

**Proceedings of the participatory workshop  
on  
Technology Identification and Recommendation for  
FoSHoL Project  
(Bogra district)**

**17 March 2005**



**Venue:**

**GTC, Proshika, Gabtali, Bogra**

**Funded by:**

**European Commission (EC)**

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## Glossary

AAS	=	Agricultural Advisory Society
AAO	=	Additional Agriculture Officer
AC	=	Area Coordinator
ACA	=	Area Coordinator Associate
BARI	=	Bangladesh Agriculture Research Institute
BKB	=	Bangladesh Knowledge Bank
BRDB	=	Bangladesh Rural Development Board
BRRRI	=	Bangladesh Rice Research Institute
CARE	=	Cooperative Assistance for Relief Everywhere
DAE	=	Department of Agriculture Extension
DFID	=	Department for International Development
DFO	=	District Fisheries Officer
DLO	=	District Livestock Officer
DLS	=	Department of Livestock Services
DoF	=	Department of Fisheries
DW	=	Development Worker
EC	=	European Commission
ED	=	Executive Director
FGD	=	Focus Group Discussion
FoSHoL	=	Food Security for Sustainable Household Livelihoods
GOs	=	Government Organizations
GTC	=	Grass-root Training Centre
IRRI	=	International Rice Research Institute
ITDG	=	Intermediate Technology Development Group
NGOs	=	Non Government Organizations
PETRRRA	=	Poverty Elimination Through Rice Research Assistance
PM	=	Project Manager
PNGO	=	Partner Non Government Organization
PO	=	Programme Organizer
RDA	=	Rural Development Academy
SO	=	Scientific Officer
SPO	=	Senior Programme Officer
UAO	=	Upazila Agriculture Officer
UFO	=	Upazila Fisheries Officer
ULO	=	Upazila Livestock Officer
URDO	=	Upazila Rural Development Officer
USSO	=	Upazila Social Service Officer
ZC	=	Zonal Coordinator

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## Introduction

The FoSHoL (Food Security for Sustainable Household Livelihoods) project is a 54-month project; the objective of which is to promote food security and livelihood improvement of the food insecure, small and marginal farmers through the dissemination of sustainable agricultural technologies. To achieve the objectives of FoSHoL project, EC has selected four NGOs (ActionAid Bangladesh, CARE Bangladesh, ITDG Bangladesh, and Proshika) as dissemination agencies. The four disseminating NGOs have been selected for their potential to contribute to the overall improvement of food security among the targeted farmers. They will identify, adapt and disseminate the selected technologies among the target farmers. This will strengthen farming system efficiency and will consequently improve farm-household food security and livelihood. Moreover, EC has selected IRRI to provide the mandated coordination and thus ensure that the four NGOs carry out their interventions in a coherent, consistent, effective and efficient manner, using appropriate technologies selected from their own experiences; PETRRA experiences; also from IRRI and elsewhere. The coordinating agency, IRRI, will work with disseminating NGOs to deliver technologies that will improve farming practices and the utilization of farm resources. Through these interventions, the target farmers will increase the quality and quantity of their farm output and thus enhance their own food security.

Location specific technology identification for the targeted food insecure, small and marginal farmers is one of the major activities of IRRI in FoSHoL project. IRRI has assigned Agricultural Advisory Society (AAS) to explore, identify and document technologies from sources throughout the country; giving particular emphasis in the districts where the FoSHoL project is operating. The selected technologies will be documented in the Bangladesh Knowledge Bank (BKB). The BKB documentation will guide the efforts of the four disseminating NGOs as they undertake to identify the most suitable technologies that are appropriate to the sub-ecosystems of their respective target areas. This derived documentation is intended to be a roadmap for carrying out the process of identifying suitable agricultural technologies and their sources; and storing these in Bangladesh Knowledge Bank and implementing them as appropriate among their constituents within their designated FoSHoL project areas. The BKB resources will help, guide and harmonize the efforts of the four disseminating NGOs as they undertake to identify the most suitable technologies for non-rice, rice, fisheries and livestock production; technologies that are appropriate to the sub-ecosystems of the target areas designated by each of the participating NGOs.

Several workshops have been scheduled in the FoSHoL project areas in collaboration with the four disseminating NGOs. These are being conducted by Agricultural Advisory Society (AAS) under the supervision of the coordinating agency, IRRI. The intention of the workshops is to identify, select and disseminate specific agro based technologies for rice, non-rice, fisheries, livestock and non-farm activities that could be act as a catalyst for disseminating NGOs the selected technologies among the targeted farmers of FoSHoL project.

In this regard, a workshop was conducted on 17 March 2005 at Grass-root Training Centre (GTC), Proshika, Gabtali, Bogra from 9.00 am to 4.00 pm in collaboration with Proshika, one of the disseminating NGOs of FoSHoL project.

## **Purpose**

The workshop was convened for the purpose of selecting (identifying) the most potential agro based technologies for rice, non-rice, fisheries, livestock and non-farm activities for targeted farmers of FoSHoL project of Bogra districts.

## **Facilitators**

In technical session, the participating farmers and stakeholders were divided into two groups. Group-1 was selected for the technologies of crops and non-farm activities and group-2 was selected for the technologies of livestock and fisheries. Two facilitation teams conducted the group work. For Group-1 Mr. Harun-Ar-Rashid, ED, AAS and Consultant, FoSHoL project, IRRI was the team leader of the facilitator's team. Mr. Deb Kumar Nath, Irrigation Engineer, AAS; M.M. Anwar Hossain, SPO, Proshika, Dhaka; and Khandakar Tofazzel Hossain, Zonal Coordinator, Proshika, Bogra acted as facilitators for Group-1. On the other hand, for group-2, Dr. Tapash Kumar Biswas, Manager Monitoring and Evaluation, FoSHoL project, IRRI was the team leader of the facilitator's team. Ms Shaila Arifa Nabi, Researcher, IRRI; A.K.M Hasan Sayed, Coordinator, Social Forestry Programme, Proshika, Dhaka and A. K. M. Ferdous, Agronomist, AAS acted as facilitators for group-2. Dr. Noel P Magor, Manager, FoSHoL project and Representative, IRRI, Dhaka and Qazi Khaze Alam, Director, Natural Resources, Proshika, Dhaka acted as the overall facilitators for the both groups.

## **Participants**

A total of 78 participants attended in the workshop of which 48 participants were from different secondary stakeholders (GOs and NGOs) of Bogra and the rest 30 participants were farmers from Bogra and Sirajganj districts. Among the 48 participants attended from relevant GOs and NGOs, 6 (14%) were female and the rest 42 were male. On the other hand, among the 30 farmers, 15 (50%) were female and the rest 15 were male. The distinguished secondary stakeholders were Department of Agricultural Extension (DAE), Department of Livestock Services (DLS), Department of Fisheries (DoF), International Rice Research Institute (IRRI), Bangladesh Rural Development Board (BRDB), Department of Youth Development, Bangladesh Agriculture Research Institute (BARI), Department of Social Service, Journalists and NGOs including Proshika and Agricultural Advisory Society (AAS). List of the workshop participants are provided in Annex-III.a and III.b.

## **Methodology**

The facilitators undertook participatory focus group discussions (FGD) with farmers at community level; discussion with the stakeholders at district level (Bogra) and district level participatory workshop with participating farmers and secondary stakeholders of Sirajganj and Bogra districts. These were conducted during 15-17 March 2005. Details of FGDs, discussion meeting with district level relevant stakeholders and participatory district workshop are given below:

### **FGD at community level**

In order to identify the farmers' demand-led technologies, two FGDs were conducted at community level. A total of 71 farmers including 33 female farmers (46%) participated in the FGDs. Out of the two FGDs, one FGD was conducted at Shimul Diar village in Kazipur upazila of Sirajganj district on 15 March 2005, where a total of 32 farmers including 16 female farmers (50%) participated. Another one FGD was conducted at

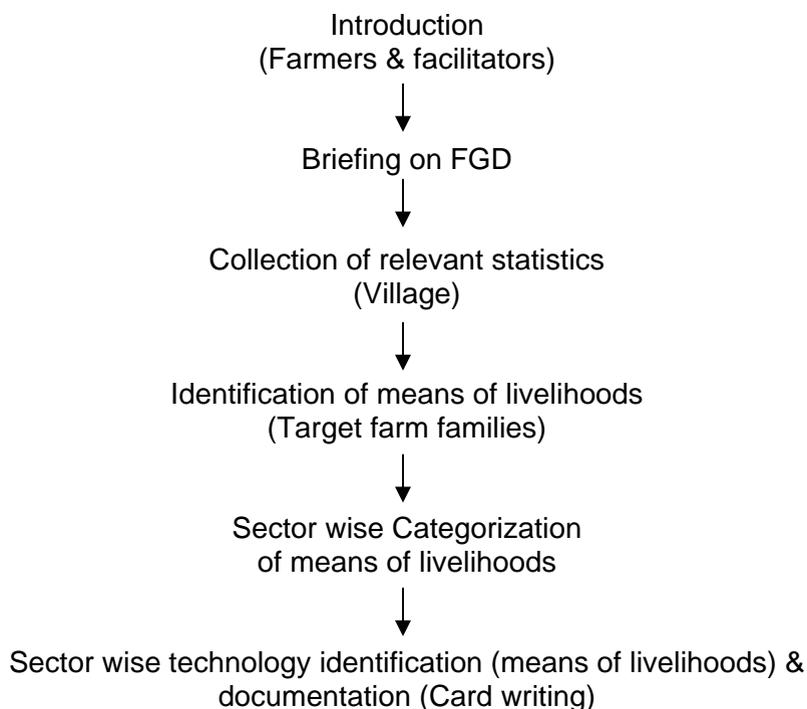
Nishindara village in Gabtali upazila of Bogra district on 16 March where a total of 39 farmers including 17 female farmers (44%) participated. In Kazipur the FGD was



conducted with the cooperation of Area Development Centre, Proshika, Kazipur, Sirajganj. In Gabtali, the FGD was conducted with the cooperation of Area Development Centre, Proshika, Gabtali, Bogra. Mr. Harun-Ar-Rashid, ED, AAS and Consultant, FoSHoL project, IRRI; Mr. A.K.M Ferdous, Agronomist and Mr. Deb Kumar Nath, Irrigation Engineer of AAS conducted the FGDs in the above upazilas of Sirajganj and Bogra districts. FGDs were conducted with the overall support of M.M. Anwar Hossain, SPO, Proshika, Dhaka; Khandakar

Tofazzel Hossain, Zonal Coordinator, Proshika, Bogra; Md. Mahinur Rahman, AC, Proshika, Gabtali and Md. Abdul Aziz, AC, Proshika, Kazipur. These half-day long FGDs were conducted through open discussion and in a participatory manner. ITDG documented technologies were displayed among the participants with an illustration by the facilitators. The process of FGD that was followed at each community is given below:

### **Process**



Output of these FGDs at farmer's level was documented through card writing for the purpose of presentation, selection and prioritization of the technologies in the technical session of the district workshop.

The facilitators of the district workshop presented the farmer's 'community level' technology selections. After presentation of each technology the floor was open for all participants of the district workshop to discuss the merits of each technology under discussion and then the recommended technologies were prioritized according to the process.

### **Discussion at district level stakeholders**

Discussion with district level stakeholders was conducted to identify sustainable technologies for Bogra district. Mr. A.K.M. Ferdous, Agronomist, AAS; Mr. Deb Kumar Nath, Irrigation Engineer of AAS along with M. M. Anwar Hossain, SPO, Proshika, Dhaka conducted the district level discussion meetings. The "candidate technologies" were identified from the Department of Agriculture Extension (DAE), Department of Livestock Services (DLS) and Department of Fisheries (DoF) during the district level discussion meeting in Bogra. The views of participants in the district level discussion meetings were duly recorded by the facilitators on cards. These cards represented the primary documentation of the district level discussion meetings.

### **District workshop**

After conducting the FGDs with the targeted farmers at community level and the discussion meeting at secondary stakeholder level; a district level workshop was conducted with the representative of farmers from Kazipur upazila of Sirajganj district and Gabtali upazila of Bogra district and with the distinguished representatives of relevant secondary stakeholders from Bogra district. A participatory approach was followed through out the workshop. The workshop was divided into three sessions i.e., inaugural session, technical session and concluding session and was proceeded on as per Schedule (Annex-IV).

#### **a) Inaugural session:**

The purpose of inaugural session of the district level workshop was to give a focus on the objectives of the FoSHoL project as well as to explain the purpose of the workshop. The inaugural session of the workshop was presided over and inaugurated by Qazi Khaze Alam, Director, Natural Resources, Proshika, Dhaka. Dr. Noel P Magor, Manager, FoSHoL project and Representative, IRRI, Dhaka was the chief guest of the workshop. A. K. M. Hasan Sayed, Coordinator, Social Forestry Programme, Proshika, Dhaka, delivered welcome address in the workshop. Md. Harun-Ar-Rashid, ED, AAS and Consultant FoSHoL project, IRRI spoke on FoSHoL project, and over view and the process of the technical session of the workshop. Dr. Golam Maula Jaglul, ULO, Gabtali, Bogra spoke on technology identification, the key activity of the workshop. Md. Nazim Uddin Ahmad, DFO, Bogra spoke on the impact of fisheries in livelihood of the food insecure people.

#### **b) Technical session:**

The main purpose of the technical session was to select the potential technologies for the targeted farmers of Bogra district. At the beginning of the technical session, Mr. Harun-Ar-Rashid, ED, AAS and consultant FoSHoL project, IRRI gave a briefing on the process of the technical session. After briefing the attendees on the process of the technical session, the following steps were amplified: group formation, identification of technologies, presentation of identified technologies, selection of potential technologies,

prioritization of potential technologies and presentation of prioritized technologies according to the presented process of the technical session of the workshop.

**Group formation:** In order to identify the area specific farmer's demand-led technologies particularly for Bogra district, two groups were formed. Group-1 was selected for the technologies of crops and non-farm activities and group-2 was selected for the technologies of livestock and fisheries. Participating male and female farmers of the workshop were divided into two groups according to their own interest. On the other hand, participating secondary stakeholders of both GOs and NGOs were divided according to their close association as well as interest with the groups. Participants from DAE and BARI were in group-1. On the other hand participants from DLS and DoF were in group-2. As a whole each group contained representative of farmers, GOs and NGOs and had a balanced strength for technology identification, selection, prioritization and recommendation.

**Identification of technologies:** Small and marginal farmers demand led technologies were identified in the district workshop through group discussion among the farmers and stakeholders of Bogra district, which were documented by the facilitators on cards. The technologies were identified on the basis of ten sectors such as cereal crops, vegetables, fruit, spices, nursery, oil seed, soil health, others, fisheries and livestock.

**Presentation of identified technologies:** Farmer's suggested technologies, district level stakeholder's suggested technologies and district workshop participant's suggested technologies were recorded on cards and presented by the facilitators among the participants of the workshop.

**Selection of potential technologies:** After the presentation of farmer's suggested technologies, district level stakeholder's suggested technologies and district workshop participant's suggested technologies, the floor was opened for discussion to select the potential technologies for the targeted farmers of FoSHoL project. The potential technologies were selected by the participants of the workshop through discussion and necessary modification at plenary.

**Prioritization of technologies:** During the "prioritization of technology" process, the potential technologies of livestock and fisheries suggested by the district workshop participants of group-2 were prioritized by their combined effort giving more emphasis of farmer's opinion. On the other hand, in group-1, the suggested potential technologies were not prioritized due to lack of time.

**Presentation of technologies:** A.H. Bazlur Rashid, UAO, DAE, Gabtali, Bogra and the group leader of group-1 presented the technologies of crops and others agro-based activities. On the other hand, for group-2, the technologies of livestock were presented by Md. Habibur Rahman, a participating farmer of Chakla village in Gabtali upazila of Bogra district and the technologies of fisheries were presented by one of the participating female farmers Mst. Hajera Khatun of Khidraperi village in Gabtali of Bogra district. All participants of the workshop accepted the technologies as their real demand for the locality.

### **c) Concluding session:**

In concluding session, Md. Harun-Ar-Rashid, ED, AAS and Consultant FoSHoL project, IRRI and A. K. M. Hasan Sayed, Coordinator, Social Forestry Programme, Proshika, Dhaka gave their satisfactory closing speech where both of them specially express their appreciation to the participating farmers and stakeholders of the district workshop.

## **Inaugural Session (Output)**

At the very beginning of the inaugural session A. K. M. Hasan Sayed, Coordinator, Social Forestry Programme, Proshika, Dhaka delivered his welcome speech. In his imperative speech he said that Proshika would work in 40 upazilas all over the country during the period of implementation of FoSHoL project. In Bogra and Sirajganj districts, 18,000 farm families of Gabtali, Shibganj and Kazipur upazilas will be involved with the project. He revealed that the FoSHoL project would work directly with agriculture including livestock and fisheries and other non-farm activities. In each upazila 450 farm families will be selected for the FoSHoL project. We will provide trainings among the farm families. Workshops, Seminars will also be arranged. Today through the technology identification and recommendation workshop, technologies will be identified and we will work with these technologies later on. At the end of his speech he showed gratitude to the participants of the workshop for their kind involvement in the workshop.

Md. Harun-Ar-Rashid, ED, AAS and Consultant FoSHoL project, IRRI thanked all of the participants of the workshop. He gave a short briefing on FoSHoL project and about the workshop with his swift presentation. He mentioned that FoSHoL means Food Security for Sustainable Household Livelihoods. The people who are food insecure, who have the opportunity to develop their livelihood, the project will work with them, he added. The project will be implemented in 28 districts where thousands of farmers will be benefited through the project. In Bogra, three upazilas such as Sadar, Gabtati and Shibganj were selected for the FoSHoL project where small and marginal farmers will be benefited by the project, he added. He said that the project would run for 4-5 years for giving food security to the food insecure farm families. Mentioning the names he said four disseminating NGOs will work with the project where IRRI is acting as a coordinating agency and AAS is doing short time consultancy. Mentioning the expectation of the workshop he said that today we will try to identify the agro based specific means of livelihoods of the resource poor farmers of the three upazilas of Bogra districts. He clearly presented the four steps of the process of the technical session for identification, selection, prioritization and recommendation of the technologies (driven from the means of livelihoods) for Bogra districts. He ended his presentation with hopeful mind expecting a successful technical session.

Dr. Golam Maula Jaglul, ULO, Gabtali, Bogra said that it will be very much pleasant if the project will be implemented fruitfully for the small and marginal farmers of our rural areas. Today we will select the potential technologies for the small and marginal farmers of Bogra district. He mentioned that in this workshop among the participants both primary (farmers) and secondary (GOs and NGOs) stakeholders are present. He hoped that with the dynamic participation of the farmers and the secondary stakeholders effective technologies will be identified and that will be prioritized on the basis of farmer's demand.

Md. Nazim Uddin Ahmad, DFO, Bogra thanked all of the participants of the workshop. He was very happy introducing with the concept of FoSHoL project specially the holistic approach of the project mesmerized him. But he claimed that in order to achieve remarkable development in cereal crops we are using enormous amount of chemical fertilizer and pesticides that are polluting our soils and water and causing serious harms to the fisheries. It seems that there is self-sufficiency in the sector of cereal crops. 'But what about our fisheries?' he asked expressing his anxiety. He claimed that with the so-

called development of pure agriculture, fisheries sector is affected in many ways. But there is no scope of neglecting fisheries sector if we want to increase our protein consumption, as we all are well aware that most of the people of Bangladesh are to depend on fish for managing a greater part of their whole protein consumption, he added decisively. That's why when we will be interested to launch a project on agriculture, we will be very much conscious about the destroying of the natural breeding fields of the fishes. Any way fish culture will not be hampered and the fish farmers will not be workless, he hopped. He requested everybody to take care of it.

Dr. Noel P Magor, Manager, FoSHoL project and Representative, IRRI, Dhaka and the Chief guest of the workshop said that he wants to say something about food security. The project FoSHoL is designed for the food insecure farmers. He mentioned that IRRI had been working with Rural Development Academy (RDA) in Bogra for last several years, which was on rice seed and observed that there were lots of problems with the techniques of rice seed production and preservation. However, he expected that during the FoSHoL project period a significant change would be taken place in the arena of agriculture in Bogra district. He pointed out that an experienced farmer knows which varieties of rice will be suitable for which land as within a village there are high, medium and low lands. He mentioned that Agricultural Advisory Society (AAS) has been working for last 3-4 months with the four disseminating NGOs for the purpose of identifying suitable technologies. In this regard, for the district of Bogra there is lots of scope to find out many more technologies, he added. At the end of his speech he said that in this workshop we the secondary stakeholders are listeners and you specially the farmers are speakers. As a foreigner he was afraid to understand regional Bengali words and conversation, but he was hopeful.

Qazi Khaze Alam, Director, Natural Resources, Proshika, Dhaka and the Chairman of the inaugural session said that the upazila Gabtali is very well known to him. Mentioning the working history of Proshika in Bogra he said that in Gabtali Proshika has been working for 26 years. He was very pleased participating in the workshop in Gabtali and thanked the workshop organizers. Focusing the aim of the FoSHoL project he said that we have to give food security to the poor farmers in order to reduce the poverty. But he tried to understand that it would not be easy to implement. Giving example he said at the first time of his arrival in Gabtali, the newly constructed roads were in imagination. There were limited vehicles. The area in a word was undeveloped. Now the roads are well constructed, vehicles are available, that's why the area seems to be developed, he added. But the main concerned is that how much the educational advancement achieved, how much the farmers are food secure now. At the beginning of the FoSHoL project we will assess the livelihood status of the target farmers. After four years, we will further try to find out what we will have achieved during the project period. Mentioning the title of the workshop he said we should be more careful about naming. He clarified that the identified technologies could be suggested for the farmers of Bogra but not recommended. He argued that through out a workshop we wouldn't be able to identify all technologies of Bogra as well as the identification would not be the whole representation of the district as a few number of farmers and secondary stakeholders are participating in the workshop. They can't recommend the technologies for all of the farmers of Bogra, he said allegedly. Referring the speech of Dr. Noel P Magor he also revealed that the farmers have to choice their crops according to their land categories (i.e., high, medium, low and so on). Similarly there are so many factors that are acting behind each prominent technology which are even unearthed to the neighbouring farmers. About group work he said since here are two types of participants: farmers and secondary

stakeholders (GOs and NGOs). For identifying and suggesting the technologies for the farmers one theory will be applied as: we the secondary stakeholders are educated, know everything very well, that's why what we will propose to the farmers, they will do so. Nevertheless, there is another theory: farmers know everything and we the secondary stakeholder will only observe, listen and do so according to the farmer's opinion. He was afraid as weaker points prevail in both of theories. Rather it seems good to him to identify the farmer's problems and the points where they have lacking, they are suffering very much. We have to mark out the weaker points and then they will understand and can be able to take their necessary action and will be able for screening out what to do or what to say. He explained mentioning himself suppose as a man of letters as he had visited many places in Bangladesh, had learnt many things, that's why he gave suggestions for the farmers of a particular area though there he had less excess. It might happen that his suggestion is completely worthless as the scenario of the locality is quite different and beyond of his imagination. As a result what was provided to the farmers was nothing but garbage, he added. He spoke on sector wise categorization and said that agriculture is a big sector. In order to specialization, this big sector can be divided into several sub-sectors such as crops, livestock, fisheries etc. We use to do so. But when we visit the communities, the picture is completely different. Farm families simultaneously cultivate rice, rear layer and boiler, culture fish. Not only these, besides the above-mentioned activities, they have to drive vans and do other jobs for better livelihood. That's why integration is required. He suggested that if necessary requirement is identified and will be provided to the farmers then it would be fruitful. Referring the speech of Md. Nazim Uddin Ahmad, DFO of Bogra, he said that we couldn't deny the amazing effect of pesticide on fish culture. It is notable that if we want to be gainer in one sector, we have to be the looser in another sector. As a consequence we have to think about the impact of our activities on neighboring people. He firmly said that poison is always poisoned. We can't provide poison as pesticide. The pesticide mostly what we are applying now in our crop fields all are health hazardous and harmful for human being. He mentioned that so as to live well, only rice or only fish or only meat couldn't be the best diet. We need balanced food as well as clothing, housing, education and treatment facilities. But we will not be able to incorporate all within the project. We have to find out the most important issues for implementation. At the end of his speech he inaugurated the workshop with great pleasure and was hopeful that throughout the workshop better issues would come out for the forthcoming days.

## **Technical session**

### **Findings:**

The means of livelihoods of the people of Bogra district are found notably promising. The technologies were identified, selected, prioritized and recommended with the cooperation of farmers and secondary stakeholders (GOs and NGOs) for the food insecure small and marginal farmers of Bogra through FGDs, district level meetings with stakeholders and district workshop.

### **1. Suggested on-farm technologies for FoSHoL project in Bogra district**

The recommended farmer's and secondary stakeholder's on-farm technologies for FoSHoL project were divided into ten categories i.e. cereal, vegetable, fruit, spices, nursery, oil seed and pulses, soil health, fisheries, livestock, and others activities. About 90 potential technologies were selected where 19 technologies are on cereal crops, 18

technologies are on vegetable, 5 technologies are on fruit, another 5 technologies are on spices, 7 technologies are on nursery, 4 technologies are on oil seed and pulses, 6 technologies are on soil health, 8 technologies are on others agro-based technologies, 15 technologies are on fisheries and 22 technologies are on livestock. The suggested technologies are presented in Annex.I.

## **2. Prioritized potential technologies**

The 15 potential technologies of fisheries and 22 potential technologies of livestock, suggested by the participating farmers and secondary stakeholders of group-2, were prioritized by the participating farmers of the same group. The prioritized technologies of fisheries and livestock are also provided in Annex-I with their obtained rank. Nevertheless, in group-1, suggested technologies were not prioritized due to lack of time.

## **3. Problems, Suggestions and Comments of the farmers and secondary stakeholders**

During FGD, when farmers were asked about their favored agro-based technologies through which they would be able to improve their livelihood status, most of the farmers of Kazipur and Gabtali raised several problems on rice cultivation, its seed production and preservation technique, soil health and fertilizer management, pest management etc. The farmers wanted to know about hybrid crops, high value vegetables, pests and their management, balanced fertilizer management for vegetable production. They demanded to ensure quality vegetable seed in local market. They were looking for the cost effective and environmental friendly technologies for protecting the insect's attack.

On the other hand, farmers have lack of knowledge on the management of livestock (cattle, goat, sheep and poultry). They have to face lots of difficulties, as they are not well aware about it as well as the availability of services from GOs and NGOs sectors are not adequate to manage livestock due to shortage of good quality medicine, extortionist and experts. That's why their cattle, goat, sheep and poultry are suffering from different diseases as well as surviving getting poor health.

In case of fisheries, farmers are not well aware about improved fish culture. There are culturing fish as usually.

Some prevailing problems raised by the farmers at field level during FGD in Sirajganj and Bogra districts are given below:

- ✓ Lack of knowledge on seed production and preservation technique
- ✓ Lack of availability of quality seed in the market
- ✓ Net-benefit of the produced crop is low
- ✓ Inadequate marketing facilities of their produced potato
- ✓ Inadequate vaccination facilities for livestock
- ✓ Inadequate supply of improved fresh water fish fingerlings

During FGD, most of the farmers of Bogra desired to get the training on improved rice cultivation method, seed production and its preservation technique, soil health and mixed fertilizer (organic and inorganic) management, pest management etc. They also desired to have the training on livestock management, beef fattening, and feed processing of their livestock. They are interested to rearing of improved varieties milking cow, goat and poultry. The farmers also desired to get the training on polyculture of fresh water fishes, disease management and fish feed preparation.

At the time of discussion meeting with the district level stakeholders (DAE, DLS, Department of Fisheries), suitable technologies were suggested for the small and marginal farmers of the targeted upazilas. Department of Agriculture Extension (DAE), gave more emphasis for providing training on improved rice seed production and preservation technique. They also suggested providing training on organic fertilizer, organic pesticide, compost preparation, homestead gardening and IPM. They also highlighted the availability of summer onion seed, hybrid seeds of chilli, tomato, brinjal and different types of gourd. They suggested introducing drum seeder, rice thresher, light weeder, vegetable nursery and also providing training on apiculture. Department of Livestock Services (DLS) suggested that the farmers should have training on boiler and layer rearing, milking cow rearing, beef fattening, poultry farming as well as bio security of poultry and different techniques of livestock improvement. On the other hand, department of fisheries (DoF) pointed out some problems such as credit problem for fish culture, inbreed problem, lack of knowledge on pond management, cost-effective fish feed preparation, fish population management, disease management etc.

In order to improve the livelihood status of the small and marginal farmers of the targeted upazilas, participating farmers and stakeholders of Bogra districts suggested some important initiatives, which, while not identified as technologies, were, nevertheless, suggested as worthy of consideration. These are given below:

- ✓ For every sector of rice, non-rice, livestock, fisheries and non-farm activities training is necessary.
- ✓ There should be trustworthy seed supplier.
- ✓ Herbicide introducing should be discouraging as it is not affordable for the small and marginal farmers.
- ✓ Hybrid rice cultivation should be discouraging as seed is costly and farmers cannot produce and store the seed for their own use.
- ✓ Quality seed of carrot, cabbage, cauliflower, tomato, Jute etc should be imported.

#### **4. Accepted ITDG documented technologies**

During FGDs at community level, out of 107 ITDG documented technologies, 58 technologies were accepted by the farmers, which are provided in Annex-II. Especially the women showed their keen interest on the documented agro based non-farm activities, which mostly include the food processing and preservation techniques.

### **Concluding session**

Md. Harun-Ar-Rashid, ED, AAS and consultant FoSHoL project, IRRI thanked all of the participating farmers and secondary stakeholders on behalf of AAS and IRRI. He appreciated the group leaders and the facilitators of both groups for providing high quality facilitation in identification, selection and prioritization of the technologies. He also thanked staffs of Proshika and AAS for providing the logistic support for the successful workshop.

A. K. M. Hasan Sayed, Coordinator, Social Forestry Programme, Proshika, Dhaka was very glad as the workshop is going to be end successfully. He thanked all of the workshop participants. He also thanked the funding agency EC, coordinating agency IRRI and workshop implementing agency AAS on behalf of disseminating NGO Proshika and concluded the session with a satisfactory breathing.

**Annex-I. Identified and prioritized suitable technologies for Bogra district by the participants of the district workshop**

<b>SI #</b>	<b>Sector</b>	<b>Identified technologies</b>
1.	Cereal: Rice	Cultivation of BR-11, 22 & 23 (Post flood), BRRRI dhan 32 & 41, Lal & Sada Paijam, Nizersail, Swarna, Kalamtepa, Moynamoti & Ganja during T. Aman season
		Cultivation of BRRRI dhan 28, 29 & 32, BR-14 and Mala during Boro season
		Rice disease and insect control technique
		Rice insect management through IPM
		Seed production and storage method at farmer's level
		Ensuring the supply of quality seed
		Improved seed storage method
		Improved technology for rice seed drying
		Rice thresher introduction
		Introduction of light and simple weeder for rice field
		Drum seeder use in irrigated land
		Rice seed production technique
		Quality seedling production technique
		Use of herbicide in rice production
		Improved production practices for HYV rice
	Improved fertilizer management in rice cultivation	
	Organic fertilizer based rice cultivation	
Maize	Improved production practices for Maize	
Wheat	Introduction of high yielding wheat variety and its improved production practices	
2.	Vegetable	Improved production practices for modern variety of potato
		Extension of Pakhri Potato cultivation
		Local Potato variety (Surjamukhi & Sundari) cultivation
		Potato disease management
		Introduction of high yielding brinjal varieties
		Introduction of Spiny brinjal cultivation
		Improved production practices: Brinjal, Tomato, Pointed gourd, Cucumber, Cauliflower, Cabbage, Sweet gourd, Papaya, Bitter gourd, Okra, Bottle gourd etc.
		Introduction of hybrid chilli cultivation
		Introduction of Elephant foot cultivation
		Drumstick cultivation within homestead
		Leafy vegetable cultivation
		Introduction of hybrid vegetable cultivation
		Improved storage techniques for vegetable seeds
		Vegetable seed production improved technique
		In-field irrigation technique for vegetable production
		Identification and management of insects and diseases of vegetable crops
		Introduction of high yielding disease resistant hybrid vegetable varieties
IPM in vegetable cultivation		

SI #	Sector	Identified technologies
3.	Fruit	Improved production practices of Banana
		Disease management for Mango and Jackfruit
		Insect management for Mango
		Introduction of disease resistant Papaya
		Preventive measures for fruit shattering of coconut
4.	Spices	Improved production practices for Onion, Garlic, Turmeric, Zinger, local and hybrid chilli
		Introduction of summer Onion cultivation
		Improved production practices of summer Onion and its true seed
		Improved production practices of high yielding Garlic
		Introduction of hybrid chilli varieties for winter season and year round
5.	Nursery	Nursery establishment and management
		Fruit and vegetable nursery management
		Saplings production technique
		Grafting technique
		Commercial small scale flower production
		Flowers culture technique
		Marigold, Tube rose and Dalea cultivation technique
6.	Oil seeds and pulses	Introduction of short duration and high yielding mustard varieties
		Lentil cultivation
		Extension of local variety of Mash kalai (Black gram)
		Introduction high yielding Mug (Mung bean) cultivation (BARI Mug 5 & 6, BINA Mug)
7.	Soil health	Soil test based fertilizer management
		Improved technique for compost and vermi-compost preparation
		Organic-inorganic fertilizer based profitable crop production
		Fertilizer management through maintaining soil health
		Introduction of soil type wise cropping pattern
8.	Others	Organic fertilizer preparation technique
		Rice based cropping pattern
		(a) Potato-Boro-T. Aman
		(b) Mustard- Boro-T. Aman
		(c) Potato+Khira-Boro-T. Aman
		Extension of use of Power tiller for land preparation
		Development of farmer's extension agent for crop disease and insect management
		Health hazard free and environmental friendly crop pests and diseases management
		Introduction of improved apiculture
Quality Jute seed production of improved varieties at farmer's level		

<b>SI #</b>	<b>Sector</b>	<b>Identified technology</b>	<b>Ranking</b>
9.	Fisheries	Practical training on fish culture	1
		Integrated fish culture in small pond	2
		Improved fingerling production	3
		Fingerling production technique from fry	4
		Sharputi fish culture	5
		Fish feed production and management	6
		Fish culture in small and seasonal pond	7
		Water and pond management for fish culture	8
		Fish disease control method	9
		Monosex Tilapia culture	10
		Improved polyculture of fishes	11
		Pangas culture	12
		Credit support for fish culture	13
		Fish culture in T. Aman field	14
		Community based fish culture	15
10.	Livestock	Duck and chicken rearing	1
		Milking cow rearing	2
		Sheep rearing	3
		Disease management of duck and chicken	4
		Cattle breeding for improved breeds	5
		Improved milking cow rearing for higher milk production	6
		Profitable beef fattening	7
		Poultry (Duck and chicken) feed preparation and feed management	8
		Black Bengal goat rearing	9
		Calf (female) rearing	10
		Credit for Sheep, Goat and Cattle rearing	11
		Introduction of kawmi & Sonali chicken breeds	12
		Egg incubation through rice husk method	13
		Napier grass production practices	14
		Indian runner and Khaki cambol duck rearing	15
		Boiler production of chicken (Flood free area)	16
		Pigeon rearing	17
		Health management for cattle	18
		Skill extension agent on vaccination for livestock and poultry at community	19
		Health management for Goat and Sheep	20
		Commercial Kawmi & Sonali chicken rearing	21
		Milk processing technique	22

## Annex-II. ITDG documented technologies accepted by the farmers in Bogra district

Sl. Nr.	Farmer's accepted ITDG documented technologies
1.	Tomato sauce preparation
2.	Tamarind chatni preparation
3.	Garlic pickle preparation
4.	Chanachur preparation
5.	Green mango chatni preparation
6.	Zilapi preparation
7.	Mobile rice milling business
8.	Olive chatni preparation
9.	Candle preparation
10.	Hog plum chatni preparation
11.	Banana chips business
12.	Green mango pickle preparation
13.	Poultry feed preparation & business
14.	Olive sour-sweet-hot pickle preparation
15.	Amsatta preparation
16.	Green chilli pickle preparation
17.	Dry Jujube pickle preparation
18.	Hog plum hot pickle preparation
19.	Milk business
20.	Puffed rice (muri) preparation
21.	Dry Jujube-Tamarind mixed pickle preparation
22.	Fish drying
23.	Poultry rearing
24.	White gourd morabba preparation
25.	Improved furnace (chula) preparation
26.	Goat rearing
27.	Beef fattening
28.	Coconut fibre made handicraft preparation
29.	Soap preparation
30.	Small (mudi) shop
31.	Business on Duck egg incubation through Chinese method
32.	Milking cow rearing
33.	Apiculture
34.	Coconut ball (Naru) preparation
35.	Kasundi Preparation
36.	Sewing
37.	Khurma /Goza preparation
38.	Shon papri preparation
39.	Packaging business
40.	Tea stall
41.	Gunny bag preparation and its business
42.	Power tiller business for land preparation
43.	Kot Koti preparation
44.	Sugarcane Juice preparation
45.	Organic fertilizer preparation
46.	Papor preparation
47.	Charcoal preparation and business
48.	Seed business
49.	Vermi-compost preparation
50.	Irrigation business in crop field
51.	Commercial flower production
52.	Grinded spices business
53.	Bamboo handicrafts preparation and its business
54.	Commercial Bamboo cultivation
55.	Agri-implements repairing business
56.	Pigeon rearing and business
57.	Nursery for medicinal plants
58.	Mango morabba preparation

**Annex-III.a: List of participants of the district workshop in Bogra  
(Farmers)**

<b>Sl. No.</b>	<b>Name</b>	<b>Village</b>	<b>Upazila</b>	<b>District</b>
1.	Abdul Bari	Nishindara	Gabtali	Bogra
2.	Madan Kumar	Nishindara	Gabtali	Bogra
3.	Abdus Salam	Nishindara	Gabtali	Bogra
4.	Md. Jahirul Islam	Nishindara	Gabtali	Bogra
5.	Md. Habibur Rahman	Chakla	Gabtali	Bogra
6.	Mst. Miroza Khatun	Khidraperi	Gabtali	Bogra
7.	Mst. Akima Khatun	Khidraperi	Gabtali	Bogra
8.	Mst. Khaleda Khatun	Khidraperi	Gabtali	Bogra
9.	Mst. Bilkis Begum	Khidraperi	Gabtali	Bogra
10.	Mst. Angura Begum	Khidraperi	Gabtali	Bogra
11.	Mst. Fahima Begum	Gutum Nagar	Gabtali	Bogra
12.	Mst. Shefali Begum	Nishindara	Gabtali	Bogra
13.	Mst. Sahera Begum	Nishindara	Gabtali	Bogra
14.	Mst. Dolena Begum	Nishindara	Gabtali	Bogra
15.	Md. Dulal	Hamidpur	Gabtali	Bogra
16.	Md. Anamul Haque	Nishindara	Gabtali	Bogra
17.	Md. Fazlul Haque	Nishindara	Gabtali	Bogra
18.	Abdur Rahim	Khidroperi	Gabtali	Bogra
19.	Mst. Hazera Khatun	Khidroperi	Gabtali	Bogra
20.	Mst. Champa Khatun	Khidroperi	Gabtali	Bogra
21.	Md. Fazar Ali	Shimuldair	Kazipur	Sirajganj
22.	Md. Azad Mahamud	Shimuldair	Kazipur	Sirajganj
23.	Md. Delwar	Shimuldair	Kazipur	Sirajganj
24.	Md. Muktal	Shimuldair	Kazipur	Sirajganj
25.	Mst. Rojeba Khatun	Shimuldair	Kazipur	Sirajganj
26.	Mst. Maya	Shimuldair	Kazipur	Sirajganj
27.	Mantu Shekh	Khidraperi	Gabtali	Bogra
28.	Anjuyara Begum	Khidraperi	Gabtali	Bogra
29.	Piyara Begum	Khidraperi	Gabtali	Bogra
30.	Md. Ruhul Amin	Khidraperi	Gabtali	Bogra

**Annex-III.b: List of participants of the district workshop in Bogra  
(Stakeholders)**

<b>Sl. Nr.</b>	<b>Name</b>	<b>Designation</b>	<b>Organization</b>	<b>Address</b>
1.	Mst. Rebeka sultana	ED	GKSS	Sariakandi, Bogra
2.	A.K.M. Ferdous	Agronomist	AAS	Dhaka
3.	Khandakar Tofazzal	ZC	Proshika	Dhaka
4.	Md. Mahinur Rahman	AC	Proshika	Gabtali, Bogra
5.	Md. Mojahidul Islam	ACA	Proshika	Gabtali, Bogra
6.	Biswajit Saha	ACA	Proshika	Gabtali, Bogra
7.	Mostafijur Rahman	Accountant	Proshika	Gabtali, Bogra
8.	Deb Kumar Nath	Irrigation Engineer	AAS	Gabtali, Bogra
9.	Md. Ruhul Amin	Imam	Jame Mosque	Gabtali, Bogra
10.	Md. Morteja Ali	Deputy Supervisor	BRDB	Gabtali, Bogra
11.	Md. Abdul Karim Akanda	Vice Chairman	Focus Society	Gabtali, Bogra
12.	Md. Moktar Hossain	PO (ACA)	Proshika	Gabtali, Bogra
13.	Md. Mamtajul Islam	URDO	BRDB	Gabtali, Bogra
14.	Md. Abu Bakkar Siddque	ED	BRIDGE	Gabtali, Bogra
15.	Md. Golam Mowla Jaglun	Upazila Livestock Officer	DLS	Gabtali, Bogra
16.	Md. Tofayel Ahmaed Khan	Assistant Director	Department of Youth Development	Gabtali, Bogra
17.	MM Anwar Hossain	SPO	Proshika	Gabtali, Bogra
18.	Nazim Uddin Ahmad	DFO	DoF	Gabtali, Bogra
19.	Shaila Arifa Nabi	Researches	IRRI	Dhaka
20.	Dr. Tapash Kumar Biswas	Manager, Monitoring and Evaluation	IRRI	Dhaka
21.	Qazi Khaze Alam	Director (Natural Resources)	Proshika	Dhaka
22.	Dr. Noel P. Magor	IRRI Representative and Manager FoSHoL Project	IRRI	Dhaka
23.	Md. Aftab Hossain	UFO	DoF	Gabtali, Bogra
24.	Md. Saiful Islam	Computer Operator	SFO	Gabtali, Bogra
25.	Shirin Ferdous	ARDO	BRDB	Gabtali, Bogra
26.	A.K.M. Hasan Sayed	Coordinator	Proshika	Dhaka
27.	Md. Abdul Aziz	AC	Proshika	Kazipur, Sirajganj

<b>Sl. Nr.</b>	<b>Name</b>	<b>Designation</b>	<b>Organization</b>	<b>Address</b>
28.	Md. Ayub Ali	APO	Proshika	Gabtali, Bogra
29.	Tanvir Ahmad	Cashier	Proshika	Gabtali, Bogra
30.	Rukshana Mamtaz	UWAO	-	Gabtali, Bogra
31.	Md. Hanif Sarder	Cashier	Proshika	Gabtali, Bogra
32.	Md. Nazrul Islam	-	Proshika	Gabtali, Bogra
33.	Md. Abdur Rahman	USSO	Upazila Social Service	Gabtali, Bogra
34.	Md. Abdul Alim	DW	Proshika	Gabtali, Bogra
35.	Mozaffor Hossain	DW	Proshika	Gabtali, Bogra
36.	Abul Kalam Azad	DW	Proshika	Gabtali, Bogra
37.	Biplab Bairagi	DW	Proshika	Gabtali, Bogra
38.	Md. Rahmat Ali Mollah	SO	BARI	OFRD, seujgari, Bogra
39.	Md. Abul Kalam Azad	SO	BARI	OFRD, Gabtali, Bogra
40.	Md. Shafiqul Islam	AAO	DAE	Gabtali, Bogra
41.	A.A. Bazlur Rashid	UAO	DAE	Gabtali, Bogra
42.	Md. Abu Bakkar Siddique	PO	Proshika	Gabtali, Bogra
43.	Md. Abu Sayed	SFO	Proshika	Gabtali, Bogra
44.	Mr. Tapous Shaha	SFO	Proshika	Gabtali, Bogra
45.	Ashraf Ali	SFO	Proshika	Gabtali, Bogra
46.	Fahima Parvin	SFO	Proshika	Gabtali, Bogra
47.	Nayontara	SFO	Proshika	Gabtali, Bogra
48.	Md. Harun-Ar-Rashid	ED	AAS	Dhaka

**Annex-IV**  
**Participatory workshop**  
**Technology Identification and Recommendation for FoSHoL project**  
**Schedule**

**Date:** 17 March 2005

**Place:** GTC, Proshika, Gabtali, Bogra

**Funded by:** EC

**Time:** 9.00 am- 4.00 pm

**Implemented by:** Proshika & AAS

**Coordinated by:** IRRI

Time	Subject	Method	Presenter/Facilitators
9.00-9.45 am	Registration	-	Mustafizur Rahman, Proshika
9.45-10.00 am	Honorable guest reception	-	M. M. Anwar Hossain
	<b>Inaugural Session:</b>		
10.00-10.05 am	✓ Recitation from holy Quran	-	Hafez Md. Ruhul Amin, Imam, Gabtali Jame Mosque
10.05-10.15 am	✓ Welcome address	-	A.K.M. Hasan Sayed, Coordinator, Social Forestry Programme, Proshika
10.15-10.25 am	✓ Short briefing from AAS on FoSHoL project & workshop	-	Md. Harun-Ar-Rashid, ED, AAS and consultant, FoSHoL project, IRRI
10.25-10.35 am	✓ Short briefing from DLS on FoSHoL project	-	Dr. Golam Maula Jaglul, ULO, Gabtali, Bogra
10.35-10.50 am	✓ Short brief from DoF on FoSHoL project		Md. Nazim Uddin Ahmad, DFO, Bogra
10.50-11.00 am	✓ Inaugural Speech of chief guest and opening of the workshop	-	Dr. Noel P Magor, Manager, FoSHoL project and Representative, IRRI, Dhaka
11.00-11.10 am	✓ Inaugural speech of the session Chairman	-	Qazi Kaze Alam, Director, Natural Resources, Proshika
11.10-11.30 am	Tea break	-	-
	<b>Technical session:</b>		
11.30-1.00 pm	✓ Process of technology identification	Presentation & Group formation	-Harun-Ar-Rashid -M.M. Anwar Hossain
	✓ Technology Identification and selection (Group-1: Crops and non-farm)	Card writing and Plenary	Harun, Anwar, Deb Kumar, Tofazzel
	✓ Technology Identification and selection (Group-2: Fisheries and livestock)	DO	Dr. Tapash, Hasan Sayed, Ferdous, Shaila A Nabi
1.00-2.00 pm	✓ Break for prayer and lunch	-	-
2.00-3.30 pm	✓ Prioritization of the selected technologies (Group-1 & 2)	Plenary	Harun, Anwar, Deb Kumar, Tofazzel, Dr. Tapash, Hasan Sayed, Ferdous, Shaila A Nabi
	✓ Presentation of the technologies	Presentation	Group-1: A. H. Bazlur Rashid, UAO, DAE, Gabtali, Bogra Group-2: Md. Habibur Rahman and Mst. Hajera Khatun, farmer
3.30-4.00 pm	<b>Concluding session:</b> ✓ Representative of AAS ✓ Representative of Proshika	-	- Md. Harun-Ar-Rashid - A.K.M. Hasan Sayed