towards technological advancement. Training wing generally involved in execution of Master Training Plans for skill development of DAE Officials, field level extension workers as well as farmers. The

¹⁴ <http://www.ais.gov.bd/ais/index.php?Page=12>

¹⁵ DAE, Ministry of Agriculture, Bangladesh

planning and evaluation wing regularly evaluates the ongoing programs and projects and annual development program in order to achieve the objectives of the DAE.¹⁵

2.3. Agricultural Extension Workers:

To provide high quality agricultural extension services, the DAE employs 12,640 agricultural extension workers (AEWs) at the field level. According to the DAE guidelines, each AEW has to provide agricultural extension services to around 1,200 farm households in his/her service *upazila* (sub-district). Due to the extensive coverage of each AEW, the success in agricultural extension services largely depends on extension worker's extension skills. As a matter of fact, however, only 13.93% of the agriculture extension workers are credible as communicator of technical advice to farmers. Furthermore, 35% of farm information loss has been found to take place in the transit between AEWs and farmers although AEWs regularly attend off-the-job training (hereinafter Off- JT). Due to lack of extension skills extension workers are not able to provide satisfactory extension services to farmers. Lack of the extension workers extension skills results in less adoption of improved rice variety by the farmers.¹⁶

2.4. NGOs Participation in extension services

The farm management and agriculture extension services in 'broad agriculture', as far as the farmers of Bangladesh are concerned, are provided by the public sector organisations, the NGO sector and the private sector. Besides Government agencies, Non-government Organizations (NGOs) and private sectors are engaged in providing extension services to their targeted groups. As NGOs work with the poor and marginal and landless people, they concentrate on small scale farm management like small scale vegetable crops, poultry fisheries, agro-forestry/ social forestry. However, over the years focus of NGOs has changed, the large NGOs are involved in providing extension services, hybrid rice and maize and other major crops as they have also engaged themselves involved in hybrid seed business.¹⁷

About 400 NGOs are directly involved in agricultural activities and thereby extension services. The NGO Sector is increasingly making its mark in agricultural and farm management and extension in Bangladesh. Initially NGOs were associated with the agriculture extension and small farm management with especially small scale vegetable crops, poultry, fisheries, agro-forestry /social forestry. Subsequently, NGOs are moving towards extension and farm advisory activities on some of the major crops like hybrid rice, maize, etc. More than one hundred local (coverage wise), national and international NGOs are involved in agricultural extension and advisory activities of some sorts. The following are worth mentioning:

¹⁶ Mohammad Jiaul Haque and Koichi Usami Journal of Social Sciences 4 (1): 21-28, 2008
ISSN 1549-3652 © 2008 Science Publications

¹⁷ UBINIG, 2008, Hybrid Boro Rice Profit Versus Yield and Ecological Concerns, Dhaka

BRAC, PROSHIKA, CARE-Bangladesh, Mennonite Central Committee (MCC), Helen Keller International, Christian Commission for Development Bangladesh (CCDB), Rangpur-Dinajpur Rural Services (RDRS), Friends in Village Development Bangladesh (FIVDB), Gono Unnayan Prochestra, Save the Children Funds-USA (SCF-USA), Gono-Kalyan Trust (GKT), Voluntary Paribar Kalyan Association (VPKA), Karmajibi Kalyan Society (KKS), World View International Foundation (WIF), Development Service Centre of Bangladesh Mission ,Upakar,Jogoroni Chakra,Thangamara Mohila Shobuj Sangho (TMSS).

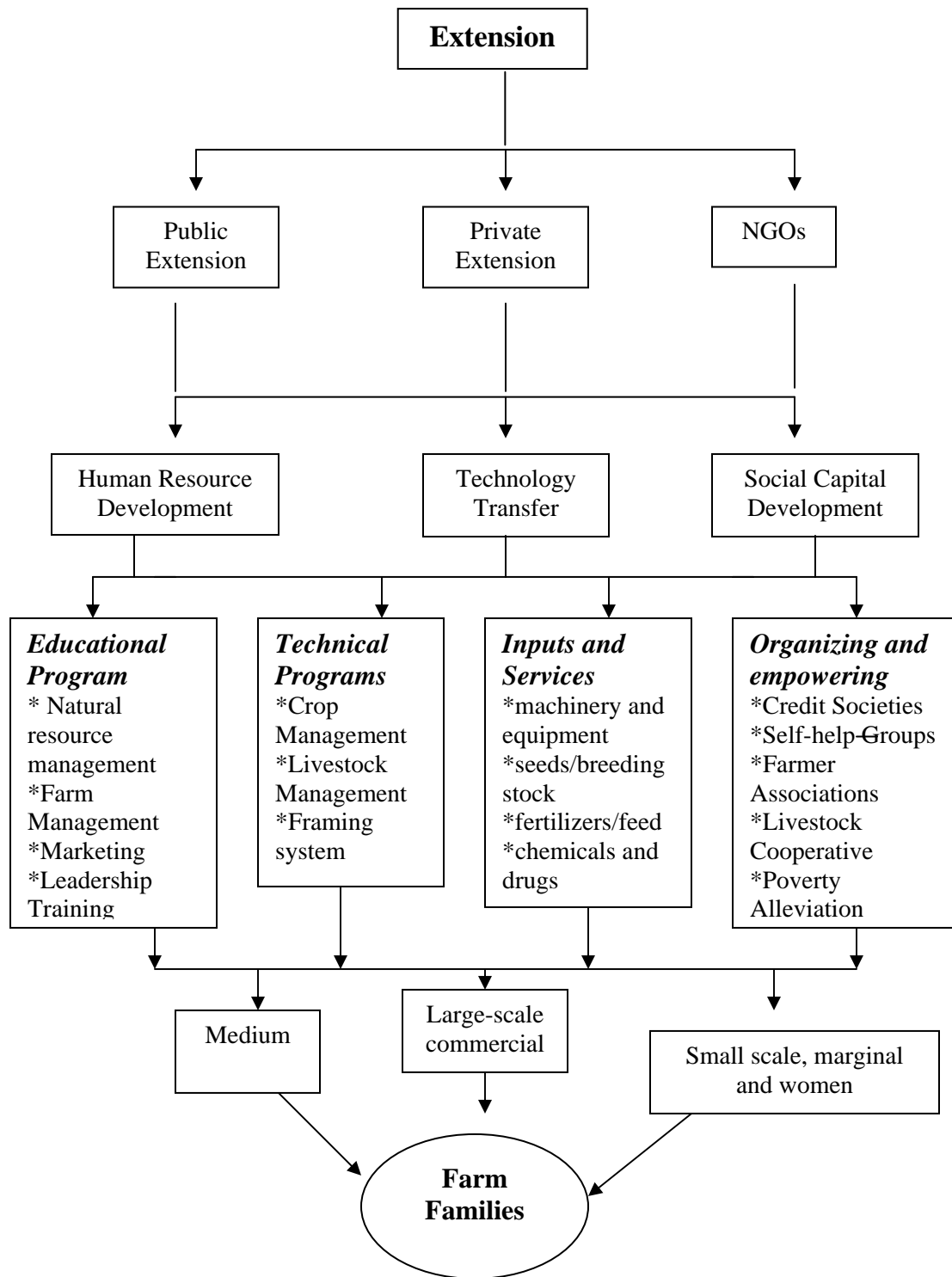
NGOs form groups of target farmers, mostly of landless and marginal categories and in many cases they focus on women. Services provided by NGOs usually include credits, inputs supply and training. In some areas, NGOs target categories of farmers that practically fall out of the public sector extension services. The public sector extension and advisory agencies have relatively narrow focus (i.e. DAE focuses on crops, DLS focuses on livestock, DoF on fisheries, etc), NGOs, on the other hand, have become attuned to providing multiple services to their beneficiaries. Most of the NGOs are, however, handicapped by the limited land area of their beneficiaries (landless and marginal farmers).

During the field visit in Tangail, it has been seen that farmers are often dependent on the local NGO as they do not get access of the government extension services. The officer responsible for communication with the local farmers was absent. Farmer hardly found him to share their problems. In Chandina thana of Comilla, we made a discussion with BRAC official and came to know that BRAC is currently providing training, technical support, inputs, and access to BRAC's microfinance to invest in farming who have less than 05 acres of lands and agriculture extension services of BRAC is mainly delivered by two components – one is vegetable cultivation which targets mainly poor rural women and another is crop cultivation to increase the productivity of agriculture.

As stated by **figure- 03**, the main task of a public extension system should be human resource development that can equip medium and small scale farmers to solve their own problems and respond to new opportunities. In addition, public extension should concentrate its resources and expertise on those educational and technical programs where it can complement the technology transfer role of private firms and the human and social capital development role of NGOs. Public institution should work on those problems that will result in public benefits (Umail, Feder and Haan, 1992).These public goods include all areas of natural field management such as integrated pest management (IPM),integrated soil nutrient management, more efficient irrigation techniques, water harvesting within rain fed areas, agro-forestry and other soil and water conservation practices .In addition extension can carry out extension programs on post-harvest handling and storage, food safety, as well as farm management and marketing skills that will help increase farm income through the intensification and/or diversification of farming system. Moreover in the absence of the NGOs public extension could be more instrumental in assisting small-scale farmers to organise into farmers' associations. Several co-operative type organisations such as producer associations have proven to be effective in helping

small scale farmers take advantage of new market opportunity and by coordinating farmers' input and marketing needs to create economies of scale.¹⁸

Figure - 03: Framework depicting public, private and NGO partnership



Source: Burton E.Swanson & Mohammad M.Samy, Volume9, No 01 (Spring2002)

¹⁸ Journal of International Agriculture and Extension Education, Volume9, No1, 2002

2.5. Participation of the Private Sectors

After 1993, the private sector was allowed entry into agriculture sector by giving permission carrying on business of agricultural inputs and irrigation equipment. The private companies in agricultural business include seed companies, fertilizer dealers, pesticide dealers and companies involved in contract farming. Besides there are small plant nurseries run by individuals. These private sector farms are involved in extension services to meet their targets and fulfill their clients' demand.¹⁹ The private sector agencies related to agriculture extension and advisory services include the burgeoning seed companies, fertilizer dealers and pesticide dealers. Also included in the private sector are small plant nurseries, often owned by individual farmers that have sprung up throughout the country during the decades of '80s and '90s. Many of these nurseries have, however, been established with NGO assistance.

The major production inputs such as seed, fertilizer and irrigation had been the responsibility of the Bangladesh Agricultural Development Corporation (BADC). Out of these, the irrigation and fertilizer distribution were given to the private sector towards the end of the 1980s, with only seed left to BADC to deal with.¹⁹ As a result of privatization various problems arose in the fertilizer distribution system as uneven distribution of fertilizers to the farmers all over the country, unavailability of required fertilizer in proper time of the crop season, high price of fertilizer, delivering of low quality and sub-standard fertilizer etc. which turned the government again to take decision to involve and give responsibility to BADC to import and distribution of fertilizer in the country.²⁰

Chapter 03

3.1. The Issues in the Agricultural Extension Services

Since the 1960s the extension services have been dominated by the donors. This donor driven approach has resulted in increase of HYV rice and other crops substituting local varieties, and increase in the use of chemical fertilizers and pesticides. The use of fertilizers in Bangladesh has increased to 1,481 thousand metric tons in 2006-07 from 350 metric tons in 1980-81 whereas during this period total available land for cultivation has decreased. The use of pesticide has also increased to about 10,300 metric ton in 2003 from 4,809.22 in 1989. (**Annex- IV**)

This top down approach of extension services has failed to meet the targeted farmers and assess their need properly. The marginal and poor farmers failed to access to resources and information. Under T&V system direct support of the

¹⁹ http://www.fao.org/ag/ags/subjects/en/farmMgmt/pdf/farm_extension/fm_in_agricultrual_extension/fm_exte_sion_bangladesh.pdf,

²⁰ National Workshop and Agriculture Fair, 25-26 February 2009, Bangladesh Agriculture Development Corporation.

extension services had gone to the 'contact farmers' who were large and well off.²¹ They had better access to resources and information. Thus the marginal farmers fell behind and were unable to receive any benefit of extension services.

Besides, the institutional research and extension method followed a linear method. This (R&E) institutional innovation was disseminated to the farmers through extension department without receiving any feedback from the field. That has been resulted in proliferation of monocrop cultivation like High Yielding Variety (HYV) Rice. These types of rice were not adaptive to the local environment rather local environment needed to be modified for the crop cultivation. This has resulted in overexploitation of natural resources (soil, water, and energy resources) and loss of agro-biodiversity along with indigenous knowledge of the local farmer that has developed over thousand years. Although there has been regular investment in the development of agricultural extension services there remained some weaknesses which have been described below.

3.1.1 Manpower

Total manpower of DAE has been cut short in order to reduce its expenditure in 1990s. At present there are 12,832 extension workers and 2,000 extension personnel throughout the country who are engaged in providing extension services to the farmers.²² However, in 1983 it was planned that the total manpower of DAE would be 23,954 of which there would be 1,963 class one employees who would be supported by 12,500 block supervisors. The T&V system required large number of extension workers and support staff. Nevertheless, during 1990s, the World Bank guided Agriculture Support Service Project (ASSP). Gradually the number of the staffs has been halved. This reduction in number of the staffs has resulted in the decrease in the quality of services. In the field level observation the farmers have expressed their view that they are not regularly visited by the block supervisors. Besides, there is absence of regular demonstration and audio visual services to the farmers. Lack of accountability of the extension service workers also is a major complain against them.²³

At present the extension services are going on through visit schedule system. It is surprising that each block supervisor, the prominent one of delivering extension services to the farmers, is responsible to visit each block which consist of 1000—1200 farmers.²⁴ It is undoubtedly a large figure compared to India, Vietnam. Besides, the block supervisors are poorly paid and they are also overburdened with the workload. A block supervisor has to maintain contact with farmers of a union. It is often difficult for them to maintain contact properly with the farmers. During dreadful weather (extreme sunny or rainy day) they face problem to visit or communicate with the farmers. Whenever a discussion with the thana agriculture officer was made, he

²¹ Rehman Sobhan, 1995, Experience with Economic Reform –A Review of Bangladesh Development 1995, Center for Policy Dialogue, Dhaka

²² http://www.dae.gov.bd/index.php?area=officials&action=h_administration_wings.html

²³ Focused Group Discussion

²⁴ Upazilla Agriculture Officer, Chandina, Comilla (field visit)

mentioned the problem of vehicles as a major concern along with others. The officers also expressed their demand for accommodation near the office.²⁵

3.1.2 Lack of Involvement of the Farmers in Decision Making

Although the Revised Extension Approach provides the guideline for the greater involvement of the farmers. The historical approach of the extension services has been towards implementation of donor guided policy. It is worthy to note that from 1960s to the early 2000 there has been emphasis on introducing HYV rice which has resulted in monocrop cultivation and disappearance of local varieties. In recent years focus is being gradually shifted towards hybrid rice and export oriented cash crops. This donor guided strategy has been neglecting the local varieties of crops which are gradually diminishing. One of the important characteristics of the local variety crops is that the local variety crops are adaptive to local soil and climatic condition and demand less care. Besides, over the years increase of local rice production has been neglected rather emphasis has been given on the export oriented cash crops. This has resulted in the rise of local food prices and deterioration of the poverty condition. This must not assert an overall failure of AES but the scenario stands for a symbol of letdown of agriculture extension services.

Inadequate dissemination of information from the contact farmers to the other farmers is another issue. DAE selected contact farmers has often failed to disseminate the information properly to the farmers. The technology they have recommended has not been introduced properly to the farmers. For example, the farmers are often unaware of giving optimum combination of fertilizer use in the field. Rather they are giving more urea fertilizer and less TSP. This has resulted fast but weak paddy growth, which are susceptible to tornado, flood or other form of natural calamity. During field visit, the marginal and landless farmers of Kopakhi village at Delduar Thana of Tangail claimed that they are often misguided by their wealthy counterparts in using fertilizers and to get other information as seeds distribution, irrigation etc.

3.1.3 Weak linkage between extension and research

The linkage between extension services and research has been very weak over the years. It took a decade for introduction of new technology to the field level farmers. For example, in order to ensure optimal use of fertilizer leaf color chart is an important technology which indicates the need of urea for the plant. The extension of this technology has been adequate over the years. Besides, diffusion of drum seeder, a technology for organized sowing of seed is also taking much time for making the technology popular. During the discussion about extension at Chandina Upazilla, an agriculture official said that new technology normally takes 5-7 years to be successful. They arrange orientation program at the time of introducing new technology. But due to shortage in research budget very often they fail to put the task into operation that they are asked for. Besides, there are inadequate linkages amongst extension providers at the organization level. Communication of the policy makers with other stakeholders is not at satisfactory level.

²⁵ Discussion with Delduar, Chandina and Purbodhola Thana Agriculture Officer.

The NGOs involve themselves in the extension services in order to serve their own agenda. For example, large corporate NGOs are involved in promotion of the Hybrid seeds as BRAC and ASHA. The promotion of hybrid seed is coming with more inputs requirements which are more marginalizing the farmers by raising input cost. Besides, these seeds are not being tested in local condition and in many cases production of hybrid seed has resulted in loss. In the day Bangladesh there are a number of NGOs involved in extension services. During the field visit in Comilla and Tangail, the local involvement of BRAC, ASHA in Nischintpur and Kopakhi village respectively was observed. The farmers living in the specified territory told that they very often met the NGO workers to get information on agriculture or find the way out of the problem they faced. As DAE agents are hardly present in his service or communicate with the farmers, hence the assistance of NGOs has been perceived as more helpful to the problem facing farmers.

3.1.4 Private Sector Involvement in Agricultural Extension Services

To ensure proper supply of inputs to the farmers the government policy has partially been modified and a number of private companies have been involved in selling agriculture inputs. Initially it was limited to agro-chemicals such as pesticides, fertilizers and vegetables seeds. Subsequently the private companies expanded their scope to seeds, forestry, dairy, and poultry and fisheries enterprises. A large number of private entrepreneurs are involved in fish culture on commercial bases. Similarly the poultry and fish feed industries developed .the pesticides, fertilizer and seed companies started extension work and motivational campaign through demonstration of result of their inputs to maximize profits. The extension efforts of private companies are both supplementary and complementary activities of GO and NGOs. However, the participation of private sector is not based on development motive rather they are involved in the promotion of their products. In many cases the private sectors do not disclose the limitations and drawbacks of their products. So often poor and marginal farmers, who are illiterate, are being flattered by them.

Private sector is more interested in commercial services rather than providing development services to the poor farmers. In recent years private sector has been aggressively involved in the proliferation of hybrid seeds.

3.1.5 Women's Participation

In Bangladesh most of the extension workers performing at the block level are male. They do not reach the assistance to the female members of the household. Infrastructural supports for women are crucial for increasing their ability to function as independent farmers. There are significant gender inequalities associated with access to credit, labor, other production inputs and information on new technologies. The cultural constructions of gender roles and behaviors also reduce women's ability to function effectively in factor and product markets and more generally in the market place. A greater female presence in agricultural input and information delivery systems would no doubt be helpful in reducing some of the gender bias but it

appears equally necessary to reorient these systems so that even male functionaries recognize the importance of contacting and assisting women farmers.²⁶

Women still remain behind at the target of services of the agriculture extension. Women contribute to agriculture in various ways- they actively take part in post harvest processing of agriculture and they are also engaged in homestead garden agriculture. The programs of the DAE and other extension services have been targeted towards the general farmers. The major emphasis is increasing the production of major crops and food grains. Women in rural Bangladesh are marginal groups and they do not have access to information equally as their male counterpart. Besides, DAE's field level workers are male and that has also been a problem for rural women to access of information. So the women remain out of reach of DAE's extension program.

It is found from the field visit that women loan from the NGOs in villages is often spent that in agriculture purpose. They either give it to their house-head to buy agriculture inputs or invest in livestock farming themselves. No facility is given for this particular class from DAE to promote agriculture development.

3.1.6 ICT Initiatives in Agriculture

The review of supply-side reforms points to the importance of ICT as a means to increase agricultural productivity and consequently agricultural and rural income. At least three interdependent factors account for the positive effects (Annamalai and Rao 2003; Singh 2006). First, ICTs can improve the quality and availability of public and private services to the rural poor. Benefits arise from reorientating service provision from the supply to the demand side, making it more responsive to the needs of the rural poor. Second, ICTs allow services to be delivered to a large number of people at low variable costs, with consequent efficiency gains in service provision. Third, ICTs increase the timely and transparent flow of information between service providers and service users. This strengthens the ability of (1) service providers to swiftly respond to the needs of the rural poor and of (2) service users to demand the services they need and to monitor service delivery.²⁷

The history of ICT use in Bangladesh Agriculture is not so rich. In 2003, Support to ICT, taskforce program launched by the Ministry of Agriculture. In Bangladesh, private sector operators are the main providers of ICTs (mobile phones, computers and internet, television channels, radio, and fixed-line telephony on a limited scale), whereas the state controls the fixed-line telephony and two national TV channels and 10 radio centres. The government also formulates and implements ICT policy. The majority of Bangladeshi and international NGOs working with ICTs are developing community information centres to facilitate information transmittal to rural people. Some NGOs partners with private organizations or local government include- Gonokendras of BRAC, D.NET-Pallitathaya Kendra, GP-Communication Information Center, RDA (Bogra), Dam (Gonokendra), Ghat-Rural ICT Center, YCMC (Youth Community Multimedia Center), RTC of Practical Action, Amader Gram of

²⁶ A Field of Own, Gender and Land Rights in South Asia, South Asian Studies 58

²⁷ IFPRI (International Food Policy Research Institute) Discussion Paper 00775, July 2008.

BEFS ,BNNRC,Bangladseh Computer Council,AIS of Ministry of Agriculture,Hridoye Mati o Manush by Channel – I, Coast Bangladesh etc.

Box 1 Private Agro business And NGOs:Leading ICT Provision To Farmers In India

Indian private companies and NGOs are global leaders in providing information to farmers as a spin-off from India's meteoric rise as a world leader in ICTs. The e-Choupals (chapter 5) now provides information on the weather and farming techniques in local languages, in addition to information on market prices.

The M.S Swaminathan Research Foundation established knowledge centers in PondicherryThe centers are managed by women's self-help groups which receive micro credit loans and training to start small business such as mushroom or biopesticide production. The self-help groups use the centers computers to manage their business accounts and co-ordinate their activities, using video links with the other villages.

Farmers can use the centers to access database of technical information, developed by the hub with the help of experts from local agricultural institutions, in their local language. Dairy farmers, for example, have received training in some centers using touch-screen computer applications developed by the local veterinary college. An alliance of more than 80 partner organisations extends the concept throughout India.

Source :World Development Report ,2008

Recognizing the role that information can play in improving the livelihoods of the poor, NGOs began to look at telecentres as a means of information sharing. In Bangladesh, telecentre development has been spearheaded by Grameenphone, Amader Gram and the Society for Economic and Basic Advancement (SEBA). Later, BRAC (the Bangladesh Rural Advancement Committee) set up community learning centres (Gono Kendra) throughout Bangladesh, and Grameenphone has set up a Community Information Centre (GPCIC) in each upazilla (sub district). A D.Net project has stressed the importance of livelihoods content in local dialects and has developed a content compendium and tested the impact of this among villagers through Pallitathya Kendra (Rural Information Centers) in four districts in 2005. While implementing, they found it most challenging to understand the problems related to Agricultural Information of rural people. Recently Agricultural Information Service has piloted 10 farmers community based Call Centers in rural areas.²⁸

The Department of Agricultural Marketing (DAM) with support from the Food and Agriculture Organisation (FAO) has been working together to make agricultural market information available. Mobiles are increasingly being used in rural villages. Grameen's Village Phone Project has helped expand the rural mobile base. There are presently 122,000 village cell phone women who have the potential to connect poor farmers to a market price information system. Mobile phones therefore present an alternative for both data collection and dissemination.²⁹ There is a great dissatisfaction with prices and market information, in particular among farmers. 80 %

²⁸ M Iqbal Ahmed , Erin C. Lentz ,2008 'Enhancing the Livelihoods of Rural Poor Through ICT 'Bangladesh Country Study

²⁹ <http://www.electronicgovernment.se/AMIS/about.htm> (mobile phone based AMIS)

of farmers say they would go to some other market to sell if prices were better there, and almost 60 % say they would use mobile phones to get such information (Islam and Grönlund, 2007). The system provides full awareness of all parties of prevailing market prices. another mobile operating company Banglalink launched a new service 'Banglalink Jigyasa 7676' which will provide suggestions and answers to any queries related to agriculture, vegetables and fruit farming, poultry, livestock, fisheries etc. The service will give people with easy access to advice and solutions to agriculture-related problems. To avail the service a Banglalink customer needs to dial 7676, talk and get expert's advice on the problem. The promotional charge for the service is Tk 2 per minute.

3.2 Producers and service providers' view about extension services:

During the field visit in Delduar and Chandina Thana, several focused group discussion were made with the producers and the Thana agriculture officials as well as block level supervisors. The opinions that they expressed were not almost similar to each other. Though all the participants in both villages were marginal, small or landless, but the farmers of Comilla were found a little bit more informative than those of Tangail. The scenario from the side of extension service provider is different.

In both villages, farmers showed their dissatisfaction for not getting assistance from block level supervisors whenever they need it. At Delduar farmers are deprived of service from agriculture office. Farmers do not get help when they face the problem of using fertilizer or irrigation or pesticide. In that case, the poor farmers share their dilemma with other experienced farmers who are safe to deliver information than their rich corresponding farmers. One farmer A shared his experience in a way that once he asked another well-off farmer B of his area about how much fertilizer he should use in potato cultivation, B answered to use a specific level of fertilizer which was a few times more than the essential amount, and later A came to know from an experienced farmer about this disproportionate amount. Due to excess use of fertilizer, the production of particular vegetables was fully damaged.

In case of getting seeds or fertilizers the poor, marginal farmers do not get the priority which are kept for some selected well - off farmers. The dealers responsible for the distribution of agriculture inputs deliver a very little amount to them saying the stock is finished. The picture is same in both areas. Due to arising problem in seeds and fertilizer distribution resulting from privatization, BADC was given the responsibility to import and distribute major agriculture inputs. But the scenario has hardly changed .Till now uneven distribution of fertilizers is continued to the farmers. Farmers also face the abnormal fluctuations of required fertilizer price and higher price which are beyond their purchasing capacity of the farmers. Farmers also told about their being cheated by purchasing fertilizer weighed less in quantity. Another important thing the farmers frequently told is the shortage of cold storage for which they cannot preserve their produced crops and are bound to sell at lower cost to the middle men.

Table 03: A snapshot of landless, marginal and small farmers' view about extension services

<i>Farmers view at Delduar and Chandina</i>
• <i>They do not get any information from DAE</i>
• <i>They do not receive any book, leaflet</i>
• <i>Framers discuss themselves whenever fall in problem</i>
• <i>NGOs only grant credit. Not others facilities is provided (information, suggestions) to the farmers</i>
• <i>They are facing the problem of storage system.</i>
• <i>Women do not get any facilities from DAE</i>
• <i>Rich farmers have the better access to get agriculture inputs from different stakeholders</i>
• <i>The land less, marginal and small farmers barely get ICT facilities then their rich counterpart.</i>
• <i>No block level supervisor performs here.</i>
• <i>They did not get any training ,discussion about farming from DAE</i>
• <i>They could not get information on new technology as leaf chart.</i>

Source: Field survey in Delduar, inTangail and Chandina in Comilla by the Author, March 2009

During discussion with the poor women about whether they receive any information or assistance from the department of agriculture extension, they replied not to have any facility from them rather they sometimes take loans from the local NGO branch as Disha in Chandina. Though it becomes so difficult for them to bear the interest they are asked to pay weekly. In case of new technology they hardly get information, seed multiplication is necessary but seeds are not available to farmers.

The field level observation also helped to know of the view about extension services provided by the group working for the farmers. In fact, the extension workers at Thana level expressed essentially their underprivileged condition. The agriculture officer of Chandina Thana said that there existed various problems in delivering extension services to the farmers due to lacking in institutional arrangements. He argued in favor of own building to solve residential problem of the officers and field level workers, transportation for field level workers as existing vehicles are not enough to provide services. They often face the problem to bring agriculture inputs in remote area due to transport. Moreover the salary structures of the present agriculture extension employees are not satisfactory enough to continue their lives. It is only tk 4100 in pay scale which is third class scale. The officer and other employee articulated opinion to uphold their grade level to second class dignity.

In answer to question about service providing, they pointed out manpower lacking as the main problem which is not adequate as compared to the number of farmers. They can not make available Leaf Color Chart (LCC) which come from Japan due to its being expensive. Therefore the extension workers are currently trying to lessen the use of LCC rather inspire the farmers to use GUTI UREA. Upazila Agriculture Officer said that they arrange orientation program in case of introducing new technology but

the problem is that most of the farmers are illiterate to understand about the use of new technology. The farmers who contribute in new innovation either in rising production capability by inventing new type seeds or irrigation process or using pesticide, are provided assistance which is a good initiative.

Chapter 04

4.1 Policy option

Agricultural extension involves offering advice, helping farmers to analyze problems and identify opportunities, sharing information, supporting group formation and facilitating collective action. The efficiency of agricultural extension services can be improved through training, skill development, institutional strengthening and logistic support. Trained extension agents can be assigned 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, and forest and household enterprises. The focus of outreach activities is to provide the most cost-effective service to farmers. Efficient Extension Service can be achieved through human resource management (HRM). The extension agencies in three sectors (government, non-government organization and private) can continue to work within their own organizational structures and procedures, but the policy seeks to ensure that effective coordination is established to increase the efficiency of agricultural extension.

The Revised Extension Approach (REA) has been aimed to be more participatory towards making extension policy. Under this approach there is provision for region specific extension service planning. However, there are still problem in the extension services and it is not achieving its targets. To reach the objectives the following key components need to be included in policy

4.1.1 Efficient dissemination of farm management knowledge in order to raise crop production with efficient use of inputs

In recent years uses of inputs have reached the saturated level. The production of crop is not increasing in pace with the increase in fertilizer and pesticide use. Introducing good practices of crop husbandry will, however, be able to increase the crop production by 10-30 percent and reduce the use of input cost. So the emphasis of the extension services should be on towards introduction of good practices. For example, drum seeder technology, widely used in Vietnam and the Philippines, is used for sowing seeds in a row. This gives the seeds more wide space and helps it to take nourishment from the soil evenly. It increases the productivity of seed and improves plant health.

Another example is the introduction of leaf chart. It is a color chart showing the colors of paddy leaves at different levels of urea requirement. By matching the chart with plant's leaf in the field with the colors on the leaf chart one can determine the

amount of urea fertilizer needed for a plant. This increases the optimal use of urea fertilizer. Thus it helps to reduce input cost and environmental degradation.

4.1.2 Increase manpower of DAE

By the nature of the duty and work that an extension system carries out, its worth to society is largely reflected by the quality and number of the technical and professional staff in the organization. For a national programme of extension, the human resource question that policy makers and extension managers deal with is: Given the mission, scope of the work, and available resources, what type of qualifications and how many extension staff should be employed by the extension system? Part of this staffing matrix includes other questions: What should be the proportion of subject-matter specialists to field extension workers? What should be the proportion of field extension personnel to the number of farmers, farm households, or other target groups? How should extension staff be deployed, how often should they be transferred, and what incentives should be provided in order to ensure that they work closely with all groups of farmers.

At present they have about 12,000 extension workers which are inadequate for the total farm population of Bangladesh. There are about 4498³⁰ unions in Bangladesh that means in average there are about 2.67 extension workers that is insufficient in any sense. In 1983 it was recommended that there should be about 23 thousand extension workers. This old manpower structure of DAE should be revived in order to provide more efficient service. As the REA has envisaged giving wide range of extension services diversifying their target, like poor, landless, women, the workload of the extension workers will also increase. This little manpower will not be able to meet the target. The extension staff should work with group of all kinds in order to bring maximum benefit for the farmers. Adequate extension workers can improve the learning and spread of knowledge among the farming population; enable farmers to fully participate in the planning of extension programme; promote a closer, participatory working relationship between staff and farmers.

4.1.3 Increase the efficiency of the Extension Workers

The main player of providing extension services is the extension workers. The effectiveness of the service depends almost on them and hence priorities should be given to them. The efficiency of agricultural extension services can be improved through training, skill development, institutional strengthening and logistical support. Trained extension agents can be assigned 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) need to go on with work within their own organizational structures and procedures, but the policy seeks to

³⁰ BBS, 2007, *Statistical Yearbook of Bangladesh 2006*, Bangladesh Bureau of Statistics, Dhaka

ensure that effective co-ordination is established to increase the efficiency of agricultural extension.

All providers of extension services need to be confident in their ability to solve farmer's problems and supply many of their information needs. Training is necessary to provide extension agents with the skills necessary to deal with the needs of particular clients, such as women and landless households. The block supervisors are the linkage between the farmers and DAE. These people are poorly paid and overburdened with workload. Besides, their training facility is not adequate. Side by side, the extension workers of the NGOs and private companies have better incentives. So the incentive structure of the DAE extension workers should be reorganized in order to reduce disparity. As the responsibility of the agriculture services mostly goes to the extension workers they should be provided proper training as well as better incentive.

4.1.4 Farmers Participation in Agricultural Extension

Laying down responsibility with the farmers to determine agricultural extension, makes services more responsive to local conditions rendering it more accountable, more effective and more sustainable. So the more the involvement of the farmers in the extension services, the better the access to extension service. The awareness of the farmers should also be increased in order to increase their realization about need of the extension services. Extension recognizes 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.

During the field level visit in Comilla, the Agriculture Officer said that the farmers being illiterate do not show interest in new technology. Small and marginal farmers and women farmers, who constitute a major part of the farming community and are the main contributors to food production, are both entrepreneurs and clients. They cannot be ignored in the extension mechanisms. Extension services have to provide space for the articulation of needs and knowledge development. Extension services should be problem solving devices, rather than be a supply-driven mechanism. They will succeed only if they address the local problems of the farmers. There needs to be a strong linkage between Extension, Need, and Supply in order to fulfill the genuine demands of the farmers. So appropriate steps are required to ensure farmers participation in order to make extension services triumphant.

4.1.5 Improving extension linkage with research

A new or existing agricultural technology package should be identified and selected as the core contents for the development of the extension. The approach of the research linkages between extension service and research has been linear top-down which are not cost saving and cause deterioration of the agriculture environment. However, local varieties and technologies are many cases cost saving. For example, local practices of crop rotation improve soil health and reduce the need

for fertilizers. The local varieties of crops are sustainable in different climatic and geographical condition whereas HYV and hybrid varieties susceptible to those variations. Over the years local knowledge has been ignored by extension department rather they were interested in introducing imported knowledge. The local knowledge should be patronized and more research and development should be done on it.

The improvement of close co-operation between extension agencies and formal research institutes is indispensable 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 programme both on research stations and on-farm with farmers. Extension requires the findings from research programme, in order to provide farmers with the most correct guidance. The connection between extension service and research and development should be increased. Agricultural extension by its nature is a service that relies on linkages and networks. An extension service that is not linked to research, farmers or other service providers cannot be effective. Unfortunately, the linkages between extension and research and extension and farmers in Bangladesh over the years have been very weak. For extension to succeed, it must enhance its linkages and networks with research, farmers, and among extension providers (public and private). This way the competence of extension to transfer agricultural technology to farmers will be improved. Another important thing is the upsurge of research budget (about double)³¹ which is not sufficient for continuing research.

4.1.6 Services should be reached to the women-introducing women extension workers

Women are one of the marginal groups who are vulnerable to poverty. The women should be regularly targeted by extension services. The REA aims to reach them. However as the extension service is male dominated; it fails to reach the poor. So there should be women extension workers who will target the women. In Bangladesh NGOs are successful examples of employing women as service provider at the rural level. Involvement of women will increase women's voice in decision making process by understanding their demand and will also help achieve the participation of women.

The importance of the role played by women in agricultural production is such that the widespread failure so far to reach women farmers through formal extension services has major repercussions for national output and food security as well as social justice.

³¹ Upazila Agriculture Officer's Opinion, field visit in Chandina

Box: 02**Reaching Women Farmers in Nigeria**

In Nigeria, women were found to comprise between 60% and 80% of the agricultural labor force, depending on the region, and to produce two thirds of the country's food crops. However, as elsewhere in Africa, extension services focused on men and their farm production needs. The Nigeria Women in Agriculture (WIA) Project was introduced to address this shortcoming in the extension system. Through a participatory, learning by doing approach, the project has succeeded in giving women a voice in the national policy reform process, and in integrating women into the mainstream of agricultural extension and development initiatives in their localities.

Because of the shortage of women trained in agriculture, existing Home Economics agents have been retrained to become agents. The formation of WIA farmers' groups has facilitated the dissemination of agricultural innovations and provided women farmers with better access to farm inputs and credit than they would have as individuals. Assisted by WIA agents, through these groups, women now participate in all aspects of subprojects, from identification to planning and implementation. Project planning and replanting has been carried out through national workshops with representatives of WIA groups - process which was found to be effective in translating field knowledge into specification for improving women's productivity in agriculture. One of the greatest benefits of promoting participation in decision-making, at both the local and national levels, is found to be the momentum generated by the dynamism and resourcefulness of the Nigerian women.

Source: <http://siteresources.worldbank.org>

In Nigeria women were trained as extension workers in order to reach the women farmers. The Nigeria Women in Agriculture Project (see box 2) illustrates the potential of the participatory approach to bring women into the national agricultural policy debate and local project management as well as enabling them to improve their own productivity. As women represent nearly half of the total population of the country, utilization of their hand into productive way is a must for accelerating and sustainable development of the country. It is obligatory on the part of the government to involve them meaningfully in agriculture-related income generation activities.

4.1.7 Strengthen participation of NGOs and private sector in extension services

Putting responsibility in the hands of farmers to determine agricultural extension programs can make services more responsive to local conditions, more accountable, more effective and more sustainable. To realize these benefits, the role of the public sector has to be redefined to permit multiple approaches that account for user diversity and to develop partnerships with farmer organizations, NGOs, and the private sector for service delivery. Private sector farms and nongovernmental organisations can bring significant alternatives in providing technical inputs, information and training, and organizational support services to farmers. NGOs have been involved in extension services for more than three decades and the private sector is participating about one and a half decade. The NGOs and private sectors have different target groups and constituencies in various regions within the countryside.

NGOs reach the wide range of people like the landless, women and disabled. Their focus is on small scale farming practice. This kind of service is complementary to the services DAE provides. However, the large NGOs have engaged themselves in the business of hybrid seeds and they are also promoting these seeds. The success of hybrid rice is not yet tested in Bangladesh. The hybrid rice need more input and its cultivation method is sophisticated. The poor farmers do not have enough capital to invest in hybrid rice as well as they do not have the knowledge base of cultivation method. So proliferation of hybrid rice will further marginalize them.

The private sectors operate their extension services to serve their clients in order to make profit. The NGOs and private sector have engaged themselves in hybrid seed business aggressively without taking into account the vulnerability of the marginal and poor farmers. Therefore, there should be a guideline of for the extension services of the NGOs and private companies in order to protect the marginal farmers who constitute the major portion of the farming population in Bangladesh. Increased involvement of the private sector either in delivery, funding, or management of agricultural extension broadens the focus of extension personnel and makes extension services more responsive to client needs and changing economic and social conditions. It offers farmers value for their money. The result of increased private sector participation is higher in those aspects of extension services that are always profit-driven: for example, input procurement and distribution, cash crop extension, and veterinary extension. For services that are more of publicly oriented, for example, adaptive research, management and the administration of agricultural extension - including policy formulation, should continue to operate under the ambit of government.

If this type of public-private partnership can be achieved then the result would be a more effective approach of delivering extension programs to serve the technological, human resource and organizational needs of all groups of farmers in Bangladesh. The extension services of the various providers within the national agricultural extension system should be co-coordinated in order to optimize 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 other's extension activities.

4.1.8 Increased use of information and communication technologies in extension

The declining trend costs of ICTs are giving farmers and rural people in developing countries much greater access to information. The promise of ICTs in agricultural extension is that they can energize the collection, processing and transmission of data, resulting in faster extension of quality information to more farmers in a bottom-up and interactive channel of communication. Thus ICTs may be the only way in which farmers can access a variety of information sources that are accessible, affordable, relevant and reliable. Also, increasing the use of ICTs in agricultural extension will narrow the gender disparities in terms of access to agricultural information. The internet could be used to enable farmers to become part of the information flow process and even to instigate the process of information flow rather than waiting for the information to be presented to them via radio, TV, newspapers,

newsletters, bulletins or other ICTs. Policies to improve ICT access in rural areas need to focus as much on content and education as on infrastructure. Education is one of the key factors affecting the return to ICTs in agricultural production, along with electricity, roads and appropriate business models. Local content creation needs to be linked to institutional innovations to provide farmer-responsive extension services.

The need of information and knowledge for development of rural livelihoods and empowerment of rural people is a very key concern. However, limited resources and illiteracy are impeding rural people benefiting from the ICT facilities (Iqbal Ahmed and Erin C Lentz, 2007)³². The major issues should be resolved very quickly was identified that given the limited resources all organization should take an integrated approach to avoid overlapping of the ICT projects and content generation; technology should be localized and contents should include local information using local language; there is a huge amount of information in the hand of the government agencies and the information should be digitized and easily disseminated to the local people. Government should give permission to establish local community radio stations because it is one of the very effective ways to provide information to the local people.

4.2 Advocacy Agendas

Rogar D.Norton, in his book Agriculture Development Policy, mentioned about nucleus suggestion for re-orienting agriculture extension in the context of developing countries.³³ In line with his proposition, entire discussion stated above and observation from field survey with producers & extension service providers' view, the following advocacy agenda can be set as a way forward for agriculture extension services in Bangladesh in taking place a robust growth in the agriculture sector.

➤ **Policy implication of the saying on farmers knowledge :**

Farmers can recognize and characterize their dilemma better than the responsible extension worker, can prioritize them and possess at least some knowledge that is relevant to finding solution.

- *Extension services need more of a client orientation, and primary accountability to the client who is the farmer.*
- *Policy maker should consider the condition of the producers' possessions of knowledge and skills along with technology transfer as extension is the process of facilitation of the acquisition of knowledge and skills, more than a process of technology transfer*
- *Participatory approaches to extension should be more effective and helpful.*
- *Incentives for extension workers need to be structured in a way that encourages them to emphasize satisfying the farmers rather than their superior in an institutional hierarchy.*
- *Decentralization of public extension services is likely to improve their effectiveness as it brings them to the clients that are the producers.*
- *Extension Services need to develop approaches that are suitable for rural women who have been ignored largely by most extension work to date.*

³² Enhancing the Livelihoods of the Rural Poor: the Role of Information and Communication Technologies

³³Rogar.D.Norton, 2004' Agriculture Development Policy-concept and experiences,' FAO

- *To make the extension services most productive there is no alternative to basic education.*
- *Extension should facilitate both the acquisition of crop cultivation skills and also skills in farm management and accounting, marketing, dealing with credit institutions and inputs suppliers, community organisation.*

➤ ***Policy implication of the axiom on capacity building development***

Department of Agriculture Extension should emphasize human resource development, strengthen the inherent capacities of farmers to solve their own problems and make appropriate farming decision as the key to promoting agriculture and rural development.

- *Government funding of extension does not necessarily mean government provision of it. It is desirable to have multiple extension providers; competition among them should be encouraged and producers should be in a position to evaluate them and choose among them.*
- *-Mechanism of support is needed so that poor producers may have access to extension services.*
- *Different forms of financing of extension need to be explored, including cost-sharing with producers who can afford it.*
- *A multiplicity of extension services requires mechanisms of co-ordination, especially among NGOs without putting hindrances on their efforts.*
- *An important role for the government is the establishment of the quality standards for extension providers and rules governing their provision of services.*

➤ ***Policy implication of the axiom on government limitations :***

Government alone are not able to provide fully adequate extension services .It implies that the farmers need to be participants in formulating solutions .The participation of other stakeholders in private level is also required to make the extension services more accessible.

- *Farmers and community organisation play an important role in determining the effectiveness of extension services and they should be encouraged by the extension efforts itself.*

Policy Matrix:

Policy Matrix on the axiom of farmers' knowledge, capacity building development, government imitations		
Dilemma	Initiatives need to be taken	Outcomes
o Lack of education	- The producers should be given basic educations and training	- Extension service would be more effective
o Extension service provider are not well paid	- Incentives for the extension workers	- To provide satisfactory service to the producers
o Lack of farmers' involvement	- Promotion of the farmers organisations and reinforcing capacities of the producers	- Improved access to improved services as measured by client satisfaction with services
o Lack of women extension worker	- Women should be involved in extension services beside male worker	- It would enhance the opportunity to increase productivity for the rural women engaged in agriculture activities
o Lack of co-ordination among stakeholders	- Mechanisms of co-ordination among public-private stakeholders need to be established	- It would formulate multiplicity of extension services
o Lack of using bio-technology	- Introduction of bio-technology in agriculture management	- Related researches are continuing in Rajshahi University with the support from donors.
o Lack of ICT	- All the relevant information kept by private – public stakeholders must be digitized	- It would result in faster extension of quality information to more farmers in a bottom-up and interactive channel of communication.
o Poor extension linkage with research	- Extension agencies and research institutes need to be co-coordinated	- The improvement of linkage would provide the farmers most correct guidance and would be cost saving also.

4.3 Conclusion

The key route of restructuring and modernizing in agricultural extension is towards learning rather than teaching paradigm. This learning approach should integrate up-to-the-minute methodologies and approaches that are demand-driven and raise the genuine, interactive involvement of local people at all levels of decision making in an extension delivery network. These methods entail that the roles and responsibilities of researchers, extensionists, and local people be re-defined and shared. Generally, a sound agricultural extension policy is indispensable to achieve success in transferring knowledge to farmers. Like other emergency services i.e., electricity, water supply, health, sanitation etc., the experience of Flood and Sidor has proved that the extension service is an emergency service provider for sustainable growth and development of agriculture in Bangladesh. As primary role of service delivery system, the agriculture extension department needs to assist farmers through appropriate technical and farm management advice and information about new technology, improve farming methods and techniques aimed at increasing production efficiency and farms' income. Although extension has a generic and universal meaning, its mission and goals may need to be adjusted according to national objectives and the context and stage of agricultural and rural development in Bangladesh. Priority needs to focus in technology transferring to promote agriculture development, human resource development in rural areas, sustainable agricultural and rural development. The extension mission should be reflected in the name of the organization, and the preamble for extension policy should be included in the law governing the country's extension system. This mission then should be reflected in a statement of goals and objectives that are agreed upon and assigned to extension in a supporting policy document. This document should be periodically reviewed by policy makers and representatives from stakeholder groups. Present Agriculture Minister, in her opening remarks stressed on the need for an up-to-date national agriculture policy with a view to modernizing agriculture through mechanization and application of scientific technologies. It is highly expected from the National Agriculture Policy 2009, going to be announced soon, to have a highlight on the issues of agriculture extension policies giving most priority. The proper implementation of extension policies as a significant part of National Agriculture Policy 2009 should be made in such a way that it would bring a revolutionary change in agriculture production which will help accelerate the growth of agriculture as well as directly contribute to the socio economic development of livelihoods of rural poor.

Reference

- BBS, 2007, *Statistical Yearbook of Bangladesh 2006*, Bangladesh Bureau of Statistics, Dhaka
- Ministry of Agriculture, 1999, *Agricultural Extension Manual*, Department of Agricultural Extension
- Rehman Sobhan, 1995, *Experience with Economic Reform –A Review of Bangladesh Development 1995*, Center for Policy Dialogue, Dhaka
- Rehman Sobhan, 1996, *Growth or Stagnation –A Review of Bangladesh Development 1996*, Center for Policy Dialogue, Dhaka
- UBINIG, 2008, *Hybrid Boro Rice Profit Versus Yield and Ecological Concerns*, Dhaka
- http://www.fao.org/ag/ags/subjects/en/farmMgmt/pdf/farm_extension/fm_in_agricultrual_extension/fm_extension_bangladesh.pdf
- http://www.dae.gov.bd/index.php?area=officials&action=h_administration_wings.html
- <http://siteresources.worldbank.org/INTRANETSOCIALDEVELOPMENT/873204-1111663181192/20489269/sdn11.pdf>
- <http://www.erd.gov.bd/mof/mof.jsp>
- Burton E. Swanson, Robert P. Bentz, Andrew J. Sofranko , *Improving Agriculture Extension*, (part III-chapter 12), Food and Agriculture Organization of the United Nations Rome, 1997
- http://www.stou.ac.th/Eng/Courses/course_ag.asp
- Ahmad, R. 2002. *Constraint in Implementing New Agricultural Extension Policy (NAEP) in Bangladesh*. Proceeding of the National Workshop on “Implementation of the New Agricultural Extension Policy: Achievement and Constraints”. January 26-28. 2002.
- M Iqbal Ahmed, Erin C. Lentz, 2008 ‘*Enhancing the Livelihoods of Rural Poor Through ICT*’, Bangladesh Country Study.
- *Strategic Plan for 2002-2006*, Department of Agricultural Extension. Dhaka, Bangladesh.

- Kashem, M.A., Hossain, M.A., & Islam, M.S. 2001. Factors Responsible for Determining Communication Behavior of the Block Supervisors. Bangladesh Journal of Extension Education, 13(1&2), 137-142.
- <http://www.electronicgovernment.se/AMIS/about.htm>
- Country Study: Bangladesh – Farm Management in Agricultural Extension and Advisory Services. <http://unjobs.org/tags/agricultural-extension>
- Journal of International agricultural and extension education (AIAEE, volume - 10, no-01)
- Abdullah et al (1995),ibid
- IFPRI (International Food Policy Research Institute) discussion 00775, July 2008.
- Agriculture for Development ,World Development Report,2008
- Burton E.Swanson & Mohammad M.Samy, - developing an extension partnership among public, private and Nongovernmental Organisations,Volume 9,No 01 (Spring2002)
- National Workshop and Agriculture Fair, 25-26 February 2009, Bangladesh Agriculture Development Corporation.
- AGRICULTURE SECTOR PROGRAMME SUPPORT, Phase II – 2006-2011, Agricultural Extension Component, Bangladesh, Ref.No.104.Bang.805-200-2. DAC May 2006
- L.Van Crowder, Decentralized Extension : Effects and Opportunities, September 1996, Extension, Education and Communication Service (SDRE); FAO Research, Extension and Training Division

Annex - I:

Methodology

- The study is accomplished in two villages named Kopakhi and Srimantopur in Delduar and Chandina Thana of Tangail and Comilla respectively. The reason behind selecting these areas is being predominant in agriculture symbolizing small and marginal farmers of the country. In the area of Delduar Thana in Tangail, the percentage of landless farmer among farm households farm is 10.13 which is 81.66 percent for marginal and small class farmers. The scenario is depicted also in Chandina Thana of Comilla where there are 23% landless farmers and 52.63 % are small and marginal of them. The major crops cultivated in this area include mainly varieties of rice as IRRI, Boro and Aman, potato, seasonal vegetables, etc.
- The study is descriptive in nature which consists of both qualitative and quantitative data. A number of FGDs were conducted with the farmers during the time period and interviews were taken among the agriculture officials, rural women for their receiving credit from bank or NGO, existing NGO partners to give their expert views in order to formulate strategies of agriculture extension services. To conduct the study both primary and secondary data has been used. The primary data were collected between January and March,2009.In order to accumulate qualitative data, several group discussion sessions were arranged separately in two villages, each group contained 35 participants.
- During the group sessions, several open-ended questions were asked of the respondents in order to collect deeper information about their accessibility to extension services along with many facts and factors. Finally interviews were made with the mentioned community in a face to face setting using the pre-designed schedule. With a view to fulfilling the objectives of the study data has been collected from both primary and secondary sources. Primary data has been accumulated through field visits which are qualitative basis. Books, journals, newspapers, reports and internet documents were used as secondary sources of data supporting or supplementing the empirical findings of the study

Annex - II:**Public Sector Organizations Extension and Advisory Services**

Extension Organization	Ministry	Major Responsibilities
Department of Agriculture Extension (DAE) and Bangladesh Agricultural Development Corporation (BADC)	Ministry of Agriculture	Crop Sector Extension Services
Department of Livestock (DLS)	Ministry of Livestock and Fisheries	Livestock and Poultry Extension Services
The Department of Fisheries (DoF)	Ministry of Livestock and Fisheries	Fisheries Extension Services
The Forest Department (FD)	Ministry Of Environment And Forest	Forestry /agro forestry extension services
The Bangladesh Water Development Board (BWDB)	Ministry Of Water Resource And Irrigation	Irrigation and drainage vis a vis agriculture extension
Bangladesh Academy for Rural Development (BARD) and Rural Development Academy (RDA)	Ministry Of Local Governments, Rural Developments And Cooperatives	Rural development vis a vis agriculture extension
Bangladesh Agriculture University (BAU)	Ministry Of Education	Farming system vis a vis agriculture extension
Local Government Engineering Department	Ministry of Local Government and Cooperative	Small scale irrigation and rural infrastructure development vis a vis agriculture extension
Bangladesh Rural Development Board (BRDB)	Ministry of Local Government and Cooperative	Farmers cooperative and one Household, one farm program of extension services
Bangladesh Academy of Rural Development	Ministry of Local Government and Cooperative	Rural development vis a vis agriculture extension
Rural Development Academy(RDA)	Ministry of Local Government and Cooperative	Rural development vis a vis agriculture extension

Source: FAO Country Study in Bangladesh³⁴

³⁴http://www.fao.org/ag/ags/subjects/en/farmMgmt/pdf/farm_extension/fm_in_agricultural_extension/fm_extension_bangladesh.pdf,

Annex - III: Mass, Group and Individual Extension Method

	Extension methods	Key points
Mass media and audiovisual aids	Radio-	Has the potential for large audience. use can be enhanced through the substantial of radio listening groups and linking with Bangladesh bear through the regional office
	Newspaper,	Has the potential for large audiences. use can be enhanced through Newspaper Reading Groups with literate farmers .articles can be submitted to local newspapers about successful technologies in thana and districts extension plans or actions that should be taken in the events of emergency situations.
	Print media	Help to make extensions events more interesting .scope for reusing resources particularly if a Resource with a stock of flip charts, slide sets, real objects and displays, flash cards, posters and other materials is developed. Materials can also be shared with other organizations.
	Demonstrations	There are numerous types of demonstrations which can be used to show farmers a new technology or the benefits of modifying existing practices
Group extension methods	Field days	Enable groups of farmers to meet together to show first hand demonstration sites or PTD test sites. encourage farmers to participate and allow the host farmer to act as the resource person
	Districts and thana fair	Technologies and innovations and encourage partnership with other extension agents requires significant planning and funding
	Farm walks	Have variety of uses. For example they can be used at block level to show farmers a new technology can help farmers analyze farm problems or help groups plan further activities .they can be used to stimulate permanent and temporary farmers groups.
	Farmers rallies	Use a combination of methods (e.g.song, drama, presentations, banners, prize giving) to introduce and /or reinforce a technology of a large numbers of farmers working with partners agencies increase cost effectiveness and interest.
	Folk media	Effective when linked to other extension activities such as fairs or rallies. Simple messages are used to relay important information in an informal way. example includes puppet shows, drama, and songs
	Group meetings	Many uses and are often low cost. For example, radio listening groups or as a way of enabling farmers to discuss problems, develop plans, palns extension events and explore new ideas. can be made more effective if visual aids are used to stimulate discussing e.g. flash cards ,posters or real objects
	Motivational tours	Motivational tours are like farm walks but are conducted further away from the farmers homes e.g. visits to research stations.
	Participatory technology development	A low cost method which encourages farmers to try new technologies on their farm as an experiment rather than a demonstration. Farmers are able to adopt the technology according to their resources and local environment. Support and advice are provided but inputs are not.
	Training days	Used to train groups of farmers in a particular technology. Can last one day and can be held at any level, village, block, thana, or district. Are further enhanced if supported by audio/visual aids. training materials require significant planning and preparation.
	Farmer field school	Enables group of farmers to be trained over an extended period (e.g. a cropping season) using classroom and field activities.emphasises participatory, action based and problem solving learning.
Individual extension methods	Individual farm visit	Enable field staff to identity and analyze the main problems facing an individual farmer or household and provide advice on possible solutions. Individual visits also prove opportunities for extension staff to learn an area or innovative farm practices. a potentially expensive extension methods which require careful planning .DAE recommended working with groups of farmers wherever possible.

Source: Department of Agriculture Extension. MoA

Annex - IV

Import of Fertilizer

(Figures in thousand metric tons)

Year	Import						Total
	Urea	TSP	MP	SSP	DAP	*Others	
1	9	10	11	12	13	14	15
1980-81	63.00	226.00	42.00			19.00	350.00
1985-86	196.00	356.00	87.00			1.00	640.00
1990-91		312.00	145.00				457.00
1995-96	63.00	64.00	102.4	502.02		38.69	770.14
2000-01	302.00	363.00	123.00		126.00	50.00	964.00
2005-06	770.30	373.93	208.06		125.19	59.49	1536.97
2006-07	775.00	290.00	230.00		125.00	61.00	1481.00

Source: Ministry of Agriculture

Note: * Others mean Gypsum, NPKS & Zinc

Consumption of Pesticides By Type 1989-2003 (mt/kl)

Year	Insecticides			Fungicide		Herbicides	Rodenticides	Public Hygiene	TOTAL
	Granuler	Liquid	Powder	Liquid	Powder				
1	2	3	4	5	6	7	8	9	10
1989	3747.07	779	168.53	49.83		61.87	2.92		4809.22
1990	5670.44	1001	69.06	35.16	281.3	104.79	20.24		7181.99
1991	5545.67	943.02	66.01	33.56	327.92	98.58	40.44	128.1	7183.3
1992	5601.01	1045.12	79.3	28.88	421.41	89.86	41.68	134.31	7441.57
1993	5818.65	1023.52	84.15	63.41	502.07	111.38	57.11	39.72	7700.01
1994	6006.08	1018.85	75.58	9.19	532.68	139.15	66.06	11.13	7858.72
1995	6997.2	1332.46	89.53	16.19	568.74	140.02	76.97	351.47	9572.58
1996	8716.73	1447.51	122.35	49	777.32	149.65	91.88		11354.44
1997	8724.33	1408.27	110.2	0	862.2	159.88	101.82		11366.7
1998	9139.1	1298.8	107.11	0	734.71	239.15	91.74	0	11610.61
1999	11192.91	1524.17	123.32		1065.42	315.14	119.22		14340.18
2000	11915.67	1789.41	80.99		1430.01	271.1	122.06		15609.24
2001	10788.37	1426.45	86.04	18.85	2170.6	838	70.3		15398.61
2002	12334.54	1496.85	142.12	2418.8	0	963.6	36.33		17392.24
*2003	6673.27	883.16	91.77	1618.71		1093.85	6.26		10367.02

*(Upto June,2003)

Source: Bangladesh Crop Protection Association/ BBS

Agricultural extension is an important development intervention for increasing the growth of the agriculture sector in the light of rising demand and supply side pressure and promoting sustainable, inclusive and pro-poor agriculture and hence economic development. Increasing efficiency of agricultural extension services is at present important when the agricultural land is decreasing under urbanization and platitude of the productivity and growth potential of the agriculture sector for development poses a severe threat for achieving food security and further reducing rural poverty.

In Bangladesh, agriculture is regarded as one of the key part of the National Agriculture Policy. To ensure appropriate utilization of agricultural land and to increase the productivity, the agricultural extension services are required to be strengthened. The present agriculture extension set-up is sufficiently broad-based and bolstered by efficient manpower. There does not exist proper monitoring to check the supply and availability of seeds, fertilizers, irrigation, pesticides, etc to smooth the progress of the cultivation of different crops. For rapid extension of agricultural technologies, the use of public mass media is necessary but this is not adequate here. Again every year allocation of ADP to local government is not used appropriately. There are lackings of strong visit to demonstrations farms and interaction with the farmers by the extension workers at an important time of the respective cropping season, facilitations of multiple extension approaches as agriculture fair, field day, farmers' rally, campaign, etc.

The apposite implementation of extension policies as a significant part of National Agriculture Policy 2009 should be made in such a way that it would bring a revolutionary change in agriculture production which will help accelerate the growth of agriculture as well as directly contribute to the socio economic development of Bangladesh.