Sub-Project:
Skilled family member (s) extension approach for rice knowledge adoption (SP # 44 02)

Evaluation Report

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EXECUTIVE SUMMARY

Rice cultivation in Bangladesh is obviously a whole family activity as all immediate family members participate in the production cycle. Therefore it is imperative to target and train families as rice producing units rather than categorically divide training into gender-specific and/or task-specific segments. The idea has been evolved during some initial research done by the International Maize and Wheat Improvement Center (CIMMYT) in Bangladesh. They found higher degrees of adoption rates of wheat technologies when whole family members are trained together. Assumptions are made that similar approach could be true to rice technology transfer as well since the tasks of rice cultivation and wheat cultivation, in many ways, are pretty similar.

The sub-project has been designed particularly to validate the claim of such advantages of whole family training concepts. Instead of wheat, here rice has been considered as the major crop for improvement. For validation, the "whole family training" concept has been compared with the concept of providing training to half family both husband & wife, husband alone, and wife alone.

The project has been implemented in three districts of Rajshahi division for one and half year period since January 2003 in collaboration with a particular NGO, which is referred as partner organization (PO) in each district. The districts are Sirajganj, Pabna and Natore. In each district four villages were selected. In each village a particular approach was implemented, in a way an approach had a chance to be replicated in three villages. The primary objective of this evaluation was to conduct a comparative study among the four different approaches that are mentioned above in terms of benefits and gains accessed by the farmers of different groups.

The study was conducted from March 10-30, 2004 by an independent consultant who was assisted by two enumerators for collecting necessary information and data from the field. The study involved a variety of methodologies such as individual interviews, focus group discussions, field visits and opinion survey. During each method a representative group of farmers participated at various discussions and expressed their opinions.

Based on all the findings of study (evaluation) it is absolutely evident that both half family and whole family approaches have consistently done better than the other two approaches, particularly in the areas of gaining more knowledge, application of new technologies in their fields, enhanced rice production and rice provision ability, and the dissemination of technologies through roll-on effect to other non participating farmers of the same villages. According to all the tests that has been done during this evaluation mission, the half family group ranked first while the whole family group ranked second. The husband alone and wife alone group stood third and fourth respectively. However, compare to the control villages, farmers in all the groups have been found to make tremendous improvement in terms of increasing knowledge, management capacity of rice fields, and enhancing their rice yields and rice provision ability.

1 BACKGROUND

Rice is the staple food and most strategic commodity in the Bangladeshi economy. It contributes nearly 20% of GDP and occupies 75% of cropped land. It provides for nearly 50% of employment and 75% of calories consumed in the country. Furthermore, the rural and urban poor spend up to 60% of their time for incomes on it.

During the last 30 years BRRI has developed about 40 MVs of rice and production practices. The Department of Agriculture Extension (DAE), the principle extension service provider has been engaged in disseminating such rice knowledge through traditional extension methodologies to improve the production of rural farm families in the country. The impact of such rice knowledge and technology dissemination however, has been found much lower than what was anticipated earlier.

One important problem is that in the rice technology transfer/dissemination process, the extension service providers' target groups are mostly the male farmers. Additionally, no comprehensive research had ever been done on the roles of women in improved rice knowledge and its dissemination among the farmers. But under Bangladesh context, it is obvious that rice production is a whole family activity. Because, all immediate family members participate in the production cycle and all family members are affected by the production decisions and results. In addition, families have their own different systems for determining intra-household labor allocation. As such it is imperative to target and train families as rice producing units rather than categorically divide training into gender-specific and/or task-specific segments, demonstrating respect for the family's internal operations. Thereby, the "whole family training" program is an alternative approach based on these concepts.

The approach has been evolved during some initial research done by the International Maize and Wheat Improvement Center (CIMMYT) with local collaborators under a project on dissemination of wheat technologies in Bangladesh. The initial findings of the project have indicated higher degrees of adoption rates of wheat technologies when whole family members are trained together. Assumptions are made that similar approach could be true to rice technology transfer as well since the tasks of rice cultivation and wheat cultivation, in many ways, are pretty similar. But no comprehensive research had ever been conducted on the roles of "whole family" on improved rice knowledge and its dissemination among the resource poor farmers (RPFs).

However, when we consider the engagement of family force, it mostly means the husband and wife since children are engaged in their own study. Hence if only the husband and wife of a family are trained together they may also contribute the same. Besides, there are tasks that are mostly done by either man or woman. Such as women play major role in post harvest operation, while men are mostly engaged in transplanting and field management work.

The sub-project has been designed particularly to validate the claim of such advantages of whole family training concepts. Instead of wheat, here rice has been considered as the major crop for improvement. For validation, the "whole family training" concept has been compared with the concept of providing training to half family both husband & wife, husband alone, and wife alone.

2 OBJECTIVES

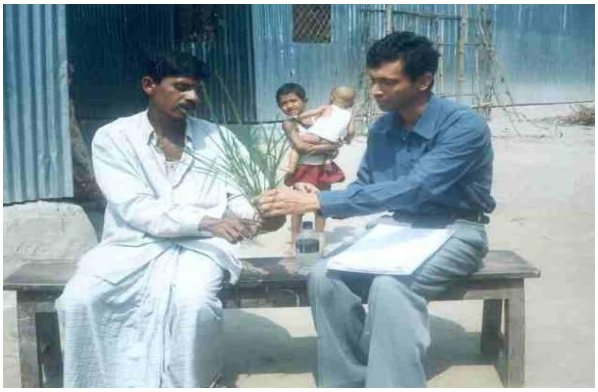
The primary objective of this evaluation was to:

1. Conduct a comparative study among the four different approaches that mentioned above in terms of benefits and gains accessed by the farmers of different groups, and

2. Assess and identify the most useful concept/concepts of providing training to the resource poor farm families of Bangladesh based on the effectiveness of each tested approaches.

3 DESIGN AND METHODOLOGY OF THE STUDY

The study was conducted from March 10-30, 2004 by an independent consultant who was assisted by two enumerators for collecting necessary information and data from the field. The study, however, was designed in consultation with the project staff who were actively involved in the implementation of the project. The study involved a variety of methodologies including intensive field visits as illustrated below.



Individual interviews: Individual interviews were conducted in 12 villages of the project with a representative number of participants in a given set of questionnaires. Please see the attachment. The number of samples in a village was 10. In the case of whole family, the whole family members and in the case of half family both the husband and wife together were considered a single sample. For these two cases any member answered to a question was considered a full answer.

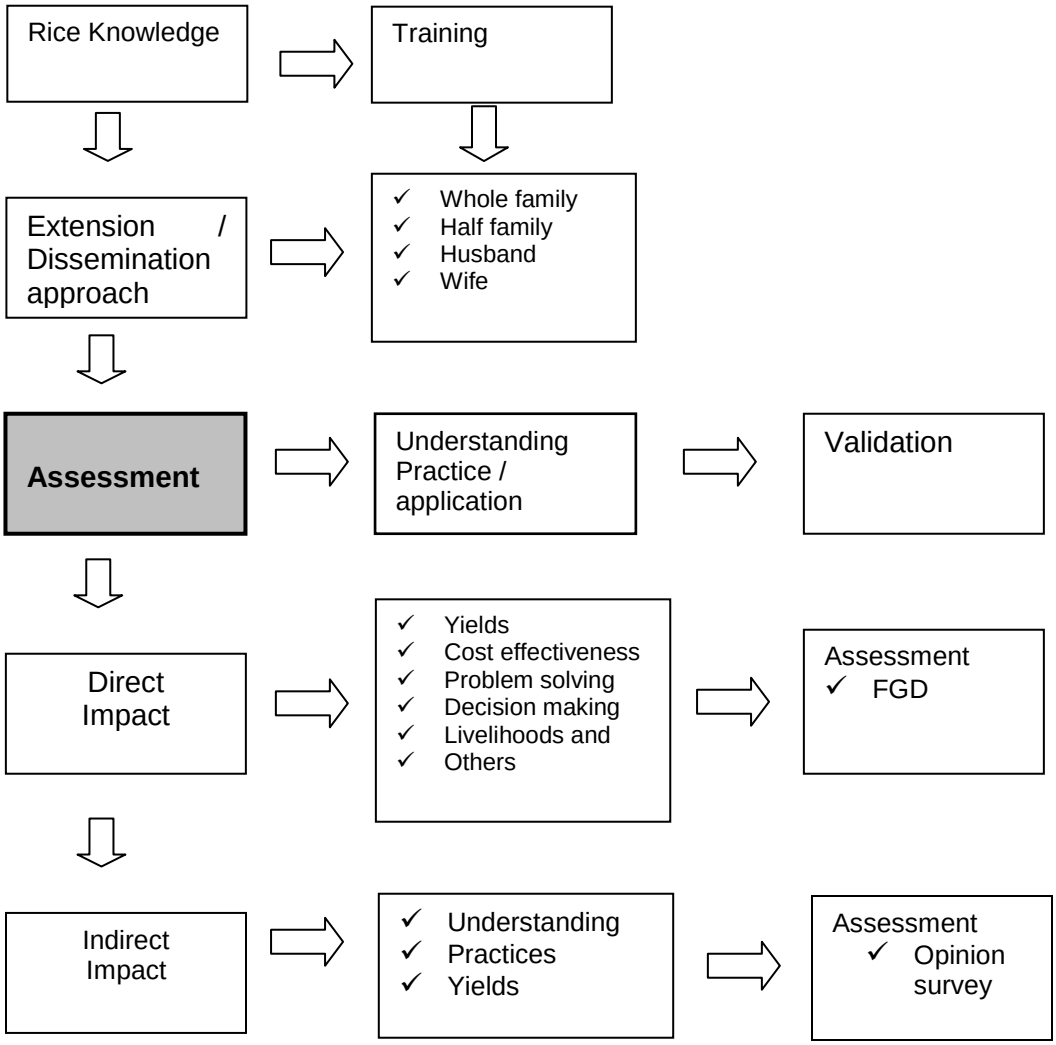
Focus group discussions: In each village, focus group discussion was organized with 10 families. For whole family the number of member however, was more than 30 since a family comprises 3-4 members, similarly for half family the number of member was 20 since both husband and wife participated in the discussion. But in the case of husband alone and wife alone the number of member was only 10. Focus group discussions were organized in all the 12 villages of the project, primarily to know how farmers are making progress after they participated in different training activities of the project. Farmers were asked which activities of the project training they liked most, how many farmers have experienced yield increase and how they are making decisions now to improve their rice fields.

Field visits: In each of the 12 villages field visits were made. During the field visits the study/assessment team visited on an average five farmer's fields, specifically to witness how they are applying the new knowledge in their own field, and what percentage of farmers are applying those knowledge.

Opinion survey was designed to assess the degree of roll-on effect of the project training given to the targeted beneficiaries of the project. It was particularly designed to see how many non-

participating farmers learnt from the participating farmers about different aspects of rice production. During the opinion survey in each of the project villages five non-participating farmers were interviewed randomly about different aspects of the training, particularly whether they have heard about the training of the project. If heard, what activities or issues they liked and applied in their own fields.

Controlled samples: In addition to compare between the approaches, the project wanted to see how much improvement an approach could make towards the lives of the communities as against those communities where the project did not organize any training and motivation. Thus, against each approach the project has selected a particular village as control village in the project areas. In the controlled village, individual interviews were taken with the same questionnaire as used in the other villages of the project where different approaches were applied. During the interviews in the controlled villages farmers were also asked about their rice yields, total production, and rice provision ability particularly to compare with the project targeted villages to see how farmers in the targeted villages improves their livings and livelihoods.



Design/Framework of the study

4 PROJECT LOCATIONS AND METHODOLOGIES

Selected approaches for testing: As mentioned earlier, the project selected four distinct approaches to closely study their comparative advantages and effectiveness in order to assess the overall performance of whole family member extension approaches. The approaches were;

(a) Whole family approach
(b) Half family approach (husband & wife)
(c) Husband approach
(d) Wife approach

Farmers and locations of the project: The project has been implemented in three districts of Rajshahi division for one and half year period since January 2003 in collaboration with a particular NGO, which is referred as partner organization (PO) in each district. The districts are Sirajganj, Pabna and Natore. In each district four villages were selected. In each village a particular approach was implemented, in a way an approach had a chance to be replicated in three villages. The partner NGOs, all of them are women-led, are Women Development Project (WDP), Pabna Protisruti (PP) and Lustre. Farmers in those villages were selected based on a given set of criteria such as a farmer should not have more than 100 decimals of land with 3-8 month rice provision ability (RPA) in a year with the help of the Resource Poor Farmer Groups (RPFGs) of POs in the respective districts.

Table 1: project area and the particular villages for different approaches and partner organizations.

District	Upazilla	Village	Approach	Family Nos	Partner NGO
Sirajganj	Tarash	Khir Pota	Half family	25	WDP
		Bigompur	Whole family	25	
		Laxmipur	Wife	25	
		Bishom Danga	Husband	25	
Pabna	Atghoria	Kandaphpur	Wife	28	PP
		Parkodalia	Half family	30	
		Mianpara	Whole family	30	
		Beruan	Husband	26	
Natore	Natore Sadar	Karota	Half family	25	Lustre
		Rajibpur	Wife	25	
		Kamardiar	Husband	25	
		Gakul Nagar	Whole family	25	
Total		**-**	**-**	**314**	**-**

Farmer's meeting and group formation: After farmers were selected, in each village special meeting was organized to explain them about the purpose and objective of the sub-project. The meeting also discussed about the working strategies of the project. At the end of the meeting, with the selected farmers in each village a group was formed. Working through the group was an important methodology of the research activities.

Participatory Benchmark Survey: The purpose of the Participatory Benchmark Survey (PBMS) was to generate baseline information for using as sub-project implementation guidelines and future

impact comparison. At the initial stage the sub-project conducted a cost-effective participatory Benchmark Survey (PBMS) in each project village with selected research farmers. Around 40 farmers were involved in the PBMS in each of the villages. A Participatory Focus Group Discussion (PFGD) method with a simple semi-structured questionnaire was used particularly to gather information on the following aspects:

(i) Farmer's existing rice knowledge level in general
(ii) Farmer's existing knowledge about rice production practices
(iii) Farmer's existing knowledge about rice post-harvest practices
(iv) Farmer's existing knowledge about quality rice seed technology
(v) Farmer's existing knowledge about rice pests and diseases

Participatory Training: Based on the information gathered during Benchmark survey, the sub-project conducted farmer's participatory training (FAMPAT) on rice technology in two rice seasons at each project village, mainly to develop the skills of farmers in areas where they needed improvement. The training was conducted by the trained female field staff of POs, with the help of female agronomist (trainer) at each project village. Training module, contents, materials and schedule were prepared based on mutual discussions and common understanding between the selected farmers and the project trainers. The training contents covered basic knowledge of rice plant and T. Aman cultivation methods, modern methods of Boro rice cultivation, plant health management of rice, modern rice seed production, post harvest management and preservation methods.

Participatory Monitoring: To assess the response of the farmers and results of the training, particularly how the farmers were applying those knowledge and skills that they received during the training, the project introduced a participatory monitoring system. Mostly sub-project staff and the staff of the partner organizations were involved in this monitoring. Monitoring was done through group discussions, individual interview with farmers and individual field visits. For participatory monitoring a plot was maintained by each farmer for each season at 12 project villages in the project areas. To strengthen the quality of the monitoring a standard format and a given set of checklists were prepared by the project in consultation with the farmer groups. During the monitoring in all the villages same methodologies were applied so that between them (villages) a balance and similar standards were maintained.

5 FINDINGS:

5.1 Farmers knowledge and understanding

To improve farmer's understanding, knowledge, and skills, as mentioned earlier, the project organized training for farmers of all four categories. The training was organized on important aspects of rice production. During the training similar contents, curriculum and methodology were maintained.

This section tried to identify the level of knowledge and understating that the farmers of different categories gained from those training. Accordingly a total of 28 questions were asked to each group of farmers. A right answer was scored with 10 points. The average scores of each group were determined in percentage based on the averages of three villages from the three districts.

The questions were determined based on the level of farmer's understating and contents of the training provided to the farmers.

Table 2: Scores obtained by different groups of farmers on knowledge and understanding test

Subject	WF %	HF %	H %	W %	Control %
1. Morphology	74	87	77	66	44
2. Agroecology	75	79	64	40	42
3. Seedling production	95	93	92	91	54
4. Intercultural operation	98	99	92	93	89
5. Insect and their management	80	79	64	63	37
6. Disease and their management	56	48	35	27	17
7. Post harvest	97	98	92	90	84
8. Seed and seed storage	73	90	79	51	40
Overall average (%)	**81**	**84**	**74**	**65**	**51**

WF = Whole family, HF = Half Family, H = husband, W = wife and control= Average of 4 control villages

*From the overall average it appears that the **half family group** (husband and wife) has scored the highest, the next highest group is the **whole family group**. This means that these two groups could remember most of the issues that they learned during the training. However, the difference between these two groups is very marginal and could be considered insignificant. According to the tradition in Bangladesh Women are mostly associated with seed preservation, but to a greater surprise on this particular issue men scored better than women.*

5.2 Adoption of improved technology by different groups in their own fields

To assess how many farmers have applied the new technology into their own fields, the study team organized **focus group discussions** in all twelve villages. In each of the group discussions farmers were asked which technology and how many of them applied the technology in their own fields. Farmer responded to each of the technology adopted by raising their hands.

About the use of the new technology all the farmers who participated in the project training used modern rice variety. Most of the farmers in all the groups prepared seedling in standard seedbed. On the use of other

technology there are sharp variations observed between the groups. None of the farmers in any group applied all the new technologies that they learnt. Given such differences it is very difficult to judge which group of participants have done the best. But from the computed averages which are made based on the percent of use of technology by a group, it appears that the half family group has applied more new technology than any other groups, the second highest group is the whole family group.

Table 3: Percent of farmers adopted new technology into their own fields.

Area/Subject	WF %	HF %	H %	W %	Control %
1. Modern rice variety	100	100	100	100	50
2. Modern seed bed preparation	80	86	87	75	00
3. Standard Seed rate	69	67	75	33	00
4. Line sowing	52	57	72	67	25
5. Appropriate no, of seedling per hill	60	66	45	48	00
6. Balanced fertilizer	69	75	71	89	00
7. Rice insect and their management	67	71	65	56	00
8. Rice disease and their management	52	50	40	20	00
9. Water Management	60	62	55	56	10
10. Quality of good rice seed	56	45	40	51	00
11. Rice seed storage	58	85	45	59	25
Average %	**65.7**	**69.4**	**63.2**	**59.4**	**10**

The results of above table clearly indicate that there are advantages of providing training to the farmers in family approach particularly on the use of new technology in their fields. However, to make such judgment based on this information alone would be very much preemptive since most of the information in this section was gathered based on the focus group discussions where farmers have higher chances to be influenced by one another.

5.3 Field visit to see how farmers are managing their field

The main purpose of the field visit was to witness by the study team actually what technical interventions farmers had applied in their own fields from among those that they mentioned during the focus group discussions. The field visit was also useful to see the growth of the rice field as well as the real benefits that the farmers could obtain from the use of those technologies. Eventually at the end of the focus group discussion, the study team randomly selected five families from each group of farmers and visited their fields. During the field visit the rice field was at its mid tillering stage.

Against the management of each of the subject mentioned on the left column of the table below farmers were given score from 1-5 point scale. (5 means excellent, 4 means good, 3 means moderate, 2 means poor and 1 means bad). Although, during the field visit, the study team wanted to validate all the information that each farmer group provided during the focus group discussions, but due to the current field conditions only those information that are provided in the table was possible to verify.

Based on the scores obtained by each group of farmers, it appears that all farmer groups have applied very carefully all those technologies that they mentioned during the focus group discussion. The differences of technology adoptions between the groups are marginal. Most of the group scored more than 90%. Among them the half family and whole family, and wife group did the best.

The following tables provide the type and status of information that were collected and scored based on the specific situation found in each farmer's field.

Table 4: Technical interventions found applied in farmers field

Subject	WF	HF	H	W	Control
1. Variety	5	5	5	5	2
2. Planting line	4.5	5	4.5	4.5	0
3. Spacing	5	5	5	5	0
4. Fertilizer management	4.5	4.5	4	4.5	0
5. Weed control	5	5	4.5	5	3
6. Growth of rice plant	5	5	5	5	3
Average (%)	**96.6**	**98**	**93**	**96.6**	**26.6**

5.4 Decision making process

The study team wanted to see, if various approaches of training had made any significant difference the way families take decision to manage their farms and families. Accordingly, during the focus group discussions, each group of farmers was asked the same question about how they make the decision about their farming, particularly which crop to grow, which variety to use, how much area to grow, which technologies to apply, etc.

Table 5: How farmers make decision on their farming

WF	HF	H	W
Take decision based on the opinion of all family members	*Take decision based on all family members opinion*	*Take decision in presence of all members*	*Take decision on the basis of whole family opinion*

Based on the answers provided by each group of farmers there is no difference on their decision making process. Every group has mentioned that they make decision in consultations with all family members. However, this might not be case for all farmers. During our discussion with some individual farmers separately, they mentioned, decision about farming are mostly taken by the male members of the family since the women are not involved in the field activity. One farmer mentioned his wife even does not know where their farms are. This could be true to most of the family irrespective of groups. But there could be more chances with whole family, and husband and wife group, that they make decision jointly since all of them together attended the training, which might influence their decision making process. Nevertheless, in separate discussions, women indicate that they hold more knowledge than men particularly on seed preservation and post harvest issues.

5.5 Problem solving

The results of the knowledge tests have clearly demonstrated that farmers have got new knowledge and skills from the training that the project offered during different periods of time. This section has tried to assess how those skills have influenced the decision making of different categories of farmers. To do that the project identified a list of common issues that farmers always consider as problems in rice production. Each category of farmers was asked how they solved those problems or what measures they usually took. Following tables provides the details of their answers.

Table 6: How farmers solve their problems

Problem encountered	Problem Solved				
	WF	**HF**	**H**	**W**	**Control**
1. Insect problem	Put stick, Apply insecticide	Remove infested plants, put stick, apply insecticide	Put stick, Use sweep net, Destroy egg mass, Finally apply insecticides	Put stick, Apply insecticide	Apply only insecticide
2. Disase eg. Sheath blight	Apply ash, Zinc Sulfate and Fungicide	Apply TSP, MP, ZnSO4 and Fungicide.	Remove water Use cowdung, ash and Fungicide	Apply ash, cowdung, Zinc fertilizer and dry the soil	Do nothing
3. Irrigation	-Use shallow tube well water	- Use shallow tube well water.	They cannot solve it, some time they use shallow tube well water.	Use shallow tube well water	Use shallow tube well water
4. Unavailability of good quality seed	-Collect from good harvest	Buying from market	-Buy from market	Buying from distance market	Use own seeds

From the answers of the above table it is very clear that each group of farmers have their own way of solving particular problem. This has again demonstrated that the project training has made significant improvement towards farmer problem solving ability. Based on their nature of

problem solving it is very difficult to judge which group has higher skills and knowledge of problem solving since in their own context each of them is absolutely right.

However, in the context of first problem half family (husband and wife) and only husband group has scored better than the other two groups since they were able to mention 4-5 points that they were taught during the training. But on the other hand the advantage of the whole family is that many members of a particular family knows how to solve a particular problem, whereas in husband alone or wife alone group only one person know how to solve a particular problem.

5.6 Rice provision ability

This section was very crucial particularly to see the overall impact of the project training. During the focus group discussions each family was asked how much their yield was before and how much has increased after they received the training. Farmers were also asked about their total cultivable land and subsequent rice provision ability.

Table 7: Farmers average rice yields and rice provision ability

Subject		*WF*	*HF*	*H*	*W*	*Control*
Average rice yield (T. Aman, 2003)	Mound/Bigha[1]	14	13	13	14	11
	% Increased	23	27	20	21	04
Rice Provision	Month/year	8	8	7	7	6
	% Increased	34	36	32	30	11

[1] 1 Mound =40 Kg, 1 Bigha=33 decimals and 100 decimals=1 Acre

The above table again clearly indicates that each group of farmers has made significant achievement in terms of improving their rice yields as well as their rice provision ability. The percent of increase in rice yield along with the rice provision ability was noticed highest with the half family group. The second highest was the whole family group. This increase was calculated based on average of 20 families who attended the focus group discussions. Please see the details in Annex-3.

5.7 Dissemination of technologies to non participating farmers

The project organized training for the targeted group of farmers. But it is highly anticipated that the experiences and gains of these target beneficiaries would influence the activities of other non-targeted farmers of the same communities. In such a way over time the technology will be disseminated to the entire farmers of the communities. To assess such dissemination process or in other word the roll-on effect of the training from the targeted beneficiaries to non-

targeted beneficiaries, the study team randomly organized opinion survey with five farmers of the same villages. Those farmers were asked the following questions as stated in the table below.

Table 8: Percent of non-participating farmers using new technology

Area/Subject	**WF**	**HF**	**H**	**W**
How many percent of farmers know about the training	100	100	67	87
How many issues they learned on average	4	2	2	4
How many issues they applied in their field on average	4	2	2	4
What benefits they got	-	-	-	-
Rank	**1 (1st)**	**2 (2nd)**	**4 (4th)**	**3 (3rd)**

The answers of farmers against each question have clearly indicated that the dissemination of technologies in the whole family and half family groups is much wider than in the other two groups. The number of technologies that other farmers learned and applied, however, is higher in the villages of whole family and wife group. About the benefits of the technologies, farmers from all the villages mentioned that they needed to wait until the harvest of the rice to see what actual benefit they could accrue from the use of those technologies.

5.8 Advantage and disadvantages of different approaches

An important item of the focus group discussions was an open feedback session with each group farmers to learn about their reaction particularly what benefits they gained from the training and what difficulties they encountered in attending the training. All the groups in their individual discussion sessions were asked the similar questions. The answers of those questions are processed by the study team and presented in the following table.

Table 9: Farmers opinion regarding the advantages and disadvantages to attend the regular training of the project.

	WF	**HF**	**H**	**W**
Advantages	They gained more knowledge of rice cultivation Whole family had chance to learn	They knew more information on training Both husband and wife learned	They grained more knowledge and learned about rice cultivation	They learned more information about rice Providing training to women is more effective since during the time men are busy
Disadvantages	Attending whole family to training disrupts their daily work	Interruption to their daily work	They cannot present in time since they have many work	They have no problem to attend the training

Answers of the all the farmers are very positive in a sense that they learned a lot of things from the training. None of the group did mention any difficulties about the training methodologies nor had they any problem about the content of the training. Perhaps, this was because the training contents were determined based on the opinion of the farmers gathered during the benchmark survey.

The only difficulty they mentioned is about their time. Since majority of the farmers are marginal to poor they are busy with their usual work. Attending the training badly disturbs their usual work. That is the opinion of all the groups except the women group who mentioned they had no problem to attend the training rather they encouraged to provide more training to women since during the training period men are busy with field work.

Considering the fact that the farmers have very limited time to attend the training, this becomes more difficult to the whole family group as the entire family members are to attend the training. But there are advantages as well, as they mentioned the approach has given the opportunity to the whole family to learn together. Similarly in the half family group both the husband and wife group has a chance to learn together.

6 LESSONS LEARNED

- ✓ Resource poor female farmer's involvement in field level agricultural activities was found to be lower in Pabna and Natore districts due to pervasive social and cultural limitations.
- ✓ During whole family training, oftentimes, children were not very attentive, which affected the training environment.
- ✓ Formation of resource poor family groups; composed of balanced membership from male and female constituencies has yielded increased outputs.
- ✓ Imparting training on "rice technology and farming" to male and female farmers and the female farmers has greatly helped to better understand the vital role that women could play in the transfer and dissemination of rice technology.
- ✓ Participation of women family members along with men in participatory group discussion during benchmark survey was very much helpful in gathering baseline data for comparison during the evaluation of the sub-project.
- ✓ Active participation of resource poor female farmers along with resource poor farm families in research activities has contributed to the overall success of the sub-project.
- ✓ The project has so far been unable to overcome the relevant social and cultural limitations in the project areas
- ✓ An important advantage of the participatory training is that sharing and exchange of information among the farmers are very high. As a result by common discussions many problems were solved.
- ✓ Women-led NGOs are more effective than those led by men.

7 CONCLUSION

Based on all the findings it is absolutely evident that both half family and whole family approaches have consistently done better than the other two approaches, particularly in the areas of gaining more knowledge, application of new technologies in their fields, enhanced rice production and rice provision ability, and the dissemination technologies through roll-on effect to other non participating farmers of the same villages. According to all the tests that has been done during this evaluation mission, the half family group ranked first while the whole family group ranked second. The husband alone and wife alone group stood third and fourth respectively. However, compare to the control villages, farmers in all the groups have been found to make tremendous improvement in terms of increasing knowledge, management capacity of rice fields, and enhancing their rice yields and rice provision ability.

Table 10: Ranking of different approaches made based on the scores of important parameters

Subject	**WF**	**HF**	**H**	**W**
Knowledge test	2	1	3	4
Adoption of technology	2	1	3	4
Field visit	2	1	3	2
Decision making	1	1	1	1
Problem solving	1	1	1	1
Increase in rice yields	2	1	4	3
Rice provision ability	2	1	3	4
Dissemination of technology	1	2	4	3
Rank	**13 (2nd)**	**9 (1st)**	**22 (3rd)**	**22 (3rd)**

In terms of performance and effectiveness, the differences between the half family and whole family groups are very marginal. Therefore, both the approaches could be considered equal. Half family in a sense is also a family approach. In families where there are no children they could be actually called whole family as well. Again in some families where adult children are engaged in study and therefore are unable to participate in the training, those types of particular families according to the category of the project fall under half family group.

What is important here is the essence and importance of understanding the concept of whole family since rice cultivation is entirely a family issue where decision are made together by the family. During the evaluation in focus group discussions all the groups, including husband alone and wife alone group, mentioned they make decision together. It does not matter who participated in the training, after the training they share the ideas and learning of the training with their spouses and then make the decision.

Now in terms of cost effectiveness, though the project did not make any economic study on this, besides it is too early to make such study since it is only little over than a year that the project has been implemented, the husband alone and wife alone group would be more cost effective for short term basis. This is because with the same training cost the project could cover more number of families.

But in actual term for long -term basis the family approach both the half family and whole family would be more cost effective since there are many members of a particular family learnt about the entire issues of rice production. They can apply all the new knowledge in their entire fields and they might continue this for longer time, whereas the experience with husband alone or wife alone shows that they apply the new knowledge in some particular portions of the field, not in the whole lands they posses. *If some families in a village are seen to make quality learning and improvement, this would make more roll-on effect than any other methods could actually make.*

8 RECOMMENDATIONS

1. One thing is still not very clear while comparing between the whole family and half family groups, why half family group stood always first since in each whole family there exists a half family. If half family does better, then definitely the whole family should do better as well. When project staffs were asked about this, they mentioned oftentimes the participation of whole family was affected by the children since many children were not very attentive during the training session. The evaluation team also believes this might an important cause. However, the differences between the two approaches as mentioned earlier are not very significant. It might even have been caused due to some unexpected data collection error as many of the data were collected by focus group discussion.

2. Therefore based on the successes and differences those mentioned in the above sections both half family and whole family, instead of segregating them into two different approaches, should be considered a family approach.

3. Since the approach is found good and useful, it should be promoted widely. Other PETRRA project can try and use the approach.

4. Organizing regional and national workshop would be very useful to present the finding and explain the concept so that other peoples and organization got opportunities to learn about the approach and are finally interested to apply in their own programs.

5. However, it would be also useful to make further investigation in economic terms by comparing the effectiveness on long-term basis. This investigation would allow to further fine-tune the concept and overall approach.

Annex-1

Agricultural Advisory Society (AAS)

8/7, Block-B, Lalmatia, Dhaka-1207

SCHEDULE ON PARTICIPATORY EVALUATION

Training Evaluation Place : Date :

Participants : 25 Farmers

Conducted by : AAS/ Lustre/ Pabna Protishsruti/ WDP

Funded by : PETRRA

Facilitators : Sarkar Sabina Yesmin/ Masud/ Joshna/ Helena/ Shamshed.

Time	Subject	Method	Farmer participants	Facilitators
9.30-9.30	Registration and Introduce	-	-	Joshna, Helena, Shamshed, Sabina, Masud.
9.30-9.40	Introduction about training evaluation	-	25	Sabina/ Masud
9.40-11.40	Interview for training evaluation	By the help of selected questionnaire	10	-D0-
11.40-12.40	Focus Group Discussion (FGD)	FGD on selected subject	25	-D0-
12.40-1.10	Field visit for evaluation	Field visit on selected subject	5	-D0-
1.10-1.40	Opinion survey from other farmer for evaluation	Farmer's opinion on selected subject	5	-D0-

Annex-2

Agricultural Advisory Society (AAS)

8/7, Block-B, Lalmatia, Dhaka-1207

Sub-Project : Skilled family members extension approach for rice knowledge adoption.

Questionnaire for individual interviews for assessing the effectiveness of family Extension Approach

Partner organization:…… Project village: ……...

Upazila: …… District: ……Group:……..

Farmer's name: ……...

1. Morphology

1.1 What are the main parts of a rice plant?

a) Root, stem, tiller, leaf and panicle
b) Root, stem and leaf
c) Stem, tiller and hill
d) Root, leaf, stem and hill.

1.2 What is the main function of roots in rice plant?

a) Food production
b) Food and water absorption
c) Water absorption
d) Don't know

1.3 What is the function of leaves of rice plant?

a) Breath
b) Produce food
c) Produce tillers
d) Don't know

1.4 What are the main stages of a rice plant?

a) Reproductive – ripening
b) Seeding – tiller – panicle
c) Growth – Reproductive – Ripening
d) Don't know

2. Agroecology:

2.1 What does rice plant uptake from soil?
- a) Water
- b) Water and necessary food
- c) Plants standing on soil
- d) Don't know

2.2 What is the importance sunlight for rice plant?
- a) Produce food with the help of light
- b) Light helps to live the plant
- c) Plant takes energy from light
- d) Don't know

2.3 Why is water necessary for the growth of rice plant?
- a) Plant gets energy from water
- b) Necessary food is uptaken by water
- c) Plant likes water
- d) Don't know

3. Seedling production

3.1 Which is ideal size (breadth) of a seedbed.?
- a) 6 feet
- b) 7 feet
- c) 4 feet
- d) Don't know

3.2 How much seed is enough to cultivate rice in one Bigha?
- a) 6-8 kg
- b) 8-9 kg
- c) 4-5 kg
- d) Don't know

3.3 How many days old seedlings are ideal for transplanting?
- a) 25-30 days
- b) 10-15 days
- c) 40-45 days
- d) Don't know

3.4 How many seedlings should be transplanted per hill?
- a) 4-7 seedlings
- b) 7-8 seedlings
- c) 2-3 seedlings
- d) Don't know

3.5 What is the appropriate spacing? (line to line)
- a) 5 inches
- b) 8 inches
- c) 10 inches
- d) Don't know

3.6 How much depth a seedling should be transplanted?
- a) Maximum 2 inches
- b) Maximum 1 inches
- c) Maximum 4 inches
- d) Don't know

4. Intercultural operation

4.1 Which fertilizers should be applied in the field?
- a) Urea, DAP or TSP, MP, Gypsum, Zinc sulfate, Compost
- b) Urea, TSP, MP
- c) Urea, MP, Zinc sulfate
- d) Don't know

4.2 Which fertilizers should be applied during land preparation?
- a) All of the fertilizers except urea
- b) Urea, TSP, MP
- c) Only Urea
- d) Don't know

4.3 Which fertilizers should be used as top dressing?
- a) Urea, TSP, MP
- b) TSP, MP, Gypsum
- c) Urea
- d) Don't know

4.4 How much water should be maintained in the field during panicle initiation stage?
- a) Less water
- b) Moderate water
- c) No water in field
- d) Don't know

5. Insects of rice plant and their management

5.1 What are the major harmful insects of rice plant? No: ……

5.2 How does stem borer damage the rice plant?
- a) Leaf feeding
- b) Ear cutting
- c) Root cutting
- d) Stem boring

5.3 What are the major practices of insect management?
- a) By hand
- b) By sweeping net
- c) Use of light trap
- d) Better management of rice field
- e) By putting stick

6. Rice disease management.

6.1 What are the major diseases of rice? No: ……..

7. Crop harvest and post harvest management.

7.1 How many percent of rice are needed to be ripening for harvesting?
- a) 60%
- b) 80%
- c) 100%
- d) Don't know

7.2 For storage how long do you need to dry the rice seed?
- a) 2 times sun drying
- b) 3 times sun drying
- c) Checking by teeth until expected broken sound
- d) One time sun drying

8. Production technique of rice seed.

8.1 What are the 5 characteristics of quality rice seed?

8.2 What are the parts of a seed? (Sample demonstration)
- a) Husk, grain, embryo
- b) Grain and embryo
- c) Husk and grain
- d) Don't know

8.3 How do you store rice seed?
- a) Openly
- b) Jute bag
- c) Gola
- d) Plastic dram with naphthalene

8.4 Tell five major techniques for good seed production.

Annex-3

Agricultural Advisory Society (AAS)

8/7, Block-B, Lalmatia, Dhaka-1207

Focus Group Discussion (FGD) format

Village: ……. Group: ……

Upazila:…….. District: ……

1. **Which items of the training did you like best and apply in your own fields?**

Subject	Farmer/ Female Farmers Numbers	Percent of farmers applied

2. **Have you experienced any yield or rice provision ability increase? If yes, how much?**

Yield mound/ Bigha		Increase yield %	Total production		Increase Total production	Rice provision ability (RPA)		% Increase
Current season	Last season		Current season	Last season		Current season	Last season	

3. How did you solve the following problems?

Problems	How solved
1. Insect problem	
2. Disease eg. Sheath blight	
3. Irrigation	
4. Unavailability of good quality seed	

4. How do you take decision about your rice cultivation?

5. What are your advantages and disadvantages in attending the training?

Advantages	Disadvantages

Annex-4

Agricultural Advisory Society (AAS)

8/7, Block-B, Lalmatia, Dhaka-1207

Sub-Project: Skilled family members extension approach for rice knowledge adoption.

Field visit for Evaluation

Collaborate organization : …….. Group: ……

Village : …… Upazila: ……. District: …….

Subject		1	2	3	4
1)	Rice variety (Modern/ local)				
2)	Optimum time of seedling transplanting (1^{st} to 31 January)				
3)	Spacing (inch)				
	i) line to line				
	ii) hill to hill				
4)	Fertilizer management (Type, rate and method)				
5)	Status of weed control				
6)	Status of rice plant/ crop				

Annex-5

Agricultural Advisory Society (AAS)

8/7, Block-B, Lalmatia, Dhaka-1207

Sub-Project: Skilled family members extension approach for rice knowledge adoption.

Opinion Survey

Partner Organization: ……. Village : ……..

Upazila : …….. District : …… Group : ……

Farmer/ Female Farmer's Name : …….

Questions:

(1) Do you know that AAS has provided training on rice cultivation in this village?

(2) If you have heard, what have you learned from those who attended the training?

(3) Which techniques have you applied in your own field?

(4) Have you benefited by the use?