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IMPACT ASSESSMENT DISCUSSION PAPER NO. 13

**IMPACT OF IFPRI'S POLICY RESEARCH
ON RESOURCE ALLOCATION
AND FOOD SECURITY IN BANGLADESH**

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February 2000

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CONTENTS

	Page
Abstract	v
Acknowledgments	vii
Introduction	1
Role of Research in Food Policy Reforms	2
A Conceptual Framework and the Case Study Approach	4
The Bangladesh Food Policy Project—A Description	8
Impact of Policy Research—Two Case Studies	13
Other Tangible Impacts of Food Policy Research	35
Impact of Capacity Strengthening for Policy Analysis	41
Implications and Lessons Learned	49
Conclusions	57
Tables and Figures	59
Appendices	73
References	98

ABSTRACT

The Bangladesh Food Policy Project (BFPP), implemented during 1988–94 by IFPRI in collaboration with the Bangladesh Ministry of Food, was effective in providing research-based information to enable several policy changes in the Bangladeshi food sector.

This paper is an attempt to assess the impact of IFPRI's research in Bangladesh through the BFPP. It identifies major food policy reforms designed and implemented by the Government of Bangladesh, examines their linkages to the information generated by the food policy research, and estimates the benefits of the research to the Government of Bangladesh. Based on information gathered through interviews of more than 60 senior policymakers, donor representatives, collaborators, researchers, and training recipients, the paper draws lessons for future food policy research programs in Bangladesh and other developing countries.

Among the more than 70 research outputs from IFPRI, two policy contributions stand out: the abolition of the Rural Rationing program and the implementation of the Food for Education program. A case study approach is used in this paper for documenting the costs and benefits of the impacts of these contributions. The cost-benefit analysis of IFPRI's contribution to the abolition of Rural Rationing indicates a benefit/cost ratio of 15 to 60 depending on the levels of attribution of benefits. The internal rates of return (IRR) for this part of food policy research investment range from 114 percent to 259 percent. The net present values (NPV) in 1989, using a 5 percent discount rate range from US\$27 million to US\$116 million. These figures demonstrate that even with the lowest level of attribution of these benefits to IFPRI's research, the returns from this policy decision alone more than pay for the total project cost.

Capacity-strengthening activities also formed a major component of the BFPP and resulted in the generation of substantial capacity for conducting field surveys and compiling and processing data from surveys for policy analysis and research.

Much can be learned from the process of implementing research and outreach activities under the BFPP. First, it was found that setting priorities through regular client-consultation, involving local researchers and key analysts as collaborators, and choosing skilled and committed research personnel all contribute to the ownership and sustainability of the research. Second, the acceptance and adoption of research results can be improved by ensuring that research is objective, by identifying windows of opportunity for result sharing, and by tailoring policy communication strategies. Finally, it was also learned that capacity-strengthening activities strategically tied to information sharing increase the acceptance and adoption of research results.

ACKNOWLEDGMENTS

Many thanks are due to Per Pinstrup-Andersen for initiating this study and for his insightful comments and suggestions on an earlier version of this paper. The author is indebted to Raisuddin Ahmed for his guidance and suggestions and for facilitating the research undertaken for the preparation of this report. Thanks are also due to Richard Adams, Howarth Bouis, Elizabeth Daines, Carlo del Ninno, Paul Dorosh, James Garrett, Lawrence Haddad, Steven Haggblade, John Hoddinott, Nurul Islam, Ibrahim Khalil, Amin Khandekar, Phil Pardey, Gulam Rabbani, Will Reidhead, and LaTonya Roberts for their valuable input during the preparation of this report, and to the participants of the Impact Assessment and Evaluation Group Phase I Workshop where the results of this paper were presented. A draft chapter on IFPRI's experience in Bangladesh in Curt Farrar's forthcoming publication provided a valuable starting point for this study. A special word of appreciation goes to Akhter Ahmed and Francesco Goletti who have been a valuable source of information and guidance throughout this study. The author has a great sense of gratitude to those he interviewed in Bangladesh and in the United States. He alone is responsible for the contents of this report.

1. INTRODUCTION

Following its independence in 1971, Bangladesh transformed itself in only 20 years from a country of chronic food shortages to a country of food self-sufficiency. That dramatic change, which was preceded by only a few of its South Asian neighbors, called for a rethinking of the issues and strategies for meeting the food security needs of millions of poor Bangladeshi households. It also necessitated reform of the food and agricultural sector in Bangladesh. The Bangladesh Food Policy Project (BFPP), implemented by IFPRI during 1988–94 in collaboration with the Bangladesh Ministry of Food (MOF), provided research-based information for several reform initiatives.

This paper assesses the role of food policy research in Bangladesh's reform process in the late 1980s and the early 1990s. It identifies major reforms designed and implemented by the government and their links to the information generated by the food policy research. It describes the roles of various institutions in the policy decisionmaking process using a series of interviews with representatives of those institutions. It estimates the benefits of food policy research to the Government of Bangladesh. Finally, the paper draws lessons for future food policy research programs in Bangladesh and other developing countries.

The paper proceeds in eight further sections. Section 2 places the case of policy reforms in the Bangladesh food sector within a broader institutional perspective and identifies the role of research in advising policy changes. Section 3 develops a conceptual framework for measuring the costs and benefits of policy research and describes the methods of this study. Section 4 describes the BFPP, its outputs, and its accomplishments. Section 5 analyzes the benefits of food policy research in improving government resource allocation and reducing food insecurity, using as case studies the abolition of the Rural Rationing program and the introduction of the Food for Education program. Section 6 documents other tangible effects of food policy research. Section 7 documents the impact of the BFPP on capacity strengthening for future policy research and analysis. Section 8 presents some implications and useful lessons learned from implementing BFPP and assessing its impact. Section 10 presents the conclusions.

2. ROLE OF RESEARCH IN FOOD POLICY REFORMS

In assessing the impact of policy research, given its public goods nature, it is important to understand the role research plays in the reform process. Information generated and disseminated as part of policy research may have a far-reaching impact beyond the original intent. Thus, tracing and measuring the full benefits of policy research over the long-run is difficult. Policy research and the advice based on it help generate and maintain dialogue on important policy issues, support the analysis of critical policy decisions, identify the steps that may lead to reform, provide strategic input to the design of projects and programs, and develop local institutional and human capacity for policy analysis (Deininger, Squire, and Basu 1998).

Developing countries have often used policy and institutional reforms to attain sustainable growth through more efficient government resource allocation. However, such reforms have been criticized because they were designed by external agencies and lack local participation and ownership. In many instances, because loans to support the policy changes are disbursed quickly, little opportunity remains to conduct detailed analysis of the implications of the changes for government resource allocation or the impact on the poor. In addition, these externally designed policy packages do not explicitly link reform to the development of local institutions and human resources that could increase in-country capability to design and implement poverty-eradicating growth policies.

Several questions are frequently asked. Can there be coherent links between the short-term objectives of reform (to attain a balance of payment equilibrium and improve allocation efficiency) and the long-term objective of sustainable development (to reduce poverty)? What role can research play in designing policy reforms that will have short-term benefits and also provide opportunities for long-term growth and poverty alleviation? What roles do institutions play in using research-generated information to design and implement policy reforms?

Policy reforms in the Bangladeshi food sector were initiated by the Government of Bangladesh, although external agencies such as the World Bank and the U.S. Agency for International Development (USAID) had been pushing for them for quite some time. In the late 1980s these organizations played a leading role in pressing the government to reduce expenditures on food subsidies (Adams 1998). The role of donors in Bangladesh was even greater in helping the government make informed decisions on the basis of research information on the potential implications of food sector policy reforms. In addition, donors provided opportunities for institutional and human resource development for future policy analysis and research.

Externally designed policy reforms are frequently criticized for hindering research-based policymaking and local partnership and ownership because they do not improve a country's

own human and institutional resources. This criticism is not valid in the case of the Bangladesh reforms. What then is the impact of such research on resource allocation and poverty reduction in Bangladesh?

Garrett and Islam (1997) summarizes a specific set of hypotheses that help explain the role of research in the policymaking process.

- Because policymakers do not adequately state their needs, information generated by research is treated as just one of a variety of information sources.
- High-quality research addressing high-priority issues, presented in an understandable format, is likely to be better used in decisionmaking.
- Personal interests, ideological inclination, and other characteristics of policymakers affect the use of research information in decisionmaking.
- In addition to its direct use in policy formulation and decisionmaking, research information is valuable for related future uses.
- Changing political and socioeconomic environments provide opportunities for better use of research by decisionmakers and result in better acceptance of research information.

This paper tests these hypotheses using the case studies undertaken for assessing the impact of BFPP.

The impact of policy research on the Bangladesh food sector policy reforms is assessed in two stages. The first stage examines the effect of research on policy decisionmaking by explicitly studying the history of the institutions and the policy process underlying the food sector reforms. The second stage estimates the impact of decisions made as part of policy reform on resource allocation and food security. In the next section, a conceptual framework for accounting costs and benefits of food policy research is developed.

3. A CONCEPTUAL FRAMEWORK AND THE CASE STUDY APPROACH

As in any other economic activity, the resources available for food policy research are limited. The general objective of assessing the benefits of policy research is to guide allocation of resources between various types of policy analysis and to identify those which result in the highest return. The same is true within a specific sector, such as food or agriculture.

The methodology for impact analysis of food policy research depends on the context in which the information is generated and used (Pinstруп-Andersen 1993). As a first step, it is useful to develop a general conceptual framework to account for the potential costs and benefits involved in the research. Such a framework can be developed at either a country level or the international level; this paper assumes a country basis.

The cost-effectiveness of generating information for food and agricultural policy decisionmaking differs depending on the nature of the policy problem and the method of generating the information. For example, rural appraisal methods can successfully and cost-effectively generate information that enables decisionmakers to intervene immediately with emergency assistance. In contrast, detailed household-level surveys of production and consumption are valuable but costly. The trade-off in obtaining detailed policy-relevant data and the cost of collecting such information has been well established (Babu and Mthindi 1995).

The costs of generating informed policy decisions can be divided into two major groups: cost of analysis of policy alternatives and cost of analysis of policy impact. Each group involves costs of data collection, processing, analysis, and reporting. Policy analysis in developing countries also involves costs for training additional staff in these operations and associated costs of strengthening institutions; such costs form a part of the total cost of generating policy information.

The benefits of policy analysis research can be classified into two broad categories; pre-decision benefits and post-decision benefits. Before decisions are made, policy research information is useful in facilitating the decisionmaking process. These benefits can also be called process benefits. Process benefits include the benefits from strengthening the policy analysis units at various levels and creating additional capacity for policy analysis.

Process benefits can be realized even if the policy decisions are not actually made. This is particularly so when the research information helps prevent implementation of erroneous policy decisions. Such error-reduction benefits need to be counted in evaluating the impact of food policy research. Process benefits can be further categorized into quantifiable benefits and qualitative benefits. Quantifiable benefits are those which can be assigned a monetary value,

although they tend to be subjective. Qualitative process benefits are those which cannot be directly quantified but can be represented in other terms, for example, the number of times a research report is used in the decisionmaking process, the role of the report in initiating dialogue, and the number of citations of the report in future research.

Process benefits can be evaluated either ex-ante or ex-post. Ex-ante evaluation is useful in determining the level of investment in research that would improve the process (Norton and Alwang 1997). Ex-post evaluation verifies the intended impact of policy information on the decisionmaking process and helps in modifying the structure and operation of policy generating mechanisms.

The post-decision benefits of policy research, which can be termed impact benefits, are realized after the policy decisions are made and implemented. Impact benefits can be further divided into the direct benefits and indirect benefits of the policy decisions in improving the welfare of the intended beneficiaries. For example, consider the results of policy research which suggest that the missing link between increased food security and child morbidity and mortality is the availability of clean water. Providing clean water to rural areas as a policy decision would have the direct benefit of saving children's lives and the indirect benefit of saving women's time in fetching water from great distances. While it is relatively easier to quantify the direct benefits, innovative methods are needed to assess the indirect benefits. Assessment of impact benefits can be undertaken either before or after policy implementation. Process benefits and impact benefits make up the total benefits of food policy research.

The discussion thus far has been limited to the benefits in the focus country in the present. However, benefits may reach beyond this narrow view. First, the usefulness of food policy research to the outcome of policy alternatives not only provides information on current policy decisions but also generates a stream of benefits in the future from both the actual benefits of the policies and the research's use in future decisionmaking. Such process-induced future benefits can be accounted for in evaluating food policy research. Second, policy information generated from research in one country can have spillover benefits in other countries (Ryan 1999). The results of policy research in one country can easily be applied to policy decisionmaking in other countries with similar circumstances (cropping patterns, food eating habits, and agroclimatic zones). Similarly, methodological improvements in one country may help increase the efficiency of policy generating and decisionmaking mechanisms elsewhere. Furthermore, even within a single country, policy research information produced in one sector can have implications for other sectors. Accounting for such benefits would be useful in evaluating the benefits of policy research.

The difficulty in assessing the benefits of policy research is determining a causal link between research and the outcome of a policy (Timmer 1998). In evaluating the benefits of various components of the BFPP, it was important to establish these links. Because IFPRI policy advisers were in Bangladesh during the project and available for day-to-day policy advice, it was possible to establish this link and to learn about the relationship between policy research and policy outcome.

The Case Study Approach

Valuation of policy research requires estimating what changes in policymakers' actions are due to the research information and then assessing the value of these changes (Gardner 1997). Smith (1998) argues that the lack of time-series data on the costs and benefits of policy-oriented social science research make conventional econometric techniques less effective in estimating the impact of policy research. As a better alternative, he suggests a case study approach to documenting the costs and benefits of a specific policy research project if the cases selected are representative of the research projects under consideration. Even with the case study approach, the major concern is the extent to which benefits derived from policy changes can be attributed to policy research programs. Thus, a challenge for the evaluator of policy research impacts is to quantify the adoption lags and the extent of adoption and to relate them to the scenario that would exist in the absence of policy research. A committee of experts can make judgmental estimates of lags and adoption rates (Freebairn 1997). In addition, carefully structured questions posed face-to-face with the most knowledgeable respondents are required (Norton and Alwang 1997).

Selected individuals associated with the BFPP, both within and outside the government, made preliminary recommendations regarding which case studies to use in assessing the impact of the BFPP. Two case studies with differing natures of impact are presented in this paper: (1) elimination of the Rural Rationing program, which resulted in substantial budgetary savings for the Government of Bangladesh, and (2) implementation of the Food for Education program, which increased the enrollment, attendance, and retention of children in schools and also increased the intake of the food among poor households.

The case studies used semi-structured interviews and a review of project documents to understand the policy process and the use of information from research for decisionmaking. The major purpose of the interviews was to understand the process by which policymakers use information in making their decisions. The author conducted a total of 65 interviews between June 1998 and January 1999 with donors, collaborators, policymakers, and participants in the BFPP training courses. The IFPRI researchers involved in the project provided a list of

potential interviewees, which was supplemented with the names of additional key informants identified through initial interviews. A list of persons interviewed is given in Appendix 1. Interviews were conducted in person, by telephone, and by e-mail. During the interview, a brief background of the reasons for the study was presented. Appendix 2 contains a set of questions that were used to guide the interviews. In the actual interviews, the questions were adapted to the interviewees according to the policy issues in which they were involved and the roles they played.

The history of food policy reforms in Bangladesh, the roles of various institutions and organizations involved, the policy decisionmaking process, and the use of research information in formulating policy reforms are discussed in the next section.

4. THE BANGLADESH FOOD POLICY PROJECT—A DESCRIPTION

In early 1989, IFPRI signed a contract with USAID, Dhaka to conduct research on food policy issues and to provide technical assistance to the Ministry of Food, Government of Bangladesh (BDG). IFPRI opened an office in Dhaka and outposted two senior researchers to work on the project. The Bangladesh Food Policy Project (BFPP) consisted of four subprojects and a large number of well-defined research topics. The subprojects included a study on price stabilization, encompassing public and private marketing; an evaluation of the effects of targeted distribution of foodgrains on consumption and nutrition; an examination of agricultural diversification as a source of sustained production growth; and capacity strengthening in food policy analysis.

In addition to these subprojects, the BFPP involved collaborating with the Food Planning and Monitoring Unit of the Ministry of Food to provide policy advice to the BDG on food sector reforms. Two research divisions from IFPRI (Markets and Structural Studies, and Food Consumption and Nutrition) implemented the BFPP, each contributing one of the outposted research fellows in Dhaka. In addition to the two outposted staff, other researchers from these divisions conducted specific research studies from the Home Office. The project also employed locally recruited researchers from Dhaka University and Bangladesh Institute of Development Studies as consultants to conduct specific research tasks. IFPRI's director of Markets and Structural Studies, Raisuddin Ahmed, served as project director, providing overall coordination and direction.

The objectives of the BFPP can be outlined as follows:

- Streamline the public food distribution system by improving efficiency and equity.
- Assess the food consumption and nutrition effects of different food and nutrition intervention programs.
- Study the functioning of food markets and suggest improvements.
- Examine the potential for international trade in foodgrains.
- Examine the prospects for agricultural diversification.
- Build and strengthen policy research capacity in the Ministry of Food.

- Collect data at three levels as part of the overall effort: household data for studying food consumption and nutrition, market-level data for studying food markets, and farm-level data for studying agricultural diversification.

A steering committee chaired by the Secretary of the Ministry of Food guided the project on the substance of research and capacity-strengthening activities.

Project Activities

Major activities of the BFPP included conducting collaborative policy research, communicating the results through appropriate channels, providing advisory services to the Ministry of Food, and strengthening the capacity for food policy analysis and research. Most of the time and effort in the first two years of the project was spent establishing the project, assessing the information needs, reviewing the literature, taking the inventory of previous studies, and collecting primary data for food policy analysis. A considerable amount of project time and energy was spent providing advisory services on a scheduled as well as an ad-hoc basis. The project team implemented capacity-strengthening activities to improve the policy analysis capacity of local collaborators in parallel with and as a part of research studies.

The collaborative research under the BFPP centered around identifying policy alternatives for reforming the Bangladeshi food sector. This required a thorough analysis of the large and inefficient Public Food Distribution System, which began during the great Bengal famine and was subsequently used to distribute large food aid inflows. The collaborative research team conducted two broad streams of studies: (1) supply of food—import, production, marketing, impact of procurement and open market sales on price stability incentives and costs, and long-term food security through agricultural diversification; and (2) consumption of food—nutritional impact of various food-related interventions, operational effectiveness, and costs of targeted public distribution programs.

Project Outputs

The BFPP produced the following:

- A bench-mark study on marketing rice and wheat, which increased policymakers' confidence in the market
- An estimate of the comparative advantages of crops, which is now guiding the development of a new agricultural strategy

- An estimate of the inefficiency and costs of targeted programs, which enabled the government to abolish the rationing system, reinforce its Food for Work and Vulnerable Group Feeding programs, and introduce the new Food for Education program.
- Capacity-strengthening through collaborative research and training courses and the development of a “situation room” for monitoring food issues
- Policy changes through constant policy advice on many fronts

Approximately 70 studies were completed over a period of five-and-a-half years. Table 1 gives a summary of project outputs. It must be noted that a large number of research papers were prepared primarily for internal use for decisionmaking. Appendix 3 lists the publications and dissemination activities of the BFPP. The project also met 11 scheduled requests and a number of supplementary requests for policy advice. Appendix 4 lists the topics and time frame of policy advisory services. The project strengthened the technical and analytical capabilities of six local institutions through local short-term training, overseas training courses, and collaborative research: the Ministry of Food (MOF), Food Planning and Monitoring Unit (FPMU), Directorate General of Food (DGF), Directorate of Agricultural Marketing (DAM), Bangladesh Institute of Development Studies (BIDS), and Institute of Nutrition and Food Science (INFS). Table 2 summarizes the training and capacity-strengthening activities undertaken by the project staff.

Major Policy Contributions of BFPP

The BFPP was instrumental in effecting several policy reforms by generating information that led to major policy decisions, by changing the conventional wisdom in food sector management, and by creating an environment in which foodgrain markets and relevant policies can evolve. Appendix 5 lists the BFPP's major policy contributions. IFPRI's research findings and policy recommendations were particularly useful in the decisions to

- abolish ineffective and inefficient rural rationing channels, with leakage as high as 70 percent. This decision has saved the BDG approximately US\$60 million per year (Ahmed 1992);
- promote open tendering for foodgrain procurement by encouraging private traders to engage in foodgrain procurement and retailing. IFPRI's close monitoring and timely reporting on the tendering procurement process influenced policymakers to make appropriate and timely decisions. This decision has saved the BDG approximately US\$25 million per year (BFPP 1994);

- lower the procurement price in 1992, saving the BDG approximately US\$12 million in that year (BFPP 1994);
- adjust downward food security stocks from approximately 1 million metric tons to 500,000 metric tons of foodgrains, resulting in considerable budgetary savings. Along with the greater reliance on private-sector storage and marketing, this change enabled the BDG to better manage abnormal demand and supply situations by maintaining optimum food stock levels and improving the scheduling of procurement and distribution activities (BFPP 1994);
- implement the Food for Education (FFE) program. Under IFPRI's leadership, a working group on targeted food interventions recommended this program, which has increased school attendance of poor children by 27 percent and 31 percent for boys and girls respectively. In addition, as a result of the income-transfer component of the program, the calorie intake of participating households has increased (Ahmed and Billah 1994);
- permit the BDG to use the PL480 Title III resources to continue the FFE program; and
- train public-sector professionals to analyze policy in both domestic and international food markets, and to respond quickly to the decisionmaking needs of the MOF.

The Process of Information Dissemination and Use

The effectiveness of policy research and outreach within a country depends on how institutions are organized to receive and respond to the information generated. These institutions range from the beneficiaries' organized groups at the grassroots level to the national-level Cabinet Committee on Food, which makes policy recommendations to the MOF. Historically the design of food-based interventions depended on the nature of the institutions in place to implement the programs. A diagram of the organizational links among the institutions in the Bangladesh food sector is given in Figure 1. The office of the prime minister is the primary decisionmaking authority for major food policy issues. The Cabinet Committee on Food advises the prime minister on food policy reforms. The committee is chaired by the finance minister with the food minister as its secretary. Other members of the committee include the ministers of commerce, transportation, agriculture, and social welfare. The Directorate of Food, directed by the secretary of food, implements public food distribution programs. It procures the food from traders and supplies it to dealers who in turn deliver the food to beneficiaries. Donor agencies with an interest in the food sector provide financial and technical support for

various activities through the Food Cell of the Planning Commission to the Ministry of Food, the Ministry of Finance, and the nongovernmental organizations (NGOs).

IFPRI collaborated closely with the FPMU. The head of the FPMU was the main counterpart for implementing the activities of the project. That individual reported to the secretary of food, who was the overall policymaker for the MOF. The secretary of food, in turn, reported to the minister of food, who chaired the Cabinet Committee on Food. That committee advised the prime minister and the cabinet on issues related to food and nutrition. The collaborative research and ad-hoc studies conducted by the IFPRI research team formed the basis for policy advice from the team's chief of party to the secretary of food, in most cases through the head of the FPMU. However, the BFPP chief of party sometimes contacted the secretary of food directly to provide policy advice. This was the general process of information dissemination and use, but the process differed according to the individual policy decisions, as will be discussed below.

The next three sections assess the impact of the BFPP research and outreach activities on food policy reforms in Bangladesh. The quantitative impact of these policy decisions is also analyzed.

5. IMPACT OF POLICY RESEARCH—TWO CASE STUDIES

To assess the impact of policy research, individuals associated with the BFPP identified two major policy changes that relied on IFPRI's research. The policy changes were the abolition of the Rural Rationing (RR) program and the introduction of the Food for Education (FFE) program. They represent different processes and produced different types of benefits. The abolition of the RR program resulted in substantial budgetary savings for the BDG, while the FFE program increased school enrollment, attendance, and retention of children—especially girls—and also improved household food security among participants.

THE CASE OF ABOLITION OF RURAL RATIONING

This subsection quantifies the impact of the BFPP research on one of the major food policy decisions of the past decade in Bangladesh: the abolition of the RR program. A brief description of the design of the RR system illustrates the nature and extent of the food policy reforms needed in Bangladesh in the late 1980s. A description of the process of research and information use in the decision to abolish the system relates the information generated from research to the policy change. An estimate of the resulting savings to the government shows the magnitude of the impact of the decision.

The Rural Rationing Program

The RR program was preceded in the Public Food Distribution System (PFDS) by the Modified Rationing (MR) program. Modified rationing was designed primarily to provide subsidized foodgrains to the rural poor. Four categories of rural households were identified on the basis of their tax criteria; those in the bottom two categories made up a majority of the rural poor. Because of problems in the MR system, however, only about 50 percent of allocated foodgrains reached beneficiaries (Chowdhury 1988). Several reasons may explain the failure of modified rationing. The weak institutional arrangements for implementing the program allowed intermediaries between the government and the beneficiaries to seek greater gains. For example, private ration shop dealers, who procured the foodgrains from government warehouses and then sold them to beneficiaries, siphoned the margin between the ration prices and the open market prices. This was largely due to the absence of an effective market monitoring system to provide information to government supervisors on open market prices. The lack of monitoring also allowed the private dealers to sell a large part of the MR allotment in the open markets. As a result, the benefit to the targeted beneficiaries of the MR program was negligible. The government replaced the MR program with the RR program in April 1989.

The RR program was designed to provide foodgrains at a subsidized price to low-income people in rural and municipal areas. On average, foodgrains distributed through the RR program were priced 25 percent below those in the Urban Rationing for Civil Servants (Statutory Rationing) program. The RR program covered all areas of the country except those covered by Statutory Rationing, namely Dhaka, Chittagong, Khulna, Rajshahi, Narayanganj, and Rangamati.

The RR program employed three targeting criteria to select beneficiaries:

- A landless or near-landless household whose total foodgrain production did not meet the household's consumption requirements for more than two months in a year
- A household that was not required to pay a tax to the local union council of more than Tk3.00 per year
- A household that was not covered under the Vulnerable Group Development program

The institutions and individuals involved in identifying target households included ward members, who made the initial recommendations; the chairman of the Union Council, who prepared a Distribution Priority List based on those recommendations; the Upazilla Food Controller; and the Member-Secretary of the Upazilla Food Committee, who verified the list before approval by the committee. The approved beneficiaries received food ration cards. Each ration card issued to an adult member of the household entitled the beneficiary household to a maximum of 1.5 kilograms of foodgrain per week.

Private dealers distributed the subsidized food rations to the beneficiaries. The system of distributing food through private dealers was intended to reduce the transaction costs of the government and to reduce the uncertainty of the foodgrains reaching the beneficiaries. The responsibility for transporting the foodgrains from the government warehouses and distributing them through their main ration outlets rested solely on the private dealers. In return, the dealers received a commission equal to the difference between the official subsidized sale price of the foodgrain to the beneficiaries and the price the dealer paid to the warehouse. The commission was fixed at Tk16.00 (US\$0.41) per 100 kilograms of foodgrain delivered to beneficiaries.

The private dealers were appointed by the local member of parliament until the fall of the government of General Ershad in December 1990. Dealers were subsequently appointed by a three-member committee chaired by the deputy district commissioner.

In 1991, a total of 10,126 dealers were appointed to distribute food through the RR program. Approximately two dealers were appointed in each union covering a total of at least 750 beneficiaries. The ration shops were located in the village marketplace and were open twice a week on market days.

From the Ministry of Food, food inspectors and Upazilla food controllers supervised the overall RR program, while the district controller of food was responsible for district-level management. In 1991, the RR program handled more than 200,000 tons of foodgrain with a cost to the government of about Tk1,200 million (US\$31 million). Weak institutional arrangements, procedural deficiencies in the selection of private dealers, and low incentives for their services resulted in poor performance. As a part of reforming the PFDS, and the food sector in general, the BDG suspended operation of the RR program at the end of 1991 and abolished it in May 1992. IFPRI's research on the "Operational Performances of the Rural Rationing Program in Bangladesh" (Ahmed 1992) quantified the leakages in the RR program and provided information to policymakers which was used in the decisionmaking process that led to its abolition.

The Process of Information Generation and Use

An understanding of the process of information generation through food policy research and its use in decisionmaking is essential for addressing two critical questions:

1. To what extent did IFPRI's research results contribute to the decision to abolish the RR program?
2. Would the RR program have been abolished anyway; and if so, what would have been the delay in the decisionmaking process in the absence of IFPRI's research results?

Evaluating the effects of targeted distribution of foodgrains on consumption and nutrition was a major component of the BFPP research agenda. In addition, the pressure on the BDG from donor agencies to reduce expenditures on food subsidies (Adams 1998) provided a major impetus for this specific study.

Research Program Implementation

As the first part of a two-part study, the outposted research fellow, Akhter Ahmed, looked at the "Operational Performances of the Rural Rationing Program in Bangladesh" (Ahmed 1992). The study, conducted between May and September 1991, evaluated the

success of the RR program in reaching the target group and its cost-effectiveness. The study used data from two field surveys conducted as part of the project activities: an operational survey implemented in all 20 regions of the country with information from food department officials, foodgrain dealers, and program beneficiaries; and a household survey conducted in eight villages with varying characteristics in terms of infrastructure and susceptibility to distress. In addition to these surveys, the study used data from the 1990–91 census. The operational survey revealed that

- the RR program did not cover all the poor households in a village,
- the program did not pay enough commission to the dealers for them to profit following the rules and regulations, and
- an estimated commission level of twice the amount actually paid plus variable transportation costs would allow dealers to be profitable and serve the beneficiaries well.

The household survey results revealed a total leakage of 69.4 percent of foodgrains with three major types of leakage:

- Leakage of 31.8 percent due to ration cards listed in the official register but not distributed to the beneficiary households
- Poor targeting—the enrolled households failed to meet the eligibility requirements—causing 20.9 percent of the total leakage
- Leakage of 16.7 percent due to less-than-full entitlements received by the beneficiaries.

As a result, on average, the RR program covered only 1.8 percent of the rural population and increased the income of the beneficiaries by only 2.3 percent. The study also estimated that the RR program spent Tk6.55 to deliver Tk1.00 worth of food to a targeted household.

In addition to these leakages, the study revealed other malpractices in the system. For example, the BDG paid full price for “recorded but not delivered” quantities of rice which were then sold to dealers at the subsidized price. This generated revenue from the sale of undelivered rice at a market price usually higher than the subsidized price. The BDG officials and the dealers shared this rent. The study also documented stories of individual households and the problems they faced in obtaining subsidized food through the program.

Communication of Research Results

The preliminary findings of the operational performance study were shared with the collaborators in the FPMU and the MOF through several in-house seminars between September and November 1991. One of the seminar participants revealed information on the leakage in the RR program to a leading daily newspaper, which then published a story on the RR program. The then-minister of finance, after reading the news item, called the secretary of the food for an explanation. He also raised the issue of the large leakage in the RR program in a cabinet meeting. The cabinet entrusted the minister of food to come up with a proposal for abolishing the RR program. The minister of food in turn looked to the secretary of food, who was in constant touch with IFPRI researchers following the publication of the information in the news media. IFPRI researchers used this opportunity to share their research-based information on the program and the potential savings for the BDG from abolishing the program. The then-secretary of food (an interviewee), presented the results to the Cabinet Committee on Food, which made a decision in December 1991 to suspend the Rural Rationing program. In April 1992, the draft report of the completed study was presented to the BDG and other donors, including USAID and the World Bank. The RR program was abolished in May 1992. According to the project reports, this resulted in an estimated budget savings of about US\$60 million per year (BFPP 1994).

Impact of IFPRI Research

Certain conditions prevailing during the early 1990s in Bangladesh helped enhance the decisionmaking process using IFPRI results. Food sector reforms had been gradually gaining momentum. Then, because of increased foodgrain production from increased investments in agricultural research and rural infrastructure, real prices of foodgrains fell in the 1980s. This reduced the pressure on the food subsidy programs. With the reduction in the subsidies, ration card holders became indifferent to the subsidized food. External agencies such as USAID and the World Bank helped the reform process by placing conditions on food aid and other lending programs. According to one interviewee, these agencies provided cover to the reformers within the government.

In addition to IFPRI's research efforts, several other entities informed the BDG of the specific need for food sector reforms as well. In particular, earlier reports by the Bangladesh Rural Advancement Committee (BRAC 1991) and Beacon Consultants (1986) had generated interest among policymakers in taking a closer look at the functioning of the rural rationing programs. In fact, the BRAC study also identified potential leakages in the RR program, but it was not widely distributed. The new government, which took over in 1991, favored abolishing

the RR program, believing that the choice of dealers in General Ershad's regime had been politically motivated; it was public knowledge that the dealers of the ration shops were corrupt. However, according to a retired senior government official, three distinct features of IFPRI's research enhanced its role and use in the decision to abolish the RR program:

- IFPRI's research offered specific parameters, for example, the 70 percent leakage of the RR system.
- IFPRI researchers facilitated decisionmakers' use of information by collaborating with and operating within the decisionmaking systems.
- The timing of IFPRI's research coincided with the need for information.

One former secretary of food pointed out during an interview that IFPRI's research products had other features that policymakers found useful in making decisions: they were of high quality, they conformed to the decisionmakers' expectations, and they outlined specific courses of action.

The benefits of abolishing the RR program are attributed to IFPRI's research because the information on the program's leakage was central to the decision to abolish it, and the IFPRI study was a major source for quantifying that leakage (Ahmed 1992). However, good harvests of foodgrains in the early 1990s and other factors just described also lay the groundwork for motivating the BDG to make policy reforms in the food sector.

Estimating the Value of IFPRI Research

Methods for quantifying the benefits of policy research are still rudimentary. However, practitioners have used two valuation methods (Ryan 1999). The first method can be termed the "delay avoidance method." Central to this method is the question of how much the results of the policy study accelerated the adoption of the policy change. This method assumes that the policy change under consideration was likely to occur regardless and that the relevance of the research is its role in avoiding delay in decisionmaking. This technique is computationally convenient because it avoids the infinite horizon problem of valuing the future stream of benefits due to the policy change. For similar reasons, the estimate is also conservative.

Typically, a diverse group of both internal and external players work to bring about a policy change in a developing country. Thus, the entire benefit of the change may not be attributed to a single individual or institution. The second method, which can be termed the

“share method,” identifies through participatory approaches the share of benefits that can be attributed to a particular source. This method requires the collection of subjective attribution values through interviews of selected informants.

Although in theory these two methods could be used separately, in practice, they most often need to be used complementarily. This report uses a combination of the two methods, taking into account both the resources saved by avoiding delays in policymaking and the share of credit due to IFPRI's policy research.

Delay Avoidance Component

The first step in the assessment is to estimate the delay in policymaking that was avoided by the cumulative actions of IFPRI and other organizations in Bangladesh. The general belief among the interviewees in the Ministry of Food was that the impetus for reform came clearly from the government side, particularly from the Ministry of Finance, even though donors had been pushing in this direction for many years. IFPRI's research was fortuitously timed in that it was available just as the new (reformist) government was ready to move. Thus, IFPRI's research hastened the decisionmaking process. Furthermore, IFPRI's research results, generated in collaboration with the FPMU, were of high-quality, reliable, and timely. This helped government reformers make a decision and implement it. The pertinent question then is how much time was saved in the decisionmaking process because of IFPRI's presence and its timely research input? No definitive consensus emerged on the extent of delay avoided; but those interviewed generally agreed that without the documentation of the leakages in the system, the RR program would have continued at least until the year 2000.

This is a plausible scenario given that if the RR program was not abolished by 1996, the change in the government in 1996 might have kept it going for several more years because of pressures from the ration shop dealers. A recent editorial in a leading Bangladesh daily supported this view saying, “Look at the rural rationing from any angle—disaster management, food security for the poor, poverty alleviation, or higher levels of foodgrain production—it is unparalleled in its multidimensional merits” (Chowdhury 1998). Thus this study used the year 2000 as the point at which the RR program would have ended without research input.

Share Component

The second step in this valuation attempt is estimating the share of credit that IFPRI's research can take for the abolition of the RR program.

Interviews conducted with the decisionmakers and policy analysts involved in the abolition of the RR program revealed that stakeholders like the World Bank and USAID also played a key role in setting the stage for food sector policy reforms in Bangladesh. Indeed, similar external pressure during the late 1980s resulted in the replacement of the Modified Rationing program with the Rural Rationing program. Research studies conducted at that time also indicated the need for reforming the food sector (Chowdhury 1988; BRAC 1991). Thus, it was clear that IFPRI did not initiate the reforms, but its research outputs did help guide them.

To elicit information regarding IFPRI's contribution to the abolition of the RR program, interviewees were given a range of shares (0–25 percent, 26–50 percent, 51–75 percent, 76–100 percent) from which to select. Table 3 summarizes the responses according to the affiliation of the interviewees. It also presents a weighted average of the levels of attribution of benefits to IFPRI research, both with and without the opinions of IFPRI staff involved in the project.

The staff of the Directorate General of Food who were interviewed were mostly conservative in their attribution of benefits to IFPRI research. FPMU staff, who were part of the process of research and information use, attributed a larger share of benefits to IFPRI's contribution. Donor representatives also placed a larger weight on the benefits of IFPRI research, and a few suggested that IFPRI's role was the key to the abolition of the RR program. Most of the policymakers showed a high level of recognition of the use of IFPRI's research in the decisionmaking process. IFPRI researchers and other collaborators were the most modest in recognizing the contribution of IFPRI's research. To avoid bias, Table 3 states the level of attribution to IFPRI both with and without the opinions of the IFPRI researchers themselves. In the next section, information from Table 3 is used to generate various scenarios for estimating the value of IFPRI's research in the abolition of the Rural Rationing program.

Valuing the Impact

The next consideration is the economics of IFPRI's involvement in the abolition of the RR program. The conceptual framework developed in Section 3 is used here to quantify the impact of the policy decision that led to the abolition of the RR program. Table 4 gives the cost of IFPRI's research in 1989 prices for IFPRI's six-year presence in Bangladesh. Four different cost figures are shown: IFPRI cost; total donor cost (IFPRI cost plus the contribution of the donor to the BDG to sustain the BFPP); full project cost (total donor cost plus the in-kind contributions of the BDG); and full project cost until the abolition of rural rationing in 1992.

Table 5 presents the stream of benefits until the year 2000 from the decision to abolish the RR program. Calculations in Table 5 directly follow the methods presented in Ahmed (1992). The total offtake of foodgrains (rice) by the rural PFDS is taken from various issues of the Food Situation Report of the Ministry of Food. The total use of rice by the RR program is calculated on the assumption that, if the program continued, it would continue to absorb the same proportion of foodgrains as the PFDS.

The total cost of the RR program consists of purchase cost and distribution cost: The purchase cost of rice is taken from the procurement price of rice for various years. The distribution cost is about 22 percent of the purchase cost and includes administrative costs and recurring costs of storage, transportation, handling, and interest. The RR program subsidy is calculated as the gross cost minus the revenue. Ahmed (1992) estimated revenue from the RR program by multiplying the quantities of foodgrain distributed under the program by their *ex-godown* (warehouse) prices. However, since there is no actual price, the rate of subsidy is taken empirically as the average subsidy during the four-year RR program. The table gives the amount of subsidy in Bangladesh taka and in U.S. dollars. Between 1992 and 1997 the cost to the government from the subsidy would have ranged from US\$15 million to US\$30 million per year. To calculate the subsidy beyond 1997, the same amount of rice as used by the PFDS is assumed. The amounts saved (in 1989 prices) as a result of abolishing the RR program are given in the last two columns of Table 5.

Using the cost of the BFPP (given in Table 4), the benefit from removing the RR program subsidy (Table 5), and the various levels of attribution of this benefit to IFPRI research (Table 3), Table 6 shows the benefit-cost ratios of IFPRI research on the Rural Rationing program up to the year 2000. The benefit-cost ratios range from 15 if only 25 percent of the benefits are attributed to IFPRI research, to 60 if all the benefits are attributed to IFPRI's research. Table 6 also presents the internal rate of return (IRR) of the IFPRI research project using full project costs up to the time of the decision. The IRR ranges from 114 percent to 259 percent depending on the level of attribution of benefits to IFPRI research. The net present values (NPV) in 1989, using a 5-percent discount rate, range from US\$27 million to US\$116 million.

Value of Policy Outreach

In the calculations above, all of IFPRI's efforts have been considered as one entity. However, evidence shows that, even with timely research, the policy change would not have occurred without adequate and appropriate outreach activities. In the past, external donors such as USAID and the World Bank had pressured the BDG to reduce food subsidy

expenditures. However, without sufficient outreach efforts, that pressure was not adequate to effect a policy change of this magnitude. The same would have been true for the IFPRI research program if not for a proactive and aggressive outreach effort. Thus, it is worthwhile to look at the value of the outreach effort within IFPRI's contribution.

Several interviewees indicated that without the constant presence of IFPRI researchers advising policymakers on a regular basis, the BDG would have delayed its decision, despite the availability of IFPRI's information on leakages. A report published by the Bangladesh Rural Advancement Committee (BRAC) in 1991 presented information on possible leakages in the RR program but was not acted upon because of poor outreach efforts. Interviewees valued IFPRI's advice and follow-up as much as its research. Given that the government was ready to move on this major food sector reform, the presence of IFPRI researchers and their participation in various consultative meetings and outreach activities helped hasten the decisionmaking process. Many interviewees believed that, in the absence of IFPRI advisers, the decision would have been delayed one to two years. That is, instead of abolishing the RR program in 1992, without the outreach effort of IFPRI and others, it might have taken until 1993 or 1994.

To distinguish between the research benefits and the outreach benefits, Table 6 presents IRRs and NPVs with one- and two-year delays in decisionmaking, in addition to the default "no delay" scenario. Assuming the 25 percent level of attribution of benefits to IFPRI, the additional benefits (US\$5.2 million) of avoiding the one-year delay through outreach efforts more than equal IFPRI costs for the project. Similarly, the benefits for avoiding a two-year delay are US\$7.73 million. The results show that substantial gains can be made by working with policymakers during the decisionmaking process. One might even argue further that without the outreach efforts, there might have been no research benefits at all. Informing policymakers at the end of the research project on various policy alternatives will not obtain the full benefit of research. Going one step further and providing policy assistance enhances the impact of the research endeavor.

Conclusions

As the results of the above analysis show, even with the lowest level of attribution of benefits from the RR program abolition, IFPRI's research and policy communication efforts in this project subcomponent more than paid for the total project costs, with an IRR close to 114 percent. The results are also given for the weighted average levels of attribution of benefits to IFPRI research (Table 6).

These results should be interpreted with caution. The preceding analysis presents a range of magnitudes of the value of research and outreach in influencing the decision to abolish the RR program. Although the abolition of the RR program generated a savings of about US\$13–30 million in real terms, it is not clear whether these savings were fully redirected to programs that reduce poverty and malnutrition. As discussed below, efforts to initiate targeted intervention programs such as Food for Education presumably absorbed a share of this savings.

It is also unclear over how many years these benefits can realistically be counted. The RR program, eight years after abolition, remains controversial. To satisfy the supporters of the RR program, the BDG has revived, under various names, the free distribution of foodgrains to rural households in selected areas. Thus, it is unclear whether the full benefits of the abolition of the RR program are currently being realized, although there were clear gains from this decision in the years immediately following the abolition.

THE CASE OF FOOD FOR EDUCATION

Phase I—The Working Group on Targeted Food Interventions 1992–93

The abolition of the RR program in May 1992 closed off the main public distribution outlet of domestically procured rice. Given the high procurement price of rice at that time, the government had accumulated a foodgrain stock of about 800,000 metric tons. Identifying an outlet for this large foodgrain stock and protecting the true beneficiaries of the RR program from food insecurity became the major challenge for the Government of Bangladesh. Identifying more effective ways of targeting food subsidies for the poor was also important. The Ministry of Food turned to IFPRI to seek answers to these challenges and asked IFPRI to conduct a systematic review of alternative targeting mechanisms for distributing food to the poor. In response, IFPRI assembled a group of technical experts from institutions involved in food and nutrition policy in Bangladesh and organized them into a Working Group on Targeted Food Interventions.

IFPRI, which was recognized for its advisory role in the process of abolishing the RR program, was asked to chair this working group. The working group comprised USAID, FPMU, CARE, the Academy for Planning and Development, the Institute of Nutrition and Food Science, and the Bangladesh Rural Advancement Committee. The representatives of these institutions formed a multidisciplinary group with a wide range of planning and policymaking experience. The BFPP chief of party (Steven Haggblade) served as chairman, and the outposted IFPRI research fellow (Akhter Ahmed) accepted the role of secretary. In addition to these IFPRI staff, three more senior researchers from IFPRI (Raisuddin Ahmed, Shubh Kumar, and Howarth Bouis) participated in the working group meetings and contributed

to the outcome. The working group also consulted many professionals from other institutions and agencies dealing with food security and nutrition issues in Bangladesh. These included technical experts from Helen Keller International, World Food Program, Bangladesh Institute of Development Studies, Nathan Associates, the World Bank, the Bangladesh Bureau of Statistics, UNICEF, Directorate of Relief and Rehabilitation, Save the Children Fund, and Aga Khan Child Health Project.

The working group, interpreting its mandate broadly, looked at the urban poor as well as the rural malnourished. It reviewed a complete spectrum of targeting options, including lessons and experiences from food distribution programs implemented in Bangladesh and in other developing countries. It considered both food-based interventions and interventions involving cash resources.

To identify the most effective ways of targeting short-run relief, the working group considered two broad categories of food-related interventions. The first set included those interventions that would increase household income and in turn enable the acquisition and allocation of more food among household members. The second set of interventions addressed the caring behavior of the households with particular reference to the vulnerable within the household.

The working group developed a framework for evaluating alternative targeting mechanisms. The framework first described the magnitude of the food insecurity problem in Bangladesh, resources available to solve the problem, and the need for targeting resources. It then identified the population groups at risk, geographical regions of vulnerability, seasonal variations in food availability, and the commodities that could be targeted for the poor. In addition to the food needs of the poor, factors related to sanitation and disease prevention were also identified. The working group considered the following program options: reform of rural rationing; expansion of open market sales; and alternative intervention programs such as food for work, vulnerable group development, school feeding, supplementary feeding at health clinics, vitamin A supplementation, complementary inputs to sanitation and public health, food stamps, rural credit, and other programs. Using the research generated by IFPRI, the working group, compared these program alternatives for their costs and benefits, the feasibility of implementing a monitoring system, political acceptability, and opportunity cost of program resources. The framework also suggested that the recommendations should include an optimum mix and scale of efforts; should build on existing programs; and should be implemented on a pilot scale with built in mechanisms for monitoring, evaluation, modification, and expansion.

The working group met and discussed the various options for targeted interventions in 10 sessions during June, July, and August of 1992. One week prior to each session, the coordinator of the session distributed background material to all Working Group members. The background material included discussion questions, discussion formulas, and reference handouts. IFPRI researchers involved in the BFPP served as coordinators for 8 of the 10 discussion sessions, which also used IFPRI research results as background materials. A list of papers and manuscripts employed for this purpose is given in Appendix 3. The chairman of the working group guided the discussion according to a predetermined framework. The working group also invited relevant specialists who participated in the discussions by responding to the technical inquiries of its members. At the end of each session, the secretary of the working group prepared a 5–10 page summary of the key conclusions which was then distributed to all members. Between September 1992 and February 1993, the findings of the discussion sessions were circulated through draft interim reports to a group of professionals involved in food and nutrition planning in Bangladesh. These draft reports generated widespread discussions on various options for targeting.

A draft final report (MS–28 in Appendix 3) of the recommendations of the working group discussions was prepared in February 1993, incorporating the comments and suggestions of representatives of the government agencies, academic institutions, NGOs, and the donor community.

The major conclusions of that report follow:

- < Given that more than half of all households in Bangladesh cannot afford an adequate diet, and given that any long-run solution will require widespread economic growth, targeted safety net programs must be implemented in the short run.
- < Given the limited resources, the BDG and donors must carefully target short-run relief to the people, locations, and regions where they will have the greatest impact.
- < Food distribution through rationing systems is ineffective in targeting and hence in improving food consumption and nutrition.
- < No new monetized ration channels should be introduced. Effectively targeted programs, such as Vulnerable Group Development (VGD), can significantly improve both income and household food consumption.
- < Expansion or replication of the Rural Maintenance Program or VGD offers market-proven means of delivering additional resources to low-income households.

- < Open market sales should be expanded for targeting distressed regions during the lean season by guaranteeing the supply of foodgrains, advertising availability, and opening sales through other outlets beyond the authorized dealers.
- < Cash-for-work programs can reduce program costs considerably and should be tried in distressed rural regions and secondary urban centers.
- < As a pilot activity, the Food for Education (FFE) program should be introduced to increase long-term human resource development by linking income transfers to primary school enrollment of children from low-income households. Both public and private schools should be included.
- < To provide a safety net to the bottom 2 to 3 percent of the population, the government should consider highly targeted supplements to the most vulnerable households through banks or post offices.
- < Substantial nutritional payoffs could be obtained at very low cost by enhancing iron supplementation for pregnant women.
- < Pilot maternal and child health supplementation programs through an integrated approach would help reduce nutritional vulnerability of pregnant and lactating women, infants, and preschool children.

Through the draft final report, the working group presented decisionmakers with a range of options for combating malnutrition. That report, circulated widely in February 1993 to government decisionmakers in various ministries dealing with food security and nutrition issues, caught the attention of policymakers and donor agencies who were looking for innovative approaches to increase the enrollment of female children in the primary schools. For example, the report was endorsed by the 1993 Country Economic Memorandum of the World Bank. On the basis of the report's recommendations, the finance minister asked the Cabinet Committee on Food to consider FFE as a potential intervention. The then-prime minister, Ms. Khalida Zia, who was also seeking new programs to support the poor, recommended this program through the Primary and Mass Education Division (PMED) of her secretariat. The PMED held several rounds of discussion among key decisionmakers and invited some members of the working group to give expert opinions. The BDG launched the FFE program in July 1993 on a pilot basis. The salient features of the FFE program are given in Box 1. The program was primarily designed to link vulnerable group income supplements to primary school enrollment of their children. Other objectives of the program included increasing school attendance and preventing drop-outs. In the long run, the program was intended to help

increase the productivity and income-earning potential of the poorest households in Bangladesh. The FFE program differs from well-known school feeding programs in that the foodgrains were given to the households which enrolled their children and kept them in school. A task force on poverty alleviation hailed the program as an approach to “Empowerment through Education.”

Box 1 — Salient feature of the food for education (FFE) program

- Since its inception in July of 1993, the FFE program has been funded entirely by the Government of Bangladesh. The program is implemented in 460 rural thanas, in one selected union in each of these thanas. The PMED administers and the Directorate of Primary Education (DPE) executes the FFE program. Recently, however, several donors, including USAID and the WFP, have contributed a significant share of food grains through their food aid operations.
- The program covers all government and registered nongovernment primary schools in a selected union. A total of 4,787 primary schools are currently covered. In addition, the government plans to include 400 madrasas (religious schools) in the program (127 madrasas have been included as of April 1994).
- A total of 1.48 million students are currently enrolled in FFE schools, of which 698,000 students (47 percent) are FFE beneficiaries.
- At present, the program distributes about 9,500 metric tons of wheat per month (that is, 114,000 metric tons per year). Each beneficiary household (family) is entitled to receive a maximum of 30 kilograms (kg) of free wheat ration per month for sending its children to a primary school. If a household has only one primary school-age (6–10 years) child and he or she attends school, then that household is entitled to receive 15 kg of wheat per month. To be eligible for 30 kg of wheat, a household is required to send more than one child, including all primary school-age children. The enrolled children must attend 85 percent of total classes in a month to be eligible for wheat entitlement in that month. Thus, the total wheat allotment to a school may vary from month to month depending on the variation in the number of students who meet the attendance requirement in a month.
- The eligible beneficiaries are only poor households who send their children to primary schools. The targeting criteria for selecting the FFE beneficiary households are as follows:
 - Household is landless or near-landless, owning less than 0.50 acre of land.
 - Principal occupation of the household head is day laborer.
 - Household is headed by a female (widowed, separated from husband, divorced, disabled husband).
 - Household wage earners are in low-income professions, such as fishermen, potters, blacksmiths, weavers, and cobblers.A household that meets any of the above selection criteria, unless it is covered under the Vulnerable Group Development program, the Rural Maintenance Program, or any targeted intervention programs, is eligible to receive FFE wheat.
- On the basis of targeting criteria, the School Managing Committee (SMC) and the Compulsory Primary Education Ward Committee jointly prepare a list of beneficiary households in each union covered by the FFE program. The headmaster of the school is member secretary of the SMC. The beneficiary list is registered in a registry book, and the school headmaster is the custodian of the registry book. Each FFE-enlisted household gets a card entitling the household to receive the monthly free wheat ration for sending its children to a specific primary school.
- By the third of each month, the headmaster prepares a list of students (from the beneficiary list) who met the 85 percent attendance requirement in the previous month. Using that list, the SMC calculates the wheat requirement for the school and submits this requirement statement to the Thana Nirbahi (executive) Officer (TNO) for clearance. By the fifth day of each month, the TNO forwards the clearance certificate to the Thana Food Officer (TFO), an official of the MOF. The TFO issues a delivery order (DO) for the school to the officer-in-charge of the MOF's Local Supply Depot (LSD). The authorized person for wheat distribution (a member of the SMC or Union Council or a selected local NGO) receives the wheat from the designated LSD in the presence of the TFO and the Thana Education Officer (TEO).
- Each school receives Tk 300 per month as a contingency allowance to cover the costs of wheat handling and distribution, FFE recordkeeping, and stationery. It receives a maximum cash transport allowance of Tk185 per ton of wheat, plus proceeds from the sales of empty bags that contained the wheat, to cover the wheat transport costs from the LSD to school. The TEO, in consultation with the TNO, determines the amount of cash transport allowance for a particular school, according to the distance of that school from the LSD.
- The wheat is distributed to the guardians of the students belonging to beneficiary households once a month, on a specific Thursday after school hours. On that specific day, the guardians of the students assemble at the school premises and receive their wheat entitlements after signing or putting fingerprints in the registry book. The chairman of the union council and assistant TEO are present during wheat distribution. The person authorized to distribute wheat signs the distribution completion statement, which is countersigned by the respective school headmaster.

Source: Ahmed and Billah 1994.

Although IFPRI was able to mobilize the support of key players involved in food and nutrition programming and policymaking for the sake of developing intervention options (of which FFE is one), not all the players agreed with the FFE program design and implementation procedures. For example, the World Food Program (WFP), a major food aid donor, argued for “Cash for Education” as a more efficient approach to income transfer. In spite of its involvement in the earlier stages of the working group discussions, the WFP did not want to be a part of the final report prepared by the working group.

The working group report made this prediction:

Many times before, Bangladesh has led the development community with the Comilla Project, the Grameen Bank, Bangladesh Rural Advancement Committee, and others. Perhaps yet another great wave of creativity will emerge from among the options proposed here for combating malnutrition.

Interestingly, the FEE program has attained international recognition as an innovative program for providing short-term relief to poverty stricken households as well as an opportunity for long-term growth through human capital investment, particularly for female children.

Mrs. Hillary Rodham Clinton, the First Lady of the United States, visited Bangladesh in 1995 and observed the operations of the FFE program. She hailed the FFE as one of the most innovative programs for educating girls in developing countries.

I think providing incentives for families to keep girls in school through direct food aid, even through direct monetary assistance, is a relatively cheaper way of engaging those families in supporting girls' education than some of the other ways we have tried in the past. So I would urge that the World Bank look at some of the food for education programs. I know there is one that I personally visited in Bangladesh that the prime minister there has supported where I saw families lined up once a week to get commodities which they were only able to receive because they kept their children in school (Hillary Rodham Clinton, 8 November 1995, Remarks for “Beyond Beijing: Acting on Commitments to the World's Women,” The World Bank, Washington, D.C. Also reported in the *Washington Post*, November 9, 1995).

Phase II—Preliminary Assessment of Food For Education 1993–94

On the basis of IFPRI's earlier evaluations of the Public Food Distribution System (PFDS) channels, that agency and the Ministry of Food were invited by the Ministry of Education's PMED to undertake an early assessment of the FFE program. The study was

conducted by IFPRI's outposted research fellow (Akhter Ahmed) and a research assistant (Kaafee Billah). To identify any early adjustments that would permit more effective expansion of the FFE, the study evaluated the performance of the program in (1) increasing school enrollment, (2) promoting school attendance, and (3) reducing the dropout rate. The PMED formed a steering committee to facilitate the design, implementation, and use of results from the FFE assessment study. The committee was chaired by PMED with representatives from IFPRI, MOF, Bangladesh Bureau of Statistics, Bangladesh Institute of Development Studies, and the World Bank as members. The committee reviewed the study proposal for its objectives, testable hypotheses, and sampling framework. It also reviewed the draft survey questionnaires and suggested several modifications. The details of the implementation of the study are given in Ahmed and Billah (1994).

IFPRI researchers conducted the household and school surveys during April and May 1994, about nine months after the initial implementation of the pilot FFE program. The survey team included officials from the Directorate of Primary Education and the MOF. They surveyed 104 FFE and 97 non-FFE schools located in 20 unions distributed across Bangladesh, as well as 236 households.

The early assessment study concluded that the FFE program was highly successful in fulfilling its three short-term objectives, namely increasing school enrollment and attendance and preventing drop-outs. The results of the surveys suggested that school enrollment increased substantially after the introduction of the FFE. The program effectively targeted low-income households. It had the lowest leakage and incurred the least cost for transferring income to a targeted household of all the food-based targeted programs in Bangladesh.

The preliminary results from that assessment were presented to the Steering Committee and circulated to selected institutions for comments and suggestions. PMED officials used the results of the study as a basis for expanding the FFE to other unions. The results of the assessment were widely quoted in the program documents that were prepared for sensitizing government officials. Box 2 presents the results of the IFPRI

Box 2 — Use of IFPRI study results for FFE promotion

<p>An early evaluation of the program was made by the International Food Policy Research Institute (IFPRI) in April 1994. According to that evaluation, the FFE program has been highly successful in fulfilling its three objectives. The findings presented in these tables show marked improvement in enrollment and attendance at FFE schools. The dropout rate has fallen significantly in schools under this program.</p> <p>The program effectively targets low-income families. The findings suggest that the income benefit offered in terms of food is not sufficient for the family heads to send their children to school. The evaluation further suggests that among all food-based targeted programs, the FFE program transfers income to a targeted household at least cost. Table iv compares the cost effectiveness of targeted income transfers among various food intervention programs in Bangladesh.</p> <p>IFPRI also surveyed the "leakages" of the program in terms of (1) nonfulfillment of beneficiary eligibility criteria and (2) receipt of smaller quantity of food than the official entitlement. The findings suggest that 12 percent of the FFE beneficiary families do not meet any of the eligibility criteria. However, the average per capita monthly income among those households is Tk414.00 (US\$10.00). As these noneligible beneficiaries are quite poor, the FFE food still reaches the needy, and in this sense, the leakage is zero.</p> <p>IFPRI also examined the second component of leakage, namely the difference between the official entitlement and the actual receipt of food by the beneficiaries. The findings suggest that the estimated quantity of wheat shortfall from the official entitlement is 6.5 percent per metric ton of wheat allotted to the program. IFPRI found that the FFE program had the lowest leakage of all targeted food intervention programs. That success can be traced to the empowerment of its recipients. The key feature of the FFE program that contributes to this empowerment is the practice of convening the beneficiaries on a set day each month to collect their food ration. This system establishes a sense of group solidarity among the recipients. They know each other, they know their entitlement, and if necessary, they can take collective action against any pilferage.</p>	<p>1. Change in enrollment rate before and after the FFE program</p> <table border="1"> <thead> <tr> <th>Period</th> <th>FFE schools (percent)</th> <th>Non-FFE schools</th> </tr> </thead> <tbody> <tr> <td>Before (April 1992 to April 1993)</td> <td>7.7</td> <td>8.6</td> </tr> <tr> <td>After (May 1993 to April 1994)</td> <td>28.1</td> <td>6.6</td> </tr> </tbody> </table> <p>2. Attendance rates before and after the FFE program</p> <table border="1"> <thead> <tr> <th>Period</th> <th>FFE schools (percent)</th> <th>Non-FFE schools</th> </tr> </thead> <tbody> <tr> <td>Before (April 1992)</td> <td>61.3</td> <td>60.8</td> </tr> <tr> <td>Before (April 1993)</td> <td>63.0</td> <td>61.8</td> </tr> <tr> <td>After (April 1994)</td> <td>77.6</td> <td>61.0</td> </tr> </tbody> </table> <p>3. Yearly dropout rates before and after FFE program</p> <table border="1"> <thead> <tr> <th>Period</th> <th>FFE schools (percent)</th> <th>Non-FFE schools</th> </tr> </thead> <tbody> <tr> <td>Before (April 1992 to April 1993)</td> <td>18.5</td> <td>17.1</td> </tr> <tr> <td>After (May 1993 to April 1994)</td> <td>10.9</td> <td>15.2</td> </tr> </tbody> </table> <p>4. Cost of transferring Tk1.00 of income benefit</p> <table border="1"> <thead> <tr> <th>Program</th> <th>Cost (Taka)</th> </tr> </thead> <tbody> <tr> <td>Rural Rationing (former)</td> <td>6.55</td> </tr> <tr> <td>Vulnerable Group Development (VGD)</td> <td>1.68</td> </tr> <tr> <td>Rural Maintenance Programme (RMP)</td> <td>1.32</td> </tr> <tr> <td>Food for Work (CARE)</td> <td>2.81</td> </tr> <tr> <td>Food for Work (WFP)</td> <td>2.06</td> </tr> <tr> <td>Food for Education</td> <td>1.59</td> </tr> </tbody> </table>	Period	FFE schools (percent)	Non-FFE schools	Before (April 1992 to April 1993)	7.7	8.6	After (May 1993 to April 1994)	28.1	6.6	Period	FFE schools (percent)	Non-FFE schools	Before (April 1992)	61.3	60.8	Before (April 1993)	63.0	61.8	After (April 1994)	77.6	61.0	Period	FFE schools (percent)	Non-FFE schools	Before (April 1992 to April 1993)	18.5	17.1	After (May 1993 to April 1994)	10.9	15.2	Program	Cost (Taka)	Rural Rationing (former)	6.55	Vulnerable Group Development (VGD)	1.68	Rural Maintenance Programme (RMP)	1.32	Food for Work (CARE)	2.81	Food for Work (WFP)	2.06	Food for Education	1.59
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Source: PMED 1996.

study as quoted in one of the major promotional booklets about the FFE published in English and Bangla languages. The results are summarized below.

- < The FFE program effectively targets low-income households.
- < The FFE program transfers income to a targeted household at least cost compared with other food-based interventions. For example, it is four times cheaper to transfer income through FFE than the RR program.
- < School enrollment and attendance improved markedly in FFE schools, and dropout rates fell significantly.
- < Twelve percent of FFE beneficiary families did not meet any of the eligibility criteria; however, given the low per capita monthly income (US\$10.00) among those households, the food from FFE still can still be considered as reaching needy households.
- < The FFE program empowers its beneficiaries through its transparent eligibility criteria and establishes a sense of group solidarity. This helps induce collective action against leakages and pilferage in the delivery system.

Subsequent to this study,

- the FFE program was expanded to 1,000 unions in 1994–95 from 460 unions in 1993–94.
- the number of beneficiaries increased from 550,000 families in 1993–94 to 1.4 million families in 1994–95,
- the number of primary school students participating in the program increased from 700,000 to 1.6 million,
- the number of primary schools benefiting from the program increased from 4,914 to 12,182,
- the total volume of wheat distributed increased from 79,661 metric tons to 177,498 metric tons,
- the total cost of the program increased from Tk7,197 lakhs to Tk19,345 lakhs, and
- the program continued to extend its coverage in 1996.

Table 7 shows the expansion and coverage of the FFE program before and after IFPRI's evaluation. The PMED officials interviewed regard IFPRI's assessment of the FFE program in 1994 as the key to expanding the program. The steering committee formed by PMED also acted as an independent evaluator of the methods and results of the study before recommending expansion. Several internal memos were written to the cabinet using the results of the IFPRI assessment to obtain the resources needed for expansion. According to one senior PMED official, "The results of the study by Ahmed and Billah were taken seriously since the government trusted the independent and objective nature of the IFPRI's research." Several

senior PMED officials were familiar with the role IFPRI played in the abolition of the RR system. In fact, in June 1998 when this interview was conducted, the joint secretary of PMED informally requested that IFPRI conduct another evaluation of the FFE program in 1999.

The Impact Benefit of the FFE Program

From the interviews conducted with the PMED and donor agencies regarding IFPRI's role in designing the FFE program, it was clear that IFPRI's research contributed significantly to the expansion of the program from its pilot scale to a full-scale program. Combining the activities of the working group with IFPRI's research and subsequent assessment of the pilot FFE project, it could be concluded that IFPRI's research was instrumental in the process of initiating and implementing this new innovative program.

The next consideration is the impact of the program. Two broad categories are considered: the short-term effects of income transfer on poverty reduction, household food security, and cost savings to the government through improved food delivery mechanisms; and the long-term effect of human resource development through increased enrollment and attendance of children in schools. The following traces the impact benefits of IFPRI's research in terms of reduced poverty, increased food consumption among beneficiary households, and budgetary savings for the government.

In 1997–1998, a total of 2.18 million households benefited from the FFE program. The BDG spent Tk3,613 million (US\$90.33 million) on foodgrains that were distributed to the FFE households. The average income transfer per household from the FFE program was about Tk1,655.00 (US\$41.40) per year. With an average household size of 5.83, that translates into a per capita monthly income transfer of Tk23.65 (US\$0.59). Given the per capita monthly expenditure of Tk197.00 (US\$4.93) per beneficiary household before the FFE program (Ahmed 1999), the contribution of the FFE income transfer represents about 11 percent of total per capita monthly expenditure. In this illustration, the calorie expenditure elasticity of households in the 25th expenditure percentile is used to calculate the gains from participating in the FFE. Interviews with officials of the PMED indicate that the targeting criteria for selecting beneficiary households roughly corresponds to the 25th expenditure percentile. This increase in per capita monthly expenditure is not enough to raise the average poor household out of poverty; however, the additional income does reduce the severity of poverty by making the poor households less poor.

The impact of food delivered through the FFE program can also be assessed in terms of reduced food insecurity. With a calorie expenditure elasticity of 0.82 for the households in the

25th percentile (Pitt 1983) and a base per capita calorie intake per day of 1,600 kilocalories (kcal)—well below the 2,200 kcal minimum requirement used in the analysis of food security (Ahmed 1999)—the income transfer from the FFE program increases the per capita energy consumption of the households by an average of 141 kcal (158 kcal for men and 125 kcal for women). This rough calculation indicates, on average, about a 9-percent increase in the per capita consumption of calories due to the FFE program. This increase in consumption, while inadequate to address the food insecurity of the ultrapoor, does contribute to decreased energy deficit.

The third and perhaps most important benefit to the Government of Bangladesh is the cost saving achieved through the improved efficiency of food delivery. In 1997–1998, a total of US\$90.33 million worth of foodgrains was distributed through the FFE program. Ahmed and Billah (1994) compared the cost of transferring income through various food-based interventions. Compared with RR, FFE transferred income four times more effectively (see Table iv in Box 2). In 1997–1998 alone that amounts to US\$550 million in savings attributable to reduced program costs.

Although interviewees (PMED officials, MOF policymakers, and donor representatives) recognized the well-targeted nature of the FFE program, they expressed dissatisfaction in its coverage of the poor. That concern is justified. The current population of Bangladesh is about 120 million, with 18 percent of living in urban areas. While various measures of poverty exist for Bangladesh, the latest available information indicates a rural poverty rate of about 52.9 percent (Ravillion and Sen 1996). That translates to about 12 million poor households in rural areas. Thus, the FFE program covers only 18 percent of the rural poor, assuming it is targeted well.

Some interviewees also criticized the program for its use of school resources—such as the time and energy of teachers—for distributing of food rather than imparting knowledge to the school children. Other officials interviewed considered the short-term relief provided by the FFE program as an input in the generation of long-term human capital, which cannot be measured precisely. Thus, they believed IFPRI's efforts to design and evaluate the FFE program should also be viewed as a contribution to the long-term development of human capital in Bangladesh.

6. OTHER TANGIBLE IMPACTS OF FOOD POLICY RESEARCH

The case studies on Rural Rationing and Food for Education presented in Section 5 were just two examples chosen from a number of policy contributions made by the BFPP. Several other research and outreach activities were directly beneficial in guiding the policy reforms of the food sector in Bangladesh. This section presents some of the tangible impacts of such activities.

Increased Private-Sector Participation in Food Markets

One of the major process impacts of IFPRI's presence in Bangladesh over the past two decades, and of the BFPP project in particular, has been the building of policymakers' confidence in the role of markets in solving food problems. This did not happen overnight. The groundwork for moving toward a market-oriented approach to managing the food economy of Bangladesh was laid by IFPRI staff and others in the 1970s and 1980s. One important factor was a study by Raisuddin Ahmed (1981) on agricultural pricing policy in Bangladesh. He argued against raising the price of rice to provide production incentives for farmers because of the very low price supply response, and also because of the possibly negative impact on farmers, the majority of whom were net consumers. Raisuddin Ahmed was also partly responsible for designing the FPMU within the Ministry of Food to assist the ministry in setting domestic target prices for foodgrains and to study other agricultural price policy matters. In the 1980s, IFPRI also collaborated with important research institutions in Bangladesh on various topics, including impact of the Green Revolution, rural finance, food for work, fertilizer distribution, and rural infrastructure (Ahmed and Hossain 1990, Hossain 1988a, and Hossain 1988b).

These activities provided the momentum for IFPRI and its collaborators to generate dialogue and debate among those involved in the food sector in Bangladesh regarding increased private sector participation in food markets. IFPRI's collaboration with local researchers also strengthened the credibility of both in Bangladesh. This foundation, along with the major research studies of the BFPP, helped generate the confidence of the BDG in the role of the private sector in the food economy of Bangladesh. With this new confidence in the markets, the BDG, through various policy reforms in the 1990s, removed restrictions on private trader marketing activities. Bangladesh is currently reaping the benefits of increased private trader participation in food markets. For example, although major news media predicted starvation of 20 million people in Bangladesh during the 1998 floods, large rice imports from India by the private sector saved millions of lives.

Optimal Foodgrain Stocks

Estimating the magnitude of optimal stocks for operating the public food distribution system was one of the major research tasks under the BFPP. Undertaken in the second year of the project, research by Goletti, Ahmed, and Chowdhury (1991) used an optimization model to estimate the stock required for a wide range of policy options. Their work using time series data on government-held stocks analyzed various policy options, including price stabilization in a specified band, use of open market operations and imports, use of basic stocks for meeting ration requirements, and flexible stabilization without monetized rationing. The results of the analysis indicated that the optimal stocks depended highly on the policy goals set by the government. Given the extremely complex nature of the model, the value of the study was limited to illustrating various objectives that needed to be considered in arriving at the optimal stock of foodgrains. Comments received from the interviewees on the use of this model suggested that the Ministry of Food could not replicate the model on a regular basis. Given that other groups such as the World Bank and the Food and Agriculture Organization of the United Nations (FAO) also suggested varying figures of optimal stocks, IFPRI's figures were treated with "caution" among MOF decisionmakers. However, the study contributed to the reduction of stocks maintained by the MOF from the level of 1 million metric tons in the early 1990s to 600,000 metric tons (in 1992). According to one senior MOF official, the study results also kept open the policy debate on the need for and the right amount of stocks.

Procurement Pricing

Over the project life, the Ministry of Food periodically requested input from IFPRI in formulating procurement prices for major foodgrains. In the first half of 1991, IFPRI researchers carried out price calculations for the 1991–92 crop seasons. In September 1991, IFPRI trained FPMU and MOF staff on the methodologies for calculating the procurement price of rice, and in July 1992 trained an additional group. That training was followed by a special briefing for the Ministry of Food and the Food Planning and Monitoring Committee (FPMC). The capacity and confidence gained by the MOF staff through training helped them adopt a price recommended by IFPRI; for the first time in history that price was lower than the prices of previous years. According to the BFPP project reports, this decision resulted in a savings of US\$12 million to the BDG (BFPP 1994).

Using the procedures for calculating procurement prices, a working paper analyzing the purposes of procurement prices was prepared (Ahmed, Chowdhury, and Ahmed 1993). An earlier version of that paper identified the weaknesses and losses due to the practice, called "millgate contracting," of procuring of rice directly from rice mills at fixed prices. It recommended an alternative system of procurement through "open tender." The BDG adopted the procurement through open tendering on an experimental basis in 1991/92 and abolished

millgate contracting in 1992. The MOF asked for IFPRI's help in implementing procurement through open tender. To prepare tendering documents, which detailed the design, procedures, and implementation framework of rice procurement through open tenders, IFPRI hired a consultant (Mahfoozur Rahman) who was a private trader and a businessman experienced in the tendering procedures (see MS-12, MS-20, MS-21, MS-25, MS-38, PB-1, and PB-2 in Appendix 3). These documents provided operational guidelines for floating open tenders by the government. BFPP documents indicate a savings of US\$25 million to the government resulting from these procedures (BFPP 1994).

It is important to note that the activities described here represent a deviation from IFPRI's usual approach to research project implementation. First, in addition to providing procurement prices as required by the project's terms of reference, IFPRI identified the capacity gap for such activities within the Ministry of Food and filled that gap with practical and timely training of the officials involved in procurement and pricing activities. This training helped the government accept the procurement prices in subsequent years. Second, in addition to recommending a new mode of procurement, IFPRI provided the government with operational support for implementing the recommendation. Clearly, increasing the impact of research may require going beyond conventional means of implementing research studies and submitting the results through project completion reports.

A Multimarket Model

As a part of the research component of the BFPP, IFPRI helped the Ministry of Food develop an operational tool for analyzing the effect of procurement, sale, and commercial import of food on the foodgrain economy of Bangladesh. That study was subcontracted to Cornell University, and Paul Dorosh (the current chief of party) was assigned the task of developing a multimarket model. The model was used to analyze the impact of production stocks, procurement, increasing imports, declining food aid, and world prices of foodgrains on domestic prices, producer incentives, and food consumption (Dorosh 1994). Subsequent training courses used several parts of the model.

The Fall of Statutory Rationing

Statutory Rationing was the longest standing subsidy program in Bangladesh until its abolition in 1992. Beginning after the East Bengal Famine of 1943, this program operated in five major urban areas and distributed rice, wheat, and small amounts of cooking oil to the beneficiaries, who were mostly civil servants. A collaborative study on the operational

performance of Statutory Rationing by IFPRI with FPMU in 1992 showed that the beneficiaries of the program had above-average income; and only 5 percent of the total commodities were actually distributed, the rest were sold by dealers in the open market (Haggblade, Rahman, and Rashid 1993). Although much of the information contained in the report was not new, the study confirmed the government's earlier belief. The findings were presented to policymakers at a seminar in June 1992 and helped the policymakers recommend the abolition of Statutory Rationing. Once again, IFPRI did not initiate the dialogue on abolishing Statutory Rationing but provided timely research information which could be used in the decisionmaking process along with other sources. The decision led to a large staff reduction at the Directorate General of Food. The role of IFPRI in the abolition of Statutory Rationing was succinctly put by an interviewee, "The Statutory Rationing was already dying. IFPRI helped in its formal burial."

Agricultural Diversification

In addition to research that was of direct and immediate relevance to the Ministry of Food, the BFPP also provided input for developing long-term strategies for agricultural development in Bangladesh. One study that continues to influence planning and policymaking in the agriculture sector is the research on agricultural diversification. The study, which was subcontracted to Dhaka University and the Bangladesh Institute of Development Studies (Mahmud, Rahman, and Zohir 1994), outlined the issues and policies likely to influence agricultural strategies once self-sufficiency in rice was achieved. It also analyzed the source of growth in crop production, assessed agricultural supply response behavior, and evaluated the structure of farmer incentives in light of trade and exchange rate policies.

The study pointed out opportunities for improving the productivity of noncereal crops in drylands through better farm practices and varietal improvement and called for increased investment in research and extension dealing with those crops. Although the study was not directly relevant to the food sector reform process, it generated much debate and dialogue among those involved in agricultural development. It also led to several other studies which are currently useful to the BDG in its attempt to expand its options for agricultural export earnings through cultivation of nontraditional crops. The World Bank (1995) study on agricultural growth with diversification extensively used the BFPP study and its results. The interest and debate this study generated resulted in a set of research that used the BFPP methodology for analyzing various options for crop diversification (Zohir 1993). The study results were also used by authors of other influential publications (Abdulla and Shahabuddin 1997, Abdulla 1995).

Nutritional Impact of Targeted Programs

Ahmed (1993) analyzed patterns of food consumption and nutrition in rural Bangladesh using household-level data collected during 1991–92. That study provided insights into targeting options for food and nutrition interventions, and the results indicated that poor rural households were highly responsive to income changes in adjusting their consumption patterns. It found that children aged 12 to 35 months were particularly susceptible to malnutrition and might be singled out as targets for supplemental feeding programs. Given the high degree of regional and seasonal variation in food consumption and nutritional status, the study argued for targeting interventions to distressed areas and lean seasons as a means of increasing cost-effectiveness of food and nutrition programs. The basic tenets of the study are still referred to by donors (WFP and USAID) in their project and programming activities.

Policy Advisory Services

One of the major subcomponents of the BFPP was to provide research-based advice to the BDG on current food policy issues. Although IFPRI does not provide stand-alone policy advice to developing countries, this subcomponent of the BFPP provided opportunities for the research team to interact with senior-level policymakers. The policy changes described in this and earlier sections resulted, in part, from these interactions. In addition, the research team handled requests for policy advice on a regular basis. The time involved in responding to these requests ranged from one day to several weeks. This interaction also aided in the timely sharing of research-based information for decisionmaking. IFPRI also extended its policy advice to selected donor representatives and others involved in food policy. Such interactions were useful in sharing IFPRI's research with the donor community, thereby enabling better communication and negotiations between them and government policymakers. Although it involves some risk of objectivity loss, this subcomponent of the BFPP illustrates the value of going beyond research outputs to identify opportunities for sharing information with policymakers.

Policy Communication

The BFPP encompassed several types of policy communications. Working papers contained detailed policy recommendations and formed a major resource of policy research information for policymakers and the donor community. To share the information on a timely basis, policy briefs were prepared on topical issues. The policy briefs formed the basis for policy advice. In addition, the research team prepared more than 60 other manuscripts and circulated them among researchers, analysts, and decisionmakers. Publication coincided with a

series of seminars for all parties in Dhaka interested in food and nutrition policy issues. The policy seminars were useful in sharing research results and generating open discussions. The research team also used several training sessions to communicate the methods of policy analysis and research. Special policy briefs prepared at the request of selected policymakers also effectively enabled policy changes.

This section has identified major research and outreach activities that helped in the process of policy reforms of the food sector in Bangladesh. Several smaller reports produced as part of the BFPP are not detailed here. A complete list of all BFPP documents is given in Appendix 3. Another major contribution of IFPRI through the BFPP is the capacity-strengthening of policy researchers and analysts in Bangladesh. The next section explores the impact of these activities.

7. IMPACT OF CAPACITY STRENGTHENING FOR POLICY ANALYSIS

Lack of adequate institutional and human capacity to conduct policy research and analysis severely constrains the ability of developing-country governments and private sector institutions to make well-grounded choices on policies and programs in the food and agricultural sectors. Bangladesh is no exception. This section assesses the challenge Bangladesh faced in generating the capacity to design, formulate, and implement food sector reforms. It presents the efforts to upgrade such capacity through the BFPP, along with the tangible products, impacts, and lessons learned. As one senior policy researcher involved in the BFPP put it, “Perhaps the most important contribution of IFPRI through the BFPP is the capacity created for discussing policy issues, analyzing them, and influencing policymaking systems of the government.”

The Challenge

A major constraint for the Ministry of Food was its limited capacity to conduct policy analysis that would help government decisionmakers make meaningful policy choices. To address this problem, the BFPP scope of work included strengthening institutional and human capacity as one of its major activities. The Food Planning and Monitoring Unit (FPMU) of the Ministry of Food was the focus of this activity. Indeed, from the beginning the final objective for the capacity-strengthening component of the BFPP was to have a well-functioning FPMU with sustainable capacity. However, soon after the project began, the inadequacy of that goal became clear. Thus, selected government institutions, such as the Department of Marketing in the Ministry of Agriculture, and other collaborating research institutions, such as the Bangladesh Institute of Development Studies and Dhaka University, were also targeted for capacity-strengthening. The level of participants and the contents of training varied widely depending on the skills needed to accomplish various policy-related activities. For example, on one end of the spectrum, enumerators were trained in data collection; on the other end, local policy researchers from collaborating institutions were trained to prepare policy communications using their policy research results. Table 8 presents the full range of capacity-strengthening activities conducted for various groups of participants. The capacity-strengthening activities involved considerable time and resources over the life of the BFPP (Farrar forthcoming).

The Process

The BFPP identified three major approaches to improving the capacity for policy analysis (see Table 2). The first approach used locally organized, short-term training sessions. The sessions covered data generation techniques, such as rapid rural appraisal, food security and nutrition surveys, and surveys of agricultural markets; basic food policy analysis of supply and

demand issues; computer-based techniques; and specific but advanced methods of analysis, such as analysis of market integration and procurement pricing methods. An example of the contents of the locally organized courses is given in Table 8. The sessions were cost-effective and helped strengthen the local capacity for providing similar future training to others with the collaborators as resource persons. The sessions also helped identify the capacity gaps of the potential trainers. To fill these gaps, these persons were trained in advanced food and agricultural policy analysis. The training not only contributed to preparing future local trainers but also directly helped strengthen the policy analysis capacity within the Ministry of Food and the Planning Cell of the BDG.

To generate demand for policy analysis and advice within the decisionmaking systems, the second approach identified selected users of policy information for overseas study tours. This approach helped participants understand the structure, conduct, and performance of food markets in other Southeast Asian countries.

The third approach to capacity-strengthening, and perhaps the most beneficial in generating policy research results, was the collaborative one-on-one training of project staff and selected collaborating researchers. Through this approach, participants were guided in designing and conducting research studies and preparing research information for dissemination to policy decisionmakers.

Although the three approaches individually and jointly generated considerable policy analysis capacity within Bangladesh, data on how this increased capacity helped generate policy information and to what extent the training was successful and sustainable are not readily available. Nonetheless, the next section indirectly traces the effect of this capacity strengthening effort in Bangladesh through various appraisal methods.

The Product

Table 2 presents a summary of the number of participants who benefited through the three approaches. A total of 237 participants were trained through local training courses covering a wide range of subjects; 15 participants attended overseas training courses in food policy analysis; and 65 collaborating researchers were trained through major research studies. In addition to training the staff of the FPMU and the MOF, the BFPP courses involved participants from the Ministry of Agriculture, Ministry of Finance, the Planning Cell, and the Bangladesh Bureau of Statistics. A summary of participation from these organizations is given in Table 9.

The Impact

Assessing the effect of various approaches to training and capacity-strengthening helps determine their relative influence in creating and sustaining capacity for policy analysis. In assessing the capacity-strengthening activities of the BFPP, two different methods were used. First, a formal survey of the participants of the capacity-strengthening activities was conducted using two questionnaires: an individual questionnaire and an institutional questionnaire. The individual questionnaire elicited information on current job status, job description, priority policy and planning activities, time allocation to various policy analyses, major daily tasks related to policy analysis, current qualifications, specialized training attended (including BFPP training), past positions held and years of service in those positions, years of experience in policy analysis, capacity needed for accomplishing current tasks, and constraints on acquiring the needed capacity. The institutional questionnaire obtained information on the role of the interviewee's institution in food sector reforms, for example, the type of institution, its mandate, major activities of the interviewee's department, number of staff employed in each of those activities, nature of policy analysis tasks undertaken by the institution, the institution's capacity needs in the next 5 to 10 years, special policy analysis skills needed to meet current tasks, current gaps in accomplishing those tasks, and capacity constraints anticipated in accomplishing those tasks. The questionnaires were administered in January 1998 as part of an exercise in assessing the training and capacity-strengthening needs for food policy analysis in Bangladesh (Babu and Reidhead 1999). Thirty-four participants were asked to fill in both the individual and institutional questionnaires. About 20 respondents took part in one or more BFPP training activities during 1991–94.

Second, several informants, who had responded to the first survey, were interviewed with a set of follow-up questions (Appendix 6). These interviews were conducted between June 1998 and January 1999.

Those interviewed and their supervisors see local training of policy analysts as the most cost-effective method of developing capacity within a country. That approach uses limited training resources locally to reach more people in a short period of time. The outposted research fellows and visiting research fellows were instrumental in designing and offering several policy analysis training courses. Some of the salient features of the local training program follow:

- Thirteen training courses were offered in nine subjects; a total of 237 participants were trained, with several attending more than one course.
- About 16 percent of participants were women.

- Participants attended from the Ministry of Food, the Planning Cell of the Planning Commission, the Ministry of Finance, the Ministry of Agriculture, and the Bureau of Statistics.
- The computer literacy courses offered to 64 MOF staff (including 4 from the FPMU) enhanced the use of computers for regular job activities, increasing the general effectiveness of the Ministry of Food.
- As part of data collection activities for policy research and for providing policy advice, the BFPP hired about 30 enumerators. The enumerators helped design and implement field data collection. The project also hired a small number of data processing clerks and computer operators and trained them in data entry and data management. They were also taught data processing and data cleaning skills. Although these participants were not BDG employees, the impact of this training has been long-lasting and sustainable, increasing the country's ability to generate field-level data for social science research (see Box 3).

As part of the collaborative research components, the BFPP hired 15 local research assistants and analysts. These researchers were taught specific policy research and analytical skills, which has helped them find employment opportunities in various international organizations, consulting firms, NGOs, and other similar projects. Three of the research assistants are currently pursuing PhDs in economics and agricultural economics at U.S. universities. The personal reflections of one such research assistant on this aspect of capacity-strengthening are given in Box 4.

In addition to the officials from the FPMU and the MOF, the BFPP also trained officials from the Agro-Economic Research Department and the Directorate of Agricultural Marketing (DAM) from the Ministry of Agriculture. Specifically, these courses included basic food policy analysis, rapid rural appraisal, computer-based price analysis, and analysis of cost of production. Twenty-nine participants attended these training courses over the five-year project period. This contribution from the BFPP helped strengthen the collaboration between FPMU and DAM staff, because it led to an exchange of price and market data collected by these organizations. A major outcome of this capacity-strengthening exercise was the Price Monitoring Unit of the DAM, which continues to produce periodic reports containing prices and costs of production on various commodities. At the end of the project, the BFPP donated two computers to the DAM; the computers are currently used by the Ministry of Agriculture in managing price and market databases (Shanaz Begum, personal communication).

To meet the emergency information needs in the Ministry of Food, the BFPP in collaboration with the FPMU organized a "food situation room" (FSR). However, because of inadequate management, the FSR is not fully operational. Some of the activities for which the FSR was originally designed have been undertaken by FPMU staff. Interviews with the staff revealed inadequate financial support from the government as the main reason for the FSR's

Box 3 — The case for strengthening local capacity to generate policy research

At the end of any development project, finding jobs for the project staff is a challenge for the project manager. With encouragement from the IFPRI project managers, a selected group of data managers and enumerators hired for and trained by the BFPP started an independent consulting firm called “Data Analysis and Technical Assistance” to help researchers collect, compile, and process field surveys. Registered under the name DATA (p) Ltd., this firm continues to operate at capacity and to help several international and local research teams collect socioeconomic and nutrition and food intake data. Interviews with DATA clients revealed that the trained consultants helped clients save 20–30 percent of the cost of data collection because of the time and resources saved in training new enumerators and the high quality of DATA’s work. The consulting firm, which continues to help in IFPRI research studies in Bangladesh, currently employs 4 program managers, 12 data entry operators, 8 data processors, and 20 field enumerators.

Over the period 1990–95, the DATA field survey and research team carried out a number of studies with IFPRI, which are highlighted as follows:

- Foodgrain market survey (1990–91)
- Survey of the operational performance of the Rural Rationing program (1991)
- Household and intrahousehold food consumption and nutrition survey (1991–92)
- IFPRI-International Wheat and Maize Improvement Center (CIMMYT) wheat survey (1993)
- An early assessment of the Food for Education program (1994)
- Household survey for the evaluation of cash versus food-based targeted intervention programs (1994)
- Household, group, and community-level surveys of targeted credit for food security of the rural poor (1994–95)

Box 4 — Reflections of a research assistant

Back in 1993 IFPRI had a project office in Dhaka. It was called the Bangladesh Field Office. Within the office were two divisions: production and consumption. In the April 1993 I joined the production division, and after working there for three months, I moved to the consumption division as a research assistant to Akhter Ahmed [research fellow, IFPRI]. I worked with Akhter Ahmed for the next one-and-a-half years until the end of the project, and then taught Economics at the University of Dhaka for about a year before leaving for the United States to start my Ph.D. program in Agricultural Economics at Cornell University. I am now close to completing my Ph.D.

IFPRI's involvement and contribution to my development in these years as an economist has been substantial and is still continuing. Some names can easily signify why. Over the years I have worked with Akhter Ahmed, Nuimuddin Chowdhury, Sajjad Zohir, Quazi Shahabuddin, Steven Haggblade, Manfred Zeller, Monhar Sharma, Paul Dorosh, David Sahn, Howarth Bouis, and most recently, Carlo del Ninno. All of these renowned researchers had been or still are affiliated with IFPRI. I learned a lot from them, sometimes as their student, sometimes as their assistant, and sometimes as their colleague. Our work always focused on the food policy issues in developing countries, as the name of IFPRI suggests. With these researchers, I worked on various food policy topics in Bangladesh and elsewhere. The work included evaluating targeted food and nutrition intervention programs, estimating production input-coefficients, estimating demand parameters, designing research, designing surveys, conducting graphical statistical and econometric analyses, writing and presenting reports, and interacting with government agencies with policy suggestions.

The one-and-a-half years I spent in the Bangladesh Field Office was an influential and fruitful time. I worked with a group of energetic young men and women who were enumerating and processing the data collected through several household-level surveys. With Akhter Ahmed as our leader, we prepared several policy and program evaluations that have been cited as the most influential ones in moving the food policy of Bangladesh onto the right track. Our report on the Food for Education program in Bangladesh exposed it to the rest of the world, and the success story of the program documented in that report motivated several countries and international development agencies to replicate it in other parts of the developing world.

My personal benefit from the project was equally substantial. As I learned how to conduct policy research and program evaluation from the project, I also became motivated to direct my focus on rural development, poverty, food, agriculture, and nutrition. The experience helped me get a teaching position in Economics at the University of Dhaka immediately after the project ended. Later, when I was considering which programs to apply to for my higher studies, the choice was clear. As my knowledge and expertise developed in the area of food security and agriculture while working in the project office, I made up my mind to learn more in those areas and focus my PhD research on such topics. Therefore, the decision to join the Agricultural Economics program at Cornell University was simple; since the program trained many of the researchers who worked at IFPRI and helped in its creation. Again, the experience I gathered from the project was instrumental in my being accepted at Cornell and getting a research assistant position at the Cornell Food and Nutrition Policy Program (CFNPP) during my first year there.

Currently I am working on establishing the link between crop technology and micronutrient consumption at the household level in Bangladesh. In particular, I am looking at how yield-enhancement of rice and wheat may affect mineral and vitamin availability at the household level. This research has great importance in advancing own-production-based sustainable nutritional intervention at the household level. I am in debt to the BFPP and IFPRI in several ways for their help in identifying, addressing, and implementing this work. Personal help from IFPRI researchers has facilitated my advancement. Akhter Ahmed's letter of reference helped me to gain admission to Cornell. A brief note of appraisal from Steven Haggblade to Paul Dorosh was sufficient to ease my acceptance at CFNPP. Later, when I was looking for detailed household-level data on Bangladesh to test the hypothesis of my Ph.D. research, a request to Howarth Bouis was sufficient to get all the help I required from him and others at IFPRI. That connection to a chance to work and interact with everyone in the IFPRI headquarters last summer. During the summer, Suresh Babu asked me to tell him how the project helped to advance my career, and recently he came up with the idea that I write about it. So here is how the project laid the path of my personal development. That path still continues....

Source: Kaafee Billah, May 1999 (former Research Assistant, BFPP).

demise. Also, because of high staff turnover, the FPMU failed to sustain the role of the FSR in meeting the information needs of the Ministry of Food.

FPMU staff regularly produce Food Situation Reports. The reports, published bi-monthly, contain information on food availability at the national level, production outlooks for various foodgrains, food aid, commercial imports, international and domestic foodgrain prices, and public food operations. The production of these reports is another indication of the quality of the capacity generated in the FPMU to monitor the food situation. However, this capacity continues to be fragile.

To a limited extent, the overseas training of selected individuals has contributed to the capacity for conducting locally organized training courses. For example, a key policy analyst in the FPMU attended overseas training in the United States in June 1991 to study computer-assisted analysis of food and agricultural policy, then organized a similar course in Dhaka in July 1992 for the staff of the FPMU and Ministry of Agriculture. However, the contribution to locally organized training sessions of other such trainees is not clear. Two of the three participants who were sent on a study tour to Pakistan, Thailand, and the Philippines to improve their skills in food sector management through studying the food sectors of those countries gained considerable experience from the study tour.

Table 10 presents a summary of the responses of participants regarding the BFPP training activities in 1991–94. A good indicator of the effect of training is the current use of the skills learned. Of all the skills analyzed, data collection and processing skills are used most regularly by the participants. About 83 percent of the respondents reported that they currently use their basic policy analysis skills. About 60 percent of the participants currently use their basic computer skills and techniques of rapid rural appraisal. Skills related to specific policy analysis methods and computer-based policy analysis are the least used (40 percent). All the participants have used their skills in the post-training period; none reported never using the skills developed through the BFPP. A general lesson can be learned from this exercise: participants stand a better chance of using their newly acquired skills if they continue to function in the same type of occupation. For example, since there is little mobility in data collection and data processing jobs, those participants fully use their skills. Participants trained in specific policy analysis skills may not use those skills after they move on to jobs involving administrative responsibilities. Therefore, training needs should be identified for various groups, and training activities should target the differing roles participants play in their jobs.

One of the many ways to measure the effectiveness of capacity-strengthening activities is to identify the current training needs of former participants and match them with their previous training. Table 11 presents a summary of the current need for policy analysis skills as

expressed by those who were trained previously by the BFPP. Several points are worth noting. First, of the 7 participants trained in rapid rural appraisal techniques, which primarily involved data collection for policy analysis, 3 identified food policy analysis as their primary current training need and another 3 indicated project monitoring and evaluation as their training need. Second, 4 of the 10 participants originally trained in food policy analysis expressed a desire to be trained in the same area. This was an unexpected finding. Third, in line with their current job description, 6 participants suggested a need for courses on policy administration and policy communication. Lastly, follow-up interviews with many respondents revealed that, while the BFPP training courses enabled them to perform their jobs better, frequent turnovers and changes in their positions within the government system have kept them from fully using the skills imparted by the courses.

Although no formal assessment of capacity-strengthening needs took place before the BFPP began, with the exception of a few courses, most training activities aimed to increase the capacity of the staff within the specific context of the research studies undertaken. Thus, the capacity generated was directly useful for understanding the research methods and results and for promoting those results in the decisionmaking process. However, it is less clear whether the skills gained through the training courses were subsequently used to replicate IFPRI's research methods in conducting policy analysis within the Ministry of Food.

In the BFPP, the outreach and policy communication activities were designed as an integral part of the process. That was partly due to the research agenda, which directly addressed the information needs of policymakers. A unique aspect of the BFPP worth emulating in other research projects was the use of outreach and communication strategies to deliver the information to decisionmakers. Further, the optimal combination of seminars, training, and special briefings fit the policy issues and decisionmakers involved.

8. IMPLICATIONS AND LESSONS LEARNED

IFPRI has been involved in collaborative research with Bangladesh for more than two decades. This long-term involvement was instrumental in establishing the credibility of IFPRI's research among the donors, decisionmakers, and stakeholders in Bangladesh. This study specifically addresses the Bangladesh Food Policy Project (BFPP), implemented by IFPRI during 1988–94. From the results presented in this report, a number of implications and lessons can be derived for IFPRI's future research.

Factors Contributing to the Success of the BFPP

Several elements contributed to the success of the BFPP in affecting policy reform through its research products.

Ownership of Policy Reforms

The Government of Bangladesh (BDG) assumed full ownership of the policy reform process and was responsible for the policy changes implemented during the project period. IFPRI provided information based on its research as an input to the process of policy decisionmaking. The BDG effectively used that information to reduce the inefficiencies associated with the public food distribution system in Bangladesh and make many other policy changes as detailed in previous sections.

Commitment to Market Orientation

The government's commitment to market-oriented development paved the way for extensive reforms in the food sector that were undertaken during the project period. Although external actors such as USAID had pushed for reform for quite some time, the reforms were implemented without any conditionality from the IMF or the World Bank.

Previous Research by IFPRI and Its Credibility

Research by IFPRI staff in Bangladesh prior to 1988 (in response to a government request to formulate a pricing mechanism for the sale of public foodgrains) set the stage for the BFPP project. Further, its past research collaboration with local researchers enabled IFPRI to identify a number of collaborators who played a central role in initiating open debates and dialogue on policy reforms. This generated momentum for policy change and made subsequent reforms in the food sector much easier to adopt.

Even before the BFPP, IFPRI—through its long-term involvement in analyzing food sector issues in Bangladesh and through the capacity-strengthening efforts of several researchers and policy analysts—had gained credibility as an objective group of researchers. For example, the BFPP project leader is a Bangladesh national who was involved in the analysis of policy issues facing the food and agricultural sectors of Bangladesh for more than 25 years before the BFPP began. The outposted researcher who investigated the operational performance of rural rationing was also a Bangladeshi and had been involved in food policy issues in Bangladesh for a considerable amount of time. Their research contribution to the Bangladeshi food sector has been well-recognized. That recognition and respect from those involved in the food policy debate in Bangladesh also helped IFPRI assume intellectual leadership in designing alternative food and nutrition programs after the abolition of the RR program. That leadership in turn helped establish high-level policy contacts within the MOF as well as with donors. Further, the involvement of the IFPRI project team with the same set of local researchers and policymakers over a long period helped build trust between them and the policy decisionmakers.

The Choice of IFPRI Personnel

One of the many factors that contributed to the BFPP's success was the choice of personnel, particularly in the latter half of the project. Although research studies were initiated in 1989 and 1990, a lack of adequate leadership from the project managers, slowed the progress during this period. Interviews with government officials showed that they had a high-level of respect for the staff who came on board during the latter part of the project, namely Steven Haggblade and Akhter Ahmed. According to those officials, these researchers had professional competence, gained respect among the local professionals and policymakers, and had insights into the political economy of the Bangladesh food sector. As a team, the two researchers built confidence among the policymakers and worked well with the pace of the reforms, giving due credit to their collaborators and government counterparts. Their personal involvement and initiative at various stages of the research and policymaking process was crucial to translating IFPRI's research findings into the appropriate policies.

The Research Teams

The key outposted researchers did not act alone. They were supported by a team of collaborative researchers from both IFPRI and Bangladesh. These researchers were competent professionals and operation experts who delivered high quality work on time. In addition, joining with local researchers from the Bangladesh Institute of Development Studies (BIDS) and from Dhaka University proved extremely beneficial in both the sharing of and increasing the use of research results in the decisionmaking process.

The Demand for Research-based Information

Policymakers made continuous requests for problem-oriented analysis. The summaries of BFPP outputs listed in Appendices 3 and 4 indicate the extent of the demand for policy advice based on data analysis. The two outposted research fellows in particular were frequently asked for their input and advice in the day-to-day activities of information generation and use in the Ministry of Food. However, the value of this demand depended on, among other things, decisionmakers' ability to ask for pertinent information and use it appropriately in the decisionmaking process.

The Research Process

The research process and the use of information in policy decisionmaking in Bangladesh exhibited certain characteristics. Collectively, these characteristics explain the successful outcome of the research efforts. First, the research issues identified by the BFPP, the government, and donor representatives were highly relevant to policy reform. Frequent consultations with policymakers, donor representatives, and local researchers helped fine-tune the research agenda throughout the project. Second, the results generated by policy research provided consistent and quantified information. Although other studies had shown the poor performance of, and the associated losses in implementing, rural rationing, the BFPP research provided information about the extent of leakage that decisionmakers could readily use. Third, most of the research results conformed to policymakers' expectations. Fourth, the research information generated was based on quantitative and qualitative data. The research studies of the BFPP relied on primary data collected from rural markets and households, and hence, provided fresh data-based evidence to support the arguments for policy reforms. Fifth, the research results challenged existing institutional arrangements. The investigations of millgate pricing and rural rationing addressed the improvements and savings that could be achieved by eliminating the middlemen in the procurement and distribution of foodgrains. Finally, the research, as noted by several interviewees, was objective and of good quality. The researchers' expertise and their long-term relationships with those involved in the Bangladesh food sector established the objective nature of IFPRI research and helped generate trust among decisionmakers in the use of research information. Furthermore, because policymakers and local researchers participated in the entire process—sharing research results at various forums and providing feedback on research results—the quality and ownership of results both increased.

The Reporting Process

During the project's implementation, a balance was needed between keeping analysis, advice, and research results confidential and finding opportunities for their wider use in the policy debate. In addition, IFPRI requires that all research results be made public. In every case analyzed here, preliminary results were kept confidential as they were politically sensitive. Reports were presented at confidential meetings before they were published as project reports. The final project reports included comments and suggestions from the participants of those internal meetings, but the final published research results were not altered or compromised in response to political pressure. That system generated trust between the researchers, who were also policy advisers, and the senior policymakers, enhancing the use of the research results in the policymaking process.

Policy Outreach and Communication

The outreach component of the BFPP was as effective as the research component, for many of same reasons. The frequent interaction of IFPRI researchers with policymakers, local researchers, and others involved in food and nutrition issues in Bangladesh through seminars, consultative meetings, policy briefs, press releases, and published reports were fundamental in creating the environment needed for improved use of research results. The case studies documented here show that, on several occasions, policy changes were a direct result of policymakers receiving ideas at seminars and policy briefings.

Flexible Research Agenda

The flexible nature of the research agenda, which allowed IFPRI researchers to tackle emerging policy problems through their policy advice, played an important role in increasing the impact of the research results. Although the research program was well-organized and conducted on a timely basis, when the IFPRI researchers were drawn into solving operational issues, the built-in flexibility of the project allowed them to meet such demands. Those occasions proved useful in turn for fine-tuning the research agenda and providing feedback to the research studies. In the process of analyzing various foodgrain procurement procedures, IFPRI researchers were asked to develop procedural documents for floating tenders. To do this work correctly, researchers also needed to analyze the implications of the alternatives for price formation and market structure. This additional analysis was necessary to the research question but might have been perceived as outside the original problem. Thus, being flexible in a dynamic policy environment and keeping the focus on a predetermined research program proved complementary.

Strengthening Capacity for Policy Analysis

The capacity-strengthening activities of the BFPP trained several researchers, research analysts, and research assistants who are currently employed by various international organizations, consulting firms, NGOs, and other similar projects. Collaborative research under the BFPP with key researchers from research institutions was effective in creating a team of policy researchers and analysts who continue to conduct high-quality research studies and provide advice for the BDG. However, identifying key individuals and training them through overseas courses as trainers of future training courses helped in faster duplication of the training efforts.

Local training as part of collaborative research studies was also effective in imparting research and data collection skills. One of the most sustainable benefits of capacity-strengthening under the BFPP came from local training of this kind: a group of data managers trained by the BFPP started their own consulting firm which specializes in field data collection and processing. This capacity contribution was hailed by several of those interviewed as the most significant and long-lasting effect of the BFPP. Training courses conducted on analytical methods as part of the project's outreach strategy had a major impact on the adoption and use of research results and policy recommendations.

While stand-alone policy analysis courses impart overall skills, policy research projects such as the BFPP gain more by teaching those skills that policy analysts will use repeatedly and those that will enhance the use of the research results. Overseas study tours gave participants general exposure to various foodgrain marketing systems but were of limited use in teaching specific procedures or skills. There is room for future improvement. Because of high staff turnover and a poor capacity base for conducting policy research to start with, training of policy analysts within the Ministry of Food itself has not been sustainable. In addition, the "food situation room" in the Ministry of Food, which IFPRI helped develop to track domestic and world prices, does not function effectively. This is partly due to lack of leadership in organizing and managing institutions designed for specific purposes within larger organizations with larger mandates.

Institutional Infrastructure

Proper institutional structures in the Ministry of Food made it possible to convert IFPRI research results into meaningful policies. The steering committee formed to oversee the BFPP activities was useful in linking the on-going information needs of the government to the research and outreach activities of the project. The existence of the Cabinet Committee on Food helped

in generating the demand for information on proposed policy changes and in putting the information to use in policymaking. Most important, the presence of the FPMU as an operational body to address the policy and planning needs of the Ministry of Food was crucial in providing the appropriate link between the MOF and BFPP. These three institutions also increased the interaction of the research team with the government, thereby helping priorities and strengthen the capacity of government policy analysts.

Lessons from Policy Research and Outreach

Several lessons emerge from this assessment for future design and implementation of policy research and outreach projects in developing countries.

- Long-term research collaboration with a particular country has a high future pay-off, particularly when research results and outreach activities demonstrate tangible benefits to the country on a regular basis.
- Policy research that is high-quality, independent, and objective in nature increases credibility and results in better acceptance and use.
- The choice of research staff and their professional competence, knowledge of local conditions, and ability to work well with national counterparts greatly increases the benefits from research and outreach activities.
- The higher the relevance of research studies to the current information needs of policymakers the greater the impact. Consulting with the client before initiating the research project helps identify high-priority issues, the challenges facing reform, and information gaps, and increases policymakers' ownership of research results.
- Institutional mechanisms built into the design of the project that help link the research group with policymakers enhance the impact of policy research. In addition, the way in which institutions are organized to meet policy challenges affects their ability to respond. Without such mechanisms in place, any amount of good research may not bear fruit.
- Close collaboration between international researchers and their local counterparts and policymaking institutions is fundamental. Researchers must use not only their research capacity but also their leadership and motivational skills. These skills are also important to generating individual and group momentum to solve policy problems on a regular basis.
- Conducting well-organized, high-quality research studies is necessary but not sufficient to effect policy change. Being available and flexible to address emerging policy issues in a dynamic environment will increase the use of research information.
- Policy outreach activities should be tailored to suit the issue at hand, the time frame for decisionmaking, and the background of those involved in policymaking. A predetermined model—such as research, publication, seminars, and workshops—does not work all the time. In addition, other specialized activities such as special briefing sessions, testimony to

parliamentary committees, and press briefings that present information on a timely and opportune basis are essential.

Lessons from Capacity-Strengthening

Several specific lessons can be derived from assessing the impact of the BFPP's capacity-strengthening activities.

- Locally organized training was cost-effective in creating capacity for understanding food sector policy issues and for generating field information on specific policy problems.
- Supplementing the local training with overseas training of selected policy analysts helped create a core group of trainers for the locally organized courses.
- The future use of the policy analysis capacity generated through the short-term courses will depend on the leadership and commitment of participants and their institutions.
- Continuing demand for the skills developed through short-term training helps sustain the policy analysis capacity.
- Conducting joint research studies in collaboration with local research institutions helped generate local research capacity. Because of the high quality of research output from this collaboration, demand for local researchers has increased, further improving the quality of work.
- Meeting the needs of various groups by organizing courses ranging from rapid rural appraisal to specialized policy courses helped generate capacity in the various spheres of food policy.
- Constant interaction with the collaborating researchers over the project period helped transfer skills in organizing and implementing field research projects. It also exposed local researchers to food policy issues, methods, and results from other countries.
- Capacity-strengthening activities designed as part of the communication strategy were most effective in transferring specific policy analysis skills as well as increasing the use of research results for policymaking.

The implications and lessons presented here illustrate the role of research in the policymaking process. IFPRI's research input was only one of several important inputs in the complex process of reforming the Bangladesh food sector. Policymakers' use of research from the BFPP demonstrated that high-quality research addressing high-priority issues and presented in an understandable format will have increased use in decisionmaking. The personal initiatives of researchers and policymakers in the policy reform process quickened the pace of converting research results into policy decisions. Some of the research results have continued relevance and use that go beyond the current direct benefits for policy formulation and decisionmaking. The readiness of the new government to take ownership of the policy reforms process and

adopt a market-oriented approach to solving food policy problems, combined with the insistence of external organizations on lower government expenditures on food subsidies, provided a conducive environment for better use of research by the decisionmakers.

9. CONCLUSIONS

This paper assesses the impact of IFPRI's food policy research conducted between 1988 and 1994 in collaboration with the Bangladesh Ministry of Food. By explicitly studying the historical information on the institutions and interviewing more than 60 policymakers, collaborators, and donor representatives regarding the policy process underlying the food sector reforms, the effect of policy research on decisionmaking was examined. Using case studies of the Rural Rationing program and the Food for Education program, the impact of decisions made during the policy reform process on cost savings and food security in Bangladesh was estimated. The impact of capacity-strengthening activities was also assessed through a series of interviews with participants of the earlier training programs. Implications and lessons were derived for future implementation of policy research projects in developing countries.

The following are the major conclusions of this study:

- High-quality policy research addressing the central issues facing policymakers can have high returns in terms of cost savings and food security.
- Constant collaboration with policymakers in meeting their policy information needs through tailor-made research and policy communication strategies helps rapidly convert research results into policies.
- Strengthening of in-country policy analysts and researchers is vital to sustaining policy generating mechanisms. Capacity-strengthening as a part of on-going research has a longer-lasting impact than general short-term training sessions.
- Proper institutional structures are necessary for absorbing and adopting policy information and for strengthening capacity.
- External guidance, government ownership, and commitment to policy change are important preconditions for creating an environment open to policy reform.

Given the rapid evolution of food markets in Bangladesh, several food policy issues still remain: (1) an appropriate role for the BDG in the food economy that does not discourage development of private marketers must still be identified; (2) policy changes implemented in the past decade have not been fully institutionalized, and poverty and malnutrition remain pervasive; (3) short-term relief through targeted food and nutrition programs continues to show varying levels of ineffectiveness in targeting the poor; (4) local capacity to monitor evolving food markets continues to be fragile; and (5) in spite of the successful implementation of the Food for Education program, the BDG's goal of integrating the benefits of short-run food and nutrition programs with long-run poverty alleviation remains elusive. To address some of these issues, the BDG, with USAID funding, invited IFPRI in 1997 to implement the second phase of the BFPP, called the Food Management and Research Support Project.

Again, it should be noted that in addition to the research input from IFPRI, several other actors played an important role in enabling the reform of the Bangladesh food sector. It must also be noted that not all of those interviewed for this study were totally positive about the contributions of IFPRI research to the policy reforms. Table 12 summarizes the responses regarding IFPRI's contributions to food policy reform in Bangladesh for various issues related to the BFPP. About 64 percent of the respondents were positive about IFPRI's contributions, while about 20 percent were indifferent and about 16 percent were negative. Understandably, some of the officials of the Directorate General of Food blamed IFPRI for the removal of the Rural Rationing program. Others criticized IFPRI for the FFE program, citing its limited short-term impact and its unclear long-term benefits. Yet others believed that while the government recognized the need for policy reforms in the food sector, donors articulated the elements of such reform, and this in turn set the agenda for IFPRI's research. IFPRI's research was useful, one interviewee said, but failed to create a system for monitoring food security by establishing an early or timely warning system.

All these comments are valid. However, as stated by a senior official of the BDG, "The role of IFPRI research and its use in guiding the policymaking process in the Ministry of Food is evident from the decision of the ministry and USAID in 1997 to reinstate IFPRI for implementing a project similar to the BFPP for the next three years."

Table 2—Training activities, participants, and output through BFPP

	Type of training activity	Participating institutions	Number of participants
Local training	Rapid rural appraisal	FPMU, DGF, DAE, DAM, BBS, IFPRI, Planning Cell, Planning Commission, others	58
	Basic computer literacy	MOF, FPMU	64
	Microcomputer-based data processing	MOF, FPMU, Planning Commission, DAM	22
	Microcomputer-based policy analysis		29
	Demand and supply	FPMU, MOF	10
	Analysis of production cost	FPMU, MOF, DGF, AER (MOA)	12
	Basic food policy analysis	FPMU, MOF, MOFin, PC, IFPRI	25
	Procurement pricing methods	FPMU, MOF, DGF	10
	Market integration and efficiency	FPMU, DGF	7
Subtotal			237
Overseas training	Computer-assisted food and agricultural analysis	FPMU, MOF, Planning Cell	4
	Agricultural policy analysis seminar	Planning Cell	1
	Analysis of international wheat markets	FPMU	1
	Analysis of market integration	FPMU	1
	Price monitoring and analysis	FPMU, DGF	4
	Macroeconomic adjustment and food/agricultural policy interactions	Planning Cell	1

	Type of training activity	Participating institutions	Number of participants
	Study tours to Pakistan, Thailand, and Philippines for policy improvement	FPMU, MOF, DGF	3
	Subtotal		15
Training through collaborative research	Rapid rural appraisal of wheat marketing	FPMU, DGF, DAE, DAM, BBS, IFPRI	14
	Study of statutory rationing	IFPRI, FPMU	4
	Rapid appraisal of crop production	FPMU, DGF, BBS, DAE, IFPRI	9
	Rapid appraisal of cost of production	FPMU, MOF, BBS, DAE, IFPRI	18
	Study of market integration	FPMU, DAM, IFPRI	5
	Review of price data quality	FPMU, DAM, IFPRI	3
	Analysis of private stocks	FPMU, MOF, IFPRI	6
	Assessment of food for education program	PMED, MOF, IFPRI	3
	Analysis of cash versus food-for-work program	PMED, MOF, IFPRI	3
	Subtotal		65

Note: Acronyms are defined as follows: AER, Agricultural Economics Research; BBS, Bangladesh Bureau of Statistics; DAE, Department of Agricultural Economics; DAM, Directorate of Agricultural Marketing; DGF, Directorate General of Food; FPMU, Food Planning and Monitoring Committee; MOA, Ministry of Agriculture; MOF, Ministry of Food; MOFin, Ministry of Finance; PMED, Primary and Mass Education Division.

Table 3 — Summary of responses regarding the share of benefits due to IFPRI research

Category of informants	Share of benefits				Total number interviewed	Weighted average ^a
	0–25	26–50	51–75	76–100		
	(percent)					
DG food staff	75.00	25.00	0.00	0.00	8	... ^b
FPMU staff	42.80	28.60	28.60	0.00	7	...
Donor representatives	0.00	50.00	30.00	20.00	10	...
Policy decisionmakers	14.30	28.60	42.80	14.30	14	...
IFPRI research staff	71.40	28.60	0.00	0.00	7	...
Others	50.00	16.60	16.60	16.60	12	...
Total with IFPRI staff	42.25	29.56	19.67	8.84	58	36.87
Total without IFPRI staff	36.42	29.76	23.6	10.18	51	39.37

^a Assumes midpoint of benefit share range.

^b Not applicable.

Table 4 — Cost of BFPP activities, 1989–94 (US\$ 1989 prices)

Year	IFPRI costs	Donor costs	Full project costs	Full project cost through 1992
1989	302,992	338,706	352,563	352,563
1990	771,339	804,386	817,208	817,208
1991	865,709	896,537	908,948	908,948
1992	717,771	747,330	758,799	758,799
1993	702,524	732,083	743,552	0
1994	631,073	659,610	670,682	0
Total cost	3,991,408	4,178,652	4,251,302	2,837,068

Table 5 — Benefits from decision to abolish the Rural Rationing program

Year	Total PFDS ^a	RR offtake ^b	Procurement price ^c	Purchase cost ^d	Distribution cost ^e	Total cost of RR Program ^f	Subsidy ^g	Subsidy ^h
	(thousand tons)		(Tk/kg)		(million Taka)		(million Tk, 1989 prices)	(million US\$)
1992	476	189.00	12.9	2438.10	536.38	2974.48	984.76	25.28
1993	350	139.00	9.1	1264.90	278.23	1543.13	510.88	12.91
1994	329	130.80	12.4	1621.90	356.82	1969.72	629.56	15.66
1995	593	236.89	13.7	3254.38	715.96	3970.38	1199.60	29.78
1996	739	293.97	11.4	3351.22	737.27	4088.49	1202.85	28.78
1997	555	220.77	9.5	2097.29	461.40	2558.69	712.58	16.24
1998	555	230.77	9.5	2097.29	461.40	2558.69	692.05	14.76
1999	555	230.77	9.5	2097.29	461.40	2558.69	670.34	13.82
2000	555	230.77	9.5	2097.29	461.40	2558.69	649.95	13.40

^a Total offtake of foodgrains (rice), Public Food Distribution System, in thousand tons.

^b Total offtake of foodgrains (rice), Rural Rationing program, calculated as a constant proportion (39.8 percent) of PFDS.

^c Procurement price of rice, Taka per kilogram.

^d Purchase cost of foodgrains (rice) in million Taka.

^e Distribution (transport cost) in million Taka calculated as 22 percent of purchase cost.

^f Total cost of distribution of foodgrain through Rural Rationing program in million Taka.

^g Subsidy calculated as 40.4 percent (average subsidy between 1988 and 1992) of total cost of Rural Rationing program in million Taka (in 1989 prices) (Ahmed 1992).

^h Subsidy in million US\$.

Table 6 — Benefits and costs to Bangladesh of IFPRI research on Rural Rationing program, 1992–2000

	Level of attribution of benefits to IFPRI research				
	25%	36.9% ^a	39.4% ^b	50%	100%
Benefit-cost ratio					
No delay	15.04	22.17	23.68	30.07	60.14
1-year delay	12.81	18.89	20.17	25.62	57.23
2-year delay	11.67	17.21	18.38	23.34	46.68
Internal rate of return (percent)					
No delay	114.00	147.00	153.00	177.00	259.00
1-year delay	69.00	85.00	88.00	98.00	135.00
2-year delay	57.00	70.00	72.00	80.00	107.00
Net present values at full cost of BFPP^c (million US\$)					
No delay	27.09	41.14	44.09	56.67	115.83
1-year delay	21.89	33.47	35.91	46.27	95.03
2-year delay	19.36	29.74	31.92	41.21	84.91

^a Weighted average of attribution levels with IFPRI staff opinion.

^b Weighted average of attribution levels without IFPRI staff opinion.

^c In 1989, using 5 percent discount rate.

Table 7 — Coverage of FFE before and after IFPRI's evaluation

Year	Coverage (unions)	Participating schools	Families benefited	Participating students	Volume of wheat distributed	Total expenditure in lakh Taka
			(thousands)		(thousand tons)	
Before						
1993–94	460	4,914	549.9	706	79.7	7,197
After						
1994–95	1,000	12,182	1,416.9	1,628	177.5	19,346
1995–96	1,250	15,182	1,729.5	1,988	345.5	36,000

Source: PMED 1996.

Table 8—Training approaches identified under BFPP

Participants	Contents of training courses					
	Data collection methods and questionnaire design	Data processing and analysis on computers	Food policy analysis methods	Computer-based food policy analysis	Policy research methods	External training/study tours
Enumerators hired for data collection and supervision	Collecting food, agricultural, and nutrition data; supervising data collection					
Data managers hired to process data on micro-computers		Entering, manipulating, and managing data for future use		Managing data to aid in statistical analysis		
Government policy analysts in the project	Designing data collection procedures and questionnaires on basis of information needs (e.g., Rapid Rural Appraisal)	Managing data for statistical analysis	Overview of food and nutrition policy issues, pricing, stock policy, and targeted interventions	Statistical analysis, cross-tabulation, hypothesis testing		Training in macroeconomics of food policy, computer-based training; overview of policy analysis of the food sector
Government training of trainers, policy analysts, and project staff	Designing data collection procedures and questionnaires on basis of on needs (e.g., Rapid Rural Appraisal)		Overview of food and nutrition policy issues, pricing, stock policy, and targeted interventions	Basic food policy analysis, demand and supply analysis, and analysis of policy responses		
Policy researchers, collaborators	Designing data collection procedures and questionnaires on basis of information needs (e.g., Rapid Rural Appraisal)		Overview of food and nutrition policy issues, pricing, stock policy, and targeted interventions	Basic food policy analysis, demand and supply analysis, and analysis of policy responses	Methods of food and agricultural policy research through research collaboration policy communication	Training in macroeconomics of food policy; computer-based training; overview of policy analysis of food sector. Study of food markets in Southeast Asia
Information users and decisionmakers involved in food policy reform						Study of food markets in Southeast Asia

Table 9—Participation of institutions in the BFPP training

	Total number	MOF	FPMU	DGF	MOA	BBS	PMED	PL	Others
Local training	237	31	23	5	15	1	0	3	22
Overseas training	15	13	53	13	0	0	0	20	0
Collaborative research	65	8	23	6	14	9	3	0	37

Note: MOF, Ministry of Food; FPMU, Food Planning and Monitoring Unit; DGF, Directorate General of Food; MOA, Ministry of Agriculture; BBS, Bangladesh Bureau of Statistics; PMED, Primary and Mass Education Division; PL, Planning Cell of the Planning Commission

Table 10—Current use of skills from BFPP training activities

Type of skill learned	Total number of responses	Currently use regularly	Use occasionally	Not currently used (stopped using)	Never used
		(percent)			
Data collection	5	100.0	0.00	0.00	0
Data processing	8	100.0	0.00	0.00	0
Rapid rural appraisal	10	60.0	20.00	20.00	0
Basic computer	16	62.5	25.00	13.50	0
Basic policy analysis	6	83.0	17.00	0.00	0
Specific policy analysis	12	42.0	16.00	42.00	0
Computer-based policy analysis	7	43.0	28.50	28.50	0
TOTAL	64	65.5	17.25	17.25	0

Source: Interviews with training participants.

Table 11— Current need for policy analysis training among previously trained participants

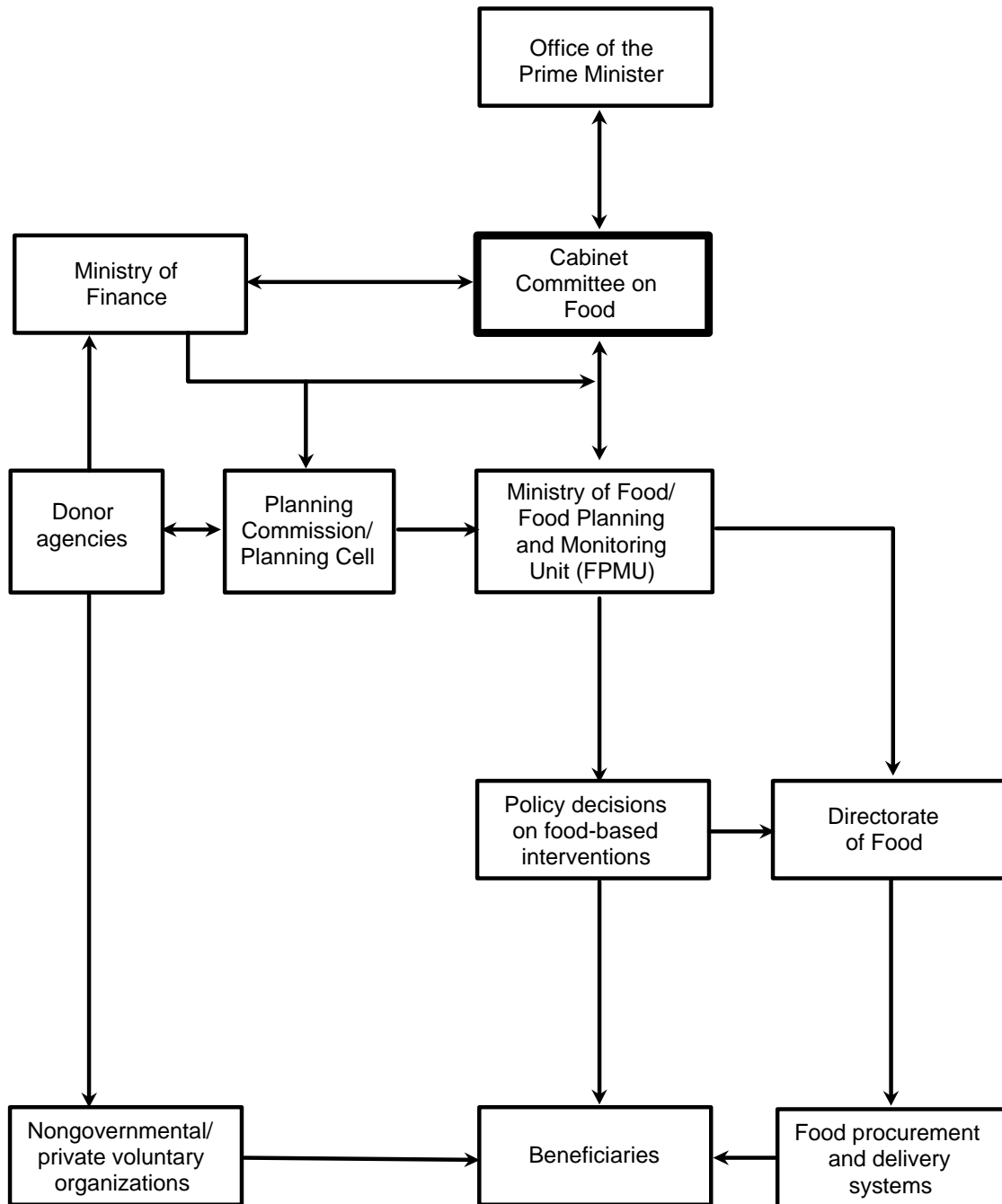
BFPP training courses	Current need for training						
	BFPP participants	Food policy analysis training	Nutrition planning	Policy administration	Pricing of inputs and outputs	Project monitoring and evaluation	Better policy communication
Rapid rural appraisal technique	7	3	0	0	1	3	0
Food policy analysis							
Basic food policy courses	4	2	0	2	0	0	0
Computer-based food policy analysis	6	2	0	1	1	0	2
Specific policy analysis methods	3	0	1	0	0	1	1
Total	20	7	1	3	2	4	3

Source: 1998 interviews with participants.

Table 12—Summary of interview responses

Issues related to BFPP	Number of responses		
	Positive	Indifferent	Negative
1. Choice and appropriateness of research studies	34	19	8
2. Choice and use of policy research methods	49	9	3
3. Choice and use of research dissemination methods	41	17	3
4. Choice of capacity strengthening methods	33	5	23
5. Impact of policy research on policy changes	38	10	13
Total (percent)	63.93%	19.67%	16.39%

Figure 1—Organizational link of institutions involved in the Bangladesh food sector



Appendix 1

PERSONS INTERVIEWED

Directorate General of Food, Bangladesh

Aruna Biswas, Senior Assistant Secretary, Ministry of Food
Saleha Akhter, District Controller of Food, Directorate General of Food
Md. Anisuzzaman, Deputy Director, Directorate General of Food
Santosh Kumar Pandit, Deputy Director, Directorate General of Food
Syed Amdadul Hug, Deputy Director, Directorate General of Food
Rehana Akhter, Senior Training Instructor, Directorate General of Food
Barkat Ali, Controller, Directorate General of Food
Bikash Choudhury, Senior Assistant Secretary, Ministry of Food
Md. Sirajul Islam, Additional Secretary, Directorate General of Food
Tauhid U.Ahmed, District Controller of Food, Directorate General of Food
Md. Badrul Hasan, District Controller of Food, Directorate General of Food

Food Policy Monitoring Unit (FPMU), Ministry of Food

Rahul Amin, Deputy Chief
Nasir Farid, Assistant Chief
Md. Giashuddin, former head
Abdul Aziz, Programme Manager, Food Research and Management Support Program (FRMSP)
Hajiqul Islam, Research Officer
Roushan Nabi, Research Officer
Abdullah Al Mamun, Assistant Chief, FRMSP

Ministry of Agriculture

Shahnaz Begum, Assistant Chief, Department of Agricultural Marketing

The World Bank

Isabel Tsakok, Principal Economist
Richard Adams, Senior Economist
Wahida Haq, Economist

USAID

Ibrahim Khalil, Activity Coordinator, FRMSP
A.S.M. Jahangir, (former) Activity Coordinator, BFPP

Appendix 1—continued

World Food Programme (WFP)

Akhter Hussain, Programme Officer
Bishow Parajuli, Adviser

International Fertilizer Development Center (IFDC), Dhaka

Ershad-ul Huq, (former) Secretary, Ministry of Food

IFPRI Research Staff

Akhter U. Ahmed, Research Fellow, Chief of Party, Egypt
Raisuddin Ahmed, Director, Markets and Structural Studies Division (MSSD)
Steven Haggblade, former Chief of Party, BFPP
Francesco Goletti, Research Fellow, MSSD
Paul Dorosh, Research Fellow, Chief of Party, FRMSP
Carlo del Ninno, Research Fellow, FRMSP
Howarth Bouis, Research Fellow, Food Consumption and Nutrition Division (FCND)
Kelly Hallman, Post-Doctoral Fellow, FCND
Benedicte de la Briere, Post-Doctoral Fellow, FCND
Mahfoozur Rahman, Program Manager
Curt Farrar, (former) Director of Finance and Administration
Nurul Islam, Senior Policy Adviser, Emeritus
Shahidur Rashid, Post-Doctoral Fellow, MSSD

Primary and Mass Education Division (PMED)

Mohammed Delwar Hossain, Deputy Chief (Planning)
A. K. M. Anisur Rahman, Joint Secretary (Development)
A. H. M. Sadiqul Hug, Joint Secretary (Education)

Planning Commission

Pranab Chakraborty, Deputy Chief, Food Cell
Anwar Hossain, Deputy Chief
Abu Bakar Siddique, Deputy Chief
A. K. M. Zainal Abedin, Director, Rural Development
Mohammad Hossain Basunia, Joint Chief
Md. Shaninur Kabir, Assistant Chief, Planning Cell

Appendix 1—continued

Bangladesh Institute of Development Studies

Abu Abdullah, Director General
Sajjad Zohir, Research Fellow
Omar Haider Chowdhury, Research Fellow
K. A. S. Murshid, Research Fellow

Dhaka University

Wahiduddin Mahmud

Others

Kaafee Billah, PhD student, Cornell University
Wahid Quabili, Director, Data Analysis and Technical Assistance (DATA), Dhaka
Zahidul Hassan Zihad, Director, DATA, Dhaka
Md. Zubair, Managing Director, DATA, Dhaka
A. N. M. Esuf, (former) Secretary of Food, Dhaka
Amin Khandekar, Data Management Specialist, FRMSP, Dhaka
Mahabub Hossain, Director, Socioeconomics Division, International Rice Research
Institute (IRRI), Manila, Philippines

Appendix 2

QUESTIONS TO POLICYMAKERS, COLLABORATORS, AND DONOR REPRESENTATIVES ON USE OF RESEARCH DATA IN DECISIONMAKING

- Who needed the information on the leakages in rural rationing?
- Why was IFPRI chosen to conduct the special studies on rural rationing?
- Was there a demand for such information to start with?
- Who was responsible for choosing the research agenda? Who set the priorities among them?
- Would you consider IFPRI's research a collaborative research program?
- Who were the collaborators? What was the role of the Ministry of Food in the collaboration?
- Why was FPMU chosen as the collaborating partner for the research program?
- Who was mainly responsible for conducting the research?
- What was the role of the Ministry of Food in getting the data to carry out the research?
- What research study do you remember as the most as useful for the decisions you made/recommended to the Ministry?
- What was the process of receiving information from the research project?
- What were the main research products (reports/news/etc) that were provided by the research project to make the decisions you made?
- How were the research products given/presented to policymakers?
- What channels and formats were used to deliver the research findings to decisionmakers?

(continued)

Appendix 2—continued

- In addition to your office/department, who else received the same information and how did it help you in making decisions?
- What were the challenges you faced in using the information and deriving policy conclusions from the research products provided to you?
- How often did you feel the need for research-based information during the decisionmaking on this particular issue?
- Was the research project prepared to provide the information to meet your specific decisionmaking needs?

In addition, the following questions were asked to investigate the effect of the Rural Rationing program, the Food for Education program, millgate contracting, and private tendering:

- Describe the process of using research information in decisionmaking in your organization.
- Who were the key players in the decisionmaking process? What are the key stages at which the research information was used to make decisions?
- What is the role of donor agencies, in particular the World Bank and USAID, in the decisionmaking process?
- How did you organize the discussion process that led to the decisionmaking on this issue?
- What were the challenges you faced in organizing discussions and in increasing the participation of various players in contributing to the decisionmaking?
- How did the changes in the personnel in various institutions involved (for example, donor agencies and the Ministry of Food) affect the use of information in the decisionmaking process?

(continued)

Appendix 2—continued

- What is the role of various interest groups such as mill owners, traders, and government bureaucrats in influencing the policy decisions made by the Ministry of Food?

In addition to IFPRI's research, what are the other sources of information used in the debate and discussions that resulted in the decisions?

- What are the various forms of communication between the research groups and policy decisionmakers?
- What key messages were passed on to the decisionmakers and where did that occur in the process of decisionmaking?
- What kind of information was provided to policymakers during the process of research communication (data on the issues, specific recommendations, policy options, etc.)?
- Did you prefer a certain format of information over others?
- Did you prefer IFPRI's information over others in making the decisions? If so, why?
- What was the role of IFPRI's research information in the official decisions made?
- In the absence of IFPRI's research, what would have been the source of similar information given to the Ministry of Food?
- In the absence of IFPRI's research, would a decision on this issue have been made anyway?
- What are other sources of information similar to the ones generated by IFPRI's research?
- In the absence of IFPRI's research, would the research leading to similar information have been done anyway by someone else?
- What role did IFPRI's research play in enabling the decisions to be made at that time?

(continued)

Appendix 2—continued

- In the absence of IFPRI's research, could the decisions made have been postponed? If yes, for how long?
- What was the key link between the recommendations made by IFPRI's research and the decision made?
- Did IFPRI's research lead to other studies on the same issue after the end of the IFPRI's project?

Appendix 3

LIST OF PUBLICATIONS AND DISSEMINATION ACTIVITIES

Output/code	Date	Title and presenter(s)/author(s)
Seminars		
S-1	January 28-29, 1990	Workshop on public food distribution and price stabilization, by R. Ahmed
S-2	July 21, 1991	Allocative efficiency in fertilizer and labor use in Aman cultivation, by N. Chowdhury
S-3	August 22, 1991	Marketed surplus of Bangladeshi rice amid growing technological change, by N. Chowdhury
S-4	September 2, 1991	Rural rationing: Preliminary findings, by A. Ahmed
S-5	April 13, 1992	Open tendering for rice, by M. Rahman
S-6	April 19, 1992	Costs and returns of alternative cropping patterns, by S. Zohir
S-7	May 11, 1992	Operational performance of rural rationing, by A. Ahmed
S-8	May 21, 1992	Structure of incentives in agriculture, by S. Rahman
S-9	May 25, 1992	Evaluation of cropping patterns and constraints to agricultural growth, by W. Mahmud and S. Zohir
S-10	July 1, 1992	Statutory rationing performance and prospects, by S. Haggade, S. Rahman, and S. Rashid

(continued)

Appendix 3—continued

Output/code	Date	Title and presenter(s)/author(s)
S-11	July 27, 1992	Rapid rural appraisal of wheat marketing, by A. Mohammed, Md. Giashuddin, N. Farid, and N. Chowdhury
S-12	August 11, 1992	Rapid rural appraisal of wheat marketing, by A. Mohammed, Md. Giashuddin, N. Farid, and N. Chowdhury
S-13	November 25, 1992	Determinants of vulnerable group malnutrition, by A. Ahmed
S-14	March 14, 1993	Data quality at DAM and DGF, by F. Goletti, N. Farid, and S. Rahman
S-15	April 20, 1993	A review of price behavior during the 1992 boro season, by S. Haggblade and M. Rahman
S-16	October 18, 1993	Theme: procurement pricing WP6, Determination of procurement price, by Md. Giashuddin; M26, Cost of Aman production, by S. Khanam; M2, Review of the R. Hoker report, by N. Farid
S-17	October 25, 1993	WP3, Price stabilization, by O. Rahman; WP4, Optimal Stocks, by Md. R. Amin; M39, Does price stabilization matter any more?, by Md. M. Islam
S-18	December 12, 1993	FAO optimal stock model, by N. Jahan; M23, Re-equilibrating the PFDS, by A. Siddiqui

(continued)

Appendix 3—continued

Output/code	Date	Title and presenter(s)/author(s)
S-19	December 30, 1993	Private foodgrain stocks, by F. Ahsan, R. Amin, N. Chowdhury, and N. Farid
S-20	May 2-4, 1994	Evolving food markets and food policy, (end-of-project wrap-up seminar), Steve Haggblade and Akhter Ahmed
S-21	June 22, 1994	Preliminary assessment of food for education, by Akhter Ahmed, and K. Billah
Policy Briefs		
PB-1	May 1992	Open tendering for rice
PB-2	November 1992	Progress in tendering for rice
PB-3	June 1994	Impact of targeted food programs
PB-4	June 1994	Maturing of private grain markets
PB-5	June 1994	Cost of production
Research Report		
RR-1	June 1994	The changing public role in a rice economy approaching self-sufficiency: The case of Bangladesh, by F. Goletti
Working Papers		
WP-1	September 1991	A literature review of public food distribution in Bangladesh, by J. Alwang
WP-2	October 1991	The relation between rice prices and wage rates in Bangladesh, by R. Thamarajakshi and M. Ravallion

(continued)

Appendix 3—continued

Output/code	Date	Title and presenter(s)/author(s)
WP-3	October 1991	A disaggregated model for stabilization of rice prices in Bangladesh, by Q. Shahabuddin
WP-4	December 1991	Optimal stock for the public foodgrain distribution system in Bangladesh, by F. Goletti, R. Ahmed, and N. Chowdhury
WP-5	August 1992	Operational performance of the rural rationing program in Bangladesh, by A. Ahmed
WP-6	March 1993	Determination of procurement price of rice in Bangladesh, by R. Ahmed, N. Chowdhury, and A. Ahmed
WP-7	July 1994	Agricultural growth through crop diversification in Bangladesh, by W. Mahmud, S. Rahman, and S. Zohir
WP-8	July 1994	The impact of trade and exchange rate policies on economic incentives in Bangladesh agriculture, by S. Rahman
Manuscripts		
MS-1	March 1990	Foodgrains in Bangladesh to year 2000 (draft), by F. Goletti and R. Ahmed
MS-2	May 1990	A review of the Ray Hoker report and an outline for determining procurement price of foodgrains in Bangladesh
MS-3	September 1990	Baseline data collection for nutrition survey and analysis (final report), by Melony International

(continued)

Appendix 3—continued

Output/code	Date	Title and presenter(s)/author(s)
MS-4	June 1991	Evaluating the grains from trade: (sic) Exporting rice and importing wheat in Bangladesh
MS-5	July 1991	Cost of public food distribution in Bangladesh, by R. Ahmed and others
MS-6	November 1991	Determination of procurement price of rice in Bangladesh (final draft), by R. Ahmed, N. Chowdhury, and A. Ahmed
MS-7	December 1991	Marketed surplus of Bangladesh rice amid growing technology changes: A microeconomic seasonal study (draft), by N. Chowdhury
MS-8	March 1992	Studies on maize in Bangladesh, by R. Karim
MS-9	March 1992	Inland fishery in Bangladesh, by K. Bhuiyan
MS-10	April 1992	Input-output coefficients in crop production activities, by S. Zohir
MS-11	April 1992	Operational performance of the rural rationing program in Bangladesh, by M. Rahman
MS-12	April 199	A viable procedure of open tender for public procurement of rice in Bangladesh, by A. Ahmed
MS-13	May 1992	Public procurement of paddy and rice in Bangladesh: Milling and storage adjustment for efficiency, by M. Rahman
MS-14	May 1992	Zoning of Bangladesh, by S. Zohir

(continued)

Appendix 3—continued

Output/code	Date	Title and presenter(s)/author(s)
MS-15	July 1992	Scope of crop diversification in Bangladesh, by S. Zohir
MS-16	July 1992	Cost and returns for some fruits and semi-perennial crops in Bangladesh, by Md. K. Bhuiyan
MS-17	August 1992	Analysis of agricultural commodity markets and prices in Bangladesh, by S. Rahman
MS-18	August 1992	The impact of trade and exchange rate policies on economic incentives in Bangladesh agriculture, by S. Rahman
MS-19	August 1992	Price responsiveness of supply of major crops in Bangladesh, by S. Rahman and M. Yunus
MS-20	October 1992	Pro-forma tender, documents for domestic procurement of foodgrains, by M. Rahman
MS-21	October 1992	Operational review of public procurement of rice by open tender: Boro season of 1992, by M. Rahman
MS-22	October 1992	Rice market in Bangladesh: A study in structure, conduct, and performance, by N. Chowdhury
MS-23	November 1992	Re-equilibrating Bangladesh's public food distribution system, by S. Haggblade
MS-24	December 1992	Projections of supply and demand of foodgrains and prospects of rice export in Bangladesh, by A. Jahangir and F. Goletti

(continued)

Appendix 3—continued

Output/code	Date	Title and presenter(s)/author(s)
MS-25	January 1993	Review of Ministry of Food's tender no. 5, Aman tender of 1992/93, by M. Rahman
MS-26	January 1993	Costs and returns of 1992/93 transplanted Aman crop cultivation, by A. Ahmed, Md. Giashuddin, and Md. M. Islam
MS-27	January 1993	Costs and returns survey design for rice and wheat cultivation practices, by A. Ahmed, N. Farid, and I. Chowdhury
MS-28	February 1993	Options for targeting food interventions in Bangladesh, by the Working Group on Targeted Food Interventions (revised February 28, 1993)
MS-29	April 1993	Food consumption parameters in Bangladesh, by F. Goletti
MS-30	May 1993	Agricultural growth through crop diversification in Bangladesh (draft report), by W. Mahmud, S. Rahman, and S. Zohir
MS-31	June 1993	Food consumption and nutritional effects of targeted food interventions in Bangladesh, by A. Ahmed
MS-32	June 1993	Structural determinants of market integration: The case of rice markets in Bangladesh, by F. Goletti and N. Farid
MS-33	June 1993	Rapid appraisal of the rice market network in Bangladesh, by F. Goletti

(continued)

Appendix 3—continued

Output/code	Date	Title and presenter(s)/author(s)
MS-34	June 1993	Data source comparisons for agricultural prices: Rice prices from the Department of Agricultural Marketing and the Directorate General of Food, by F. Goletti, N. Farid, and S. Rahman
MS-35	June 1993	Note on food demand parameters in Bangladesh, by F. Goletti
MS-36	June 1993	Credit relations amid Bangladesh's rice markets: Where sharing is the currency, by N. Chowdhury
MS-37	June 1993	Interactions between private rice stocks and public stock policy in Bangladesh: Evidence for a crowding out, by N. Chowdhury
MS-38	July 1993	The laws of gravity: A review of rice price movements during the boro season of 1992, by S. Haggblade and M. Rahman
MS-39	August 1993	Does price stabilization matter any more to low-income consumers in Bangladesh?, by S. Haggblade
MS-40	August 1993	The structure and conduct of Bangladesh's wheat markets: Some emerging insights, by N. Chowdhury
MS-41	August 1993	Demand parameters in rural Bangladesh, by A. Ahmed and Y. Shams
MS-42	August 1993	Statutory rationing: Prospects and performance, by S. Haggblade, S. Rahman, and Y. Shams

(continued)

Appendix 3—continued

Output/code	Date	Title and presenter(s)/author(s)
MS-43	August 1993	Determinants of positive and negative deviance in child nutrition, by R. Naved and S. Kumar
MS-44	August 1993	The changing public role in a rice economy moving toward self-sufficiency: The case of Bangladesh, by A. Ahmed
MS-45	September 1993	Patterns of food consumption and nutrition in rural Bangladesh, by A. Ahmed
MS-46	November 1993	Summary of research output
MS-47	December 1993	Credit and Bangladesh's foodgrain market: Is more targeting of credit necessary?, by N. Chowdhury
MS-48	January 1994	Liberalization of credit for growth of foodgrain markets in Bangladesh, by M. Rahman
MS-49	January 1994	Cross-border trade and commodity prices of principal food items, by M. Rahman, N. Farid, and R. Amin
MS-50	January 1994	Report on the rapid rural appraisal on private foodgrain stocks in Bangladesh 1993/94, by F. Ahsan, R. Amin, N. Chowdhury, and N. Farid
MS-51	January 1994	A review of existing legal impediments to private foodgrains trade, by S. Rahman

(continued)

Appendix 3—continued

Output/code	Date	Title and presenter(s)/author(s)
MS-52	March 1994	Credit and Bangladesh's foodgrain markets: New evidence on commercialization, credit relations, and effect of credit access, by N. Chowdhury
MS-53	May 1994	Evolving food markets and food policy: Seminar keynote paper, by S. Hagglade
MS-54	May 1994	Causalities and cost effectiveness of public rice procurement in Bangladesh, by N. Chowdhury
MS-55	May 1994	National security stocks for Bangladesh, by N. Chowdhury
MS-56	May 1994	Access to noncereal foods and household food security: Concepts, evidence, and implications for poverty, by N. Chowdhury and N. Farid
MS-57	May 1994	History of the Ministry of Food, by A. Ahmed and L. Chowdhury
MS-58	June 1994	Rationalization of freight structure and schedule of rates for public-sector foodgrain movement: Marine transport, by K. Chowdhury
MS-59	June 1994	A grain exchange for Bangladesh, by M. Rahman
MS-60	June 1994	Food policy, external shocks, and income distribution in Bangladesh: A multimarket analysis, by P. Dorosh

(continued)

Appendix 3—continued

Output/code	Date	Title and presenter(s)/author(s)
MS-61	June 1994	Input-output coefficients for estimating rice production costs and returns in Bangladesh, by A. Ahmed
MS-62	June 1994	Food for education program in Bangladesh: An early assessment, by A. Ahmed and K. Billah
MS-63	June 1994	Nutritional effects of cash versus commodity-based public works programs, by A. Ahmed and Y. Shams
MS-64	June 1994	Evolving food markets and food policy in Bangladesh: Synthesis and policy implications, by S. Haggblade

(continued)

Appendix 4

**POLICY ADVISORY OUTPUTS OF THE
BANGLADESH FOOD POLICY PROJECT**

Topic	Request	Execution
Scheduled requests by government		
A-1 Changing foodgrain markets	FS	SH, 1 week
A-2 Procurement review and preview	FS	SH and MF, 2 weeks
A-3 Credit review	USAID IFDC	NC, 4 weeks MR, 4 weeks
A-4 Water transport	FS	Consultant
A-5 Upgrade monthly FPMU report	FPMU	SH, 2 weeks
A-6 Price monitoring and analysis	FS	MR
A-7 Milling and quality improvement	FS	SH
A-8 Synthesis document	FS	SH
A-9 Demand review	USAID, FS	AA
A-10 Bellmon review	USAID	AA
A-11 Rice exchange	FS	MR
Illustrative listing of supplementary requests		
SR-1 Land rental	FS	SH, 1 day
SR-2 Impact of government procurement on paddy price	FS	SH, 2 days
SR-3 Price bubbles in rice market	JS	MR, 2 days
SR-4 Options for targeting	FPMU	AA, 1 day
SR-5 Cost of 1994 boro production	FPMU	AA, 3 days

Appendix 4—continued

Topic	Request	Execution
SR-6 Storage loss: Consultants' evaluation	FPMU	MR, 1 week
SR-7 Private stocks, postharvest	FS	NC, 3 weeks
SR-8 Private stocks design, boro harvest	FS	NC, 3 days

Note: FPMU, Food Planning and Monitoring Unit; FS, Secretary of Food; IFDC, International Fertilizer Development Center; JS, Joint Secretary; NC, Nuimuddin Chowdhury; MR, Mahfoozur Rahman; AA, Akhter Ahmed.

Appendix 5

**MAJOR POLICY CONTRIBUTIONS OF THE
BANGLADESH FOOD POLICY PROJECT**

BFPP input	Policy Decision	Result
1. Rural Rationing (RR) program		
Study operational performance	Suspend RR from 12/91	Government savings of Tk230 crore (US\$60 million) per year
Document 70% leakage and high cost of operation (WP-5)	Abolish RR from 5/92	
2. Food for Education (FFE) program		
Convene working group on targeted food interventions (MS-28)	Government introduce FFE program	Improved primary school enrollment and attendance, and reduced dropout rate for children, especially girls from poor households
Assess impact of FFE (MS-62)	USAID motivated to support FFE	
3. Procurement procedures		
Review all five tenders (S-5, MS-12, MS-21, MS-25, PB-1, PB-2)	Expand tendering Modify tendering procedures Abolish millgate contracting	Government savings of Tk100 crore (US\$25 million)
Sample tendering documents (MS-20) (11/92)		

(continued)

Appendix 5—continue

BFPP input	Policy Decision	Result
<p>Review 1992 boro season price (MS-38)</p> <p>Provide briefing on implications for 1993 procurement (5/93)</p>		
4. Procurement pricing		
<p>Provide training on procurement pricing (T2, T7)</p> <p>Provide special briefings for Ministry of Food and Food Planning and Monitoring Unit (FPMU) (7/92)</p>	<p>Lower the procurement price for first time in history (7/92)</p>	<p>Government savings of Tk47 crore (US\$12 million)</p>
5. Statutory Rationing (SR)		
<p>Perform collaborative study of operational performance; document 95% leakage and complete lack of targeting of needy (S-IO, MS-42)</p> <p>Corroborate work by FPMU and the Food and Agriculture Organization (FAO) reorganization project</p>	<p>Review SR</p> <p>Informally abolish SR</p>	<p>Large staff reductions at Directorate General of Food</p>
6. Nutritional impact of targeted programs		

(continued)

Appendix 5—continue

BFPP input	Policy Decision	Result
Household consumption and nutrition study (MS-31, MS-45)		Input into World Bank nutrition project
Cash versus food for work (MS-63)		

Source: BFPP 1994.

Appendix 6

QUESTIONS TO TRAINEES AND TRAINERS OF SHORT-TERM TRAINING COURSES

- < What was the title of the training course you attended?
- < How many BFPP courses did you attend during 1991–1994?
- < What was your position in the government when you took this course(s)?
- < What is your current position in the government?
- < What skills, learned in the BFPP, are most valuable in your current work?
- < What type of data analysis do you do in your regular work?
- < What type of policies do you analyze now in your job?
- < To whom do you report in your job?
- < What policy analysis techniques did you learn from BFPP training that are still useful in your work?
- < How valuable was the study tour to Pakistan, Thailand, and the Philippines for policy improvement?
- < What overseas training did you attend through BFPP?
- < What are the techniques that you use in your work from the overseas training?
- < What training methods do you use in the training courses that you teach as a trainer?
- < To what extent were the objectives of overseas training matched with the needs of your job at that time?
- < What techniques did you learn as part of the collaborative research with BFPP?
- < What type of policy issues did you analyze as part of your collaboration?
- < Did you learn anything new by working with the staff of BFPP?
- < What skills are you currently using in your job that you learned by collaborating with BFPP?

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