Learning and experiences of the PETRRA project, BANGLADESH

BOOK: 9/10

## Monitoring and evaluation

# PETRRA – an experiment in pro-poor agricultural research

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DFID Department for International Development

IRRI International Rice Research Institute

Bangladesh Rice Research Institute

**Poverty Elimination Through Rice Research Assistance (PETRRA), 1999-2004**

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## Book 9. Monitoring and evaluation

9.1. Monitoring and Evaluation Management

9.2. Knowledge, Attitude and Practice (KAP) Study on the PETRRA Value-based, Demand-led Research Systems

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# Monitoring and evaluation system of the PETRRA project

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## Introduction

The Poverty Elimination Through Rice Research Assistance (PETRRA) monitoring and evaluation (M&E) system was designed to be simple, relatively low-cost, and one that could be used flexibly. The M&E system was designed to allow:

- The PETRRA team to effectively collect, record, analyse and use information about the progress of its activities and initial impact on output and purpose;
- For sub-projects (SPs) to be able to effectively monitor and evaluate their own progress; and
- For PETRRA project management unit (PMU) and the SP teams to monitor their adherence to the PETRRA values.

PETRRA used the logical framework at the project and SP level as the basis for its M&E system. The M&E system was developed in a participatory and collaborative manner with the SP partners. The main elements of M&E system are highlighted as follows:

## Periodic progress M&E at SP level

### SP progress monitoring

Progress monitoring was undertaken through a structured set of quarterly progress report, annual progress report, internal review and field visits. The periodic progress monitoring systems for SPs are discussed below:

*Quarterly progress report:* One of the important elements of progress monitoring was the quarterly progress reporting by all the SPs. It included latest news on research findings, methods, partnership, participating farmers, gender issue, environment and progress against planned activities of the logframe. In order to develop an effective and operational quarterly progress-reporting system a standard format with detailed guidelines was developed through the active participation of the research partners. An important feature of the reporting system was that the SP had to submit their report by 25th of the last month of each quarter and then the PETRRA PMU members reviewed the reports and sent feedback to the SP partners regarding the relevance and progress of the SP activities along any specific actions that required attention.

Disbursement of the research fund for the next quarter to a SP was dependent on satisfactory and timely reporting. A review report of the main issues arising from the quarterly reports was prepared in each quarter for use within PETRRA. This highlighted action that needed to be taken on fund release, future field visits and use of information provided for external communications. In the review meeting a decision was taken on which project needed to be visited immediately and who would visit the SP.

The quarterly progress report format was updated through a number of iterations. The most recent iteration was designed to easily capture newsworthy items for the

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newsletter, website etc., to capture gender and poverty focus and environment and to enable the SPs themselves to more easily monitor their own progress. A copy of the quarterly progress report format is attached as Appendix 1.

*Annual progress report:* Since July 2002 PETRRA introduced annual progress report for its SPs covering the period from July to June of the respective year. This replaced the fourth quarterly progress report of each year, and focused on achievements against outputs and purpose level indicators of the logframe. Like quarterly progress report, it was also reviewed by the PETRRA PMU members, who then provided feedback to the SP partners. The annual progress report was used for writing newsletter and capturing progress and achievement of the SPs.

*Field visit:* All the PMU members used to visit field level activities of different SPs. After each field visit a trip report was prepared with a copy to the SP partners as a feedback along with other relevant persons. Trip reports were collected and documented.

*Monitoring gender and environment issues:* In order to monitor the progress on gender and environmental issues covered by the SP, a section for each of the issues was included in the quarterly progress report format. These issues were also integrated with the indicators of PETRRA log frame. Emphasis was given to monitor the gender issues through field visits by an interview process, which provided scope for dialogue. Attempt was made to focus the women's involvement in the decision-making process and institutionalisation with the SP procedures. Implementation of gender and environmental strategies by the SPs were monitored in three stages – the appraisal stage, implementation stage and evaluation stage.

*Region-wise SP review by the TEC members:* In order to monitor the SP progress by the technical committee (TEC) members of PETRRA, region wise SP visits were organised. Three groups were formed to visit three regions, where most of the SPs were concentrated. Each of the three regions – Rangpur, Khulna and Barisal – was visited by one of the three groups consisting of TEC members, respective Principal Investigators (PIs), partners and PMU members along with farmers. After visiting field level activities of the SPs a workshop on the last day was organised in the respective regions, where each of the SPs presented their learning. Workshop proceedings were distributed to the respective SPs' PIs and partners.

*Farmers' exchange visit at regional level:* The main objective of farmers exchange visits was to review the SP performance and share the experiences of different SPs by different groups of farmers in a region. In this process, initially farmers visited all the SPs in a region. After a field visit, farmers of the respective SPs presented their learning to other farmers and then initiated dialogue among the farmers of different SPs for clarifying the issues, process of implementation and benefits derived from the SPs. Finally, on the last day, a joint workshop was organised at the regional level, at which farmers again presented their learning and recommendations were formulated for further improvement. In this way farmers were able to gain new knowledge, disseminate learning and perform better.

*Participatory peer review:* One of the important approaches of PETRRA was the practice of participation. This extended to the SP review process. As per decision of the uptake forum a participatory peer review was conducted with the nine SPs in April 2001. Initially the major issues for the peer review were identified in the uptake forum meeting (held on March 29, 2001). The peer review was conducted with the

participation of demo farmers, non-demo farmers, women, field staff, respective institutions, and community-based organisations through a checklist. The findings of these reviews were then presented in the uptake forum meeting by each of the partners (held on August 21, 2001). Each peer review report was compiled, summarised and distributed among the relevant stakeholders.

**SP level final evaluation and review**

PETRRA followed a self-evaluation process. This was complimented with a group of independent consultants, whose task was to ensure reliability of information and quality of the reports.

The process of review and evaluation varied across SP type; namely technology development with 19 SPs, uptake methods research with 20 SPs and policy research with 6 SPs. For technology development SPs there were 2 reports, a final evaluation report and a completion report. For uptake methods SPs there was a single report that covered evaluation and completion. The steps followed for SP evaluation and completion reports were:

- Initially the PIs of the technology development and uptake methods SPs were asked to prepare preliminary evaluation plans which included objectives, method, data required, evaluation team and the proposed schedule of events in a Gantt chart format. However, on review the evaluation plans were found lacking for issues like poverty focus and gender equity;
- For this reason a three-day workshop was organised with eleven of the technology development SPs. The objective was to develop an evaluation report guidelines to better reflect the values of PETRRA; and
- The report guidelines were tailored to the specific requirements of the respective technology development, uptake methods and policy SPs. A sample guideline for the technology development SPs is given in Appendices 2 and 3.

To produce reports of high quality the PETRRA PMU formed a review committee and recruited a pool of evaluation consultants.

For consultants PETRRA advertised under the caption 'Opportunity for Evaluation Consultants' in three national newspapers in April 2003. There were 76 applications. A first screening based on relevance of experience reduced this to 36. The PETRRA project management with the endorsement of the TEC sought more applications by word of mouth and received 10 additional applications. In late February 2004, a chairman of the review committee was appointed to lead and to coordinate the review process. The chairman in consultation with the PETRRA project manager finally selected 13 applicants (10 male and 3 female) as evaluation consultants. Selection was based on the following criteria:

- Most relevant to PETRRA SPs in educational background (agricultural and social sciences);
- Long experience in relevant areas (rice technology, participatory management, evaluation, agricultural economics, gender, poverty, environment analysis, resource management);
- Gender balance; and

- Preferably free/retired persons.

The role of the consultants was:

- to ensure that the evaluation reports and completion reports were prepared as per the guidelines;
- to assist PIs/coordinators of SPs improve the quality of the evaluation and completion reports;
- to ensure that the outputs reported for the SPs were in line with the logical framework; and
- to ensure that the assigned tasks were completed on time.

Each consultant was given a specific terms of reference (TOR) with work schedule and guideline for making the review comments. Two evaluation consultants were assigned to each SP to review two dimensions (technical and social) of the reports following the review guidelines. An arrangement for contact between the evaluation consultants and PIs of the concerned SPs was made by the review committee.

The review committee was headed by the chairman along with some members from TEC, subject matter specialists and PETRRA PMU. The role of the review committee was:

- To ensure SPs take the evaluation and completion reporting process seriously, and are motivated to produce a report of high quality;
- To ensure that SP evaluations and completion reports address all the issues required by the evaluation/completion guidelines;
- To ensure that SP evaluations and completion reports are delivered on time;
- To provide a transparent and credible process of quality control; and
- To act as an important channel through which the evaluation findings will reach Bangladeshi institutions associated with agricultural research.

Members of the review committee were:

- Dr. N. I. Bhuiyan, Ex-director general, BRRI, chairperson of review committee and former chairperson of the PETRRA TEC;
- Dr. S. M. Elias, Ex-director general, BJRI, TEC member;
- Dr. A. R. Gomosta, director (research) BRRI, TEC member;
- Dr. M. Rahman, director (research), BARI, TEC member;
- Dr. M. A. Razzak, Member director (crops), BARC, TEC member;
- Dr. M. Samsuzzaman, director (agriculture), RDRS, TEC member;
- Dr. Rita Afser, Research fellow, BIDS, TEC member;
- Dr. M. A. Hamid Miah, Liaison scientist for IRRI Bangladesh office, TEC member;
- Mr. Md. Rafique Ahmed, Ex-director (field services), DAE;
- Dr. A. Aziz Miah, Plant breeder, Ex-head, Biotechnology Divison, BRRI;
- Dr. A. F. M. Saleh, Professor, IWFM, BUET.

Besides, the following members from PETRRA PMU were a part of the review committee.

- Dr. Tapash Kumar Biswas, manager (M&E), PETRRA project, member-secretary;
- Mr. Ahmad Salahuddhin, manager (research programmes), PETRRA project;
- Dr. M. A. Ghani, manager (research administration), PETRRA project;
- Dr. Rick Davies (international M&E consultant);
- Dr. Noel P. Magor, IRRI representative for Bangladesh and PETRRA project manager, as adviser to the review committee.

The specific role of chairman of the review committee was:

- to make final selection of the evaluation consultants in consultation with the PETRRA PMU;
- to organise and coordinate the work of the consultants;
- to ensure that all committee meetings take place on schedule, and with the relevant participants;
- to ensure that all deadlines for the review of evaluation and completion reports were met; and
- to ensure that the quality of evaluation and completion reports was as high as possible.

Four review committee meetings (2 on technology development & 2 on technology uptake methods SPs) involving a panel of concerned review committee members and consultants, both technical and social were held for discussing the SPs reports along with review and overview comments. In each meeting, a set of recommendations was made for consideration during finalisation of the report for enriching quality. This was followed by a face to face meeting between the consultants and the PIs of the concerned SPs for incorporating the recommendations in the reports. The final report of each SP, attached with a certificate of acceptance from the concerned consultants, was submitted by the PI to PETRRA PMU.

Policy research SPs were not required to have a built in evaluation. Instead, the technical reports, which were produced as their final outputs, were sent to two independent reviewers for comments. The reviewers' comments were then forwarded to the researchers for incorporation and finalisation. In addition to the technical report, policy research SPs also produced a completion report. The completion report was sent to independent reviewers along with the review guidelines. After receiving comments from the reviewer, again comments were forwarded to the researchers for report finalisation.

The self-evaluation process coupled with a review committee and external consultants did prove an effective way to manage evaluation and completion reviews with expert input. The timeframe for report review and finalisation was too short. It was, however, complimented by other processes of review in the form of final uptake methods, technology development workshops, and policy dialogues.

## PETRRA PROJECT LEVEL EVALUATION AND REVIEWS

At project level M&E comprised a

baseline study, output to purpose reviews (OPRs), special impact studies, end of project level evaluation and completion report of PETRRA project on purpose and outputs, and potential for post-project impact assessment. Details are given below.

### Baseline study for PETRRA

In order to assess the impact of the project, a national level baseline survey was conducted at the beginning of the project. The baseline quantitative data requirement was met through two sources. Firstly, a contract with Mitra and Associates that conducted the field study and completed the final report. The final report was independently reviewed and edited by Prof. Abdul Bayes of Jahangirnagar University. Secondly there was a study on 'Dynamics of livelihood systems in rural Bangladesh' under the leadership of Dr. Mahabub Hossain, Head of Social Sciences Division of IRRI. In addition to the above two studies, another study on pathways from poverty with the leadership of Dr. Alastair W. Orr of NRI, UK will also provide qualitative information. This baseline information would help assess the PETRRA goal level indicators, an activity beyond the project period.

### Output to purpose reviews (OPRs)

These were held each year. There was an inception review and five output to purpose reviews. The reports are available on the PETRRA website (petrra.irri.org). Each study was externally managed with close liaison between the PETRRA PMU, IRRI Los Baños and DFID Dhaka.

The PETRRA OPR was the single most important M&E activity each year. Recommendations made by the OPR team were often considerable, sometimes contentious and influenced the direction of the project in the following year. Each involved discussions and modifications to the project logical framework.

### Evaluation of PETRRA project outputs and purpose at the end of the project

A final completion review was held in July - August 2004. It was managed on behalf of DFID by the Rural Livelihoods Evaluation Partnership (RLEP). For this the PETRRA PMU produced a completion report including achievements against PETRRA logframe purposes and outputs based on the SP evaluation and completion reports. In addition to the SP evaluation and completion studies, PETRRA commissioned several independent special studies on impact of technologies on livelihoods, a knowledge, attitude and practice (KAP) study, environment impact study, gender study and seed health impact study. All these study findings were presented in the PETRRA completion review external team. The RLEP completion review focus was to score the project and to draw out lessons learned.

## Conclusion

The purpose of this brief has been to outline the range of tools that PETRRA used for its M&E. There were processes at the project level and SP level. The use of the logical framework was underpinning. The M&E experimented

with participatory methods such as peer reviews and regional cross visits. The regular quarterly reporting was tied to fund release and reflected the logical framework for the specific SP. The quarterly format highlighted gender and poverty focus and the environment. Through this process gender focus increased overtime. The completion and evaluation proforma moved beyond simply reporting research results to careful assessment of gender, poverty, organisational impact and so on. It also built on self evaluation. The KAP study was designed to assess attitudinal change. Finally the output to purpose reviews for PETRRA as a whole provided an invaluable yearly check up.

# Appendix 1:

## PETRRA sub-project (SP) quarterly progress report format and guideline

## Quarterly progress report format

### 1. SP identification

| | | |
|---|---|---|
| SP number: | | Quarter: |
| Title: | | |
| Theme: (as defined by PETRRA) | | |
| Lead organisation: | | |
| Collaborative organisation: | | |
| Start date: | End date: | Total budget:<br>Partner X:<br>Partner Y:<br>Partner Z: |
| Purpose: (as stated in logical framework) | | |

**Submitted by:** .....

Name of organisation: .....

Type of involvement: Lead: ..... Partner/Collaborator: .....

SP component (if applicable): .....

### 2. The most significant news in the last 3 months

(Please report news only. Do not repeat what has been reported before. Be very selective, not try to report everything that is new. Do not just state facts; explain their significance as well. This section will feed into the PETRRA newsletter)

- Research findings: What is new? [describe who, when, what, where]

- Why is this significant? [what difference did they make, or will they make?]

[maximum 300 words]

- Research methods being used: What is new? [describe who, when, what, where]

- Why is this significant? [what difference did they make, or will they make?]

[maximum 300 words]

| |
|---|
| ◆ Research partnerships: What is new? [describe who, when, what, where]<br><br>◆ Why is this significant? [what difference did they make, or will they make?]<br><br>[maximum 300 words] |

### 3. How this SP is responding to environmental issues:

| The most significant news in this quarter | How it was significant |
|---|---|
| 1. Positive | |
| 2. Negative | |

### 4. How this SP is responding to gender issues:

| The most significant news in this quarter | How it was significant |
|---|---|
| 1. Positive | |
| 2. Negative | |

### 5. Research participants and locations

| Season (rice or other) | SP location | | Number of villages covered | Number of participating farmers | | |
|---|---|---|---|---|---|---|
| | Name of district | Name of upazila | | Male | Female | Total |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| The most important change since the last quarterly report is that: | | | | | | |

## 6. New documents and reports produced by this project in the last quarter

| Title of documents and reports | Author and or organisation | Date |
|---|---|---|
| | | |

*Please submit copies to PETRRA if not done already*

## 7. Training provided by this project in the last quarter

| Training course title | Provided by | Type of participants | Number of participants | | | Organising date |
|---|---|---|---|---|---|---|
| | | | Male | Female | Total | |
| | | | | | | |

## 8. Progress against planned activities

| Output statement | Activities planned for this quarter under this output | Progress (with reason for any deviation) | Activities planned for the next quarter under this output (need for revised plan details also) |
|---|---|---|---|
| Output 1: | | | |
| | | | |
| | | | |
| Output 2: | | | |
| | | | |
| | | | |
| Output 3: | | | |
| | | | |
| | | | |
| Output 4: | | | |
| | | | |
| | | | |
| Continue if there is more | | | |

## 9. Recommendations (on any issue arising)

| |
|---|
| |

Signature: ..... Date: .....

Name of SP Leader/Collaborator: .....

# GUIDELINE FOR QUARTERLY PROGRESS REPORT PREPARATION

## 1. PETRRA SP identification

*SP number and quarter:* SP number and name of the reporting quarter is written in the first row of the first page of the format. In order to write the reporting quarter, mention the name of the months like April to June, July to September, October to December and January to March with year.

*Title:* Exact title of the approved SP is written here.

*Theme:* Theme in this case is the broad area of research under which the SP falls. These are technology development, policy study and dissemination method. Each of the SPs has to write its theme.

*Lead organisation:* The organisation responsible for overall coordination and delivering the SP outputs.

*Collaborative organisation:* The other agencies working with the lead organisation for the SP and having access to budget against their contribution.

*Start date:* Actual date of starting as per present contract.

*End date:* Date of completion of the SP as per present contract.

*Total budget:* The amount of budget agreed for the SP as per present contract. In case of different collaborators, individual budget for each of the collaborators along with total budget are mentioned here.

*Purpose:* Statement of purpose as mentioned in the SP logframe.

*Submitted by:* Name of organisation which submitted the report including type of involvement is mentioned in this section. Some cases SP have different components/locations and partners are responsible for individual components. For example, BARC livelihood SP has BARI Noakhali component, BARI Faridpur component, BARI Rangpur component, BARI Rajhsahi component and BRRI Barisal component. This type of information is to included here.

## 2. Most significant news

News means something that you have not told PETRRA before, in previous written reports or plans. News is about differences and changes. Think like a newspaper editor.

Be selective. Do not report everything new. Focus only on what you think is the most significance changes or new developments. The output table has space for other news, such as changes in planned activities:

- Research findings;
- Research methodology; and
- Research partnerships.

Treat these headings like sections with a newspaper (sports, finance, overseas news). Use them to organise the news that you want to tell PETRRA.

## 3. Environmental issues

Please do not use this section to report what you have already reported to PETRRA in the past, in other written reports. Only report new developments.

As well as describing the new developments please explain why you think these changes are significant. What difference have they made, or what difference will they make, in your opinion?

## 4. Gender issues

The same applies as above

## 5. Research participants and locations

*Rice season:* The rice season(s) covered for the furnished information under this sub-

table. In case of policy studies rice season may not be applicable.

*SP location:* The name of district(s) and upazila(s) where the SP is being implemented.

*Number of villages covered:* Number of villages, where the SP activities are being conducted by district, upazila and season.

*Number of participating farmers:* Total number of farmers by sex directly participated in the SP in particular rice season.

### 6. New documents and reports produced

Title, author and date of new documents and reports produced during the reporting quarter are mentioned under this section. Please submit copies to PETRRA if not done already.

### 7. Training provided in the last quarter

In this section, title of the training course, who provided/organised training, type of participants by gender and date are to be mentioned. Please do not provide training information, which has already been provided.

### 8. Progress of activities

This is based on logframe of your SP. Therefore the first step is to verify whether the SP logframe is properly formulated or not? If not then refine the SP logframe. In order to complete the first column of the table, please copy the outputs as indicated in your SP logframe and then write the specific activities planned for the reporting quarter in second column. In the third column mention the progress achieved against the activities as indicated in the second column. In the last column of this table you have to mention the activities, which you plan for the next quarter. If any SP have more than four outputs or activities increase the number of rows to accommodate all the outputs and activities.

### 9. Recommendations

This is where you tell PETRRA what changes are required in project design and other important issues.

### Note on submission of Quarterly Progress Report

In order to adopt an effective monitoring system of different SPs the following procedural note was prepared in consultation with SP partners.

1. The due dates for submitting quarterly progress reports are in accordance with the DFID financial year, and are June 15-25, September 15-25, December 15-25 and March 15-25.
2. Fund for the next quarter will be released after receiving and reviewing the quarterly progress report.
3. The PMU of PETRRA project will conduct a review meeting immediately after receiving the quarterly progress reports from the partners.
4. In case of different collaborators of a SP, all the individual collaborators will submit their draft quarterly progress report to the coordinator/team leader with a copy to PETRRA project. After compiling the collaborators' reports, coordinator/lead organisation of the SP will submit the final report to PETRRA project.
5. Quarterly progress report will be submitted directly to M&E officer of PETRRA project.

## Appendix 2:

## Evaluation report content and guidelines for technology development sub projects (SPs)

## Front page

**Responsibilities and acknowledgements**

## Content page

**List of tables and figures**

**Glossary**

**Executive summary**

**Chapter 1: An overview of the SP**

**Chapter 2: Information sources used during evaluation**

**Chapter 3: SP achievements in relation to the logical framework**

- 3.1 A description of achievements in relation to the logical framework
- 3.2 An assessment as summarised in the logical framework

**Chapter 4: Livelihood changes**

- 4.1 Productivity improvement
- 4.2 Rice provisioning ability
- 4.3 Observations on livelihood changes

**Chapter 5: Evaluation of research findings**

- 5.1 Research findings summary table
- 5.2 Assessment of research findings

**Chapter 6: Participation of resource-poor farmers**

- 6.1 Trend of participation of resource-poor farmers over time
- 6.2 Assessment of the participation of resource-poor farmers

**Chapter 7: The management of gender equity and environmental impact**

- 7.1 Gender participation
- 7.2 Environmental impact

**Chapter 8: Capacity building: training, workshop and seminar**

- 8.1 Training, seminar and workshop participants
- 8.2 Assessment of SP capacity building

**Chapter 9: The organisational impact of the research**

- 9.1 Inter-organisational linkage development
- 9.2 Changes within the partner(s) organisation
- 9.3 Use of PETRRA SP research findings

**Chapter 10: Research documents and communication materials**

- 10.1 Documents and materials produced
- 10.2 Assessment of SP communication

**Chapter 11: Conclusion and recommendations**

**Appendix**

- Maps of research locations
- List of publications and reports (in bibliographic format)
- List of communication materials produced by the SP
- List of MS and PhD with title of the thesis and present status under the SP
- Detailed list of training, seminar and workshop participants by name, designation, organisation, address and title of the course
- List of farmers participated in the evaluation process by name, father's name, village, upazila, union, district and rice provisioning ability at the beginning and end of the SP

# Evaluation report guidelines for technology development sub projects (SPs)

In order to capture PETRRA SP learning and achievement, all the SPs need to complete their draft evaluation by March 2004 and final evaluation by May 20, 2004. The design and completion of SP evaluation are the responsibility of SP PI and partners. PETRRA may provide technical assistance in planning and implementation of the evaluation. In this regard all the SPs were requested to prepare their evaluation plan. Based on SP draft evaluation plan an evaluation-planning workshop for 11 SPs was organised during May 11-13, 2003 in Proshika Training Centre, Manikganj. After Manikganj workshop it was reviewed in a small group of SP PIs and PETRRA PMU members. This Evaluation Report guideline has been developed based on the Manikganj planning workshop, small group review and PETRRA OPR 2004 discussion.

## Objectives of the evaluation

The specific objectives of the SP evaluation are to assess:

- the SP achievements in relation to the logical framework indicators;
- livelihood changes of the resource-poor farmers;
- the usefulness of research findings and suitability for resource-poor farmers;
- the degree of participation of resource-poor farmers;
- the management of gender equity and environmental impact;
- capacity building status and its contribution to the SP outputs;
- impact of the SP on the organisation itself; and
- documents and communication materials produced.

## Front page

This will include the following information:

- Title of the report along with the SP name and number;
- SP Duration: from start to end date;
- Funded by: DFID and name of any other donor;
- SP Implemented by (names of lead and partners with organisation);
- Report written by (names of team members);
- Photograph of farmer participants and/or technologies tested;
- Date of the report;
- Contact address including e-mail and phone number; and
- Do not put any logos on the front page.

A sample of front page is enclosed at the end in Appendix.

## Responsibilities and acknowledgements (1 page max)

- Who funded the SP;
- Who led the SP:
  - Organisation; and
  - Principal Investigator (PI).
- The evaluation team:
  - Team membership and leader;
  - Who wrote the report; and
  - Who is finally responsible for the report.

## Content page

- Headings, sub-headings (up to two levels) and page numbers;

## List of tables and figures

- Title of each table, its page number, in page order;

**Glossary**

- Technical terms; and
- Abbreviations.

**Executive summary**

- This chapter needs to be written within three pages;
- Write this section last of all, after all the other chapters have been written; and
- Create separate paragraphs:
  - These should focus on one subject at a time;
  - In the same sequence as main text; and
  - Make sure all chapters in the main text are covered.
- DO NOT
  - Do not introduce new ideas that are not already mentioned in main text of your evaluation report;
  - Do not use the executive summary to provide a general SP description or background on the geography, history or economy of Bangladesh; and
  - Do not include any tables.

**Chapter 1: An overview of the SP**

This chapter will not be longer than two pages. This tells the reader about the following:

- How was the need for this SP identified and by whom?
- If there was a stakeholder analysis how did it affect the design of the SP? Who was involved in the stakeholder analysis?
- How does this research relate to any previous research in this area?
- What were the objectives of the SP? Use reader-friendly simple language;
- Who participated in the research? What type of organisations and types of people? This should be a brief summary only. Refer reader to chapters 5 & 6 for details of people's participation, especially resource-poor farmers;
- What were the main stages in the research? And what activities were undertaken in each of these stages?
- Where was the research undertaken? How different many locations (district, upazila, union, village) and what were the differences between them. If you can provide a map, include it as Appendix 2 and point the reader to this Attachment 1 for further information. For example, (see Appendix 2 for map of research locations);
- How did the research objectives and activities change over time? And why? and
- Summarise the SP Finances in a table to show:
  - Total budget versus actual expenditure;
  - Total expenditure made by each partner; and
  - Amount of funding provided by any sources other than PETRRA.

DO NOT lists the achievements of your SP in this section. These should be summarised in chapters 4 to 9. This chapter should provide the reader with factual background information.

**Chapter 2: Information sources used during evaluation**

This chapter will not be longer than three pages. This chapter tells the reader about the following:

- What types of existing information sources were used, when the evaluation team did the evaluation? For example, stakeholder analysis reports, baseline studies, seasonal data collection, specific studies, specific workshops, etc.;

- What were the strengths and weaknesses of this existing information? For example, how the information was collected, how much detail there was, how reliable it was, what information was missing, how participated in the collection and analysis of this information, etc.;
- What types of additional information were collected by the evaluation team? Including both factual information, and peoples' opinions about what was done and what was achieved;
- Who participated in the collection and analysis of this information?
  - What types and numbers of people were involved, especially resource-poor farmers?
  - How was this organised? For example, via planning workshops, participatory monitoring exercises, surveys, etc.; and
  - What external participants were involved the evaluation and what was their role? Include the terms of reference for the External Evaluator (if used) in Attachment 3; and
- What were the strengths and weaknesses of this process? Who was included and not included, where was the quality of the data strong and weak?

**Chapter 3: SP achievements in relation to the logical framework** (within four pages)

This chapter covers the achievement against output and purpose level indicators of the SP logframe. In order to write this chapter progress mentioned against output and purpose level indicators in the annual progress report in section 9 and 10 can be used.

*3.1 Description of achievements in relation to the logical framework* (use a table with the following layout, in landscape format)

- The first two columns of the table should be filled with the same text as appears in your SPs' own logical framework; and
- You need to use the third column to provide your own description of achievement with facts and figures and also with evidence. For each indicator in the second column provide achievement and evidence in the third column using the same identifying number. Mention the name of research document where the achievements are documented as evidence.

| **Purpose statement** | **Planned indicators as in logical framework (OVIs)** | **Achievement against indicators with evidence** |
|---|---|---|
| 1. (text statement) | 1. (as in logical framework)<br>2. Etc. | 1. Text summary (with document source in brackets)<br>2. |
| **Output statement** | | |
| 1. (text statement) | 1.<br>2. Etc. | 1.<br>2. |
| 2. Etc. | 1.<br>2. Etc. | 1.<br>2. |

*3.2 An assessment as summarised in the logical framework*

- Looking at the different indicators at the output level where was the greatest and least achievement? Which indicators and why do you think this is so?
- Looking at the different indicators at the purpose level where was the greatest and least achievement? Which indicators and why do you think this is so?
- In your SP logical framework there is also an assumptions column, on the far right:
  - Which assumptions were found not to be correct during the SP, and why was this so? What difference did these faulty assumptions make to the SP's achievements? And why so? and
  - What other important assumptions were not listed in your logical

framework? And what difference did they make to your research?

**Chapter 4: Livelihood changes** (within five pages)

*4.1 Productivity improvement*

- In your SP what number and percentage of the participating farmers achieved increased rice productivity (net benefit derived per unit of land due to project intervention)?
- Give separate figures for farmer directly involved (their land was used) and for neighbouring farmers who simply observed the results on other farmers land;
- In both cases separate out the numbers of female versus male farmers;
- Analyse the cost-effectiveness of developed technologies in terms of labour and other inputs;
- Estimate the rice productivity rate increased or decreased per unit of land by season and year compared to the beginning of the project;
- Compare and analyse the annual rice productivity rate with the population growth rate; and
- Describe how many participating and neighbouring farmers used the developed technology and plan to repeat its use beyond the PETRRA SP?

*4.2 Rice provisioning ability*

- Rice provisioning means the number of months of the year a farming household is able to support its rice consumption from its own production;
- In your SP what number and percentage of the participating farmers achieved at least one month increased rice provisioning?
- Give separate figures for farmer directly involved (their land was used) and for neighbouring farmers who simply observed the results on other farmers land;
- In both cases separate out the numbers of female versus male farmers;
- An example is given below to present rice provisioning ability information of participating farmers in a tabular form:

| Rice provisioning ability (RPA) at the beginning of the project | | | Number of farmers increased RPA at the end of the project by month and sex | | | | | | | | Percentage of farmers increased at least one month RPA | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RPA category (months) | Number of participating farmers | | 0 | | 1 | | 2 | | 3 or more | | | |
| | M | F | M | F | M | F | M | F | M | F | M | F |
| Less than 3 | | | | | | | | | | | | |
| 3-5 | | | | | | | | | | | | |
| 6-8 | | | | | | | | | | | | |
| Greater than 8 | | | | | | | | | | | | |
| Total: | | | | | | | | | | | | |

- Similar table can be used for neighbouring farmers.

*4.3 Observation on livelihood change*

This section contains the impact (positive, negative) of the SP in general and the technology developed under the SP in particular on the livelihoods of the resource-poor farm households. Information could be collected using participatory tools with the farmers - male, female, participating and non-participating. Impact can be assessed through before and after comparison on the following livelihood issues considering the relevancy of the SP:

- Changes in social status;
- Changes in food security;

- Utilisation pattern of increased income through project intervention;
- Changes in coping system in different stress;
- Changes in life style: changes in number of meals per day, dress, etc.;
- Changes in housing facilities: structure of house, number of rooms;
- Changes in health and sanitation facilities: toilet, drinking water and health facilities;
- Changes in asset accumulation: physical, human, economic, social & natural;
- Changes in children education: enrolment, continuation by gender; and
- Access to new facilities or information.

## Chapter 5: Evaluation of research findings

This chapter will not be longer than five pages. This chapter tells the reader about research findings and their assessment.

*5.1 Research findings summary table*

- List the comparisons that you made between different types of treatments. Don't use more than one page for this table. Put any additional information in Attachment. For this section a table can be used like the one below.

| Comparison of treatments tested | Observed difference | Reasons with explanation |
|---|---|---|
| 1. BRRI dhan34 versus *kataribhogh / chinigura* | The yield (t./ha.) of the BRRI dhan34 was higher than that of *kataribhogh / chinigura* (not less than double of this control plot) | |
| 2. Traditional milling system versus modified milling system | 5% increased milling yield from modified milling system | Due to lower grain losses |
| 3. Etc. | | |

*(Example from SP 29 02)*

*5.2 Assessment of research findings*

Which treatments were most and least successful in technical terms? In terms of:

- Production: changes in total production and yield;
- Productivity: changes in net benefits; and
- Provisioning: changes in ability of households ability to provide themselves with sufficient rice for consumption, in terms of months supply.

- Which treatments were most and least successful in terms of adoption by resource-poor farmer? Including adoption by farmers participating in the experimental plots and adoption by neighbouring farmers. Provide detailed statistics, don't just make broad generalisations;
- Which research results did resource-poor farmers value the most and least, and why? Which results did women in particular value the most and least, and why? Where was there most disagreement between resource-poor farmers over the value of the results?
- Which valuable results were found across all seasons, versus only in some seasons, and why?
- Which valuable results were found across all experimental locations, versus in some locations only, and why? and
- How do the findings of this research project relate to what has been found by other research projects? What is the same? What is different?

## Chapter 6: Participation of resource-poor farmers (This chapter will not be longer than five pages)

This chapter tells about the trend of participation of resource-poor farmers (RPFs) and adjustment made on selection criteria over time and its assessment.

*6.1 Trend of participation of resource-poor farmers over time*

| Name of rice season (List from beginning to end of research) | Criteria used to select resource-poor farmers and adjustment made by season | Total number of directly participating farmers | | Number of resource-poor farmers based on selected criteria | | Percentage of resource-poor farmers | |
|---|---|---|---|---|---|---|---|
| | | Male | Female | Male | Female | Male | Female |
| *T. Aman* 2000 | | | | | | | |
| *Boro* 2001 | | | | | | | |
| Etc. | | | | | | | |
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*6.2 Assessment of the participation of resource-poor farmers*

- How did the SP define who was a resource-poor farmer? Describe the criteria used. Who developed this definition? How did this definition change over time, and why? Who actually selected the resource-poor farmers? Who were to participate in the research?
- How did RPF's participation in the research change over time, during the SP period? From the beginning to the end of the research SP. And were there any seasonal differences, and if so, why?
- What types of information and judgments did the researchers make a special effort to seek from the resource-poor farmers? What types of factual information, what type of judgments and explanations? and
- What was new or different about the way in which resource-poor farmers participated in this SP, compared to others? Think about quantity and quality, and how central or marginal the RPFs' roles were.

**Chapter 7: The Management of gender equity and environmental impact** (This chapter will not be longer than three pages)

*7.1 Gender participation*

- Participation of resource-poor male and female farmers in major SP activities;

| Major SP activities | 2000 | | 2001 | | 2002 | | 2003 | |
|---|---|---|---|---|---|---|---|---|
| | M | F | M | F | M | F | M | F |
| Project planning and designing | | | | | | | | |
| Identification of technologies | | | | | | | | |
| Development of technologies | | | | | | | | |
| Testing of technologies | | | | | | | | |
| Assessment of technologies | | | | | | | | |
| Total: | | | | | | | | |

- Assessment of women's participation in the research:
  - How are women participating as research team members? How does their role differ from that of the male members? Both in their relationship to the community and in their relationship to other research team members. How have these relationships changed since the research started? If there are not any women members, why is this?

- How are women participating in the research as farmers and neighbours?
  - Which types of SP events listed in the table above did the female farmers have the most and least involvement in and why?
  - What SP locations have highest levels of women's participation in SP activities, and which have the lowest? And why?
  - How has female farmer's participation in the research change over time;
  - Both over the whole SP period, and across the different seasons; and
  - Did the SP create new opportunities for women to freely express their views? If so, in what way, and what difference did it make?

*7.2 Environmental impact*

- What types of possible environment impact did the researcher think about?
- What evidence was found of any positive or negative environmental impact of the research activities, in the form of changes in:
  - Diversity of species of plants, animals, insects, etc.;
  - Numbers of existing species of plants, animals, insects, etc.;
  - Soil pollution, water pollution, food crop pollution, air pollution; and
  - The incidence of human diseases.

This section will mainly be based on farmers' voice and needs to present in a matrix form showing the positive and negative impact of technologies tested and promoted during the project period on environmental issues.

**Chapter 8: Capacity building** (within three pages)

*8.1 Training, seminar and workshop participants*

This section needs to be included all types of training, workshop and seminar organised by the SP during the project period. This information needs to be presented by starting date, course title, number of participants by type and sex, total number of participants and duration of the training course. In one row, information on only one training course can be included. It can be presented in a tabular form as follows:

| Starting date (day/month /year) | Title of the course | Venue (institution, country) | Number of participants by type and sex | | | | | | | | Total | | Duration (days) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Researcher* | | Field staff** | | MS, PhD students | | Farmers | | | | |
| | | | M | F | M | F | M | F | M | F | M | F | |
| | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | |

**Researcher includes coordinator, PI, team leader, research partner and scientist*
*** Field staff includes research assistant, office supporting staff*
*M= Male participant; F = Female participant*

- Separate table for the people doing MS & PhD with title of the thesis needs to be included in Appendix;
- Similar table can be used to present information on seminar and workshop; and
- More detailed information can be presented in Appendix.

*8.2 Assessment of SP capacity building*

- What was the main component of the capacity building?
- How it emerged over time? and
- What was the contribution of the capacity building efforts to get the output of the SP?

**Chapter 9: The organisational impact of the research** (this chapter will not be longer than two pages)

*9.1 Inter-organisational linkage development*

- With which organisation/s has your research SP been working with during this research? Think about central, regional, district and local government, private sector and NGOs, and community level groups. Think about sections of organisations, not just about whole organisations. Include your research partners (in the agreements with PETRRA) and others who were also involved;
- Which of these are new relationships that did not exist before? And which of these new relationships are likely to continue after PETRRA funding ends, and why?
- Looking at the old relationships that already existed before you received PETRRA funding, how have these relationships changed? And why?
- Looking at each partner involved in your PETRRA research SP, what did they provide that you and your other partners could not provide? And why was that? and
- Have any memoranda of relationships or contracts been signed with any of the organisations you have been working with during the research? And if so why? What effect have they had, or will they have?

*9.2. Changes within the partner(s) organisation*

How has your organisation been affected by its relationships with PETRRA? What sort of effects is likely to last beyond the SP funding, and why? For example:

- How your area of research is now being viewed by your senior management, compared to the past;
- The content of your organisation's policy documents, compared to the past;
- How budget money is being allocated within your organisation, compared to the past;
- What type of staff are being recruited now compared to the past;
- How staff are working with each other now compared to the past;
- Changes in management of gender equity issues; and
- How your staff are working with farmers now compared to the past.

*9.3 Use of PETRRA SP research findings*

- Is your organisation used or planning to use any of the PETRRA research findings?
- If yes, what findings and how it has been used or planning to use?
- Is there any other government and non-government organisation utilised your SP findings? and
- If yes, which organisation? What findings? How?

**Chapter 10: Documentation and communication**

*10.1 Documents and materials produced*

Provide a summary table listing important reports and communication materials produced by your SP along with the target audience in the following categories.

| Communication materials | | Target audiance | | |
|---|---|---|---|---|
| Type (poster, pamphlet, video, leaflet, workshop report, published paper etc.) | Description [list title, author, date in chronological order. Use an asterisk (*) for documents that are planned to be produced by June 2004] | Farmers and organisations working with them | Policy makers (donors, decision makers in development, extension and research agencies) | Scientific audiences (in Bangladesh and elsewhere) |
| Hypothetical example: | | | | |
| Poster | Water use efficiency in coastal areas in dry season, Dr. Manoranjan Mondal, 2002 | ✓ | ✓ | ✓ |
| Annual Report | Annual progress report on coastal water resource management SP, Dr. Manoranjan Mondal, June 2003 | ✓ | | ✓ |
| Etc. | | | | |

A complete list of all reports and communication materials produced by the SP needs to be included in the Appendix of completion report. Please ensure that PETRRA has a hard and electronic copy of all of these documents.

*10.2 Assessment of SP communications*

- Looking across the three communication categories above, in which of these categories do you think your SP was most and least successful? And why?
- Within each of these audience categories what was the most and least successful product? And why?
- Your recommendations to PETRRA:
  - What steps should be taken to make the best use of the material produced so far?
  - Who should receive copies of this evaluation report? List names of people, positions and organisations, in priority order.

**Chapter 11: Conclusion and recommendations** (within two pages)

- Include key message and inference based on research findings as conclusion;
- Do not recommend anything that does not support by the research findings;
- Recommendation should be specific and action oriented.

*Appendix*

A.1 List of research locations with maps

A.2 List of publications and reports (in bibliographic format)

A.3 List of communication materials produced by the SP

A.4 List of MS and PhD with title of the thesis and present status under the SP

| Participant's name, designation, organisation and mailing address | Type of degree (give tick sign) | | Title of the thesis | University/ Institution | Present status* |
|---|---|---|---|---|---|
| | MS | PhD | | | |
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |

**Present status can be classified as completed, continuing and dropped*

A.5 Detailed list of training, seminar and workshop participants by name, designation, organisation, address and title of the course.

| Participants name, designation, organisation and mailing address | Type of participants* | Sex (M/F) | Title of the training course/ seminar/ workshop | Venue (institution, country) | Starting date (day/ month/ year | Duration (days) |
|---|---|---|---|---|---|---|
| 1. | | | | | | |
| 2. | | | | | | |
| 3. | | | | | | |
| 4. | | | | | | |
| 5. | | | | | | |
| 6. | | | | | | |
| 7. | | | | | | |
| Up to last one | | | | | | |

**Type of participants: coordinator, PI, team leader, research partner, scientist, research assistant, office supporting staff, farmer, etc.*

A.6 List of farmers participated in the evaluation process by name, father's name, village, union, upazila, district and rice provisioning ability at the beginning and end of the project.

| Name of farmers | Father's name | Village | Union | Upazila | District | Rice provisioning ability (month) | |
|---|---|---|---|---|---|---|---|
| | | | | | | Beginning | End |
| 1. | | | | | | | |
| 2. | | | | | | | |
| 3. | | | | | | | |
| 4. | | | | | | | |
| 5. | | | | | | | |
| 6. | | | | | | | |
| Up to last one | | | | | | | |

**Type of participants: coordinator, PI, team leader, research partner, scientist, research assistant, office supporting staff, farmer, etc.*

*References*

# Appendix 3:

## Completion report contents and guidelines for technology development sub-projects (SPs)

## Front page

**Responsibilities and acknowledgements**

## Content page

**List of tables and figures**

**Glossary**

**SP Communication brief**

**Executive summary**

**Chapter 1: Detailed research experiments and findings**

- Background of the research;
- Methodology;
- Experiment conducted;
- Research findings;
- Conclusion and recommendations.

**Chapter 2: SP Finance and inventory**

*Appendix*

- Detailed list of training, workshop and seminar participants by name, designation, organisation, address and title of the course;
- List of communication materials produced by the SP;
- List of publications and reports (in date order, most recent first);
- List of directly participating farmers in the research project by name, father's name, village, union, upazila, district and rice provisioning ability at the beginning and end of the project;
- SP finance (total budget versus actual expenditure, expenditure made by each partner, other than the amount directly incurred from PETRRA);
- Detailed list of SP equipment and present status.

## Completion report guidelines for technology development sub-projects (SPs)

The completion report will include up to *boro* 2003-04 results. You will need to submit your draft completion report by March 20, 2004 based on all earlier results. The final completion report will include the bore results and any editorial changes, which you need to submit by June 8, 2004. Preparation of completion report is the full responsibility of SP PI and partners. PETRRA will organise the review of completion reports.

### Objectives of the completion report

The specific objectives of the SP completion report are to:

- document detailed research findings;
- document training, workshop and seminar participants;
- list research documents and communication materials produced;
- document detailed about participating farmers profile;
- document financial information; and
- prepare an inventory on equipment purchased.

## Front page

This will include the following information:

- Title of the report along with the SP name and number;
- SP Duration: from start to end date;
- Funded by: IRRI-PETRRA and name of any other donor;
- SP Implemented by (names of lead and partners with organisation);
- Report written by (names of team members);
- Photograph of farmer participants and/or technologies tested;
- Date of the report;
- Contact address including e-mail and phone number; and
- Do not put any logos on the front page.

A draft sample of font page is enclosed at the end in Appendix.

### Responsibilities and acknowledgements (1 page max)

- Who funded the SP;
- Who led the SP:
  - Organisation; and
  - Principal Investigator (PI); and
- The team members:
  - Team membership and leader;
  - Who wrote the report; and
  - Who is finally responsible for the report.

## Contents page

- Headings, sub-headings (up to two levels) and page numbers.

### List of tables and figures

- Title of each table, its page number in page order.

### Glossary

- Technical terms; and
- Abbreviations.

*SP communication brief*

- This section will successingly promote your work.
- It will focus on SP objective, methodology, research findings, conclusion and recommendations;
- It needs to be written within two pages in popular form including photos;

- Create separate paragraphs for different issues; and
- An advance copy of communication brief needs to be forwarded as hard and electronic copy to PETRRA office by March 31, 2004.

**Executive summary**

- This chapter needs to be written within three pages;
- Write this section last of all, after all the other chapters have been written; and
- Create separate paragraphs;
  - These should focus on one subject at a time;
  - In the same sequence as main text; and
  - Make sure all chapters in the main text are covered.
- DO NOT
  - Do not introduce new ideas that are not already mentioned in main text of your evaluation report;
  - Do not use the Executive Summary to provide a general SP description or background on the geography, history or economy of Bangladesh; and
  - Do not include any tables.

**Chapter 1: Detailed research experiments and findings**

This is the main section of the completion report. This will tell the reader detailed about the SP. It can be written within maximum of 20 pages. This section will include:

*Background of the research*

- Statement of the issue;
- Rationale of the research;
- Objectives (purpose and outputs);
- Hypothesis (if any);
- Scope of the research; and
- Limitation (if any).

*Methodology*

- How the research location was selected?
- How the participating farmers were selected?
- How the research partners were selected?
- What were the different stages of research?
- How the research experiment or test was conducted?
- How the participation of resource-poor farmers by male and female were ensured at different levels of the research? and
- How the research data were collected and analysed?

*Detailed research findings*

- This part will be more detailed about the research findings of the SP;
- Research findings need to be written with facts and figures;
- Data can be presented in tabular form with detailed analysis below the table; and
- This section can be divided into different sub-sections as per objectives of the SP.

*Conclusion and recommendations*

- Include key message and inference based on research findings as conclusion;
- Do not recommend anything that does not support by the research findings; and
- Recommendation should be specific and action oriented.

**Chapter 2: SP finance and inventory**

This section contains a description on SP

finance and equipment. Detailed figures need to be listed in Appendix. Under the research agreement all equipment purchased under the SPs are the property of IRRI and the handling over to the respective partner organisations is at the discretion of IRRI. This section will contain the following information:

*2.1 SP finance*

- You will include in the Appendix your final quarter (April 30 2004 to July 08, 2004) Fund Request as approved by IRRI-PETRRA finance department. There will be fund requests for each partner attached.
- Comments on expenditure as compared to budget;
- Reasons for change (if any); and
- Lessons learned.

*2.2 SP equipment*

- You will include in the Appendix inventory list that is provided by IRRI-PETRRA finance department and cross checked by yourself and signed. There will be an equipment form for each partner.

*Appendix*

A.1 List of training, workshop and seminar participants by name, designation, organisation, address and title of the course

| Participant's name, designation, organisation and mailing address<br>1. | Type of participants* | Sex (M/F) | Title of the training course/ seminar/ workshop | Venue (institution, country) | Starting date (day/ month/ year | Duration (days) |
|---|---|---|---|---|---|---|
| 2. | | | | | | |
| 3. | | | | | | |
| 4. | | | | | | |
| 5. | | | | | | |
| 6. | | | | | | |
| 7. | | | | | | |
| Up to last one | | | | | | |

**Type of participants: coordinator, PI, team leader, research partner, scientist, research assistant, office supporting staff, farmer, etc.*

A.2 List of communication materials produced by the SP

A.3 List of directly participating farmers in the research project by name, father's name, village, union, upazila, district and rice provisioning ability at the beginning and end of the project.

| Name of farmers | Father's name | Village | Union | Upazila | District | Rice provisioning ability (month) | |
|---|---|---|---|---|---|---|---|
| | | | | | | Beginning | End |
| 1. | | | | | | | |
| 2. | | | | | | | |
| 3. | | | | | | | |
| 4. | | | | | | | |
| 5. | | | | | | | |
| 6. | | | | | | | |
| Up to last one | | | | | | | |

**Type of participants: coordinator, PI, team leader, research partner, scientist, research assistant, office supporting staff, farmer, etc.*

A.4 List of publications and reports (in bibliographic format)

A.5 SP fund request for last quarter of SP

Proforma as provided by IRRI-PETRRA finance department

A.6 List of SP equipment and present status

Proforma as provided by IRRI-PETRRA finance department

Suggested citation:

Biswas, T. K., Magor, N. P., Salahuddin, A. and Davies, R. 2007. Monitoring and evaluation system of the PETRRA project. In: Magor, N. P., Salahuddin, A., Haque, M., Biswas, T. K. and Bannerman, M., editors. PETRRA – an experiment in pro-poor agricultural research. M&E brief no. 9.1. Dhaka (Bangladesh): Poverty Elimination Through Rice Research Assistance Project, International Rice Research Institute. 30 p.



# Knowledge, attitude and practice (KAP) study on the value-based research approach of PETRRA

*Muhammad Solaiman, Tapash K. Biswas, Milan K. Bhattacharjee and Atiar Rahman*

## Executive summary

1. The Poverty Elimination Through Rice Research Assistance (PETRRA), a Department for International Development (DFID), UK-funded project in Bangladesh, was implemented by the International Rice Research Institute (IRRI), in collaboration with the Bangladesh Rice Research Institute (BRRI). The project aimed at achieving the goal of increased rice production in Bangladesh and increased income for its resource-poor rice farmers. As outlined in its logframe, six indicators of achievement of PETRRA's objectives required a knowledge, attitude and practice (KAP) survey as a means of verification. For assessing the impact of the project in the light of the indicators, PETRRA commissioned a study in May-June 2004. The KAP survey was considered an essential pre-requisite for consolidating the learning of PETRRA.

2. The broad objective of the KAP study was to know the impact of PETRRA activities on partner agencies in terms of their capacity building, commitment and increased practice of learning from PETRRA. The specific objectives were to assess the following:

- Extent of use of PETRRA research findings by governmental and non-governmental organisations (NGOs);
- Adoption level of key elements of pro-poor demand-led competitive rice research system of PETRRA by research management and funding bodies, and PETRRA partners;
- Important stakeholders' level of awareness about the importance of PETRRA management practices for value-based research;
- Important stakeholders' level of awareness about PETRRA technology development research findings; and
- Level of KAP of management and key staff of participating agencies to undertake value-based, demand-led research.

3. In keeping with the KAP objectives formulated on the basis of PETRRA's logframe (see Appendix 1), three categories of respondents: i) Principal Investigators (PIs) and partners of sub-projects (SPs); ii) representatives of research management and funding bodies; and iii) personnel associated with Bangladesh Rice Knowledge Bank (BRKB) – were selected. With three sets of structured questionnaires, interviews were conducted with 38 PIs and partners; 7 representatives of research management and funding bodies and 13 personnel associated with BRKB. Some case studies dealt with technology adoption by the farmers, PETRRA research management practices by the PIs and the observations of donors. Relevant and available secondary materials were also used to supplement the primary data.

4. On the use of research findings, it was found that among the 21 partners, 4 governmental organisations (GOs), 14 NGOs and one international organisation (IRRI) used the findings of some of their respective SPs in the activities of their

DFID Department for International Development

IRRI
International Rice Research Institute

Bangladesh Rice Research Institute

own organisations (objectively verifiable indicator [OVI]: purpose 2.1). In total, 19 organisations used SP findings. It is also evident that two GOs, 10 NGOs and one international organisation (IRRI) adopted the findings of different SPs of other partner organisations. They thus cross-fertilised the learning of similar projects and adopted the new knowledge of other SPs dealing with different issues. For example, BRRI (a GO) adopted the findings of the seed health improvement SP in its training sessions with the farmers and extension providers, and in its own regional research stations across the country. At the same time, it was informed by HEED Bangladesh (NGO) that its findings on production and marketing of fine aromatic and glutinous rice have been used by BRRI.

Against the minimum threshold of 7, 21 SPs' findings have been used by their own and other organisations (OVI: purpose 2.2). Among all the technologies, the rice seed health improvement technology has been most widely adopted by both the implementing organisations and others. Six of the implementing organisations, namely BRRI, CARE, GKF, WAVE, BRAC and Proshika, have incorporated this technology in their own programmes while around 30 other organisations (GOs, NGOs and CBOs) including DAE and RDA have adopted the same in their own programmes.

5. The KAP study asked for information about the endorsement of the SP research findings, and seven authorities, namely i) farmers; ii) own organisations; iii) other organisations; iv) BRKB; v) workshop participants; vi) broadcast by recognised media; and vii) annual report of the organisation – were listed for endorsement. The study revealed that of the 27 SPs studied, the findings of 11 have been endorsed by all the seven authorities, the findings of five SPs have been endorsed by six authorities, and those of six SPs by five authorities. It was also found that the seed health improvement project and integrated rice-duck farming for resource-poor farmer households SPs were endorsed by the largest number of fellow SP implementing organisations.

6. Of the endorsement authorities, farmers were considered the most valuable by 26 PIs and partners representing 16 organisations. While giving the reasons, 21 of these PIs and partners said that farmers are the key users of the findings, while the rest considered them useful because according to them i) farmers' acceptance or approval is necessary for spreading the technology horizontally; and ii) winning their confidence as well as adoption of the findings by them is most important. The PIs' and partners' own organisation were next in the order of the most valuable endorsements. Ten PIs and partners from 6 organisations (all NGOs) ranked this as the number one endorsement. This was followed by the media as the third most valuable endorsement. Of the 14 technology development SPs, 12 had their findings endorsed by their own organisations and by others. A total of 20 findings were learned to have wider endorsement. Out of 13 technology uptake SPs, findings of 10 SPs have gained wider endorsement.

7. DFID and EC, two leading funding bodies in Bangladesh, have a working

relationship with PETRRA. Close dialogues with two senior staff members from DFID and European Commission (EC) revealed that the two funding bodies strongly support all the key elements of the PETRRA research system (OVI: purpose 3.1). In the DFID funded Agricultural Research Initiative (ARI), PETRRA-outlined elements like participation of the resource-poor, environment, competitiveness, gender etc. have been taken care of. In the recent past, EC decided to fund replication of the results of PETRRA research. It went through a competitive selection process and finally selected the 4 best proposals. Only those proposals that had convincingly focused the key elements of the PETRRA research system were selected. It was also noted that EC takes care of these values in funding related projects, especially in the evaluation process of project selection. The DFID representative, however, observed that capacity building for rice research by organisations other than BRRI required a more tangible outcome, while the EC representative underscored that the short term project support approach should be replaced by an inbuilt mechanism for step-by-step cost sharing by the implementing agencies, so that the projects do not face a sudden death.

8. In total, seven officials of research management and funding bodies were asked to assess the value-based research elements of PETRRA. Their average score for each element crossed the level of 80%, which indicates that the research management and funding bodies hold a very positive opinion of the PETRRA research elements. The highest score was attributed to the participation element (100%).

Four key management officials including the director (research) of BRRI, recorded a very positive assessment of the value-based demand-led research system of PETRRA. According to them, conducting research with both men and women has gained more focus in BRRI's recent research. The institute has been using this element through a participatory variety selection (PVS) approach in variety development. Women are increasingly taking part in BRRI's on-farm research. PETRRA has provided opportunities to improve resource-poor farmers' rice provisioning through participatory research and development (PR&D). Through involvement in PETRRA, BRRI scientists are increasingly taking part in competitive research.

9. The PIs and partners have demonstrated a satisfactory level of awareness of and a positive mentality towards PETRRA management practices (OVI: output 1.4). According to their evaluation, all the key elements and their sub-components, other than the project steering committee (PSC), are important at the level of 75% and above. Five elements in the list have been rated very high with scores ranging from 90%-95%. These are: monitoring and evaluation (M&E): completion report (95%), M&E: annual progress report (94%), M&E: evaluation report (92%), use of financial process with direct management by PI and quarterly advance to PI (92%) and stakeholder analysis (90%). It also indicates that among all the management practices, the M&E component played a critical role for the project's success.

10. Rating of the relative importance of PETRRA technology development research findings by personnel associated with the BRKB reveal that they have developed a clear understanding of these technologies (OVI: output 1.4). The scores for the findings vary from 95% to 26%. According to them, the seed health improvement technology (SP 00 99) (see Appendix 3 for list of SPs in this study) is the most promising research finding (95%) while the system of rice intensification (SP 34 02, SP 35 02, SP 36 02) is the least important one (26%). The next most promising findings are: i) integrated crop management (SP 25 00: 88%) and ii) USG for the tidal zone (SP 21 01: 81%).

11. A total of 38 PIs and partners of 21 partner organisations were asked whether and to what extent their organisation adopted the key elements of PETRRA research management system. It was learnt that the organisations of around 95% of the PIs and partners have adopted the key elements to varying degrees. This implies that the minimum threshold of 25% of PETRRA partners' adoption of key elements has been achieved (OVI: output 3.1). Among the elements, the top three were: i) environment-friendly technology development (92%); ii) direct communication of results to key users (86%); and iii) conducting research with resource-poor farmers (81%).

12. It was expected that more than 70% of management and key staff of organisations participating in and trained through the PETRRA would demonstrate a positive impact on their knowledge, attitude and practice with regard to the elements of PETRRA value-based, demand-led research system (OVI: output 3.3). However, the KAP study shows that among the respondents in this category, more than 80% reported a positive change in their knowledge, attitude and practice (84% for knowledge, 83% for attitude and 84% for practice). Again, the changes were measured applying a scale with scores ranging between 3-0. Converting the individual scores to composite scores and then to weighted scores, it was learnt that the overall reported levels of knowledge, attitude and practice were 44%, 42% and 44% respectively higher than the corresponding levels before the respondents' participation in the SPs.

## Introduction

### Background

"Said is not yet heard, Heard is not yet understood, Understood is not yet approved, Approved is not yet applied."

*Visualisation in Participatory Programmes (UNICEF, 1993)*

The above quotation, although a bunch of four negative statements, is a pointer to the necessity of fixing four yardsticks to measure the success of communication: the target audience i) hear the message, ii) understand it, iii) approve it and iv) apply it. PETRRA recognised at its very inception the importance of these yardsticks, and incorporated them in its

logframe by fixing certain indicators to be verified by a KAP survey before the project came to a close.

PETRRA was implemented by the IRRI, in collaboration with the BRRI. Begun in 1999, the project was completed in August 2004. The whole range of PETRRA activities, aimed at achieving the goal of increased rice production in Bangladesh and increased income for the resource-poor rice farmers of the country, is summarised in its logframe. As outlined in the logframe, six indicators of the achievement of PETRRA's objectives require a KAP survey as their means of verification. Of these, three are at purpose level and three are at output level. The indicators are as follows:

| Purpose | Objectively verifiable indicators (OVIs) |
|---|---|
| Purpose 2: Governmental and non-governmental extension services have made use of research findings from PETRRA SPs. | 2.1 At least three GOs (DAE, BARD & RDA) and eight NGOs used PETRRA research findings during the project period.<br>2.2 At least seven PETRRA SPs' findings utilised by the governmental and non-governmental organisations (NGOs) by the end of the project (EOP). |
| Purpose 3: Other agricultural research funding bodies in Bangladesh have adopted key elements of a pro-poor demand-led competitive rice research system as used by PETRRA. | 3.1 At least two funding agencies adopted key elements of a pro-poor demand-led competitive rice research system of PETRRA by the EOP. |

| Output | Objectively verifiable indicators (OVIs) |
|---|---|
| Output 1: PETRRA's management practices and research findings effectively communicated to relevant organisations and persons involved in agricultural research and extension, and to policy makers. | 1.4 Most important stakeholders have clear understanding of PETRRA management practices and research findings by the EOP. |
| Output 3: Capacity of research partners to undertake value-based demand-led research sustainably enhanced. | 3.1 At least 25% PETRRA partners adopt key elements of a research management system (i.e., output 5) which promotes demand-led research with a focus on resource-poor rice farming (RPRF) households by project year 5.<br>3.3 More than 70% of management and key staff of agencies participating in, and trained through the PETRRA project, demonstrate positive impact on their knowledge, attitudes and work practices by project year 5. |

With a view to assessing the impact of the project in the light of the above indicators, PETRRA commissioned a KAP study in May-June 2004. The KAP study was also considered an essential prerequisite for consolidating the learning of PETRRA before its closure.

**Objectives**

The broad objective of the KAP study was to know the impact of PETRRA activities on the partner agencies, in terms of their capacity building, commitment and increased practice of the PETRRA learning. The study covered stakeholders from three types of partner organisations:

- GOs (research, extension and development);
- NGOs; and
- Research management and funding agencies.

The five specific objectives along with parameters for assessment were:

i) Extent of use of PETRRA research findings by GOs and NGOs;

The first means of assessment was the use of PETRRA research findings within the sub-project organisations itself and by other organisations both currently and in plans for the future. Also evidence of endorsement of research findings by appropriate authorities was sought. Examples of appropriate authorities are

farmers, the organisations management, media, BRKB management and publications;

ii) Adoption level of key elements of PETRRA's pro-poor demand-led competitive rice research system by research management, funding bodies, and PETRRA partners;

Measurement was the extent of adoption of key elements of pro-poor demand-led competitive rice research system of PETRRA. Also to what extent were the elements useful for research management, funding bodies and partner agencies;

iii) Important stakeholders' level of awareness about the importance of PETRRA management practices for value-based research.

The measurement was the stakeholders' awareness about PETRRA management practices such as research issue identification through stakeholder analysis, engagement of technical committee, selection criteria for value-based research, utility of project steering committee (PSC), use of M&E system, financial process, use of communication, etc.;

iv) Important stakeholders' level of awareness about PETRRA technology development research findings.

The indicator was stakeholders' awareness of PETRRA research findings such as seed health improvement; leaf colour chart; integrated pest management (IPM), rice-duck management, improving use of coastal water to add one additional crop; urea super granule (USG) for tidal zone, production, processing and marketing of aromatic rice, system of rice intensification (SRI), participatory integrated plant nutrient management and improve salinity resistant variety development through PVS; and

v) Level of KAP of management and key staff of participating agencies to undertake value-based, demand-led research.

The measurement for this final objective was change in knowledge, attitude and practice of management/key staff of participating agencies with respect to: conducting research with resource-poor farmers, gender focus in research, participation in research, partnership for comparative advantage, environment-friendly technology development, communication of results to key users, competitiveness to engage best players and capacity building.

## Methodology

*Sample selection*

Three categories of respondents were selected: i) PIs of SPs; ii) representatives of research management and funding bodies; and iii) officials associated with the BRKB. Respondents also represented all categories of partner organisations: GOs, NGOs and donor agencies.

Under PETRRA there were 45 SPs implemented by 48 research partners. The SPs comprised technology development with 19, uptake methods (two completed after second year) with 20 and policy research with 6. The existing 37 technology development and uptake methods SPs were initially selected as relevant for this study, and finally 32 SPs were listed for study. However, interviews could be conducted in the case of only 30 SPs, representing 72% of those selected for interview. The organisations of the respondents who could be interviewed covered 21 out of 48 research partners.

The categorywise distribution of respondents is as follows:

| Category | No. of respondents |
|---|---|
| PIs and partners of SPs | 38 |
| Representatives of research management and funding bodies | 7 |
| Personnel associated with BRKB | 13 |
| **Total respondents** | **58** |

*Data sources*

Both primary and secondary data were used for this study. Primary data were collected using three methods: workshop, direct interview and mailed questionnaire. The workshop and direct interviews were supported by structured questionnaires. For each category of respondents, different sets of questionnaire were administered. Questionnaires were also e-mailed to international partners. The KAP research team conducted the interviews. PETRRA documents, including case studies, SP reports, newsletters and periodicals, served as secondary sources of data.

*Data analysis*

Data were processed and analysed through MSAccess and SPSS. The individual assessments of the respondents for certain indicators were transformed into composite scores. In order to calculate the composite score of an indicator, the following formula has been used (Biswas, 2004):

Composite index (CI)

$$= \frac{\Sigma x_i f_i}{M} \times 100$$

Where,

$x_i$ = assigned score for individual issues with the range of 0-3, for this study, where 3 was assigned for high, 2 for moderate, 1 for low and 0 for not at all.


$f_i$ = frequency of responses of individual scores.

M = maximum potential score = (Maximum score assigned for a response) X (total number of respondents) = 3 (total number of respondents).

## USE OF PETRRA SP RESEARCH FINDINGS BY GOVERNMENTAL AND NON-GOVERNMENTAL ORGANISATIONS (NGOs)

*OVI 2.1 At least three GOs (DAE, BARD & RDA) and eight NGOs used PETRRA research findings during the project period.*

To assess the use of PETRRA research findings, two issues were considered: i) the continued use of research findings by the research partners that generated the findings, and ii) the use of research findings generated by other organisations.

### Organisations using SP research findings

A total of 38 PIs and partners from 21 organisations participated in the KAP study as respondents. It is evident from their opinions that 19 of these organisations used the research findings of their own PETRRA SPs. Among these organisations, 4 were GOs (BRRI, BARD, RDA and BADC), 14 were NGOs and one was an international organisation (IRRI). This does not, however, necessarily mean that the implementing agencies have used the findings of all their SPs. For example, the partner agencies for SPs 34 02, 17 01, 19 01, 28 02, 36 02, 21 01, 04 00 and 44 02 are yet to use the research findings, while for SPs 13 00, 27 02, and 19 01 some organisations adopted the findings, and others were yet to adopt them.

The influence of the SPs on the partner agencies is important from another perspective. SP partners also used the

findings generated by other partner organisations as well. Two GOs, namely BRRI and RDA, 10 NGOs, namely CARE, GKF, WAVE, BRAC, HEED Bangladesh, AID-Comilla, AAS, Proshika, RDRS and Shushilan and one international organisation, IRRI, adopted the findings of different SPs of other partner organisations. In this way, they not only cross-fertilised the learning of similar projects, but also adopted new knowledge from other SPs dealing with different issues.

The nature of use of the findings varied from organisation to organisation. The areas of adoption were mainly their own community-based programmes/projects, on-farm experimentation and training. The use, however, depended on the nature of work of the individual organisations. For a deeper understanding of the diversified use of the findings, the following illustrations could be helpful:

*Governmental organisations (GOs)*

BRRI, implementing the largest number of SPs (15), used the findings primarily in training farmers as well as extension providers, and in its on-farm experimentation across the country. For example, the findings of seed health improvement project (SP 00 99) and integrated nutrient management in intensive cropping system (SP 10 00) were used mainly in training programmes, while techniques like PVS, participatory plant breeding (PPB) and anther culture (a plant breeding technique) used in development of HY rice varieties for the coastal wetlands of Bangladesh (SP 13 00) have also been used in a number of projects for variety development. BRRI has also instructed its concerned scientists to use USG (SP 21 01) instead of prilled urea in its on-farm and on-station activities.

The Bangladesh Academy for Rural Development (BARD), Comilla, has introduced the learning of the village institutional approach for rice technology dissemination (SP 23 01) in its on-going pilot project Comprehensive Village Development Programme (CVDP), while the Rural Development Academy (RDA), Bogra, is using the women-to-women extension approach (SP 37 02) in its training and demonstration programmes.

Although there were no representatives from DAE among the respondents, it became evident from the opinions of the respondents that DAE, the largest government sector agricultural extension organisation in Bangladesh, has also adopted the findings of certain SPs (e.g., SP 00 99, 36 02).

The Bangladesh Agricultural Development Corporation (BADC), in order to demonstrate the higher yield of hybrid rice (SP 15 00) in Modhupur, arranged a field day that was attended by farmers, NGOs, DAE officials and BADC personnel.

*Non-governmental organisations (NGOs)*

Regarding the seed health improvement project (SP 00 99), CARE and GKF have disseminated the tested practices among their beneficiaries through training. WAVE undertook an integrated agriculture programme to implement the findings of this SP, while BRAC is using their learning through rice seed production and agricultural extension programmes. AID-Comilla is applying two findings of LITE (SP 27 02) in its other donor-funded agriculture-based programmes in Feni and Kurigram. These findings are: i) there is no measurable yield difference because of non-application of insecticide; and ii) LCC reduces urea application. These were applied by AID-Comilla in its rice fish project in Feni and homestead vegetable gardening project in Kurigram. IDE is applying the findings of a USG-based SP (SP 21 01) in its IFAD-funded project in Mymensingh. AAS, another NGO, has

already applied the farm seed extension method (SP 05 00) in some non-project areas with large groups of farmers. These are some examples of how different NGOs involved in SP implementation have started putting their learning into practice whilst at the same time using the findings of other organisations.

**Sub-projects' findings used by governmental and non-governmental organisations**

*OVI 2.2 At least 7 PETRRA SPs' findings utilised by GOs and NGOs by the end of the project (EOP).*

A wide range of GOs and NGOs have used the findings of PETRRA SPs during the project period. These include both participating and non-participating organisations. Table 1 lists 20 technology development and uptake research findings that, according to the project partners, have been widely used by their own organisations and others.

Among all the technologies, the seed health improvement technology (SP 00 99) has been the most widely adopted by both implementing and other organisations. Six participating organisations, namely BRRI, CARE, GKF, WAVE, BRAC and Proshika, have incorporated this technology in their own programmes, while around 30 small and big GOs, NGOs and CBOs, including DAE and RDA, have adopted the technology in their own programmes.

In addition to rice seed health improvement, certain other technologies have also been used by at least three organisations other than the implementing organisations. These are:

i) women-led cultural extension (SP 09 00);

ii) development and use of hybrid rice (SP 15 00);

iii) integrated crop management (SP 25 02);

iv) livelihood improvement through ecology (SP 27 02);

v) production and marketing of aromatic and glutinous rice (SP 28 02);

vi) strengthening FARMSEED extension method (SP 05 00);

vii) integrated nutrient management in intensive cropping system (SP10 00);

viii) women-to-women extension (SP 37 02); and

ix) skilled family members extension approach (SP 44 02).

As mentioned by the PIs and partners, organisations using one or more of these technologies are DAE, BRRI, IDE, Nakshikantha, UTTARAN, Concern, BADC, GKF, RDRS, Shushilan, Khulna University, AAS, TMSS, CARE, HKI-Nepal, Amrul Union Parishad, WDP, PP and LUSTRE. A noticeable feature of technology adoption by others in this regard is the participation of Department of Agricultural Extension (DAE), a government sector organisation with a country-wide network extending to the village level. Almost all the PIs of SP 00 99 have said that their rice seed technology has been adopted by the DAE through its field level extension functionaries, called block supervisors (BSs). The PIs of two other SPs (SPs 21 01 and 36 02) have also mentioned DAE as a user of their technologies.

**Plan by partner GOs and NGOs to use PETRRA research findings**

It was learnt that a number of implementing agencies were not using the findings of their own sub-projects. The organisations in this category were: BRRI (SP 17 01, 27 02, 34 02 and 43 02), BRAC

Table 1. SP-wise use of PETRRA research findings by governmental and non-governmental organisations

| SP no. | SP name | By own organisation | By other organisation | Total no. of organisations that used findings |
|---|---|---|---|---|
| **Technology development** | | | | |
| 00 99 | Seed heath improvement project (SHIP) | BRRI, CARE, GKF, WAVE, BRAC, Proshika | DAE, RDA, 18 NGOs and 6 CBOs | 32 |
| 10 00 | Nutrient management for intensive rice-based cropping systems | IRRI | RDRS, AAS, IFAD | 4 |
| 15 00 | Development and use of hybrid rice | BRRI, BADC | NGOs & pvt. seed cos. | 4 |
| 21 01 | Adaptation and adoption of USG technology for RPFs in tidal submergance-prone areas | BRRI, IDE | DAE | 3 |
| 22 01 | Rice diversity and production in south-west Bangladesh | BRRI | Local NGOs | 2 |
| 25 02 | Integrated crop management (ICM) in north-west Bangladesh | BRRI | GKF, RDRS | 3 |
| 27 02 | Livelihood improvement through ecology (LITE) | AID-Comilla | 23 NGOs, DAE | 25 |
| 28 02 | Production and marketing of FAG rice in north-east Bangladesh | - | Khulna University, Shushilan, BRRI | 3 |
| 29 02 | Production, processing and marketing of aromatic rice in north-west Bangladesh | APEX | - | 1 |
| 36 02 | Verification and refinement of system of rice intensification (SRI) in selected areas | - | DAE | 1 |
| **Uptake methods** | | | | |
| 01 00 | Technology identification and uptake model | BRRI | - | 1 |
| 05 00 | Strengthening FARMSEED extension method | AAS | 20 POs (CBOs, NGOs) | 21 |
| 06 00 | Union federation-based extension approach for rice and rice seed production | Proshika | - | 1 |
| 07 00 | Federation-based quality seed promotion | RDRS | Proshika | 1 |
| 09 00 | Women-led cultural extension method | Shushilan | NGOs like IDEAL, Nakshikantha, UTTARAN and Concern | 5 |
| 23 01 | Village institutional approach for rice technology dissemination | BARD | - | 1 |
| 37 02 | Learner-centred video production | RDA | TMSS, CARE, HKI - Nepal, Amrul UP | 6 |
| 38 02 | Local entrepreneurship and network development for mobile pump dissemination | IDE | - | 1 |
| 42 02 | Women-led extension method for rice seed cleaning and storage | EPRC | - | 1 |
| 44 02 | Whole family extension approaches | AAS | WDP, PP, LUSTRE | 4 |

(SP 36 02), HEED (SP 28 02), FIVDB (SP 19 01), Proshika (SP 20 01), GKF (04 00) and AAS (44 02). Certain organisations, however, planned to use the findings in future. The respective PIs of BRRI, HEED Bangladesh, FIVDB, Proshika, GKF, IDE and AAS expressed their organisations' plan to utilise some of the findings. The SPs in this category were: 43 02 (BRRI), 28 02 (HEED), 19 01 (FIVDB), 20 01 (Proshika), 04 00 (GKF), 38 02 (IDE) and AAS (44 02).

As expressed by the PIs and partners, BRRI planned to use the whole family training approach in its rice farming programme areas. HEED Bangladesh planned to extend PETRRA innovations such as ICM, rice-duck, SHIP and water management in the coastal eco-systems through its agricultural programme. To this end, it had already organised a programme review and decided to mainstream these technologies through expending its agricultural programme.

Proshika planned to use the findings of the coastal water management SP in its

agriculture-related programmes, which according to the concerned PI, included improved irrigation for *boro* rice cultivation and productivity improvement in *t. aman*. A PI from GKF said that his organisation would use the findings of quality seed marketing methods (SP 04 00). The findings he referred to were the use of resource-poor farmers as quality seed producers, seed users and seed sellers. AAS will use the family members extension approach (SP 44 02) for skill development amongst farm families through participatory training in its working areas across the country.

**Endorsement of SP research findings**

The KAP survey asked for information about who had endorsed which research findings. SP respondents' replies may be indicative of the relative likelihood of subsequent use of their research findings. Each SP was given a list of sources to say which among them endorsed their findings. The sources of endorsement were as follows: i) by farmers; ii) by own organisations; iii) by other organisations; iv) used by the BRKB; v) by workshop participants; vi) broadcast by recognised media; and vii) in annual report of the organisation. The responses are given in Table 2.

The table shows the number of different sources stated by respondents to have endorsed the findings of their SPs, as well as listing those partner organisations who provided endorsement of the SP findings. With seven possible sources of endorsement, the number of endorsements varied from 2 to 7. Of the 27 SPs studied, the findings of 11 have been endorsed by all the seven sources; the findings of five SPs have been endorsed by six sources, and of six SPs by five sources. This implies that the findings were quite relevant to the actual situation.

Among the 14 technology development SPs, the findings of 8 SPs have been endorsed by seven sources and two by six sources. In the case of the 13 technology uptake SPs, the findings of three have been endorsed by 7 sources, three by 6 sources and 4 by 5 sources. Furthermore, in consideration of the number of endorsements, 8 within the 14 technology development SPs rank first and 2 rank second. On the other hand, within the 13 uptake SPs, 3 rank first, 3 rank second and 4 rank third. The findings thus indicate that the SPs as a whole gained wide acceptance from a cross-section of people and many outlets for getting their findings across to the larger community.

Included among the 7 sources endorsing the research findings were the 'own organisation' conducting the SP and 'other organisations' conducting other SPs. So, besides the 'own organisation' conducting the SP, other organisations also endorsed the SP findings. In Table 2 the names of the organisations endorsing either the findings of their own SPs or the findings of the SPs of other organisations have been included. It is found that the findings of the seed health improvement (00 99) SP and the integration of rice-duck farming for resource-poor farmer households SP (19 01) were endorsed by the most fellow SP implementing organisations.

The partner organisations' assessment of the importance of the endorsing authorities was also looked at from a different perspective to further validate the attitude in this respect (see Table 3). They were asked to say which among all the given authorities endorsing their findings they valued most. In response to this, most organisations (16 out of 21 organisations interviewed) mentioned the farmers as the most valuable endorsement. Again, while giving the reasons, 21 PIs out of 26 who considered it most valuable, said that farmers are the key users of the findings while the remaining considered them useful

Table 2. Endorsement of SP research findings

| SP | | Number of endorsements | Rank | Partners endorsing the technology |
|---|---|---|---|---|
| SP no. | Name | | | |
| **Technology development** | | | | |
| 00 99 | Seed health improvement project (SHIP) | 6 | 2 | BRRI, CARE, GKF, WAVE, BRAC, Proshika |
| 10 00 | Nutrient management for intensive rice-based cropping systems | 7 | 1 | BRRI, IRRI |
| 13 00 | Development of HY rice varieties in coastal wetlands | 5 | 3 | BRRI |
| 15 00 | Development and use of hybrid rice | 6 | 2 | BRRI |
| 17 01 | Participatory integrated plant nutrient management | 7 | 1 | BRRI |
| 19 01 | Integrated rice-duck farming | 7 | 1 | BRRI, BDS, FIVDB |
| 21 01 | Adaptation and adoption of USG technology for RFPs in tidal submergance-prone areas | 7 | 1 | BRRI, IDE |
| 22 01 | Rice diversity and production in south-west Bangladesh | 7 | 1 | BRRI |
| 25 02 | Integrated crop management (ICM) in north-west Bangladesh | 7 | 1 | BRRI |
| 27 02 | Livelihood improvement through ecology (LITE) | 7 | 1 | AID-Comilla |
| 28 02 | Production and marketing of FAG rice in north-east Bangladesh | 7 | 1 | HEED |
| 29 02 | Production, processing and marketing of aromatic rice in north-west Bangladesh | 4 | 4 | APEX |
| 34 02 | System of rice intensification (SRI) in south-west Bangladesh | 5 | 3 | BRRI |
| 36 02 | Verification and refinement of SRI in selected areas | 4 | 4 | BRAC |
| **Uptake methods** | | | | |
| 01 00 | Technology identification and uptake model | 3 | 5 | BRRI |
| 04 00 | Quality rice seed marketing method | 2 | 6 | GKF |
| 05 00 | Strengthening FARMSEED extension method | 7 | 1 | AAS |
| 06 00 | Union federation-based extension approach for rice and seed production | 5 | 3 | Proshika |
| 07 00 | Federation model of quality seed promotion | 7 | 1 | RDRS |
| 09 00 | Women-led cultural extension methods | 4 | 4 | Shushilan |
| 23 01 | Village institutional approach for rice technology dissemination | 5 | 3 | BARD |
| 37 02 | Learner centred video production | 6 | 2 | RDA |
| 38 02 | Local entrepreneurship and network development for mobile pump dissemination | 6 | 2 | IDE |
| 40 02 | Private sector-led FFS method for herbicide use | 6 | 2 | SAFE |
| 42 02 | Women-led extension method for rice seed cleaning and storage | 5 | 3 | EPRC |
| 43 02 | Site specific nutrient management (SSNM) in central-west Bangladesh | 5 | 3 | BRRI |
| 44 02 | Whole family extension approach | 7 | 1 | AAS |

because, according to them, i) their approval is required for spreading the technology horizontally, and ii) their adoption of the findings as well as winning their confidence is most important. One noticeable aspect of this endorsement was its recognition by BRRI, the apex rice research organisation in this country, because resource-poor farmers' participation was fundamental to PETRRA's value-based rice research system. Side by side with this GO, 15 NGOs have also evaluated the endorsement of farmers as most important.

The 'own organisation' was next in the order of the most valuable endorsements. Six organisations and 10 PIs (all NGOs) ranked it as number one. The reasons they gave were: i) own organisation's ownership helps wider adoption and scaling up; ii) it plays a supportive role that helps to influence policy-level people and funding bodies; iii) it ensures

provision of necessary staff and logistics for replication; and iv) it facilitates quick technology adoption through its incorporation into running programmes of the organisation.

The endorsement of findings by media was found to be the third most valuable endorsement. Two PIs from BRRI considered it most important for creating awareness about the findings and disseminating them.

*Endorsement of SP findings by partner organisations: technology development SPs*

Respondents implementing the SPs were asked to comment on endorsement of their SP findings by different organisations. Among the 14 technology development SPs, 12 had their findings endorsed by their own organisations and others (SPs 00 99, 10 00, 13 00, 15 00, 19 01, 21 01, 22 01, 25 02, 27 02, 29 02, 34 02, 36 02). A total of 20 findings had wider endorsement.

**Seed health improvement project (SHIP) (SP 00 99):**

The endorsed findings of this project are the following: seed quality improvement through manual sorting, production of good quality seeds and safe storage at farmers-level, rouging practice along with floatation for seed quality improvement, better seed preservation using plastic drum and tin can and enhanced women's empowerment in decision making in rice production due to family approach. As reasons for the wider endorsement of these findings, PIs mentioned that as a package of technology, farmers considered it convenient. Training, distribution of good quality seed-storage containers, and also partner organisations' support in terms of logistics and training had contributed to gaining farmer-level approval.

**Livelihood improvement through ecology (LITE) (SP 27 02):**

Important findings of LITE endorsed by

Table 3. Most important endorsement authorities according to the PIs

| Organisations | Names of authorities | No. of responses | Reasons |
|---|---|---|---|
| BRRI, CARE, GKF, WAVE, BRAC, HEED, IRRI, FIVDB, Proshika, IDE, APEX, AAS, RDRS, Shushilan, EPRC, IDE | Farmer | 26 | ◆ They are the key users of findings;<br>◆ Through them technology will spread horizontally;<br>◆ They have become convinced about the technologies;<br>◆ They adopted findings. |
| CARE, FIVDB, AID-Comilla, APEX, Proshika, EPRC | Own organisation | 10 | ◆ Helpful for wider adoption and scaling up of the technology;<br>◆ Plays a supporting role to influence government and donors;<br>◆ Provides necessary staff and logistics;<br>◆ Helpful for integration of the technology in own programmes. |
| AID-Comilla, BRRI | Other organisation | 1 | ◆ Promotes the extension of technology across the country, DAE in particular. |
| - | Workshop participants | - | - |
| BRRI | Media | 2 | ◆ Create awareness;<br>◆ Help wider dissemination among cross-section of people. |
| BRRI, AAS | BRKB | 1 | ◆ Helps quick and wider dissemination of technology. |
| BARD | Annual report | 1 | ◆ Reflects the commitment of the organisation. |
| | Others | - | - |

*Note: Some organisations implemented more than one project and some respondents did not provide the reasons.*

the farmers were as follows: i) no measurable yield difference for not using insecticide was found; and ii) use of LCC reduced excessive use of urea. Farmers approved of the findings because appropriate doses of urea led to reduction in cost and increase in yield.

**Integrated rice-duck farming (SP 19 00):**

Integrated rice-duck farming needs no insecticide and fertiliser and is more profitable than sole rice cultivation. Organisational motivation, a farmer to farmer approach, and most importantly profitability helped to gain farmers' endorsement.

*Endorsement of SP findings by partner organisations: uptake methods SPs*

Out of 13 uptake SPs, a total of 13 findings of 10 SPs have gained wider endorsement (SPs 04 00, 05 00, 06 00, 07 00, 23 01, 31 02, 38 02, 40 02, 42 02, 44 02). The following illustrations show how certain uptake findings have been endorsed by the stakeholders:

**Strengthening FARMSEED extension method (SP 05 00):**

As an outcome of the SP, trained resource-poor farmers accepted the varieties BRRI dhan28 and 29, and a foundation seed (FS)-based quality seed production and distribution system was developed.

**Village institutional approach for rice technology dissemination (BARD, Comilla) (SP 23 02):**

The village institution was found effective in rice technology dissemination. Its impact was enhanced further through the use of mini demonstration plots. The existing village organisations facilitated easier acceptance of the technologies to farmers. Mini demonstration plots facilitated the adoption process.

## Adoption of key elements of PETRRA research system by funding and management bodies

*OVI: purpose 3.1 At least two funding bodies adopted key elements of a pro-poor demand-led competitive rice research system as used by PETRRA by EOP*

DFID and EC, two leading funding bodies, had a working relationship with PETRRA. While DFID funded the implementation of PETRRA, EC has committed to fund the upcoming uptake of PETRRA research results in Bangladesh. Two key management staff, one each from DFID and EC and a team member of the Agricultural Research Initiative (ARI), also funded by DFID, were interviewed in this connection. In order to learn the impact of PETRRA on research management staff in respect of adoption of the key elements, four key management staff of BRRI including the director general were also interviewed.

Close dialogues with two senior staff members of DFID and EC revealed that they strongly support all the key elements of the PETRRA research system. These elements will continue to be essential determinants of their funding decisions. PETRRA's experiences were taken by them as added strength for their future programmes.

BRRI: Four senior management officials were interviewed. They were: director general, director (research), director (administration) and Head of Biotechnology Division. As a whole, their assessment of the key elements of PETRRA research was very positive. While justifying their assessment of the individual elements and giving examples of their practice in BRRI's research, they were very articulate in certain cases. The following are some excerpts from their comments:

- The direct involvement of women in production and processing of farm

produce shows why their participation in farm research is so important. Women are participating in BRRI's participatory research & development (PR&D) activities and BRRI has incorporated the PVS approach in the variety development process;

- Many BRRI scientists are involving women in on-farm research;
- The PETRRA system provided scope for open competition, and the best research proposals (RPs) were identified and selected by a highly qualified technical committee. BRRI has internalised this element for its own research selection and is practicing this through programme area committee meetings where research programmes are critically reviewed, scrutinised and selected;
- PVS and other component technologies and farming system technologies are being generated and disseminated through PR&D;
- Some BRRI scientists are already participating in competitive research funding;
- PETRRA provided opportunities to improve resource-poor farmers' rice provisioning through PR&D;
- BRRI is using participation in its on-farm research. It is helpful for applied research, e.g., herbicide and farm machinery adoption; and
- Resource-poor farmers (RPFs) are an important component of society. BRRI's applied research uses farmers for technology validation.

Case 1. Adoption of key elements of PETRRA research system by European Commission (EC)

The EC is one of the leading funding bodies in Bangladesh. Over the past years, the Commission has keenly observed PETRRA's activities and developed a very positive attitude towards them. The KAP study helped to further understand EC's evaluation of PETRRA and the reasons behind its expressed commitment to fund future replication of its learning. Dr. Ekramul Ahsan, Delegation of the European Commission to Bangladesh, in an interview with the study team, clarified EC's stand with regard to PETRRA's value-based research system.

Dr. Ahsan said that food security is an important area of EC's Country Strategy Paper (CSP) for Bangladesh. In fact, PETRRA is also addressing the issue of food security in Bangladesh through supporting rice research that, according to him, takes into account certain non-rice elements of agriculture as well, in order to achieve a much wider impact on rural livelihoods.

Commenting on the key elements of PETRRA's pro-poor demand-led competitive rice research system, Dr. Ahsan said that the necessity of these elements varies depending on the nature of the research as well as its target groups. However, for any farmer-oriented research, all these elements are highly important. He also noted that these elements remain ingrained in the EC policy. The EC takes care of these values in funding related projects, especially in the evaluation process of project selection. These are integral part of project formulation and monitoring criteria pursued by EC, he added.

Dr. Ahsan went on to say that EC appreciates the approach and philosophy of PETRRA. Several rounds of talk and experience sharing took place between EC and PETRRA. In the recent past, EC came forward to fund replication of the results of PETRRA technology development and uptake research. To this end, EC went through a competitive selection process and finally selected four proposals. Three international and national NGOs, namely ActionAid, CARE Practical Action (former ITDG) were selected. In the whole process, it took the utmost care to make the selection quality-based and unbiased. Only those proposals that had convincingly focused the key elements of the PETRRA research system were chosen.

Giving glimpses of his personal opinion, Dr. Ahsan said that he would not prefer high-tech propelled agriculture for Bangladesh. For quick development of this sector, local-level technology modification is more important, he said. That element has also been taken care of in PETRRA, he added. However, regarding the capacity building element, he observed that the long practiced short-term approach, resulting in the expiry of a project after the completion of external funding support, should be discouraged from the sustainability point of view. Instead, he envisaged an inbuilt mechanism that, from a certain stage onward, ensures that the implementing agencies take part in cost sharing. Step by step they could then take over the whole responsibility, he emphasised. His final remark was: 'Anyway, PETRRA sheds new light on value-based research systems in Bangladesh.'

Case 2. Adoption of key elements of PETRRA research system by Department for International Development (DFID)

Mr. Nazir Ahmed Khan of DFID took special note of the gender concern of PETRRA. He said that DFID wanted to ensure gender priority in all cases. In ARI and the community-based fisheries project funded by DFID, elements of the PETRRA research system like participation of the resource-poor, environment, competitiveness, gender etc. have been taken proper care of. For ownership development, DFID always stresses participation. PETRRA is the first ever approach taking into account so many values as ingredients of a research system, and therefore deserves high appreciation. *"However, our expectation is much higher",* he commented. Capacity building by organisations to gain funds from different sources is a good initiative. Capacity building for rice research by organisations other than BRRI required a more tangible outcome, he added.

Case 3. Adoption of PETRRA research elements in Agricultural Research Initiative (ARI)

Dr. S. M. Elias, a member of the ARI team, was interviewed in connection with the KAP study. During the interview, he stated that under the DFID-funded ARI, a committee was formed to propose a permanent umbrella setup for agricultural research and extension that would fund research initiatives in the government, non-government and private sectors. The 2002 output to purpose review (OPR) team had already accomplished their assessment and proposed a foundation called Krishi Prajukti Foundation (KPF), that is, Agricultural Technology Foundation.

Dr. Elias said that in designing the foundation, PETRRA experiences were very helpful. As part of experience sharing with different organisations and sections of people, consultations were also made with PETRRA. *"We have spelt out the priorities for KPF. In the course of time, KPF itself would decide its priorities. However, we have laid emphasis on certain principles"*. By way of exemplification, Dr. Elias said that research organisations, NGOs and private sector organisations would seek KPF funds in a competitive process. Proposals would be invited and supported following a competitive process so that the best players are engaged. KPF's major thrust would be competitive research. However, the committee has also recommended direct funding for special types of research that have few competitors with the expertise required to conduct such research.

Dr. Elias commented that PETRRA could strike a better balance between technology development and extension projects. Other than this, PETRRA did a laudable job, he said. He appreciated the impartiality in project selection and the emphasis on resource-poor farmers and gender considerations in the PETRRA research system. From his own practical experience of project evaluation, he noted that he had found many projects successful because they incorporated elements like conducting research with resource-poor farmers, participation for mutual learning and openness and women taking part with men in research.

While assessing the elements, one senior official gave her own outlook on capacity building from a different perspective. She said that capacity building is absolutely necessary for an organisation. However, in the case of external support to this end, phase-wise withdrawal of project support would be a better option. Some high-technology instruments procured with PETRRA support came to a halt after the project's termination, when the skilled operators left. More time was needed to establish biotechnology. She was, in fact, referring to her own SP, and she concluded that the capacity developed through this project might suffer in the coming days for lack of manpower and resources had there been a phase-wise withdrawal of assistance, this would not have happened.

Officials of funding and research management bodies were also asked to assess the elements using a scale (3 highest and 0 lowest). Converted into composite figures, average scores against all the elements of the pro-poor demand-led competitive rice research system have crossed the level of 80, which indicates that the research management and funding bodies valued all the elements as highly useful (Table 4). However, if individually looked at, the participation element has received the highest score (100%). According to their assessment, the next two most important elements were 'conduct research with both men and women' and 'capacity building is critical to achieve the other elements'; each given a score of 95%.

## UNDERSTANDING OF PETRRA TECHNOLOGY DEVELOPMENT RESEARCH FINDINGS BY IMPORTANT STAKEHOLDERS

*OVI: Output 1.4 - Most important stakeholders have a clear understanding of PETRRA management practices and research findings by the end of the period.*

### SP partners' understanding of PETRRA management practices

PETRRA management practices consisted of 7 basic elements. Table 6 gives the list of these components and sub-components. It is likely that while implementing PETRRA SPs, the PIs have gained both a deeper understanding of these elements, and a practical orientation in their use. When the project partners demonstrate a satisfactory level of awareness and a positive attitude to the management practice, it is an indication of potential continued use of the practice.

The number of responses of the PIs and partners against the elements of the management practices varied from 32 to 40 out of 42 respondents. The composite scores in Table 5 indicate the level of importance given to these elements by the SP partners. On a scale of importance, the values varied from 3 (highest) to 0 (not important).

According to their evaluation, other than the 'PSC for providing guidance', all the key elements and their sub-components were important at the level of 75% and above. Five in the list have been rated very high with scores ranging from 95 to 90% while four fall in the category of 80s ranging from 82 to 89. As a whole, the scores reflect a very positive attitude of the stakeholders towards the key elements of PETRRA management practices for value-based research.

As an act of validation of the quantitative assessment, they were asked to give reasons. The following section summarises the reasons for the highest scores and the lowest two scores.

*The use of M & E: completion report (95%)*

- It gives an overall picture and helps to take future course of action (AID-Comilla, BRRI, BADC);
- Comments by PETRRA consultants and guidelines helped to improve the quality of completion report (BARD, BDS, IDE);

Table 4. Opinions of stakeholders from research management and funding bodies about the usefulness of key elements of PETRRA research management system

| Key elements | No. of responses | Level of usefulness | | | | Composite Score (%) | Rank |
|---|---|---|---|---|---|---|---|
| | | High (3) | Moderate (2) | Little (1) | Not important (0) | | |
| Conduct research with resource-poor farmers | 7 | 5 | 0 | 2 | 0 | 81 | 5 |
| Conduct research with both men and women | 7 | 6 | 1 | 0 | 0 | 95 | 2 |
| Use participation to help mutual learning, flexibility, openness and evaluation | 7 | 7 | 0 | 0 | 0 | 100 | 1 |
| Use partnership for comparative advantage | 7 | 5 | 1 | 1 | 0 | 86 | 4 |
| Develop technologies that are environment-friendly | 7 | 4 | 2 | 1 | 0 | 81 | 5 |
| Direct communication of results to key users | 7 | 5 | 1 | 1 | 0 | 86 | 4 |
| Competition for competitive funding | 7 | 5 | 2 | 0 | 0 | 90 | 3 |
| Capacity building is critical to achieve the above elements | 7 | 6 | 1 | 0 | 0 | 95 | 2 |

- It serves as a valuable document (BARC, BRRI). It is important for future use and reference (BRRI), programme review (BRRI), timely project operation (BRRI, FIVDB) and impact learning (IDE). It helps learning dissemination (BRRI, Proshika);
- It helps to identify strength, weakness, opportunity and threat (SWOT), which helps to develop future projects (CARE);
- The format includes wider aspects of monitoring and evaluation (BRRI).

*The use of M & E: annual progress report (94%)*

- It gives accumulated picture of project findings (AID-Comilla, BRRI, BRAC);
- For learning annual progress is highly important (BADC);
- It helps to assess the achievement against targets in the project document and take necessary measures (BARD, FIVDB);
- PETRRA guidelines helped us (BDS);

Table 5. Awareness level of SP partners about the importance of PETRRA management practices for value-based research

| Key elements | No. of responses | Level of awareness | | | | Composite score (%) | Rank |
|---|---|---|---|---|---|---|---|
| | | High (3) | Moderate (2) | Little (1) | Not important (0) | | |
| The use of stakeholder analysis for research issue identification | 40 | 30 | 8 | 2 | 0 | 90 | 4 |
| The engagement of technical committee (TEC), comprising technical, social and implementation experts that provide appropriate combination of persons to recommend concept notes (CNs) and research proposals (RPs) and to ensure transparency | 40 | 24 | 12 | 3 | 1 | 83 | 9 |
| The use of selection criteria e.g., technical, socio-economic, financial, poverty, participation, gender and environment focus, for selection of projects | 39 | 24 | 12 | 2 | 1 | 84 | 8 |
| Project steering committee (PSC) headed by Secretary, Ministry of Agriculture for providing guidance and endorsement of key stakeholders | 33 | 7 | 13 | 8 | 5 | 56 | 11 |
| Monitoring and evaluation: | | | | | | | |
| ◆ Quarterly progress report linking with field visit and fund release | 38 | 28 | 8 | 2 | 0 | 89 | 5 |
| ◆ Annual progress report | 41 | 35 | 5 | 1 | 0 | 94 | 2 |
| ◆ Evaluation report | 35 | 27 | 8 | 0 | 0 | 92 | 3 |
| ◆ Completion report | 35 | 30 | 5 | 0 | 0 | 95 | 1 |
| ◆ Interaction with output to purpose review (OPR) | 32 | 13 | 16 | 1 | 2 | 75 | 10 |
| ◆ Frequent interaction with PETRRA project management unit (PMU) | 38 | 23 | 14 | 1 | 0 | 86 | 6 |
| Use of financial process with direct management by PI and quarterly advance to PI | 38 | 31 | 5 | 2 | 0 | 92 | 3 |
| Use of communication as a part of the reporting system (in the form of news) | 38 | 22 | 15 | 1 | 0 | 85 | 7 |

- It keeps the researcher updated and helps take action (BRRI, CARE, SAFE);
- It facilitates smooth implementation, programme view and documentation (BARI/Proshika).

*Use of M&E: evaluation report (92%)*

- Helps the organisation through self assessment and external evaluation (AID-Comilla);
- Highly important to evaluate successes and failures and find out reasons (BADC), and helps to know the impact of the project (IDE);
- The participatory approaches of PETRRA in this research are useful (BDS);
- The recommendations of the evaluation report were helpful (BRAC);
- Facilitates smooth and timely implementation and programme review (BRRI); and
- Helps further dissemination and validation (Proshika).

*Use of financial process with direct management by PI and quarterly advance to PI (92%)*

- The project does not suffer from fund crisis (BARD, BRAC, IDE);
- The system was excellent (AAS); process was simple and useful (SAFE);
- Helped to spend fund freely and accomplish work in time (BRRI, RDRS).

> *"The flexibility of fund reallocation was excellent. Instruments were supplied quickly."*
>
> - Dr. M. A. Salam CSO, Plant Breeding Division, BRRI

- Helped speedy and timely project implementation (BRRI);
- Helps PI for instant decision (BRRI);
- Very important for timely completion of project activities (BRRI, FIVDB), quick service delivery (HEED);
- A useful fund release system (IRRI) and one of the best practices (WAVE).

*Project steering committee (PSC) headed by Secretary, Ministry of Agriculture (56%)*

- It makes the process lengthy (AID-Comilla);
- In the last three years, there was no evaluation and monitoring by PSC (BADC) and regular monitoring of progress was not done (BRRI, SAFE);
- Bureaucracy may be a threat (BRAC, BRRI);
- Action of PSC is not well-known (BRRI);
- It is not well known whether the right persons are selected (IRRI); and
- The PSC is not very effective practically (WAVE).

A few (e.g., Shushilan, two officials from BRRI, CARE, GKF, BRAC) recognised the importance of the PSC in strengthening the project, through involving policy makers. It is also important to note that, according to PETRRA records, PSC meetings were held regularly. However, since PIs are not members of this committee, there was little scope for them to participate in its activities. Hence they were less likely to be fully aware of PSC activities.

*Interaction with output to purpose review (OPR) (75%)*

- Only the management was involved (BDS); and
- It was not introduced (BRRI) and they were not aware of it (BRRI).

Although the score for the OPR is relatively low, most respondents recognised its necessity. They said that the process helps to review the project progress and helps its successful

completion. It is important for review and feedback, and issues raised by the OPR team were useful. There were also some BRRI officials who endorsed the necessity of OPR. Officials from IDE, FIVDB, Proshika, and SAFE also endorsed OPR.

**Understanding of PETRRA technology development research findings by personnel associated with BRKB**

The KAP study has attempted to gain a grasp of the important stakeholders' understanding of PETRRA technology development research findings. Concerned personnel associated with the BRKB were chosen as respondents for this part of the study. The BRKB aims to ensure availability of technological innovations online that are relevant for Bangladeshi farmers. There were 13 respondents who gave their opinion on 11 technologies emerging from different PETRRA SPs. Each finding was the outcome of an individual SP bearing an identity number. The respondents were asked to give their assessment on their awareness of the findings using a scale ranging from 3 to 0. Table 6 lists the findings and shows the respondents' assessment of the individual findings.

All the values against each research finding have been converted to a composite score. The composite scores vary from 95 to 26%. According to these scores, seed health improvement to reduce seed rate and increase yield (95%) has been the most promising research finding. In their assessment of importance, the next two most promising findings are integrated crop management to reduce water loss and to include one more crop in the existing cropping pattern (88%) and USG for tidal zone to save urea and to increase yield (81%). The system of rice intensification (SRI) (26%) was the least promising of the research findings.

A relatively low rating for salinity tolerant variety development process through PVS (63%) was given but this may reflect that a variety was not released during the project period. Overall 9 of the technologies received a rating of 70% and above.

To support their assessment, the stakeholders pointed out reasons, keeping the findings' utility to farmers in mind. In order to capture their understanding of the PETRRA research findings, salient expressions regarding the highest three and lowest two, in their assessment, are summarised below:

*Seed health improvement (SHIP) to reduce seed rate and increase yield (SP 00 99)*

Among the respondents, officials from BRRI, DAE and NGOs held a high opinion of this technology. According to them, yield of rice increased and seeds were disease-free. Following this technology, farmers are getting direct benefit in terms of higher yield from clean seeds. No risk is involved in this process. Seed quality improvement at the farmer's level compensates for limited supply of quality seeds by the GOs. This is a low cost technology, easy to adopt, and accommodates local knowledge of stakeholders.

> *"I've visited farmers' fields, talked to farmers and observed with my own eyes very promising results. Seed improvement has resulted in a 10% rise in yield."*
>
> - Director (research), BRRI

*Integrated crop management (ICM) to reduce water loss and include one more crop (SP 25 02)*

Respondents mentioned that it requires reduced doses of urea and pesticides. As a result, environmental pollution and health hazards are reduced. It saves farmers' money. It has brought in attitudinal change in the farmers towards the application of pesticides and contributes to improve farmers' knowledge base. For better resource management, respondents felt that this is an effective option.

Table 6. Awareness level of stakeholders about PETRRA technology development research findings

| Key elements | No. of responses | Level of awareness | | | | Composite score (%) | Rank |
|---|---|---|---|---|---|---|---|
| | | High (3) | Moderate (2) | Little (1) | Not important (0) | | |
| Seed health improvement (SHIP) to reduce seed rate and increase yield (SP 00 99) | 13 | 12 | 0 | 1 | 0 | 95 | 1 |
| Leaf colour chart (LCC) to prevent over application of urea (SP 10 00) | 13 | 4 | 7 | 2 | 0 | 72 | 6 |
| Integrated pest management (IPM) for reduced pesticide application (SP 27 02) | 11 | 4 | 4 | 3 | 0 | 70 | 7 |
| Rice-duck management system to save fertiliser and to protect from weed and insect as well as to increase yield (SP 19 01) | 13 | 4 | 6 | 3 | 0 | 70 | 7 |
| Improving use of coastal water to add one additional crop (SP 20 01) | 11 | 6 | 3 | 2 | 0 | 80 | 4 |
| USG for tidal zone to save urea and to increase yield (SP 21 01) | 12 | 6 | 5 | 1 | 0 | 81 | 3 |
| Integrated crop management (ICM) to reduce water loss and include one more crop in the existing cropping pattern as well as to increase yield (SP 25 02) | 11 | 7 | 4 | 0 | 0 | 88 | 2 |
| Production, processing and marketing of fine quality aromatic rice (SP 27 02) | 11 | 4 | 7 | 0 | 0 | 79 | 5 |
| System of rice intensification (SRI) to save seed and to increase yield (SP 34 02, SP 35 02, SP 36 02) | 13 | 1 | 1 | 5 | 6 | 26 | 9 |
| Participatory integrated plant nutrient management by the farmers for balanced fertiliser application (SP 17 01) | 13 | 7 | 4 | 2 | 0 | 79 | 5 |
| Salinity tolerant variety development process through PVS (SP 13 00) | 10 | 2 | 5 | 3 | 0 | 63 | 8 |

*USG for tidal zone to save urea and to increase yield (SP 21 01)*

Respondents stated that this is an appropriate technology for the tidal zone where fertiliser is washed away by tides. It offers improved fertiliser management for coastal zone in which fertiliser retention and effectiveness is high. This leads to increased productivity.

*System of rice intensification (SRI) (SP 34 02, 35 02, 36 02)*

The average assessment was the lowest in this case. Most respondents mentioned the following reasons:

The technology has not proved its scientific basis and is controversial. It is very labourious and not feasible for coverage of a large area. Farmers and researchers are still confused about SRI, and it is difficult for the farmers to maintain the components of SRI. It may not be appropriate for the environment in Bangladesh. Moreover, field observation shows that there is no significant difference in yield between SRI and normal cultivation practice.

*Salinity tolerant variety development through PVS (SP 13 00)*

Among the respondents, 70% rated their

Case 4. Study on seed health improvement project (SHIP)

A study was conducted by Orr et al (2004) on four SPs including SHIP (SP 00 99) and ICM in north-west region of Bangladesh (SP 25 02). In this study, they incorporated farmers' views about the SPs through general meetings of men and women participants, group discussion and case studies of individual households. In the general meeting, farmers expressed their view that SHIP increased farmers' knowledge and skills on the maintenance of seed quality, storage, sorting, and the floating method for sorting seeds. It also reduced labour time, and facilitated exchange of knowledge between block supervisors (BSs) of DAE and farmers. In the group discussion, the women members informed that they were producing plenty of good quality seeds and advised farmers of neighbouring villages on seed quality improvement. They realised that it is the quality of seeds that matters for higher yield, not fate, which they used to believe. The case study of Shamsun Nahar (36) is reported here:

Ms. Nahar and her husband have 0.19 Acres of rice field and she inherited one *bigha* (0.33 Acre) of land from her father. When her husband was sick, she started rearing cows and goats. At one stage, she started working in the rice field and involved herself in SHIP for seven seasons. Working under this project, she learnt the techniques of improvement of seed quality which gave higher yields. This ultimately raised her food provisioning ability. For the last two years, she has not bought any rice, whereas earlier she bought rice for 3-4 months in a year. She is now selling rice seed and seedlings. Out of the income from these sales, she bought a bicycle for her son to go to school.

Case 5. Study on integrated crop management (ICM)

The Orr et al (2004) study referred to earlier also collected information on integrated crop management (ICM) following the same methods. In the general meeting, farmers informed researchers that since joining the ICM SP, they were planting modern variety seeds of rice, wheat, mustard and potato. They had started growing green manure in the crop field. They had also learnt about the correct duration and frequency of irrigation and the amount of water required for growing a crop, and were using a hose pipe to minimise water loss. Because of ICM, their cropping intensity increased and the adoption of modern seeds raised their total production. Now they work in their own plots and do not need to cultivate land on a sharecropping basis. Higher cereal production from their own land minimised their expenditure on food items and the amount saved is used for small trades, educational expenditure for their children and even for treatment of illness through specialised doctors. The relationship between the farmers and the BSs has changed and the BSs now visit their plots and give suggestions.

In the group discussion, it was revealed that by the adoption of latest modern variety rice seeds, they were getting a higher yield of rice to the extent of around 25%. Production of BARI 9 mustard and Cardinal potato was more than double that of traditional varieties. The yield of the modern wheat varieties was also nearly double. This increase in production per unit of land and labour raised farmers' food security.

awareness level concerning this research finding as high to moderate. However, on an average, it shows a medium performance. The reasons are: according to director (research), BRRI, the variety development is still in process. It has some disadvantages also, and may not sustain. The yield is not satisfactory, and it needs more research.

## Adoption of key elements of PETRRA value-based research system by its partners

"No programme will help small farmers if it is designed by those who have no knowledge of their problems and operated by those who have no interest in their future."

*- Robert McNamara, the-then President of the World Bank, 1973 (Melkote, 1996)*

*OVI: Output 3.1 At least 25% PETRRA partners adopt key elements of a research management system (PETRRA Output 5) which promotes demand-led research with a focus on RPF households by project year 5.*

In total, 42 PIs and partners responded. They represented 21 organisations (GOs and NGOs). They were asked to say to what extent they adopted the key elements of PETRRA's research system. The number of responses varied from 36 to 40 (Table 7). In total, 307 responses were given for the 8 elements of the pro-poor demand-led competitive rice research system. Among them, only 16 responses were in the 'not adopted' category. This indicates that the organisations of around 95% of the PIs and partners have adopted the key elements to varying degrees. Since they are representing 21 organisations out of 48 of the partner organisations, it implies that the threshold of 25% of PETRRA partners' adoption of key elements has been achieved.

Table 8 also indicates the PIs' and partners' assessment of the level of adoption of the respective elements. Scores (3 for high and 0 for not adopted) distributed by them have been turned into composite scores. The top three scores have been given to five key elements: environment-friendly technology development (92%), direct communication of results to key users (86%), conducting research with resource-poor farmers (81%), partnership for comparative advantage (81%) and use of participation to help mutual learning (81%). The lowest score was given to conducting research with men and women (73%). This does not reflect a negative assessment, however, because in this particular case, 33 out of 40 respondents rated the adoption as high to moderate. A synopsis of articulated reasons for high and low scores for the aforesaid six elements are as follows:

### Develop environment-friendly technologies

- It reduces the use of pesticides and chemical fertiliser. It saves useful insects that are natural enemies of pests, and protects the living environment from bad smells (BRRI, BRAC, AID-Comilla, HEED);
- Necessary for soil environment (AID-Comilla);
- Increases yield (BRRI);
- Technology adoption is sustainable (BRRI);
- The risk of ground water contamination is less (BRRI);
- Healthy seeds reduce disease and weed infestation (CARE); and
- Organisation's direct involvement in developing and using environment-friendly technology (BRRI, IDE).

### Direct communication of results to key users

- Participation in district-level fair was found useful (AID-Comilla);
- Disseminated results through workshops, exhibitions and meetings, field days, folk songs and street drama etc. (BARD, BRRI, CARE, RDRS);
- Key users remained updated (BRRI);
- Dissemination happened quickly;
- Help to build trust of key users, helped them make informed choice (BRRI); and
- Communication gained more

Table 7. Adoption of key elements of pro-poor demand-led research management system of PETRRA by its partners

| Key elements | No. of responses | Level of awareness | | | | Composite score (%) | Rank |
|---|---|---|---|---|---|---|---|
| | | High (3) | Moderate (2) | Little (1) | Not important (0) | | |
| Conduct research with resource-poor farmers | 40 | 22 | 15 | 1 | 2 | 81 | 3 |
| Conduct research with both men and women | 40 | 18 | 15 | 4 | 3 | 73 | 6 |
| Use participation to help mutual learning, flexibility, openness and evaluation | 39 | 24 | 11 | 1 | 3 | 81 | 3 |
| Use partnership for comparative advantage | 36 | 21 | 10 | 4 | 1 | 81 | 3 |
| Develop technologies that are environment-friendly | 40 | 32 | 7 | 0 | 1 | 92 | 1 |
| Direct communication of results to key users | 40 | 27 | 10 | 2 | 1 | 86 | 2 |
| Competition for competitive funding | 36 | 20 | 10 | 3 | 3 | 77 | 5 |
| Capacity building's critical to achieve the above elements | 36 | 19 | 13 | 2 | 2 | 79 | 4 |

importance in other projects of the organisation (IDE).

### Conduct research with resource-poor farmers

- More than 95% of participating families are resource-poor farmers (AAS). Increased numbers of resource-poor farmers are participating (BRRI);
- Organisation applies this in own programmes (BARD, GKF, HEED, IDE, Proshika);
- It ensures sustainability, fits into organisational goal of poverty alleviation (BRAC);
- Research findings are accessible to farmers (RDRS); and
- It helped scaling up the uptake (SAFE).

### Partnership for comparative advantage

- AID-Comilla, a non-research NGO, gained the skill of research, and consequently earned an enhanced reputation (AID-Comilla);
- Knowledge exchange on seed health was helpful. It is the key to a stress tolerance study (BRAC, BRRI); and
- Partnership facilitated speedy expansion of technology and findings. The PI of the NGO AAS said that three women-led partner NGOs participated with them in their work and trained resource-poor farmers' groups. The PI of SAFE noted that close dialogues helped them gain the support of an agro-chemical company (AAS, CARE, SAFE).

### Participation to help mutual learning

- Conducted research through a participatory approach (AAS);

  Mobilised important stakeholders and gained their support (AID-Comilla);
- Involved farmers in stress tolerance practice in their fields (BRRI);
- Participation is a very useful and positive approach for mutual use of research on technology generation and dissemination (BRRI); and
- Participation enhanced ownership of outputs; organisations make increased use of participation in their other projects (CARE, IDE).

### Conducting research with both men and women

The composite score was 73%, which was low relative to other key elements but still very positive. The expressed limitations were as follows:

- Nutrient management in rice research is mostly related to men and it offers narrow scope for women's involvement; and
- Women's participation in field activities is still limited by social values.

## Level of knowledge, attitude and practice of management and key staff to undertake value-based, demand-led research

*OVI: Output 3.3 >70% of management and key staff of agencies participating in, and trained through the PETRRA project demonstrate positive impact on their knowledge, attitude and work practices by project year 5.*

The management and key staff implementing PETRRA SPs were asked to assess the increase in their knowledge, attitude and practice regarding the key elements of the PETRRA value-based research approach. This self assessment had two significant implications. On one hand, it helped respondents themselves to visualise the level of knowledge, attitude and practice they had reached after their participation in this research system. On the other hand, it indicated what percentages of respondents felt that they gained an increase in their own knowledge, attitude and practice regarding

Case 6. Adoption of key elements of PETRRA research system by AID-Comilla

Applying the research skill gained through PETRRA, we have gained funds from DFID for another project. The proposal writing process that we had to follow in PETRRA gave us this skill. We made concerned stakeholders participate in our project. Openness gave us a dividend. We motivated insecticide dealers, Imams and insecticide smugglers. They owned the project and even applied our learning in their own farm fields.

these values. Table 8 shows that 84% reported an increase in their knowledge of these values, 83% reported an increase in their positive attitude towards them while 84% reported an increase in their practice of these values. It is therefore obvious that as a whole, more than 80% of the respondents noted a positive impact on their knowledge, attitude and practice in respect of the PETRRA value-based research system, meeting the target of more than 70% of the said category of respondents (OVI: output 3.3).

Again, the knowledge, attitude and practice of the management and key staff of the SP implementing agencies with regard to value-based, demand-led research were assessed by asking them to apply a scale with levels from 0 to 3 (0 for no change and 3 for high change). The individual scores for each element of the research system have been converted to composite scores. Later, all the composite scores against knowledge, attitude and practice were converted to a weighted scores to learn the overall reported change in knowledge, attitude and practice. Table 9 shows the respondents' assessment of their levels of knowledge, attitude and practice (as composite scores in percentages) before and after their participation in the value-based, demand-led research system:

The composite scores and overall

Table 8. Percentage of respondents increased KAP regarding PETRRA value-based research approach

| Key elements of PETRRA value-based research approach | Level of awareness | | Level of awareness | | Level of awareness | |
|---|---|---|---|---|---|---|
| | No. of respondents | Percentage of respondents increased knowledge | No. of respondents | Percentage of respondents increased attitude | No. of respondents | Percentage of respondents increased practice |
| Conduct research with resource-poor farmers | 39 | 92 | 39 | 92 | 39 | 90 |
| Conduct research with both men and women | 39 | 79 | 39 | 79 | 38 | 86 |
| Use participation to help mutual learning, flexibility, openness and evaluation | 39 | 92 | 39 | 87 | 39 | 85 |
| Use partnership for comparative advantage of each stakeholder for more effective research | 37 | 92 | 37 | 89 | 37 | 89 |
| Develop technologies that are environment-friendly | 38 | 68 | 38 | 74 | 38 | 74 |
| Direct communication of results to key users | 39 | 82 | 39 | 79 | 39 | 79 |
| Use competitiveness to engage best players and to show transparency | 37 | 76 | 36 | 78 | 34 | 79 |
| Capacity building is critical to achieve the above elements | 38 | 92 | 38 | 89 | 38 | 92 |
| **Overall weighted increase in percentage (%)** | **84** | | **83** | | **84** | |

Table 9. Composite score on level of KAP of management and key staff of participating agencies to\ undertake value-based demand-led research

| Key elements of PETRRA value-based approach | Knowledge (%) | | | Attitude (%) | | | Practice (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Before | After | Change | Before | After | Change | Before | After | Change |
| Conduct research with resource-poor farmers | 33 | 89 | 56 | 34 | 86 | 52 | 26 | 82 | 56 |
| Conduct research with both men and women | 40 | 79 | 39 | 40 | 78 | 38 | 34 | 76 | 42 |
| Use participation to help mutual learning, flexibility, openness and evaluation | 47 | 91 | 44 | 49 | 91 | 42 | 42 | 89 | 47 |
| Use partnership for comparative advantage of each stakeholder for more effective research | 42 | 89 | 47 | 44 | 87 | 43 | 38 | 81 | 43 |
| Develop technologies that are environment-friendly | 54 | 87 | 33 | 55 | 88 | 33 | 54 | 90 | 36 |
| Direct communication of results to key users | 37 | 80 | 43 | 34 | 78 | 44 | 39 | 83 | 44 |
| Use competitiveness to engage best players and to show transparency | 36 | 80 | 44 | 37 | 78 | 41 | 35 | 78 | 43 |
| Capacity building is critical to achieve the above elements | 44 | 85 | 41 | 41 | 82 | 41 | 41 | 88 | 47 |
| **Overall weighted Score (%)** | **41** | **85** | **44** | **42** | **84** | **42** | **39** | **83** | **45** |

weighted scores indicate that respondents believe changes had taken place:

i) The overall levels of knowledge, attitude and practice increased from 41%, 42% and 39% to 85%, 84% and 83% respectively. This indicates remarkable achievement in all cases;

ii) Overall changes in knowledge, attitude and practice are 44%, 42% and 45% respectively. This indicates that their levels of knowledge, attitude and practice after their participation in PETRRA research are at least twice their levels of knowledge, attitude and practice before their participation in the same; and

iii) Again, if we look at individual elements, we see that the highest level of change happened in the case of conducting research with resource-poor farmers (56%, 52% and 56% for knowledge, attitude and practice respectively). Changes are quite remarkable for the participation element as well (44%, 42% and 47%). In case of capacity building the change in practice is also considerable (47%).

## Conclusion

The KAP study was incorporated in the logframe of PETRRA to verify PETRRA's achievement in terms of six specific indicators, of which three are purpose related and three are output related. From the analyses in the preceding section, it can be concluded that PETRRA has succeeded in achieving each of these indicators and in most cases the achievement has gone far beyond the projected targets. For a deeper appreciation of the learning of the KAP study, the salient conclusions are drawn below:

i) Against the targets of at least 3 GOs and 8 NGOs (OVI: purpose 2.1), all the 4 GOs (BRRI, BARD, RDA and BADC) and 14 out of 16 NGOs used their own SPs' findings. An international organisation (IRRI) has

also used its SPs' findings. Further, it became evident from the opinions of the respondents that DAE, the largest government sector agricultural extension organisation in Bangladesh, has also adopted the findings of certain SPs (SP 00 99, 36 02, 21 01).

ii) Three GOs, namely BRRI, RDA and BADC adopted SP findings of HEED, Proshika and RDA (SP 28 02, 06 00) while 10 NGOs have also adopted findings of different GOs and NGOs.

iii) Another noticeable feature is that out of a total of 27 SPs covered by the study, the findings of 20 have been used by different GO and NGOs. This indicates that the achievement is almost three times the target (OVI: purpose 2.2).

iv) Among all the technologies, the rice seed health improvement has been most widely adopted by both partner and other organisations.

v) Among the seven given endorsing authorities, farmers were considered the most valuable authority by the PIs. Sixteen organisations mentioned the farmer's endorsement as the most important one. This reflects the realisation of the partner organisations of the necessity of farmer-focused research.

vi) Interviews with representatives of two funding bodies, namely DFID and EC, revealed that they had adopted the key elements of the pro-poor demand-led competitive rice research system of PETRRA. This fulfils the minimum target of two, set by PETRRA in the logframe (OVI: purpose 3.1). DFID has focused these elements in its ARI, while EC has selected four proposals to replicate the results of PETRRA technology development research, and in its selection process, the PETRRA research elements have been used as the criteria for selection;

vii) Interviews with four key officials of BRRI reflected some tangible impact of the PETRRA research values on their own organisations' programmes. Farmers', as well as women's participation in research and competitiveness for quality research were the two most articulated values that have come into increased practice by this organisation;

viii) According to the PIs and partners, all the elements of PETRRA management practices other than the project steering committee are important at 75% and above level. This reflects a very positive notion about the management practices as a whole, and the overall assessment also fulfils the indicator that most important stakeholders have a clear understanding of PETRRA management practices (OVI: output 1.4);

ix) The overall assessment of the 11 technology development findings by the 13 personnel associated with the BRKB can be considered very promising. Nine of the findings have been given importance at the level of 70% and above, and only the SRI finding has suffered a very low assessment (26%). Seed health improvement topped the scale of rating. It is thus obvious that BRKB related personnel, representing the most important stakeholders, have demonstrated a clear understanding of the PETRRA research findings (OVI: output 1.4);

x) The PIs and partners responding to the survey represented 21 organisations. 95% of their responses to questions on the key elements of PETRRA's research system indicated adoption of those elements to varyimg degrees. As these respondents

represented 21 out of 48 PETRRA research partners, this implies that more than 25% of PETRRA partners adopted the key elements of PETRRA research (OVI: output 3.1). The degree of adoption varied from 73% to 92%. This is another indicator of success; and

xi) PETRRA succeeded in achieving the target of changes in knowledge, attitude and practice with regard to its value-based research system among the management and key staff implementing PETRRA SPs (OVI: output 3.3). Against the target of more than 70%, among the respondents, 84% reported changes in their knowledge, 83% reported changes in their attitude while 84% reported changes in their practice of the value-based research elements. When asked to assess the extent of these changes, overall respondents felt that their levels of knowledge, attitude and practice of the value-based research elements were twice what they had been before their participation in the PETRRA project.

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## Appendix 1: List of respondents

Table 1. Principal Investigators (PIs) and partners

| Sl. no. | SP no. | SP name | Respondent |
|---|---|---|---|
| | | **Technology development** | |
| 01. | 00 99 | Seed health improvement project (SHIP) | Dr. M. A. Taher Mia, PSO, BRRI |
| 02. | 00 99 | do | Md. Mofizur Rahman, PDO, CARE |
| 03. | 00 99 | do | Md. Rezunnabi, PI, GKF |
| 04 | 00 99 | do | Mohsin Ali, Executive Director, WAVE Foundation |
| 05. | 00 99 | do | Md. Saidur Rahman, Sector Specialist, Seed Health, BRAC |
| 06. | 00 99 | do | A. H. M. Mahfuzul Haque, Junior Programmer, Proshika |
| 07. | 00 99 | do | A. K. M Zakaria, DD, RDA |
| 08. | 10 00 | Nutrient management for intensive rice-based cropping systems | Md. Harunur Rashid, SO, BRRI |
| 09. | 10 00 | do | Md. Akhter Hossain Khan, PSO, BRRI |
| 10. | 10 00 | do | Dr. M. Murshedul Alam, PDF, IRRI |
| 11. | 13 00 | Development of HY rice varieties in coastal wetlands | Dr. M. A. Salam, CSO, BRRI |
| 12. | 13 00 | do | Dr. Nilufar Hye Karim, CSO, BRRI |
| 13. | 15 00 | Development and use of hybrid rice | Dr. A. W. Julfiquar, CSO, BRRI |
| 14 | 15 00 | do | Md. Zahiruddin Talukder, GM (Seed), BADC |
| 15. | 17 01 | Participatory integrated plant nutrient management | Dr. M. A. Saleque, SSO, BRRI |
| 16. | 19 01 | Integrated rice-duck farming | Dr. Gazi Jashim Uddin Ahmed, CSO, BRRI |
| 17. | 19 01 | do | James P. Biswas, DD, BDS |
| 18. | 19 01 | do | Malik Anwar Khan, Coordinator, FIVDB |
| 19. | 20 01 | Coastal water resources for crop production | Mobarak Chowdhury, Coordinator, Proshika |
| 20. | 20 01 | do | Dr. Manoranjan Mondal, SSO, BRRI |
| 21. | 21 01 | Adaptation and adoption of USG technology in tidal submergence-prone areas | Dr. M. A. Mazid Miah, CSO, BRRI |
| 22. | 21 01 | do | Md. Badrul Alam, Manager, IDE |
| 23. | 22 01 | Rice diversity and production in south-west Bangladesh | Dr. Md. Khairul Bashar, Head, GRSD, BRRI |
| 24. | 25 02 | Integrated crop management in north-west Bangladesh | Md. Golam Wahed Sarker, SSO, BRRI |
| 25. | 27 02 | Livelihood improvement through ecology (LITE) | Dr. Nazira Quraishi Kamal, CSO, BRRI |
| 26. | 27 02 | do | Rokeya Begum Shafali, Director, AID-Comilla |
| 27. | 28 02 | Production and marketing of FAG rice in the north-east Bangladesh | A. Mannan Chashi, Coordinator, HEED Bangladesh |
| 28. | 29 02 | Production, processing and marketing system of aromatic rice in north-west Bangladesh | Md. Abdus Salam, Executive Director, APEX |
| 29. | 34 02 | System of rice intensification (SRI) in south-west Bangladesh | Md. Abu Bakar Siddique Sarker, SSO, BRRI |
| 30. | 36 02 | Verification and refinement of SRI in selected areas of Bangladesh | Dr. A. M. Muazzam Husain, Head, Department of Economics & Social Science, BRAC |
| | | **Uptake methods** | |
| 31. | 01 00 | Technology identification and uptaek model | Dr. M. Zahirul Islam, PSO, BRRI |
| 32. | 02 00 | Sustainable rice seed network | Dr. Md. Khairul Bashar, Head, GRSD, BRRI |
| 33. | 04 00 | Quality rice seed marketing method | Md. Abdul Jabbar, Programme Officer, GKF |
| 34. | 05 00 | Strengthening FARMSEED extension method | Md. Harun-Ar-Rashid, Executive Director, AAS |
| 35. | 06 00 | Union federation-based extension approach for dissemination of rice and seed production | Mahfuzul Haque, Senior Programmer, Proshika |
| 36. | 07 00 | Federation model of quality seed production | M. G. Neogi, Senior Programme Manager, RDRS |
| 37. | 09 00 | Women-led cultural extension method | Quzi Wadud Newaz, Adviser, Shushilan |

*continued in the next page...*

Table 1. Principal Investigators (PIs) and partners (continued...)

| Sl. no. | SP no. | SP name | Respondent |
|---|---|---|---|
| | Uptake methods | | |
| 38. | 23 01 | Village institutional approach for rice technology dissemination | Abul Kalam Azad, DD, BARD |
| 39. | 37 02 | Learner centred video production | A. K. M Zakaria, DD, RDA |
| 40. | 38 02 | Local entrepreneurship and network development for mobile pump dissemination | Md. Badrul Alam, Manager, IDE |
| 41. | 40 02 | Private sector-led FFS method for herbicide use | Gopal Chowhan, SAFE |
| 42. | 41 02 | Women-led farmer field schools for disseminating rice-potato-rice cropping patterns in northern Bangladesh | M. G. Neogi, Senior Programme Manager, RDRS |
| 43. | 42 02 | Women-led extension method for rice seed cleaning and storage | Ms. Sufia Khanam, EPRC |
| 44. | 43 02 | Site specific nutrient management (SSNM) in central-west Bangladesh | Md. Harunur Rashid, SO, BRRI |
| 45. | 44 02 | Whole family extension approach | Md. Harun-Ar-Rashid, Executive Director, AAS |

## Members Centre Of Bangladesh Rice Knowledge Bank (BRKB)

1. Dr. A. R. Gomosta, director (research), BRRI
2. Dr. M. A. Mazid Miah, PSO & Head, Soil Science Division, BRRI
3. Dr. M. A. Taher Mia, PSO, Plant Pathology Division, BRRI
4. Dr. M. Jahirul Islam, PSO & Head, Training Division, BRRI
5. Md. Akhter Hossain Khan, PSO, Rice Farming Systems Division, BRRI
6. Md. G. W. Sarker, SSO, Irrigation and Water Management Division, BRRI
7. Dr. M. K. Bashar, Head, Genetic Resources and Seed Division, BRRI
8. Dr. Manoranjan Mondal, SSO, Irrigation and Water Management Division, BRRI
9. Dr. M. A. Saleque, SSO, Soil Science Division, BRRI
10. Munnujan Khanam, SSO, Plant Physiology Division, BRRI
11. Lutfar Rahman, Additional Director (Administration), DAE
12. M. G. Neogi, Senior Programme Manager (Agriculture), RDRS
13. Md. Harun-Ar-Rashid, Executive Director, AAS

## Research Management & Funding Bodies

1. Dr. M. Mahiul Haque, director general, BRRI
2. Dr. A. R. Gomosta, director (research), BRRI
3. Dr. M. A. Baqui, Director (Administration), BRRI
4. Dr. Nilufar Hye Karim, CSO & Head, Biotechnology Division, BRRI
5. Nazir A. Khan, Deputy Programme Manager, DFID, Bangladesh
7. Dr. Ekramul Ahsan, Task Officer, European Commission (EC) Delegation, Bangladesh
8. Dr. S. M. Elias, ARI Team Member and Ex-director general, BJRI

Table 2. Sub-project organisationwise distribution of respondents (PIs and partners)

| Organisation | SP no. | SP name | No. of respondents |
|---|---|---|---|
| BRRI | 00 99 | Seed heath improvement project (SHIP) | 1 |
| | 01 00 | Technology identification and uptake model | 2 |
| | 02 00 | Sustainable rice seed network | 1 |
| | 10 00 | Nutrient management for intensive rice-based cropping systems | 3 |
| | 13 00 | Development of HY rice varieties in coastal wetlands | 1 |
| | 15 00 | Development and use of hybrid rice | 1 |
| | 17 01 | Participatory integrated plant nutrient management | 1 |
| | 20 01 | Coastal water resources for crop production | 1 |
| | 21 01 | Adaptation and adoption of USG technology in tidal submergance-prone areas | 1 |
| | 22 01 | Rice diversity and production in south-west Bangladesh | – |
| | 25 02 | Integrated crop management (ICM) in north-west Bangladesh | 1 |
| | 27 02 | Livelihood improvement through ecology (LITE) | 1 |
| | 34 02 | System of rice intensification (SRI) in south-west Bangladesh | 1 |
| | 43 02 | Site specific nutrient management (SSNM) in central-west Bangladesh | – |
| CARE | 00 99 | Seed heath improvement project (SHIP) | 1 |
| GKF | 00 99 | Seed heath improvement project (SHIP) | 1 |
| | 04 00 | Quality rice seed marketing method | 1 |
| WAVE | 00 99 | Rice seed heath improvement project (SHIP) | 1 |
| BRAC | 00 99 | Seed heath improvement project (SHIP) | 1 |
| | 36 02 | Verification and refinement of system of rice intensification (SRI) in selected areas | 1 |
| Proshika | 00 99 | Seed heath improvement project (SHIP) | 1 |
| | 06 00 | Union federation-based extension approach for rice and rice seed production | – |
| | 20 01 | Coastal water resources for crop production | 1 |
| IRRI | 10 00 | Nutrient management for intensive rice-based cropping systems | 1 |
| BADC | 15 00 | Development and use of hybrid rice | 1 |
| BDS | 19 01 | Integrated rice-duck farming | 1 |
| FIVDB | 19 01 | Integrated rice-duck farming | 1 |
| IDE | 21 01 | Adaptation and adoption of usg technology in tidal submergance prone areas | 1 |
| | 38 02 | Local entrepreneurship and network development for mobile pump dissemination | – |
| AID-Comilla | 27 02 | Livelihood improvement through ecology (LITE) | 1 |
| HEED | 28 02 | Production and marketing of FAG rice in north-east Bangladesh | 1 |
| APEX | 29 02 | Production, processing and marketing of aromatic rice in north-west Bangladesh | 1 |
| AAS | 05 00 | Strengthening FARMSEED extension method | 1 |
| | 44 02 | Whole family extension approaches | – |
| RDRS | 07 00 | Federation model of quality seed production | 1 |
| | 41 02 | Women-led farmer field school for disseminating rice-potato-rice cropping patterns in northern Bangladesh | – |
| Shushilan | 09 00 | Women-led cultural extension | 1 |
| BARD | 23 01 | Village institutional approach for rice technology dissemination | 1 |
| RDA | 00 99 | Seed heath improvement project (SHIP) | 1 |
| | 37 02 | Learner-centred video production | – |
| SAFE | 40 02 | Private sector-led FFS method for herbicide use | 1 |
| EPRC | 42 02 | Women-led extension method for rice seed cleaning and storage | 1 |
| | | | **38** |

## APPENDIX 2: PETRRA REVISED LOGFRAME (updated on August 21, 2003)

| Narrative summary | Objectively verifiable indicators (OVIs) | Means of verification (and by whom) | Important goal-related assumptions |
|---|---|---|---|
| **Super goal**<br>Poverty in rural and urban areas substantially eliminated. | Proportion of the rural and urban population respectively living below poverty line (2,122 K.cal/capita/day) declines from 45.4% and 48.5% in 1995-'96 to 22.5% and 24% by 2015. | - DOLsys database, Poverty study 1999-'00. DFID/ International community poverty study, 2015.<br>- Analysis will be done by DFID. Baseline information will be provided by PETRRA. Village revisit study could be repeated. | |
| **Goal**<br>Rice production and incomes increased nationally. | G.1: Annual growth rate of rice production is above that of growth rates of the population in 2008-'09 compared to 1999-'00.<br>G.2 Income of resource-poor rice farmers (including small and marginal farmers) increased at least 25% in real terms between 1999-'00 and 2008-'09.<br>G.3 Employment opportunities for landless labourers, in rural areas as a whole, increased in 2000-'09 at a rate above that for the period 1990-'00.<br>(Note: Target needs to be fixed from GOB policy statement, especially PRSP). | - BBS Yearbooks of Agricultural Statistics, 2000-'01 and 2009-'10.<br>- This analysis will make use of baseline data provided by PETRRA funded DOLsys study, the Pathways from poverty study, the WB/GOB household expenditure survey, and the Mitra & Associates baseline survey.<br>- Ditto<br>- Analysis will be done by DFID. Baseline information will be provided by PETRRA. Village revisit study could be repeated in 2009-'10. | - Government and donors continue positive support on agricultural policies.<br>- Increased agricultural productivity is an essential ingredient to national economic growth and thus overall poverty reduction.<br>- But by itself it is not sufficient for rapid reductions in poverty. Agricultural research and service targeted to the poor are also needed.<br>- Rice output increases will be sufficient to reduce prices in real terms.<br>- Participation in WTO does not change the terms of trade for rice producers. |
| **Purpose**<br>1. Productivity of rice-based farming systems for resource-poor farmers (RPFs) sustainably increased.<br>2. Governmental and non-governmental extension services have made use of research findings from PETRRA sub-projects. | [Direct local impact]<br>P.1.1 The majority of participants in more than 50% of sub-projects achieve increased rice productivity, at a rate which is greater than population growth rate by EOP (see Goal)<br>P.1.2 At least 50% sub-projects' participating RPFs (male/female) increased rice provisioning ability of at least one month by the end of the project.<br>[Indirect local impact]<br>P.2.1 At least 3 government organisations (DAE, BARD & RDA) and 8 NGOs used PETRRA research findings during the project period.<br>P.2.2 At least 7 PETRRA sub-projects findings utilized by the government and non-government organisations by the EOP. | -Sub-project progress reports, participatory evaluation and end of project evaluations. These will include attention to wider livelihoods impacts.<br>-Ditto<br>-KAP surveys commissioned by PETRRA Publicly available reports on the extension activities of the identified organizations.<br>-Ditto | - In addition to PETRRA interventions, there are some other factors contributing to the reduction of poverty in Bangladesh.<br>- Government continues to give high priority to rice production and ensures appropriate policy framework remains in place.<br>- Sufficient availability of farm inputs, including seed of improved varieties.<br>- Increased rice productivity will generate increased household incomes and employment<br>-GO-NGO extension services effectively disseminate new technologies to resource-poor farmers.<br>- Incentive prices for farmers ensured. |

*continued in the next page...*

## APPENDIX 2: PETRRA REVISED LOGFRAME (updated on August 21, 2003) (continued...)

| Narrative summary | Objectively verifiable indicators (OVIs) | Means of verification (and by whom) | Important goal-related assumptions |
|---|---|---|---|
| 3. Other agricultural research funding bodies in Bangladesh have adopted key elements of a pro-poor demand-led competitive rice research system as used by PETRRA. | [Indirect national impact]<br>P.3.1 At least two funding bodies adopted key elements of a pro-poor demand-led competitive rice research system of PETRRA by the EOP. | - KAP surveys commissioned by PETRRA.<br>- PETRRA records of contacts with these bodies.<br>- Evaluation report of the PETRRA communications strategy. | -The macro-economic and political situation does not deteriorate.<br>-Donors are willing to fund agricultural research bodies. |
| **Output 1**<br>PETRRA's management practices and research findings effectively communicated to relevant organisations and persons involved in agricultural research and extension, and to policy makers. | 1.1 All the enlisted stakeholders received PETRRA Bangla and English newsletters and PETRRA reports made available in its website during the project period.<br>1.2 All identified improved technologists and dissemination methods packed and communicated among the relevant stakeholders and accessible on the knowledge bank website by the EOP.<br>1.3 One special issues of *KrishiKotha* and other special issues of NGO partners published during the project period.<br>1.4 Most important stakeholders have clear understanding of PETRRA management practices and research findings by the EOP.<br>1.5 Increased information request and number of person's access to website. | - Distribution list of PETRRA newsletter and visit PETRRA website web log.<br>- CD on updated knowledge bank and translated Bangla version.<br>- PETRRA records, correspondence letter, proceedings of workshops.<br>- Published documents.<br>- KAP study report and communications strategy.<br>- Documents on technology package, dissemination methods and receivers list. | - Targeted organisations have the resources to apply PETRRA findings.<br>- Dissemination networks that were established by PETRRA maintain their active membership levels, after PETRRA inputs diminish. |
| **Output 2**<br>Improved rice production technologies appropriate to RPFs identified or developed, and tested in collaboration with the same by PETRRA's sub-project partners and project management unit (PMU). | 2.1 At least 7 key constraints identified by RPFs that limit improved rice production of the regions of Bangladesh by 2001.<br>2.2 Both resource-poor male and female farmers are involved in identification or development and testing and assessment of technologies during the project period.<br>2.3 All technologies tested and promoted during the project period are environmentally friendly, as judged against the PETRRA environment strategy.<br>2.4 Developed technologies demonstrate improved cost-effectiveness in terms of labour and other inputs by EOP.<br>2.5 In the majority of sub-projects there are more than 50% of participating RPFs (and a similar number of neighbour farmers) who have tested the improved technology by EOP and who plan to repeat its use thereafter. | - Stakeholder analysis reports of PETRRA project.<br>- Quarterly reports by sub-projects, special studies, and project evaluation.<br>- Environmental audit, screening in the initial TEC assessment report and workshop proceedings, environmental statement brief by relevant sub-projects and PMU.<br>- Sub-project completion reports and participatory evaluation commissioned by PMU in PY 5.<br>- Evaluations of all sub-projects facilitated by PMU in PYs 4 and 5. | - Key constraints are solvable efficiently within project timeframe.<br>- Participation is effective.<br>- Resource-poor farm households willing and able to participate with researchers. |

*continued in the next page...*

## APPENDIX 2: PETRRA REVISED LOGFRAME (updated on August 21, 2003) (continued...)

| Narrative summary | Objectively verifiable indicators (OVIs) | Means of verification (and by whom) | Important goal-related assumptions |
|---|---|---|---|
| **Output 3**<br>Capacity of research partners to undertake value-based demand-led research sustainably enhanced. | 3.1 At least 25% PETRRA partners adopt key elements of a research management system (i.e., PETRRA output 5) which promotes demand-led research with a focus on RPF households by PY 5.<br>3.2 Key partners are proactive in creating and maintaining linkages with relevant organisations committed to work with RPRFs by PY 5.<br>3.3 >70% of management and key staff of agencies participating in, and trained through, the PETRRA project, demonstrate positive impact on their knowledge, attitudes and work practices by PY 5. | - Review of PETRRA partners research commissioning and management systems, undertaken by OPR team in PY 5.<br>- MOUs or other instruments of commitment available, and verified by OPR team in PY 5.<br>- Survey questionnaire and semi-structured interviews conducted by independent consultant in PY 5. | - Key partners willing and able to form linkages.<br>- Linkages provide mutual benefits to all partners.<br>- Availability of confident external facilitators and participatory research facilities meet the demand. |
| **Output 4**<br>Key policy constraints to improved rice-dependent livelihoods identified and recommendations presented in key policy fora, by PETRRA's policy research partners. | 4.1 Each completed policy paper/study document meets quality criteria established by PMU.<br>4.2 At least 6 policy briefs produced on seed, research-extension, non-farm, WTO, biotechnology, poverty and agricultural, mechanisation, gender, and ecosystem-based technology developed by EOP.<br>4.3 PETRRA policy findings on poverty and agriculture reflected in PRSP during the project period.<br>4.4 Policy research findings presented to appropriate policy making fora by PY 4, key recommendations assessed as relevant and practical by fora participants. | - Assessment document prepared by PMU and policy cell,<br>- Policy documents and briefs.<br>- PRSP document.<br>- Minutes of fora prepared by PMU, including use of assessment/ evaluation questionnaire completed by participants. | - Improved policies for rice production implemented by governmental and/or other organisations.<br>- Key policy research institutes willing and able to participate in the programmes. |
| **Output 5**<br>Improved methods for effective uptake of technologies identified, pilot-tested and recommendations for improved uptake pathways made by PETRRA's sub-project partners and PMU. | 5.1 More than 50% of uptake sub-projects are able to show increased adoption rates by RPFs (male & female) both participating and neighbouring when using new uptake methods, when compared to existing uptake methods.<br>5.2 More than 50% of uptake sub-project partners are applying, uptake pathway recommendations by PY 5.<br>5.3 Validated and documented recommendations presented to a National and Regional Uptake Seminar by end of PY 5, and assessed by majority of seminar participants as being relevant, practical, efficient and cost-effective.<br>5.4 Updated version of Knowledge Bank incorporating PETRRA learning by the EOP.<br>5.5 Two focal area network and uptake forum piloted and critiqued by its members and their respective institutions by PY 5. | - Sub-project progress report<br>End of project evaluations of all sub-projects.<br>- Project documentation and proceedings of workshops.<br>- Paper(s) presented to seminar.<br>- Seminar proceedings including use of evaluation questionnaire to assess participant response.<br>- Focal area network and uptake forum proceedings | - DAE and other extension providers willing to collaborate.<br>- Other dissemination organisations and researchers willing and able to enter into partnerships and implement proposed improvements. |

*continued in the next page...*

## APPENDIX 2: PETRRA REVISED LOGFRAME (updated on August 21, 2003) (continued...)

| Narrative summary | Objectively verifiable indicators (OVIs) | Means of verification (and by whom) | Important goal-related assumptions |
|---|---|---|---|
| **Output 6**<br>A pilot model of an effective pro-poor competitive rice research management scheme has been established and effectively managed by the PMU. | 6.1 The following processes are designed, implemented, improved and documented:<br>(a) Establishment of Project Steering Committee (PSC) and Technical Committee (TEC);<br>(b) Stakeholder analysis and research issues identification;<br>(c) Research selection process;<br>(d) Monitoring and evaluation of research implementation and findings;<br>(e) Capacity building for value-based approach;<br>(f) Network and partnership development;<br>(g) External communications of research findings and model; and<br>(h) Poverty, participation, gender and Environmental impact relating to all above approaches.<br>6.2 The above processes produce Outputs 2 to 5 as scheduled with 95% fund allocation of the project research budget within PY4.<br>6.3 The strengths and weaknesses for effectiveness in the project identification, funding, and management procedures are documented for lessons learned for future research fund models. These are compared with other research funding mechanisms (e.g World Fish, HARP, IRRI Country Programs) already existing within Bangladesh or in nearby countries. Effective in terms of transparency, complexity, timeliness, cost, partnerships etc. | - PSC and TEC minutes.<br>- Stakeholder analysis - reports.<br>- Procedures manual, with dated updates.<br>- PETRRA annual and financial reports.<br>- Workshop with structured comparisons by representatives of the compared organisations informed by report by independent third party in 2004. Lessons learned will be prepared by PMU for discussion in workshop. | - Donors allow adequate time for testing and evaluating competitive research commissioning system. |

## Appendix 3: List of PETRRA sub-projects (SPs) in KAP study

| SP no. | SP name | SP brief no. |
|---|---|---|
| **Technology SPs** | | |
| 00 99 | Seed health improvement project (SHIP) | 10.1.1 |
| 10 00 | Nutrient management for intensive rice-based cropping systems | 10.1.2 |
| 13 00 | Development of high yielding rice varieties for the coastal wetlands of Bangladesh | 10.1.3 |
| 15 00 | Development and use of hybrid rice in Bangladesh | 10.1.4 |
| 17 00 | Participatory integrated plant and nutrient management for intensive rice-based cropping | 10.1.5 |
| 19 00 | Integrated rice-duck farming for resource-poor farm households | 10.1.7 |
| 20 01 | Development and utilization of coastal water resources for crop production and its impact on coastal ecosystem of Bangladesh | 10.1.8 |
| 21 01 | Adaptation and adoption of USG technology for resource-poor farmers in tidal submergence-prone area | 10.1.9 |
| 22 01 | Rice diversity and production in the south-west of Bangladesh: using local knowledge to create sustainable livelihoods in coastal area | 10.1.10 |
| 25 01 | Integrated crop management (ICM) in north-west region of Bangladesh | 10.1.11 |
| 27 02 | Livelihoods improvement through ecology (LITE) | 10.1.12 |
| 28 02 | Production and marketing of fine, aromatic and glutinous rice through farmers' participation in north-east Bangladesh | 10.1.13 |
| 29 02 | Technology development of a production, processing and marketing system for a aromatic rice in north-west region of Bangladesh | 10.1.14 |
| 34 02 | Validation and delivery of system of rice intensification (SRI): methods to increase rice production of resource-poor farmers in south-west Bangladesh | 10.1.17 |
| 36 02 | Verification and refinement of system of rice intensification (SRI) in selected areas of Bangladesh | 10.1.19 |
| **Uptake methods SPs:** | | |
| 01 00 | Technology identification and uptake model | 10.2.1 |
| 02 00 | Sustainable rice seed network | 10.2.2 |
| 04 00 | Quality rice seed marketing method | 10.2.4 |
| 05 00 | Strengthening the FARMSEED extension method | 10.2.5 |
| 06 00 | Union federation-based extension approach for dissemination of environmentally-friendly rice and rice seed production | 10.2.6 |
| 07 00 | Replication of federation-based sustainable approach for quality seed promotion | 10.2.7 |
| 09 00 | Women-led cultural extension methods | 10.2.9 |
| 23 02 | Village institutional approach for rice technology dissemination | 10.2.10 |
| 37 02 | Learner-centred video production to enhance women-to-women extension of post-harvest innovations | 10.2.13 |
| 38 02 | Local entrepreneurship and network development for mobile pump dissemination | 10.2.14 |
| 40 02 | Private sector led farmer field school method for herbicide use in rice cultivation | 10.2.16 |
| 41 02 | Women-led farmer field schools for disseminating rice-potato-rice cropping patterns in northern Bangladesh | 10.2.17 |
| 42 02 | Women-led community-based extension method for rice seed cleaning and storage | 10.2.18 |
| 43 02 | Validation of technology uptake pathways for (SSNM) for intensive rice-based cropping systems in central-west Bangladesh | 10.2.19 |
| 44 02 | Whole family extension approach for rice knowledge adoption | 10.2.20 |

## Appendix 4: Poverty Elimination Through Rice Research Assistance (PETRRA) International Rice Research Institute (IRRI), Dhaka Office

**Knowledge attitude and practice (KAP) study**

**A. Use of PETRRA research findings by government and non-governmental organisation (NGO) (purpose 2.1 & purpose 2.2).** *This section is applicable for both technology development and uptake sub-projects (SPs).*

Name of SP : _____

Name of respondent : _____

Designation : _____

Organisation : _____

**A.1. Use within own organisation**

A.1.1. What are the important research findings of your SP?

a. _____

b. _____

c. _____

d. _____

A.1.2. Did your organisation use any of the above listed research findings?

Yes ☐ No ☐

A.1.3. If yes, which findings and how? Whether your organisation committed any resources for future dissemination of technology/uptake method?

A.1.4. If not, whether your organisation is planning to use any of the above listed research findings?

Yes ☐ No ☐

A.1.5. If yes, which findings? And how?

**A.2. Use by other organisation**

A.2.1. Is there any other organisation that used your SP research findings?

Yes ☐ No ☐

A.2.2. If yes, which organisation used what findings? And how?

A.2.3. If no, whether there is any other organisation that is planning to use any of the above listed research findings?

Yes ☐ No ☐

A.2.4. If yes, which organisation is planning to use what findings? And how?

**A.3. Endorsement by appropriate authority**

A.3.1. Which of the following authority endorsed your research findings? And how?

| **Endorsement by the authority** | | **Evidence of endorsement** |
|---|---|---|
| **Type of authority** | **Give tick sign** | |
| Farmers | | |
| Own organisation | | |
| Other organisation | | |
| Workshop participants | | |
| Published or broadcasted in recognised media | | |
| Bangladesh Rice Knowledge Bank (BRKB) | | |
| Included as an achievement in the Annual Report by the concerned organisation | | |
| Others (with name) | | |

A.3.2. Which of the above endorsement do you think most valuable? And why?

A.3.3. Which of the findings as mentioned in A.1.1 has got wider endorsement? And how?

**B. Adoption of key elements of a pro-poor demand-led competitive rice research system of PETRRA by research management and funding bodies (purpose 3.1)**

Name of the research management/funding body: _____

Name of respondent: _____

Designation of the respondent: _____

Organisation of the respondent: _____

Which of the following key elements (or combination) of pro-poor demand-led competitive rice research system of PETRRA has been used or planned to be used by your organisation? And how?

| **Key elements of pro-poor demand-led competitive rice research system of PETRRA** | **How useful this element?** (put 3 for high, 2 for moderate, 1 for little and 0 for not useful) | **Please give reasons for your assessment score** | **Have you used this element? and if so how?** | **If you have not used, do you plan to use? and if so how?** |
|---|---|---|---|---|
| Conduct research with resource-poor farmers | | | | |
| Conduct research with both men and women | | | | |
| Use participation to help mutual learning, flexibility, openness and evaluation | | | | |
| Use partnership for comparative advantage of each stakeholder for more effective research | | | | |
| Develop technologies that are environment friendly | | | | |
| Direct communication of results to key users | | | | |
| Use competitiveness to engage best players (researchers) and to show transparency | | | | |
| Capacity building is critical to achieve the above elements | | | | |

**C. Important stakeholders' awareness level about the importance of PETRRA management practices for value-based research (output 1.4)**

Name of the SP: _____

Designation: _____

Name of the respondent: _____

Organisation: _____

Could you give your assessment on relative importance of the following PETRRA project management practices?

| **Elements of PETRRA management practices** | **Stakeholders' opinion** | |
|---|---|---|
| | **How important this element of PETRRA management practices?** (put 3 for high, 2 for moderate, 1 for little and 0 for not important) | **Please give reasons for your assigned score** |
| The use of stakeholder analysis for research issue identification | | |
| The engagement of a technical committee (TEC), comprising technical, social and implementation experts that provide appropriate combination of persons to recommend concept notes (CNs) and research proposals (RPs) and to ensure transparency | | |
| The use of selection criteria e.g., technical, socio-economic, financial, poverty, participation, gender and environment focus, for selection of projects | | |
| Project steering committee (PSC) headed by Secretary, Ministry of Agricultural for providing guidance and endorsement of key stakeholders | | |
| **Use of M&E system that includes:**<br>◆ Quarterly progress report linking with field visit and fund release<br>◆ Annual progress report<br>◆ Evaluation report<br>◆ Completion report<br>◆ Interaction with output to purpose review (OPR) team | | |
| ◆ Frequent interaction with PETRRA project management unit (PMU) | | |
| Use of financial process with direct management by PI and quarterly advance to PI | | |
| Use of communication as a part of the reporting system (in the form of news) | | |

**D. Important stakeholders awareness level on PETRRA technology development research findings (output 1.4)**

Name of the SP: _____

Designation: _____

Name of the respondent: _____

Organisation: _____

Could you give your assessment on the following PETRRA technology development research findings from the resource-poor farmers' point of view? (respondents: BRKB group)

| Important PETRRA research findings | Assessment level | | | | |
|---|---|---|---|---|---|
| | Very promising (3) | Moderately promising (2) | Little promising (1) | Not promising (0) | Reasons for your assessment score |
| Seed health improvement (SHIP) to reduce seed rate and increase yield (SP 00 99) | | | | | |
| Leaf colour chart (LCC) to prevent over application of urea (SP 10 00) | | | | | |
| Integrated pest management (IPM) for reduced pesticide application (SP 27 02) | | | | | |
| Rice-duck management system to save fertiliser and to protect from weed and insect as well as to increase yield (SP 19 01) | | | | | |
| Improving use of coastal water to add one additional crop (SP 20 01) | | | | | |
| USG for tidal zone to save urea and to increase yield (SP 21 01) | | | | | |
| Integrated crop management (ICM) to reduce water loss and include one more crop in the existing cropping pattern as well as to increase yield (SP 25 02) | | | | | |
| Production processing and marketing of quality aromatic rice (SP 27 02) | | | | | |
| System of rice intensification (SRI) to save seed and to increase yield (SP 34 02, SP 35 02, SP 36 02). | | | | | |
| Participatory integrated plant nutrient management by the farmers for balanced fertiliser application (SP 17 01) | | | | | |
| Salinity tolerant variety development process through PVS (SP 13 00) | | | | | |

**E. Adoption of key elements of pro-poor demand-led research management system of PETRRA by its partners (output 3.1)**

Name of the SP: _____

Designation of the respondent: _____

Name of respondent: _____

Organisation of the respondent: _____

Which of the following key elements (or combination) of pro-poor demand-led research management system of PETRRA has been used or planned to be used by your organisation? and how?

| **Key elements of pro-poor demand-led competitive rice research system of PETRRA** | **Extend of adoption of this element** (put 3 for high , 2 for moderate, 1 for little and 0 for no adoption) | **Please give reasons for your assessment score mentioning the area of adoption** | **If you have not used, do you plan to use? and if so how?** |
|---|---|---|---|
| Conduct research with resource-poor farmers | | | |
| Conduct research with both men and women | | | |
| Use participation to help mutual learning, flexibility, openness and evaluation | | | |
| Use partnership for comparative advantage of each stakeholder for more effective research | | | |
| Develop technologies that are environment friendly | | | |
| Direct communication of results to key users | | | |
| Competition for competitive funding system research | | | |
| Capacity building is critical to achieve the above elements | | | |

*Details can be written outside the table*

**F. Level of knowledge, attitude and practice (KAP) of management and key staff of participating agencies to undertake value-based demand-led research (output 3.3)**

Name of respondent: _____

Organisation: _____

Designation: _____

Address: _____

As a management/key staff, could you mention your level of knowledge, attitude and practice change compared to the beginning of the project to undertake value-based demand-led research?

| **Key elements of PETRRA value-based approach** | **Change occurred compared to the beginning of the project** (put 3 for high, 2 for moderate, 1 for low and 0 for no change) | | | | | | **Please write the evidences of changes for each of knowledge, attitude and practice in text form to undertake value-based demand-led research** |
|---|---|---|---|---|---|---|---|
| | **Knowledge** | | **Attitude** | | **Practice** | | |
| | **Before** | **After** | **Before** | **After** | **Before** | **After** | |
| Conduct research with resource-poor farmers | | | | | | | K:<br>A:<br>P: |
| Conduct research with both men and women | | | | | | | K:<br>A:<br>P: |
| Use participation to help mutual learning, flexibility, openness and evaluation | | | | | | | K:<br>A:<br>P: |
| Use partnership for comparative advantage of each stakeholder for more effective research | | | | | | | K:<br>A:<br>P: |
| Develop technologies that are environment friendly | | | | | | | K:<br>A:<br>P: |
| Direct communication of results to key users. | | | | | | | K:<br>A:<br>P: |
| Use competitiveness to engage best players and to show transparency. | | | | | | | K:<br>A:<br>P: |
| Capacity building is critical to achieve the above elements | | | | | | | K:<br>A:<br>P: |

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