The Status of Food Security in the Feed the Future Zone and Other Regions of Bangladesh: Results from the 2011–2012 Bangladesh Integrated Household Survey

Akhter U. Ahmed*, Kaikaus Ahmad, Victoria Chou, Ricardo Hernandez, Purnima Menon, Farria Naeem, Firdousi Naher, Wahid Quabili, Esha Sraboni, and Bingxin Yu
International Food Policy Research Institute

In collaboration with
Zahidul Hassan
Data Analysis and Technical Assistance Limited

*Comments and queries are to be directed to Akhter Ahmed (e-mail: a.ahmed@cgiar.org), lead author of this report and principal investigator of the Bangladesh Integrated Household Survey.

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1. INTRODUCTION

1.1 Background

Improving food security is a matter of supreme importance to many millions of people in Bangladesh, and an issue of paramount concern to those responsible for the nation's welfare. The Government of Bangladesh considers agricultural development a major priority alongside food and nutrition security. While Bangladesh has experienced steady advances in food availability and security during the past several decades, including the tripling of its annual rice production, the country faces a number of persistent and emerging challenges. Future agricultural growth and food and nutrition security are threatened by population growth, worsening soil fertility, deteriorating access to increasingly scarce natural resources (such as water and land), increasing vulnerability of improved crop varieties to pests and diseases, and persistent poverty leading to poor access to food.

The Bangladesh Policy Research and Strategy Support Program (PRSSP) for Food Security and Agricultural Development, funded by the United States Agency for International Development (USAID) and implemented by the International Food Policy Research Institute (IFPRI), was launched in October 2010. PRSSP conducts applied research to fill knowledge gaps on critical food security and agricultural development issues in Bangladesh. Its main objectives are to provide policy options and advisory services to decision makers and stakeholders, collaborate with national institutions to strengthen analytical capacity within the country, and stimulate policy dialogue.

IFPRI-PRSSP empirical research to address specific food security and agricultural development issues requires collection of data through especially designed surveys, including household, community, market, and institutional surveys. IFPRI researchers designed the Bangladesh Integrated Household Survey (BIHS)—the most comprehensive, nationally representative household survey conducted to date. The carefully collected data serve as a baseline for the U.S. Government's Feed the Future (FTF) zone of influence in southern Bangladesh. Future progress of the FTF initiative can be measured against the point of reference determined by the survey results. In addition, varied studies can use the survey's integrated data platform to carry out research with policy implications for the country's food security and agricultural development.

This report presents results of analyses of the IFPRI household survey data on various topics that, combined, represent the current food security situation in Bangladesh. Specifically, the study examines how that situation varies between the FTF zone of influence in the southern region and other regions throughout the country.

This report is organized in seven sections. The rest of section 1 describes the FTF initiative in Bangladesh and presents a conceptual framework of food security. Section 2 describes the BIHS, which provides the data used in the empirical work. Section 3 gives a profile of survey households. Section 4 addresses the food availability aspect of food security by focusing on agricultural production and practices. It describes the agrarian structure in terms of landlessness and landholding patterns and land tenure, the use of production inputs, farmers' access to credit and agricultural extension services, the extent of women's participation in agricultural production and post-harvest operations, and agricultural product marketing and farm-level stock of rice. Section 5 looks into the role of income and social safety nets in

providing households with access to food. Section 6 discusses food utilization and nutrition issues. Section 7 summarizes the main findings and provides policy conclusions.

1.2 Feed the Future at a Glance1

FTF, the U.S. Government's global hunger and food security initiative, is a $3.5-billion commitment to support country-driven approaches to address the root causes of poverty, hunger, and undernutrition. A whole-of-government initiative led by USAID, FTF leverages the strengths of multilateral institutions, civil society, and the private sector. Globally, FTF aims to help 18 million vulnerable women, children, and family members—mostly smallholder farmers—escape hunger and poverty. Altogether, FTF will strive to increase agricultural productivity, decrease poverty, drive economic growth, and reduce undernutrition to improve millions of lives.

1.2.1 Feed the Future in Bangladesh

Opportunities

Bangladesh has tremendous potential for agriculture-led growth, with fertile soil, abundant water, strong research and extension institutions, and expanding infrastructure. Over the past several decades, the Government of Bangladesh has adjusted its policies in the agriculture sector to increase private-sector participation and reduce tariffs and price controls. As a demonstration of its strong leadership in the area of food security, the Government of Bangladesh hosted a high-level Food Security Investment Forum in May 2010. At the meeting, representatives of the government, civil society, the private sector, academia, and donors discussed the Country Investment Plan, which was finalized in March 2011. The government also began implementing a $52-million Global Agriculture and Food Security Program, managed by the World Bank, to enhance agricultural productivity through technology generation and adoption, as well as improved water management.

Key Objectives

FTF's collective efforts aim to improve the livelihood and nutritional status of households in Bangladesh through:

- Increased on-farm productivity

- Increased investment in market systems and value chains

- Enhanced food security policy and planning capacity

- Enhanced agriculture innovation capacity

- Improved nutritional status of rural poor

Target Region

The target region (also called the FTF zone) for FTF projects in Bangladesh is the south and southwest region of the country.

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[1] Feed the Future, Bangladesh Fact Sheet, August 2011, www.feedthefuture.gov

Core Investments

The United States is focusing its efforts in targeted regions and value chains to maximize impact. Concentrating resources, fostering political engagement, linking agriculture to nutrition, and supporting gender equality are critical investments to successfully improve food security throughout Bangladesh.

Targeted Investments

FTF will have the highest impact with focused interventions in areas that offer opportunities to reduce poverty and undernutrition. It will target intensification of rice production by promoting higher-yield, saline/drought-resistant, and more nutritious rice by supporting research institutions, government policy makers, nongovernmental organizations (NGOs), farmers, and the private sector. The initiative will also support diversification into higher-value, nutritious products, such as fruits, vegetables, fish, and livestock. This effort will increase farmers' incomes while also making more nutritious food available both in markets and at the household level. Women will be specifically targeted through promotion of homestead food production and nutrition education to encourage consumption of the diversified foods they produce.

Private-Sector Engagement

FTF will support private-sector growth by identifying market constraints and working with the Government of Bangladesh and private sector to eliminate constraints. It will build the capacity of farmers, small and medium enterprises, and civil society by promoting market linkages and improving access to market information.

Policy Reform

FTF will identify and advocate for policy reforms, stimulate policy dialogue, and strengthen the analytical and monitoring capabilities of national institutions. It will generate policy research to fill knowledge gaps in critical areas and communicate research outcomes to relevant stakeholders. It will also improve the capacity of the government, civil society, farmers, and the private sector to engage in policy dialogue, with an emphasis on Bangladesh's most vulnerable populations.

Research and Innovation

FTF will strengthen agricultural research capacity with a focus on (1) crops that are resilient to climate change-related challenges, such as salinity, drought, and floods; (2) improved cost-effectiveness; (3) improved farming practices, including fertilizer use and better irrigation; and (4) high-value crops. Socioeconomic research will also be prioritized, especially in the promotion of agribusiness marketing, value-added transformation, and analysis of the overall enabling environment. Natural resource management issues, such as soil fertility and erosion and the impacts of pesticide use, will be an important part of building research capacity in Bangladesh. Programs will focus on strengthening extension services to farmers through government, NGOs, and the private sector to facilitate the dissemination of research results. In particular, efforts will focus on gender roles in farming and household gardening activities and increasing the number and skills of female extension agents.

Nutrition

Through extension activities and community outreach, FTF will disseminate consistent information on nutrition and social and behavioral change. In collaboration with the U.S. Government Global Health Initiative, FTF will improve nutrition service delivery for pregnant women and young children. Research on innovative nutrition technologies and bio-fortified varieties of rice will be targeted toward improving the quality of food and preventing and treating undernutrition.

Climate Change

Crop research and development will focus on improving resiliency against climate change impacts associated with salinity, drought, and floods. FTF efforts will focus on use of energy and fertilizer, as well as on improved irrigation technologies to mitigate greenhouse gas production. Communities will be trained in conservation and sustainable agriculture practices. FTF will also promote improved natural resource management, watershed protection, and sustainable management of water bodies, since Bangladesh is heavily dependent on fishery systems.

Gender Integration

Nutrition education will focus on women and children, though not to the exclusion of men. Extension activities will reach out to women, and ensure that women are well represented in Bangladeshi agricultural support services. FTF's efforts encourage teaching the "whole family at once" approach to ensure access to women and the next generation of farmers and better information retention.

Whole-of-Government Approach

FTF elevates coordination across the U.S. Government so that its investments, resources, and programs are harmonized for greater collective impact. This interagency engagement, led by USAID, includes collaboration with U.S. Department of State, the U.S. Department of Agriculture, the U.S Department of the Treasury, the Millennium Challenge Corporation, the U.S. African Development Foundation, the U.S. Trade Representative, and the Overseas Private Investment Corporation. For example, the State Department will encourage regulatory reform and market liberalization to improve the business climate for farmers and the private sector.

1.3 A Conceptual Framework of Food Security

Food security is broadly defined as access by all people at all times to sufficient food to meet their dietary needs for a healthy and productive life. One essential element of food security is the availability of adequate food at a national level. Another essential element is the access to adequate food at household and individual levels. Some literature views the first to be synonymous with national food security, while the second element is viewed as synonymous with household or individual food security. However, the availability of and access to adequate food are necessary, but are not sufficient conditions for a healthy life. Hence, the third essential element of food security is the effective biological utilization of food, which depends on a number of other factors, such as the health and sanitation environment and the household or public capacity to care for vulnerable members of society.

Food availability at the national level is determined by domestic food production; public and private food stockholding; food imports, including food aid; and food exports. With the liberalization of international trade, global availability of food is of increasing importance for national food security. Availability of food at the household level depends on the household's own capacity to produce food, household food stockholding, and availability of food in the local markets. These factors, in turn, are a function of market operations, infrastructure, flow of information, and seasonal variations in domestic food production.

A country's access to globally available food is a function of export earnings, world prices, and debt-service obligations, as well as policies and capacities of food aid donors. Household access to food depends on food prices, household income, and assets or resource base. Increased income of households can improve household food security in terms of improved access to food. In addition, expanded asset bases reduce the vulnerability of households to short-term disruptions in income flows, because part of the asset base can be sold in times of adversity, which helps to prevent degradation of household food security.

Poverty is a major determinant of chronic household food insecurity. The poor do not have adequate purchasing power to secure their access to food, even when food is available in local markets. Moreover, the poor are vulnerable to shocks (such as natural disasters, crop failure) that cause transitory food insecurity. Increased food prices also result in transitory food insecurity of low-income households by lowering their real income and, hence, eroding their purchasing power.

As food availability and access to food increase, hunger may decrease, but not necessarily malnutrition. One reason for persistent malnutrition may lie in the complex interaction between food intake and illness, affecting the body's utilization of food, which, in turn, is influenced by the overall health and caring environment. This relationship is often called the "leaking bucket effect," wherein improvements in availability and access to the foods that are important for good nutritional status may be offset by poor access to nonfood inputs, such as quality health care facilities and services, education, sanitation, and safe water, or ineffective mechanisms for delivering these services.

Evidence in Bangladesh and some other developing countries indicates that improvements in household food security do not necessarily translate into the eradication of nutritional risks confronted by vulnerable individuals within the households. The gains from improved household food security and developed health and sanitation facilities at the community level can be effectively brought to children, women, and other vulnerable household members by enhanced caring practices.

Figure 1.1 summarizes the diverse determinants of food security status in a general conceptual framework. The framework highlights the hypothesized causal relationships between the various elements of food availability, access, and utilization.

Figure 1.1—A conceptual framework of food security

Food Security
(National, household, individual)

| **Food Availability** | **Food Access** | **Food Utilization** |

Resources
- Natural
- Physical
- Human

Natural
- Rainfall
- Soil quality
- Water availability

Physical (national)
- Food stockholding
- Food and nonfood imports
- Export earnings
- Foreign aid
- Infrastructure

Physical (farm/household)
- Infrastructure access
- Farm implements
- Livestock ownership
- Landownership, access
- Other physical assets

Human
- Labor supply
- Education
- Household size and gender

Production
- Farm
- Nonfarm

- Research
- Technology
- Extension
- Input use
- Irrigated area
- Cropping seasons
- Crop diversity
- Input and output prices

Income
- Farm
- Nonfarm

- Crop income
- Wage income
- Self-employment
- Migrant income
- Producer prices
- Access to physical, natural, human, financial, social capital
- Private transfer
- Public/NGO safety nets/Social protection interventions

Consumption
- Food
- Nonfood

- Food expenditure
- Nonfood expenditure
- Consumer prices
- Income transfer programs/ food-based interventions

Health and nutrition
- Child
- Adult

- Access to health services
- Safe water supply
- Sanitation
- Dietary quality
- Education
- Intrahousehold food distribution
- Caring practices
- Food-based interventions
- Behavior change communication interventions

Markets
- Agricultural input
- Agricultural output
- Labor and nonfarm

- Market access
- Market development
- Market stabilization
- The trade regime

Economic, Social, Political, Legal, and Environmental Settings

Source: Prepared by IFPRI.

2. SOURCE OF DATA: BANGLADESH INTEGRATED HOUSEHOLD SURVEY

The required data to analyze the status of food security in the Feed the Future (FTF) zone and in entire rural Bangladesh came mostly from the Bangladesh Integrated Household Survey (BIHS). A community survey was also carried out to supplement the BIHS data to provide information on area-specific contextual factors.

BIHS is comprehensive and nationally representative. In fact, it is the only nationally representative survey that has collected detailed data on (1) plot-level agricultural production and practices, (2) dietary intake of individual household members, and (3) anthropometric measurements (height and weight) of all household members.

This section provides a description of BIHS in terms of sampling, questionnaire design, training of survey enumerators and supervisors, survey administration, and data entry and cleaning.

2.1 Sampling

The BIHS sample is statistically representative at the following levels: (1) nationally representative of rural Bangladesh; (2) representative of rural areas of each of the seven administrative divisions of the country: Barisal, Chittagong, Dhaka, Khulna, Rajshahi, Rangpur, and Sylhet; and, (3) representative of the FTF zone of influence. The U.S. Agency for International Development (USAID) provided the International Food Policy Research Institute (IFPRI) the list of FTF locations (districts and upazilas [i.e., subdistricts]). Using this list, a consultant statistician sampled the FTF zone separately for its statistical representativeness.

A sound and appropriate statistical method was used to calculate the total BIHS sample size of 6,500 households in 325 primary sampling units (PSUs [i.e., villages]).[2] The sample design of the BIHS followed a stratified sampling in two stages—selection of PSUs and selection of households within each PSU—using the sampling frame developed from the community series of the 2001 population census of Bangladesh. Later, sampling weights were adjusted on the basis of the latest population census of 2011. The domain of the national survey was the rural areas of the entire country, and the domain of the FTF zone of influence was all the upazilas belonging to the zone.

In the first stage of sampling, the total BIHS sample of 325 PSUs were allocated among the eight strata (seven divisions and the FTF zone) with probability proportional to size (size being the number of households in each stratum), which resulted in the following distribution: 21 PSUs in Barisal, 48 in Chittagong, 87 in Dhaka, 27 in Khulna, 29 in Rajshahi, 27 in Rangpur, 36 in Sylhet, and 50 in the FTF zone. In the second stage, 20 households were randomly selected from each PSU. The sampling process and survey administration included the following steps:

- List all villages in each of the stratum (7 divisions and the FTF zone of influence).

- In each stratum, randomly select villages (PSUs) with probability proportional to size (PPS) sampling using the number of households in the 2001 population census data.

- Conduct complete census in each of the 325 selected villages.

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[2] The BIHS sampling was done by a consultant statistician, former chief statistician at the Bangladesh Bureau of Statistics, Ministry of Planning.

- Randomly select 20 households from each village from the census list.

- Conduct interviews through male and female enumerators of male and female respondents of each selected household, respectively.

Initially, the FTF stratum had a sample of 1,000 households in 50 PSUs. However, IFPRI-Policy Research and Strategy Support Program (PRSSP) researchers noticed that the sample size becomes inadequate for certain disaggregated analyses of the data from the FTF sample of 1,000 households. To obtain more robust estimates of disaggregated analysis, the researchers expanded the FTF sample of households by adding 52 PSUs (with 1,040 sample households) that belong to FTF upazilas in Barisal, Dhaka, and Khulna, which are strata (divisions) of the overall BIHS sampling frame. Since the sampling frame of the BIHS has the FTF stratum and the seven strata representing the seven divisions, the use of the additional BIHS sample from the three divisional strata required estimation of appropriate sampling weights to obtain results that are statistically representative of the FTF zone of influence. The consultant statistician calculated the sampling weights and trained IFPRI-PRSSP research analysts on the use of the weights in analyzing the expanded sample of the FTF data set. The final sample frame of the FTF zone includes 2,040 households (1,000 households in the original FTF sample and 1,040 additional sample households) in 102 PSUs belonging to 73 upazilas.

Figures 2.1 and 2.2 show the survey PSUs in the map of Bangladesh, for the national and the FTF sampling frames, respectively.

2.2 Survey Instruments

IFPRI has extensive experience in the design and implementation of similar surveys in Bangladesh and other countries. The IFPRI-PRSSP researchers also consulted the 2010 Household Income and Expenditure Survey (HIES) questionnaires of the Bangladesh Bureau of Statistics (BBS) in order to collect data on a comparable set of variables.

The BIHS questionnaires include modules that together provide an integrated data platform to answer a variety of the research questions posed in the IFPRI-PRSSP research proposal. The survey has been designed to collect gender-disaggregated information, as appropriate.

The IFPRI-PRSSP team prepared a draft questionnaire for the BIHS, which was peer reviewed within IFPRI. A revised questionnaire was distributed to USAID and its partners, officials of the Food Planning and Monitoring Unit (FPMU) of the Ministry of Food, researchers, and other stakeholders in Bangladesh for comments. IFPRI received detailed comments from a number of organizations and incorporated them in the questionnaire.

A two-part questionnaire was prepared—one part for female respondents and the other for male respondents. The modules of the questionnaires are listed below:

- Household composition and education (relation to household, age, marital status, occupation, literacy, level of education, additional schooling information for all children age 6–18 or those who have attended primary/secondary school/*madrasa*)

- Employment for all household members age 6 years and older (employment status, type of work, number of days worked per week, wages)

Figure 2.1—Map of Bangladesh showing the survey upazilas in the national sampling frame
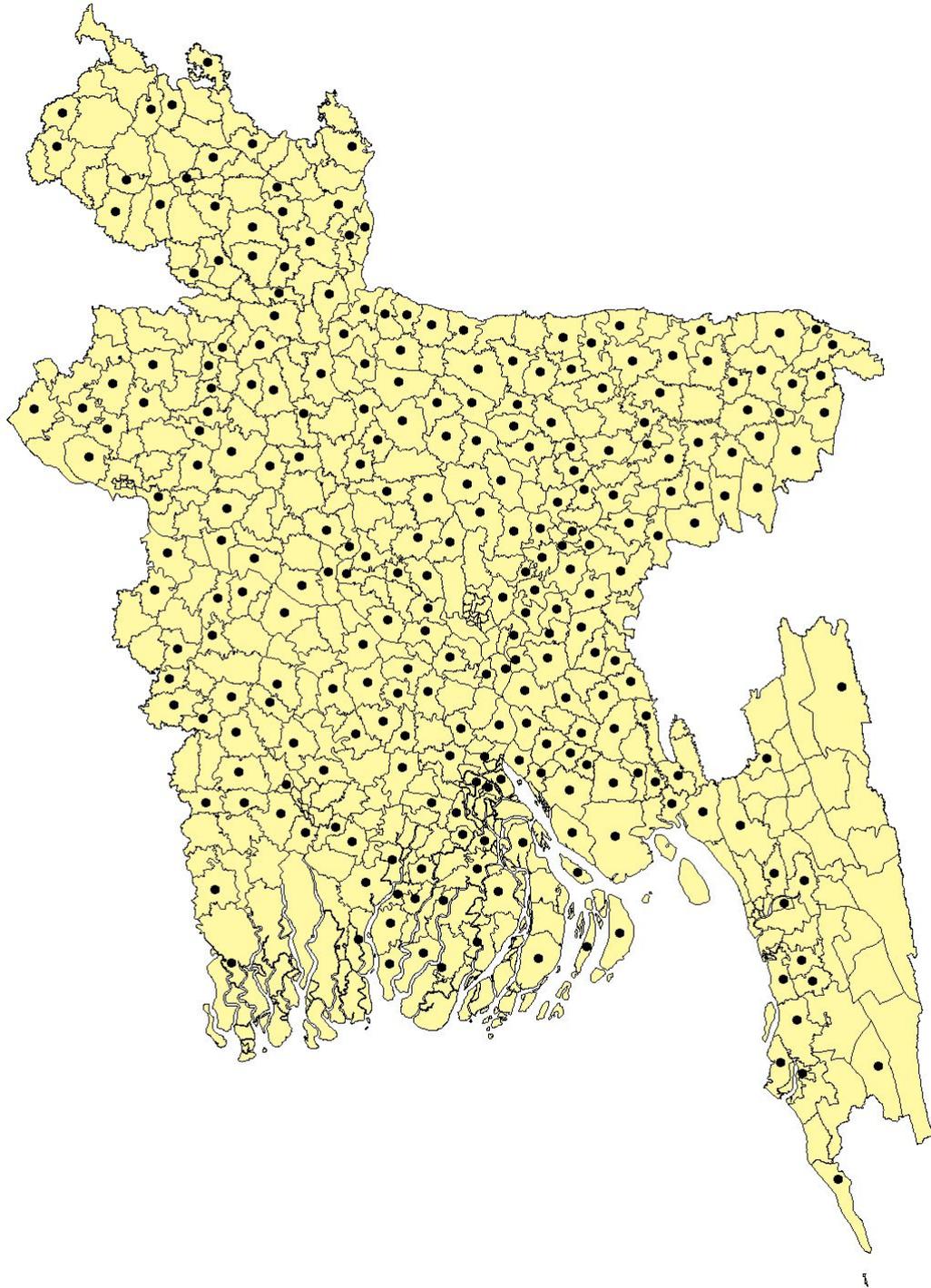
Figure 2.2—Map of Bangladesh showing the survey upazilas in the Feed the Future sampling frame
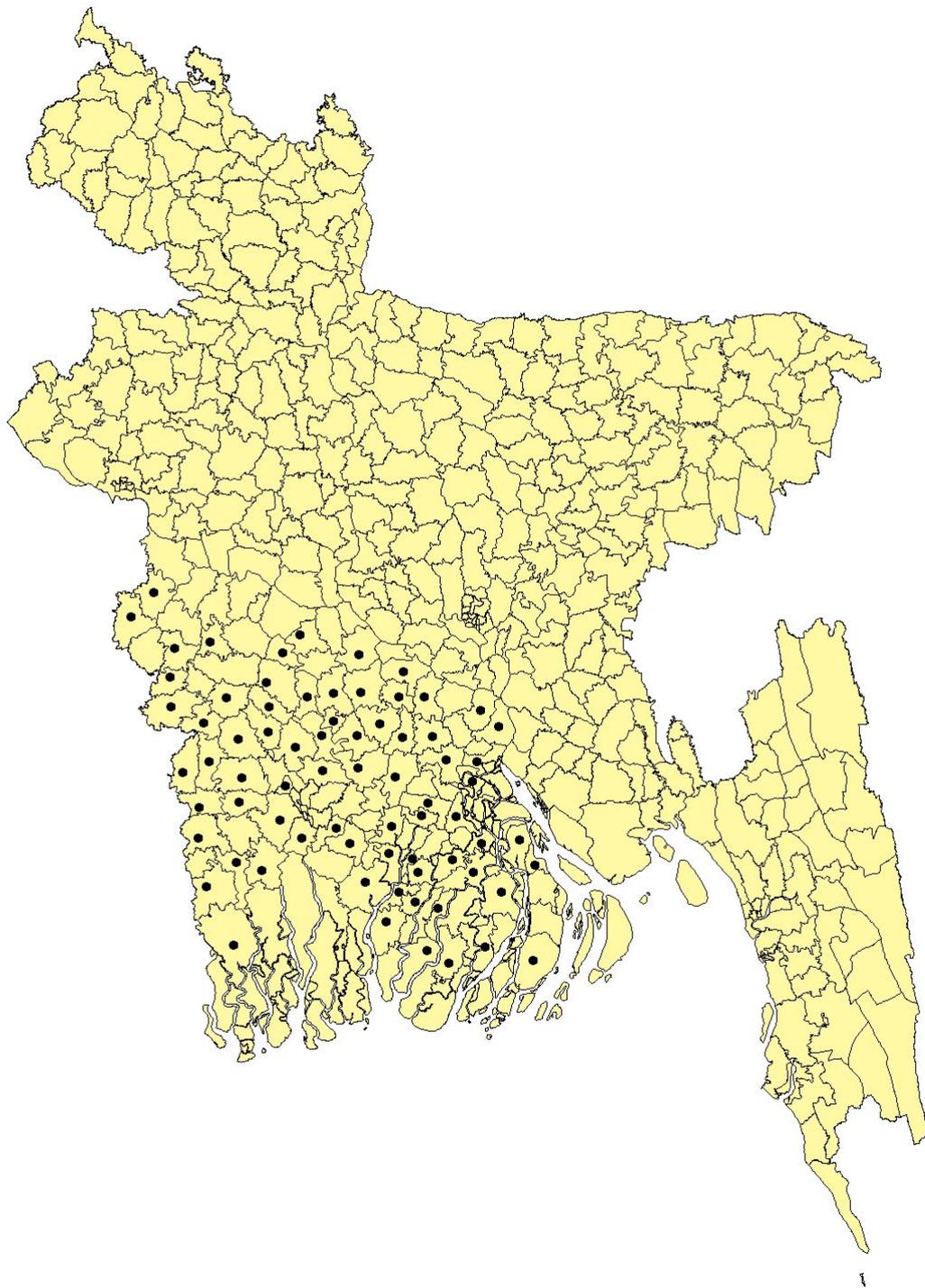
- Migration, remittances, transfers, and other income

- Current household assets (date purchased/acquired, purchase price and current value, gender-disaggregated information on asset ownership)

- Savings (where saved, planned use of savings)

- Loans (source of loan for each borrower, use of loan, outstanding amount of loan, interest rate)

- Landownership and tenure (plot-level data on homestead land, cultivable land, other land, soil type, current value of land, gender-disaggregated information on landownership and decision making regarding use of land)

- Agricultural production and costs (plot-level data)

    o Crops grown and area planted on own land and on mortgaged/rented/leased land, source and cost of seeds

    o Crop yields, use of produced crops

    o Input use and expenditure on inputs (irrigation, fertilizers, pesticides, machineries, gender-disaggregated labor use)

    o Crop marketing practices and revenues

    o Ownership of farming assets (date purchased/acquired, purchase price and current value, gender-disaggregated information on asset ownership)

    o Access to agricultural extension services and subsidies

- Livestock and poultry ownership and rearing

    o Current inventory, bought/sold/slaughtered in past 12 months, buying/selling price, rearing costs, gender-disaggregated information on ownership

    o Livestock and poultry products (production, consumption, marketing practices and sales, gender-disaggregated information on decision making concerning use of products)

- Fisheries (production, consumption, marketing practices and sales)

- Food grain stock and storage capacity

- Nonfarm enterprises/activities

- Food consumption in the last seven days (quantity of food purchased, price of purchased food, quantity consumed from home production, food received from other sources)

- Household food inventory on the day of survey

- Nonfood expenditures (fuel, housing, clothing and footwear, health, education, communication, transport, travel, entertainment, furniture/appliances, utilities/taxes/fees, family events, miscellaneous)

- Housing and amenities (dwelling characteristics, cooking fuel, lighting fuel, electricity, telephone)

- Water and sanitation (type of latrine, garbage disposal, source of water used for drinking and other purposes, water purification and testing for arsenic contamination)

- Access to facilities (distance, and time taken to commute by mode of transportation)
- Women's status
    - Earnings, mobility, reproductive decisions, commodity buying decisions, domestic violence, wife's assets brought to marriage
- Negative shocks and coping strategies (death of main earner, loss of a regular job, loss of assets, crop loss, loss/decrease of remittances, natural calamities)
- Positive economic events (new job, new or increase in remittances, social assistance received, etc.)
- Participation in safety net/social protection programs (government relief/transfers, nongovernmental organization [NGO] assistance, stipends)
- Quantities of food intake by individual household members (food weighing and 24-hour recall of individual dietary intakes)
- Anthropometry (weight and length or height) of all household members
- Health and illness
- Nutrition practices and services
    - Infant and young child feeding practices and use of micronutrients
    - Nutrition knowledge of mothers
    - Awareness-trial-adoption of sentinel practices
    - Immunization and health status of young children (<2 years)
    - Nutrition-related prenatal care during pregnancy with youngest child
    - Access to community nutrition centers
    - Exposure to nutrition information from health workers and media
- Household food security indicators, including use of validated food security assessments
- Women's Empowerment in Agriculture Index (recommended by USAID)
    - Individual identification
    - Role in household decision making around production and income generation
    - Access to productive capital
    - Income
    - Individual leadership and influence in the community
    - Time allocation
    - Decision making

2.3 Training

For implementing the BIHS, IFPRI contracted Data Analysis and Technical Assistance (DATA) Limited, a Bangladeshi consulting firm with expertise in conducting complex surveys and data analysis. DATA worked under the supervision and guidance of senior IFPRI

researchers. DATA's capacity to conduct surveys to collect high-quality data was largely built by IFPRI over the past 18 years.[3]

DATA provided experienced survey enumerators and supervisors to administer the BIHS; most of them hold a master's degree in social science, nutrition, or home economics. IFPRI researchers and DATA experts trained 120 experienced enumerators (60 females and 60 males) and 20 supervisors (3 females and 17 males) to conduct the survey, and 10 editors (4 females and 6 males) to edit the completed questionnaires in the field during the survey. The training of the survey team, conducted by IFPRI researchers and senior DATA staff, consisted of a formal classroom component, as well as closely monitored practice fieldwork. In the formal training, IFPRI researchers briefed the enumerators and supervisors on the objectives and methods of the survey, the sampling design, and the responsibilities of the enumerators. The enumerators and supervisors were trained in how to carry out the interviews, including line-by-line explanation and interpretation of the questionnaires, the flow and skip patterns, definitions, and explanations of how to handle unusual cases and when to contact the supervisors for assistance.

Field supervisors received additional training related to their supervisory role. In particular, they were trained on the quality control process; cross checking, editing, and coding the questions; security and confidentiality issues; and the delivery of the completed questionnaires to the DATA office in Dhaka for simultaneous data entry.

The questionnaires were field tested in five rural locations. The field testing determined the appropriate distribution of questionnaire modules for males and females, and identified problems with the questionnaires or additional rules that were needed to address difficult cases. The field testing resembled the actual implementation of the survey, in order to test the full range of survey activities, including questionnaire completion, questionnaire delivery, and data entry. An additional function of the field testing was to provide practical training to the enumerators in administering the questionnaire. The total duration of training (classroom and field testing) was 50 days.

2.4 Survey Administration

Going into the field, the teams of enumerators were equipped with a number of documents (such as the survey manual, serial numbered questionnaires, identification cards); weighing and height scales for anthropometric measurements; global positioning system (GPS) units for georeferencing, etc.[4] The BIHS dataset includes the GPS coordinate for each of the 6,500 survey households. Letters of authorization to conduct the survey were issued by the Director General (DG), FPMU, Ministry of Food. The DG, FPMU sent letters to all Upazila *Nirbahi* (executive) Officers of upazilas where the survey was implemented, requesting their cooperation with the DATA team's administration of the household survey.

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[3] DATA carried out all IFPRI surveys in Bangladesh, including more than 40 household surveys and several market, school, and other institutional surveys. In addition, DATA has conducted numerous surveys for various international organizations, such as the World Food Programme (WFP)-Bangladesh, the World Bank, the European Union, the U.S. Department of Agriculture, CARE-Bangladesh, World Vision-Bangladesh, the Population Council–New York, Save the Children (USA), Tufts University School of Nutrition Science and Policy, and the IRIS Center at the University of Maryland.

[4] "Health O' Meter" weighing scales and GPS units were imported from the United States for the BIHS.

The DATA survey team consisted of male and female interviewers who completed separate male and female questionnaires for each household. The male interviewer interviewed an adult male member of the household (usually the household head), and the female interviewer interviewed an adult female household member (typically the wife of the head of the household). IFPRI's knowledge from its previous surveys in Bangladesh and elsewhere and the pre-testing of the BIHS questionnaire in the field determined the appropriate distribution of questionnaire modules among the male and female questionnaires.

The enumerators conducted the interviews one-by-one and face-to-face with the respondents assigned to them. On average, it took about eight hours for a team of two enumerators (about four hours each) to interview one household, usually in two visits to the household on two consecutive days. A gift (valued at about Bangladeshi Taka [Tk] 200) was given to each household in appreciation of the time given for the survey interviews by its members.

The field supervisors accompanied the enumerators to the village and supervised them. Each field supervisor was responsible for his/her defined region. All field staff reported their activities to their superiors using a standard progress report form. Completed questionnaires were delivered to the DATA central office in Dhaka on a regular basis for further quality control and validation during data entry.

2.4.1 Quality Control

IFPRI and DATA took extensive care to ensure the quality of the household survey data. In the field, survey supervisors routinely oversaw interviews conducted by enumerators, and verified that enumerators completed all questionnaires on a daily basis. If the supervisors detected inconsistencies in responses in completed questionnaires, they visited the related respondents to find out the reasons and correct the responses as needed. In addition, the supervisors made random checks of about 10 percent of the completed questionnaires by revisiting the sample households. IFPRI researchers made frequent field visits to supervise the fieldwork.

2.5 Data Entry and Cleaning

The DATA office in Dhaka carried out the data entry simultaneously during data collection, with a about a week time lag. It is important to enter the data as soon as possible after data collection, in case there are errors that can only be addressed by returning to the village where the errors occurred.

DATA carried out data entry of the BIHS using a specialized software (Microsoft Access) that was programmed to identify values that are out of range or inconsistent with other responses in the questionnaire.

2.6 Timeline of Activities

- In April 2011, the IFPRI-PRSSP team prepared a draft questionnaire for the BIHS that was peer reviewed within IFPRI. Between late June and early July of 2011, the team distributed a revised questionnaire to USAID and its partners, researchers, Government of Bangladesh officials, and other stakeholders in Bangladesh for comments. IFPRI had received comments from a number of organizations and incorporated the suggestions in the questionnaire.

- In mid-July 2011, USAID advised IFPRI to include the FTF zone of influence in southern Bangladesh as a separate stratum of the BIHS to create a baseline for the FTF. In early August, USAID provided IFPRI with the list of FTF locations. Using this list, IFPRI created a separate stratum for the FTF for its statistical representativeness. USAID also gave IFPRI a list of FTF indicators to ensure that the BIHS collects the necessary data to measure the indicators. IFPRI-PRSSP researchers redesigned the BIHS questionnaire to fully incorporate the FTF indicators. The questionnaire was translated into Bengali.

- From August 7 to September 10, 2011, IFPRI researchers and senior DATA staff trained survey enumerators and supervisors on how to administer the comprehensive BIHS questionnaire. The training consisted of a formal classroom component, as well as closely monitored practice fieldwork. The questionnaire was field tested in five rural locations. The BIHS was scheduled to start on September 20, 2011.

- In early September 2011, at the request of the Bureau of Food Security at USAID-Washington, USAID-Dhaka asked IFPRI to add the Women's Empowerment in Agriculture Index (WEAI) modules in the BIHS. IFPRI-PRSSP researchers incorporated the WEAI modules in the BIHS questionnaire. The inclusion of the WEAI modules required retraining survey enumerators and supervisors from September 13 to October 22, 2011, which delayed the start of the BIHS.

- By October 25, 2011, the IFPRI-PRSSP team and DATA completed the preparation of the BIHS. The survey started on October 26, 2011. The survey of the FTF zone was completed on November 30, 2011, and the entire BIHS was completed by March 15, 2012. After data entry and cleaning, DATA delivered the complete data set to IFPRI-PRSSP by the end of June 2012.

3. PROFILE OF SURVEY HOUSEHOLDS

Using household survey data collected through the BIHS, this section compares the profile of survey households living in the FTF zone of influence to that of households in other regions and entire rural Bangladesh.

This study uses consumption expenditures as the principal indicator of household welfare, and uses per capita expenditure as a proxy for income for two reasons. First, expenditures are likely to reflect permanent income and, hence, are a better indicator of consumption behavior (Friedman 1957). Second, data on expenditures are generally more reliable and stable than income data. Since expenditures are intended to serve as a proxy for income, the terms "expenditure" and "income" are used interchangeably.

The measure of total consumption expenditure is quite extensive and draws upon responses to several sections of the household survey. In brief, consumption is measured as the sum of total food consumption and total nonfood (nondurable and durable) expenses. Expenditures on individual consumption items were aggregated to construct total expenditures. Quantities of goods produced by the household for home consumption were valued at the average unit market prices of commodities.

Much of the household-level analysis in this section disaggregates the sample households into per capita expenditure quintiles. Quintiles are based on household quintiles ranked by total per capita expenditures. Households in the first quintile represent the poorest 20 percent in income distribution, while those in the fifth quintile represent the richest 20 percent of all households. Quintiles are constructed separately for the total sample of survey households living in the FTF zone and in entire rural Bangladesh. Households belonging to each of the two classifications are distributed among the quintile groups according to their per capita expenditures and the quintile cut-off point expenditures.

3.1 Household Characteristics

Tables 3.1 and 3.2 show the characteristics of the survey households in the FTF zone and the entire rural Bangladesh by per capita expenditure quintiles termed as income groups. Table 3.3 presents the household characteristics by each of the seven administrative divisions (rural areas of the divisions) of the country. The average household size is the same (4.7 persons per household) in the FTF zone and overall rural Bangladesh, and is slightly larger than the 2011 census (4.4 persons in rural areas) and the 2010 Household Income and Expenditure Survey (4.5 persons in rural areas) (BBS 2011). Poorer households tend to be a bit larger than richer households; the average household size declines from 5.0 for the first quintile group to 4.0 for the fifth quintile group in the FTF zone. This positive relationship of household size with income holds for the entire rural Bangladesh. The average household size varies across divisions, with the largest average household size in Sylhet (5.9 persons) and the smallest in Khulna and Rangpur (4.4 persons).

The dependency ratio is defined as the ratio of the number of members in the age groups of 0–14 years and above 60 years to the number of members of working age (15–60 years). The ratio is normally expressed as a percentage. The average dependency ratio varies extensively across income groups (Figure 3.1). Members of working age in poorer households have more

nonworking-age members to support relative to richer households. The dependency ratio is highest in Chittagong division (114 percent) and smallest in Khulna division (75 percent).

Figure 3.1—Dependency ratio by income groups
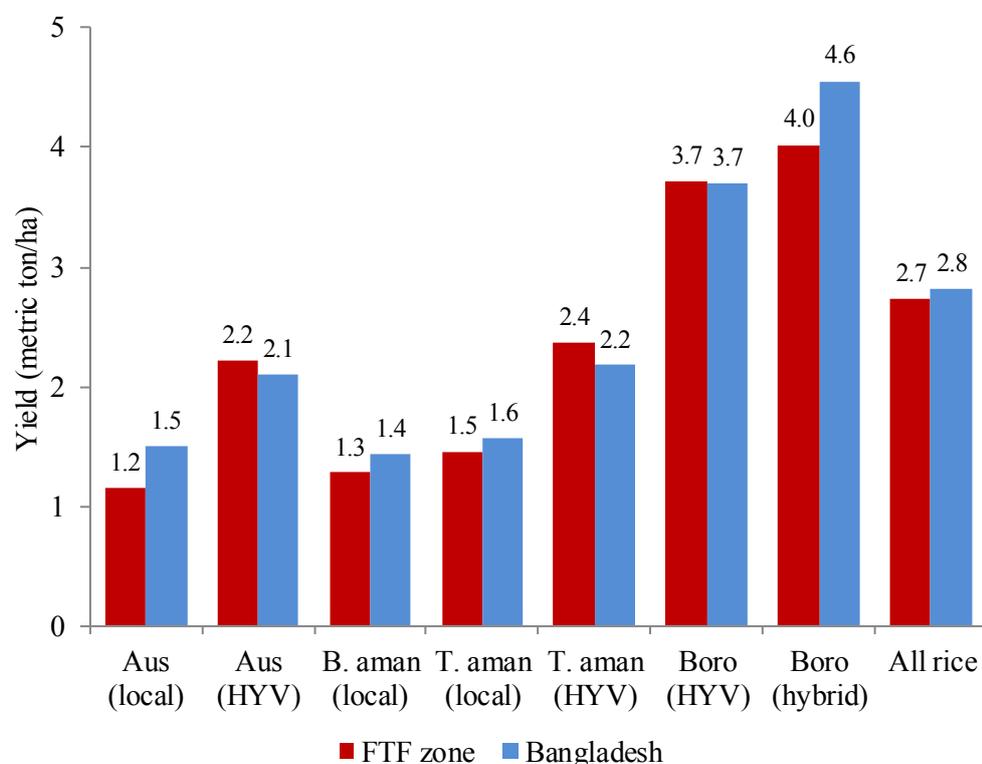
The following highlights other corresponding results from Tables 3.1–3.3 and Figure 3.2:

- Primary school-age children (age 6–11) from about 13 percent of households and secondary school-age children (age 11–18) from about 30 percent of households do not go to school in the FTF zone (Table 3.1). The rates for not attending school are slightly higher for overall rural Bangladesh—19 percent of households for primary school-age children and 32 percent of households for secondary school-age children (Table 3.2).

- The percentage of households with primary and secondary school-age children who do not send their children to school declines rapidly as household income rises (Tables 3.1 and 3.2).

- Across administrative divisions, the proportion of primary school-age children who do not go to school is lowest in Khulna division (13 percent) and highest in Chittagong division (23 percent). For secondary school-age children, the rate of not going to school is lowest in Rajshahi division (23 percent) and highest in Sylhet division (46 percent) (Table 3.3).

- In the FTF zone, 36 percent of adult males and 41 percent of adult females never attended school. The rate of no schooling of adults is lowest in Barisal division and highest in Rangpur division (Figure 3.2).

Figure 3.2—No schooling of adults age 18 years and above
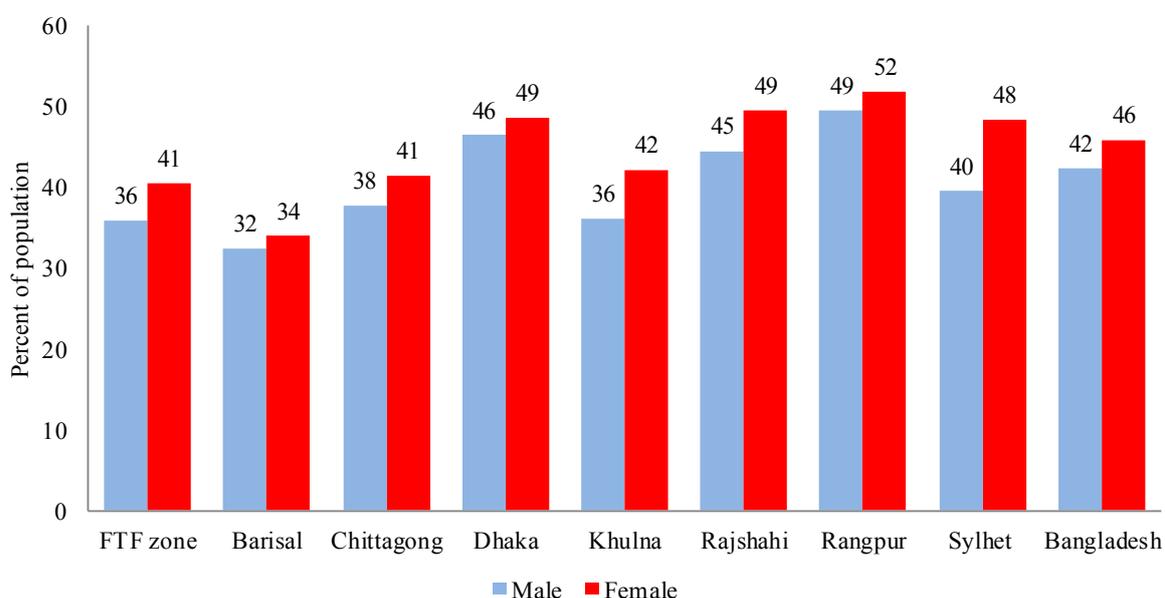
- Educational attainment in terms of years of schooling of adult family members is positively correlated with income (Tables 3.1–3.2 and Figure 3.3).

- Contrary to general perception, a high percentage of households in the richest quintile are headed by females. This could be due to the fact that husbands of many women in rural areas work and reside outside their villages, within Bangladesh or abroad, and send remittances to their wives. Such households are classified as female-headed by definition. Due to private income transfers, these households belong to richer income groups.

- Farming is by far the most common occupation of the heads of households.

Figure 3.3—Years of schooling of males and females age 15 years and above
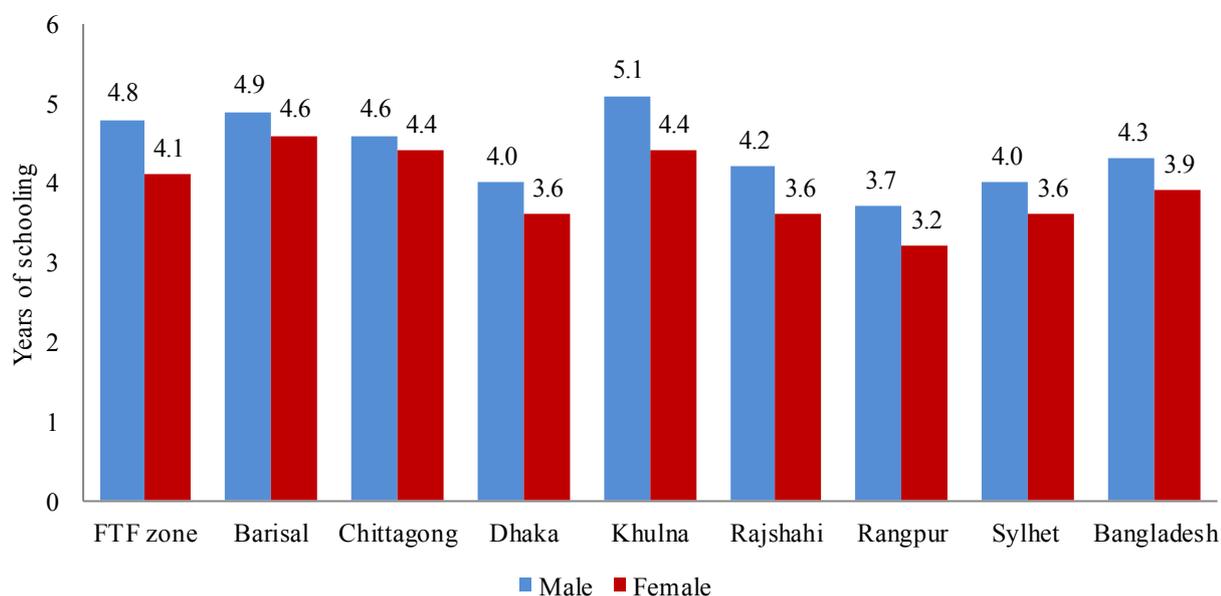
3.1.1 Marital Status

Figure 3.4 shows the incidence of the marital status of Bangladeshi women 15–25 years old. The trend of marital status in the FTF zone and in rural Bangladesh for women age 15–25 years is quite similar, although the division-wise breakdown shows a significant variation. Sylhet division boasts the lowest incidence of women age 15–25 years who are married, with a rate of 48 percent, whereas Rangpur division has the highest rate of 81 percent.

Figure 3.5 shows that, in the FTF zone, the survey found that 4.9 percent of girls 15 years old were married, while no boys younger than 16 years were married. From age 22 onward, the rate was consistently above 92 percent for women in the FTF zone, while for men it was consistently above 90 percent, but only for men older than 32 years.

Figure 3.4—Marital status of women 15–25 years old
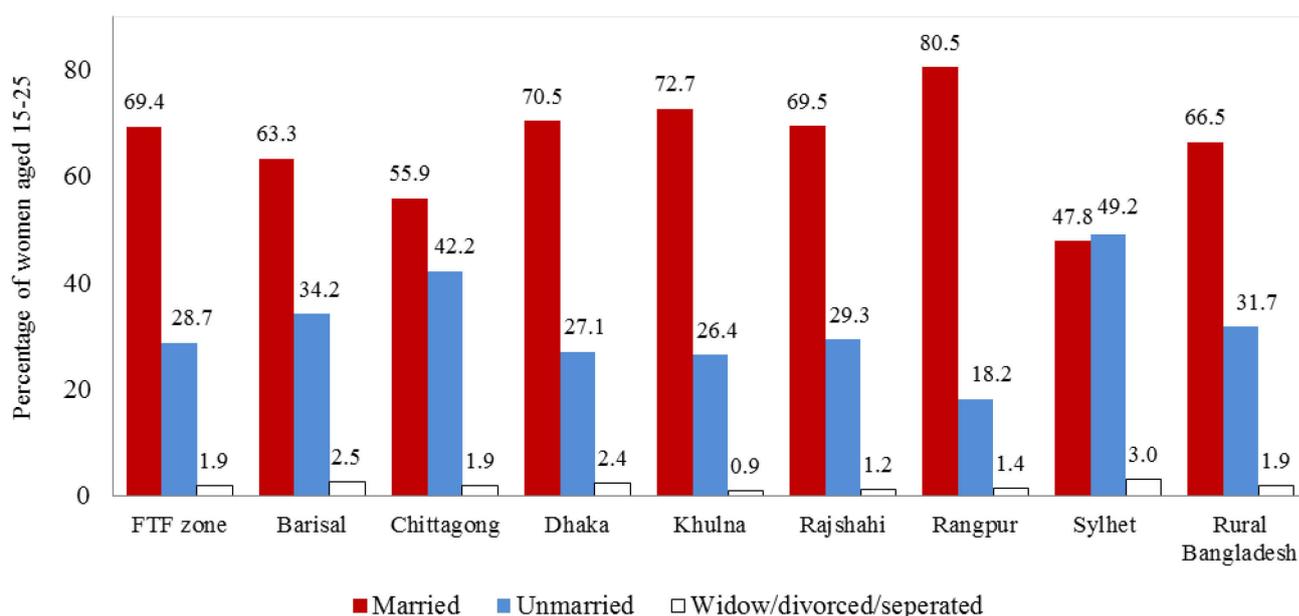
For rural Bangladesh, the survey found that 0.4 percent of girls age 14 and 3.4 percent of girls age 15 were married, 1.0 percent boys age 16 were married, and no boys younger than 16 years were married. While the percentage of men under age 20 in rural Bangladesh who were married was not high (less than 5 percent), the proportion of married girls 16, 17, and 18 years old was 7.7 percent, 14.8 percent, and 37.4 percent, respectively. From the age of 24 onward, the rate was consistently above 97 percent for women, while for men it was consistently 90 percent or above, but only for men older than 29 years (Figure 3.6).

Figure 3.5—Percentage of males and females ever married: FTF zone
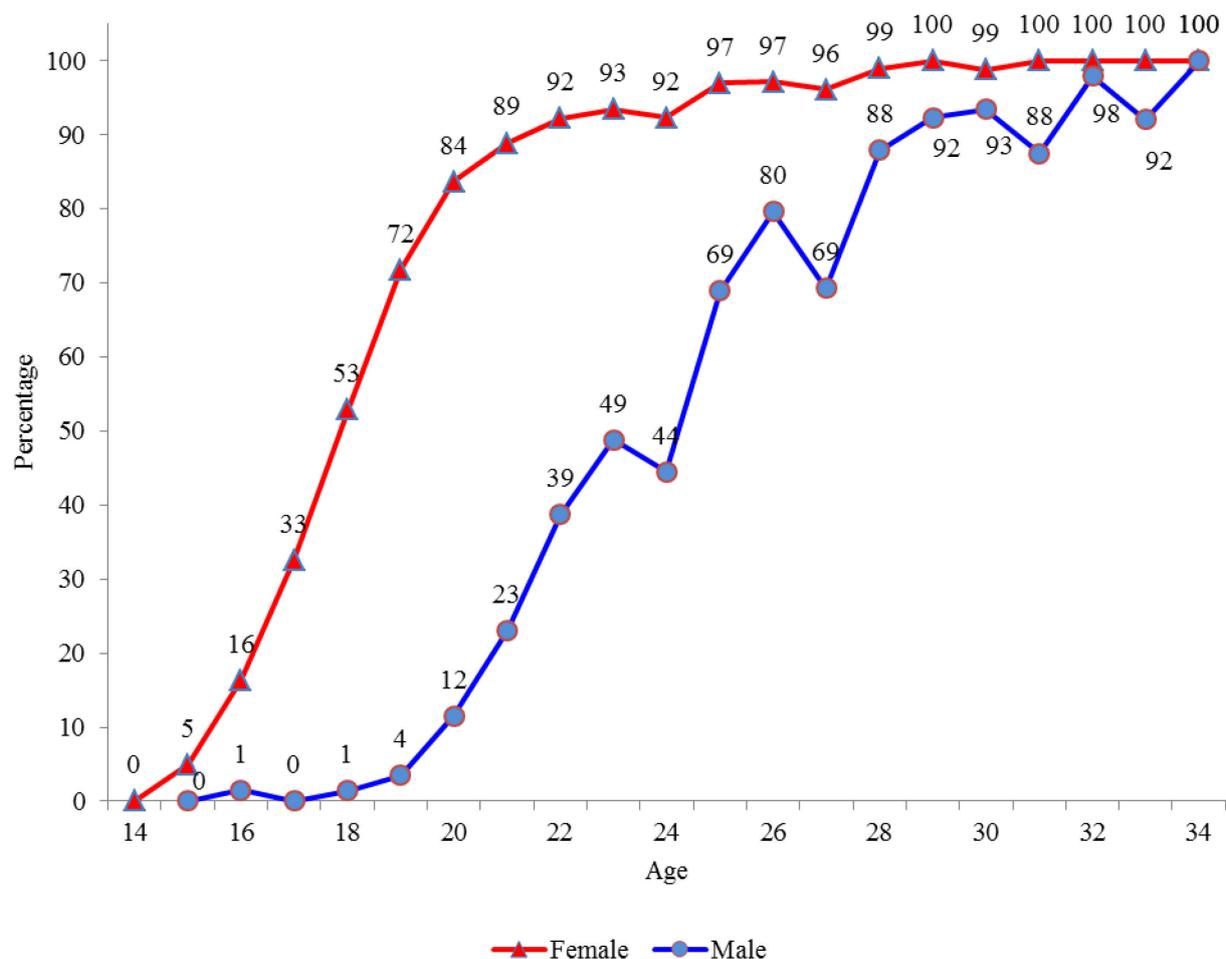
3.1.2 Literacy

A person who can read and write a sentence in Bengali is considered to be literate. Tables 3.4 and 3.5 present the literacy rates by income groups, respectively, for the FTF zone and for entire rural Bangladesh. Table 3.6 shows the literacy rates by administrative divisions for two population groups: one for ages 7 and above and the other for ages 15 and above. Overall, the female population has a lower literacy rate than the male population. Literacy rates have strong, positive relationships with income. This is further corroborated by Figure 3.7, which shows that Rangpur division has the lowest literacy rates in contrast to Barisal division.

3.1.3 Highest Level of Education Attained by Adults

Tables 3.7–3.9 provide information regarding the highest education levels attained by males and females age 25 and over. The levels of educational attainment are low in general, and are even lower for the female population. The levels of education have a positive relationship with income.

Figure 3.6—Percentage of males and females ever married: Rural Bangladesh
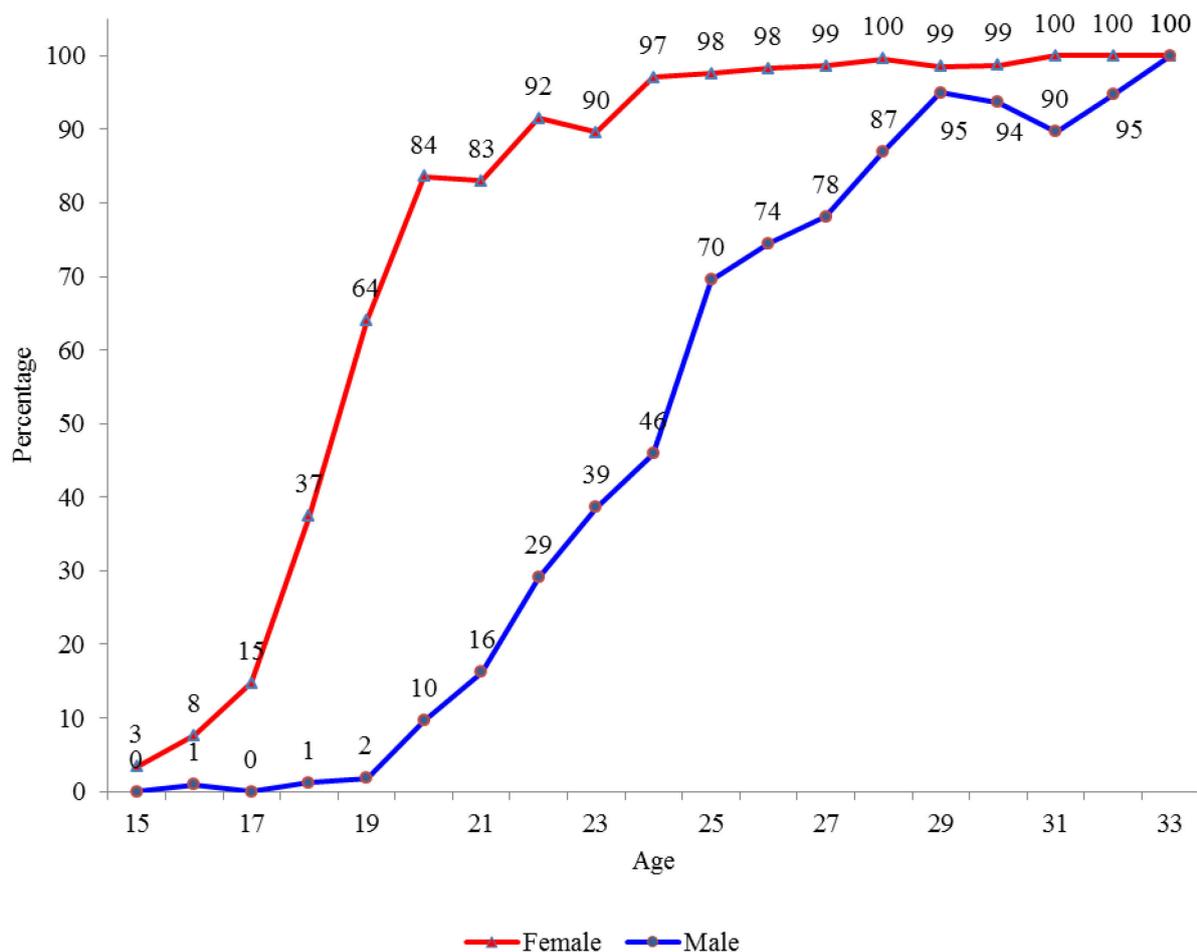
Figure 3.7—Literacy rate of people age 15 years and above
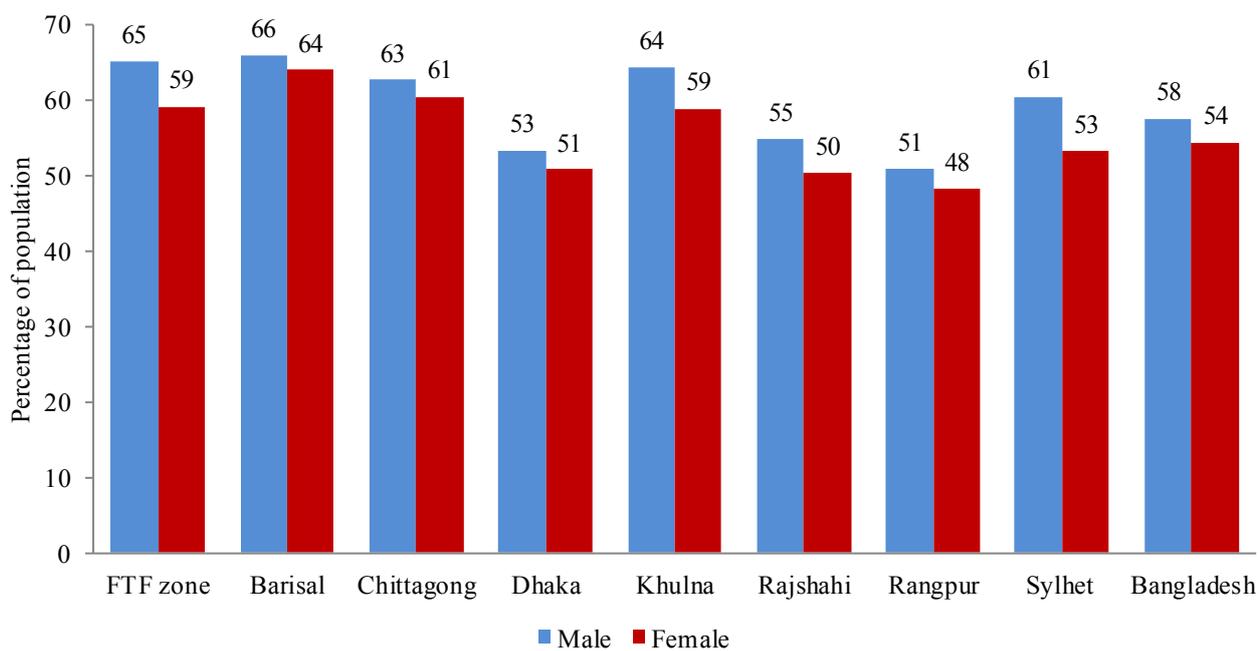
3.1.4 Types of School Attended by Children

Primary schools in rural Bangladesh include government schools, registered nongovernment schools, nonregistered nongovernment schools, Primary Training Institute schools, community schools, high school-attached primary schools, *madrasas* (Islamic education schools), kindergartens, and nonformal schools run by BRAC (Building Resources Across Communities, formerly Bangladesh Rural Advancement Committee) and other nongovernmental organizations. Secondary schools include government schools, registered nongovernment schools, nonregistered nongovernment schools, and *madrasas.*

Tables 3.10–3.12 show the types of schools attended by children enrolled in primary school. About 66 percent of primary school-age children in the FTF zone and overall rural Bangladesh attend government primary schools. A relatively higher percentage of students attending BRAC schools belong to low-income groups. The rate of children attending *madrasas* is the highest in Chittagong division (9.9 percent) in contrast to Rajshahi division (2.9 percent).

Tables 3.13–3.15 illustrate the types of school attended by children enrolled in secondary schools. The majority of secondary school-age children in the FTF zone (71 percent) and in overall rural Bangladesh attend nongovernment-registered secondary schools. The rate of secondary school-age children attending *madrasas* is the highest in Chittagong division (12.8 percent) and the lowest in Dhaka division (7.2 percent).

3.1.5 School Enrollment Rates

Tables 3.16–3.18 present enrollment rates for primary and secondary education. Net enrollment rates, generally considered a better indicator of educational attainment than gross rates,[5] are higher in the FTF zone than those in overall rural Bangladesh. Net enrollment rates show a positive relationship with income (Tables 3.16 and 3.17). Enrollment rates drop considerably from primary education to secondary education. The results also suggest that while girls overtake boys in terms of enrollment at both primary and secondary levels of education, the difference is larger at the secondary level. This pattern is an indication of the success of the female secondary education stipend programs in attracting girls to school.

There is considerable variation in primary and secondary education enrollment rates across regions. For example, primary net enrollment rates range from 77 percent in Chittagong division to 84 percent in Khulna division and 86 percent in the FTF zone (Figure 3.8), and secondary net enrollment rates range from 54 percent in Sylhet division to 77 percent in Rajshahi division (Table 3.18). Figures 3.8 and 3.9 show net enrollment rates for boys and girls across regions, respectively, for primary and secondary levels of education.

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[5] The net enrollment rate (NER) is the ratio of enrollment by children of the official targeted age (e.g., age 6–11 for the 5-year primary school cycle) in a given level of schooling (e.g., primary) to the total number of children of the official targeted age. The NER excludes underaged and overaged children. The gross enrollment rate (GER) is the ratio of total enrollment for a given level of schooling to the total number of children of the official age. GER can be greater than 100 percent and is heavily influenced by the extent of underaged and overaged enrolled children.

Figure 3.8—Net primary school enrollment rates across regions
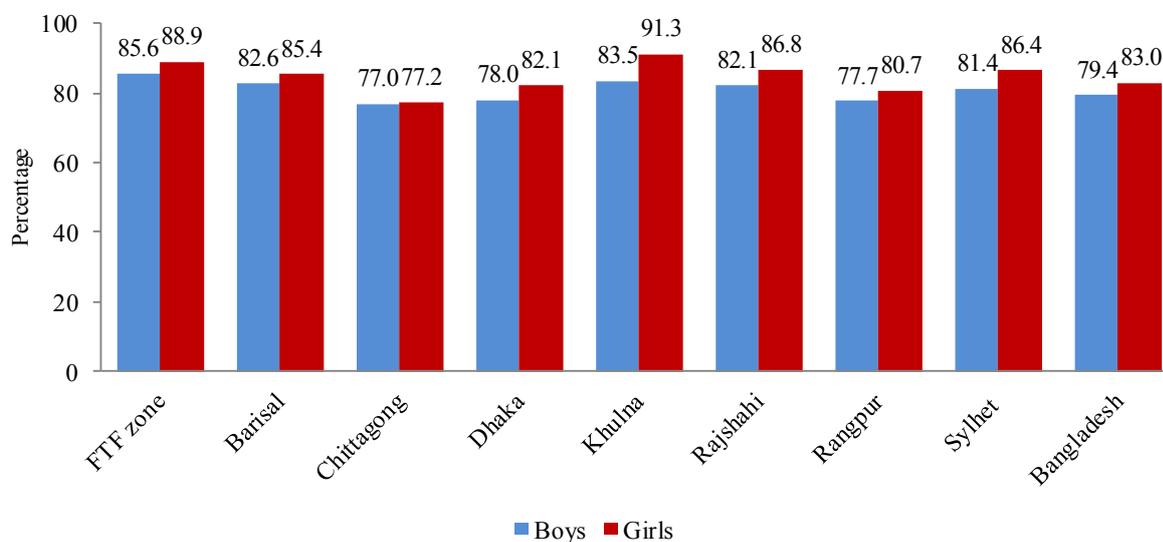
Figure 3.9—Net secondary school enrollment rates across regions
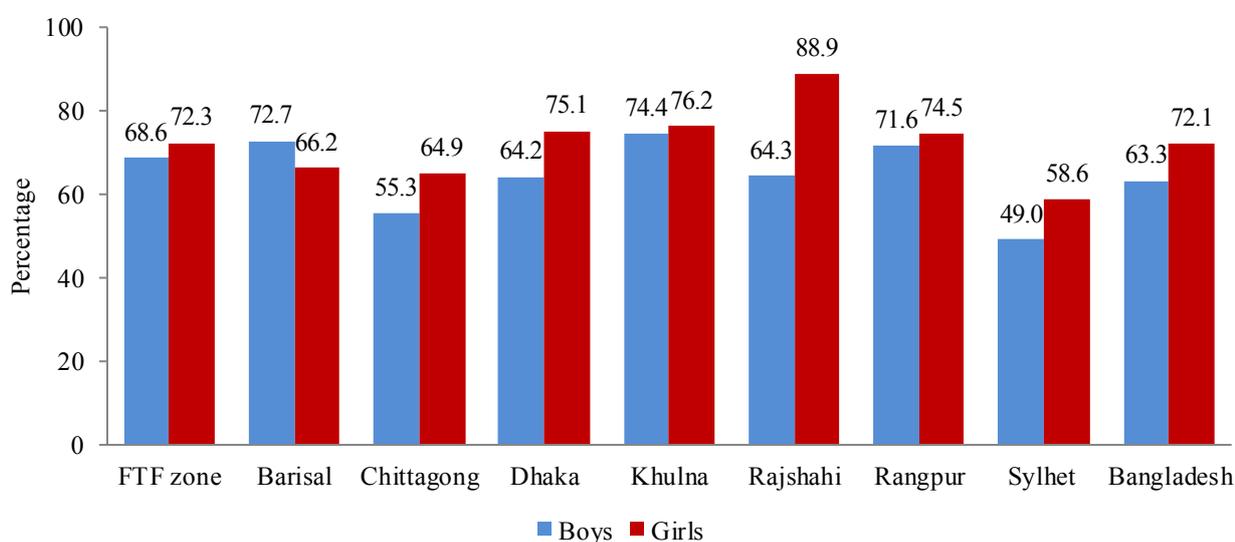
3.2 Ownership of Household Assets

Tables 3.19–3.21 present the ownership status of some selected assets. Among these assets, ownership of mobile phones is most prevalent, followed by electric fans. In the FTF zone, three-quarters of households own functional mobile phones, and 35 percent own electric fans. In general, asset ownership increases as household income escalates. An exception is the ownership of a rickshaw/van, which is concentrated mainly among the households in the

bottom three income quintiles. Figure 3.10 shows the relationship between income and ownership status of mobile phones in the FTF zone and entire rural Bangladesh. There is considerable variation in asset holding across the programs. The general level of asset holding appears to be highest in Chittagong division and lowest in Rangpur division (Table 3.21).

Figure 3.10—Ownership of functional mobile phones, by income groups
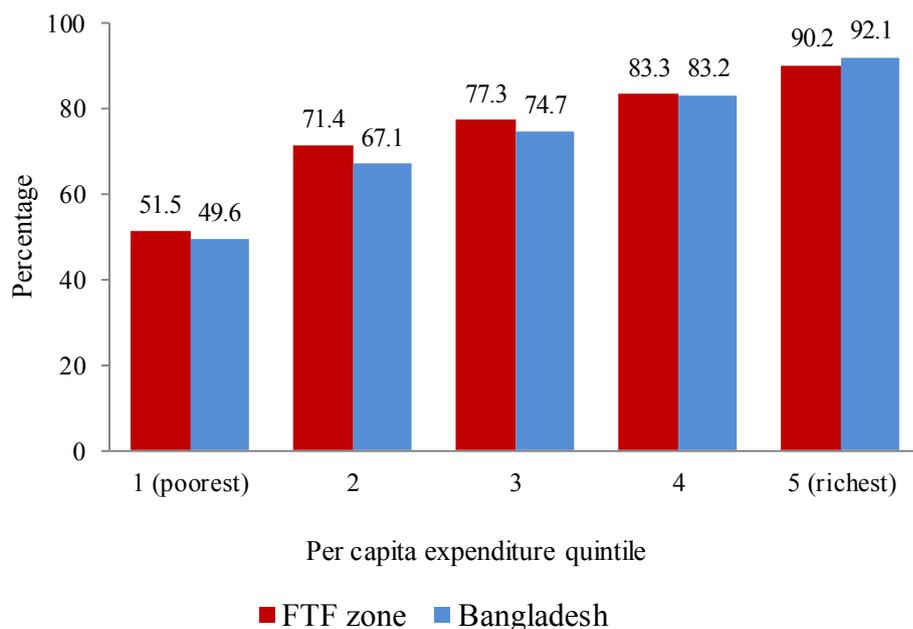
3.3 Access to Electricity and Dwelling Characteristics

Tables 3.22–3.24 provide information on electricity connections and the types of dwellings of survey households. About 45 percent of households in the FTF zone and 48 percent of households in entire rural Bangladesh have electricity. The percentage of households with electricity connections increases sharply as household income increases. In overall rural Bangladesh, while 26 percent of households in the poorest (first) income quintile have electricity, the rate increases to 72 percent for households in the richest (fifth) income quintile (Figure 3.11).

The percentage of households having electricity varies widely across regions of rural Bangladesh—while only 26 percent of households in Rangpur division have electricity, the rate is 56 percent in Chittagong division. In Rangpur division, although only 11 percent of households in the poorest quintile have electricity connection, about 65 percent of households in the highest income group have it (Figure 3.12). This pattern indicates that pervasive poverty in Rangpur division is probably the main reason for the lowest incidence of electricity in the division, rather than the paucity of electricity network.

Figure 3.11—Households having electricity, by income groups

Legend: ■ FTF zone   ■ Bangladesh
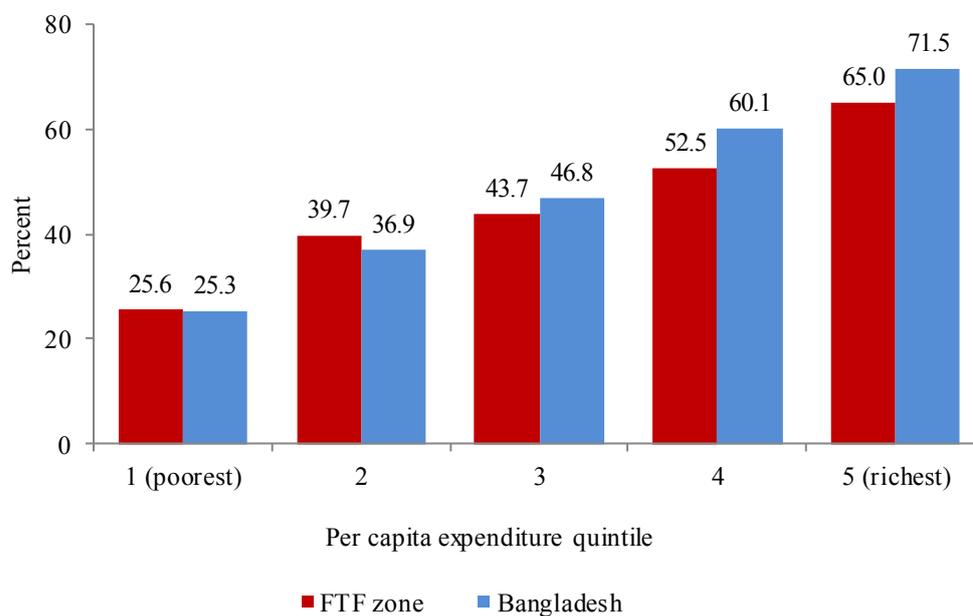
Figure 3.12—Households having electricity in Rangpur division, by income groups
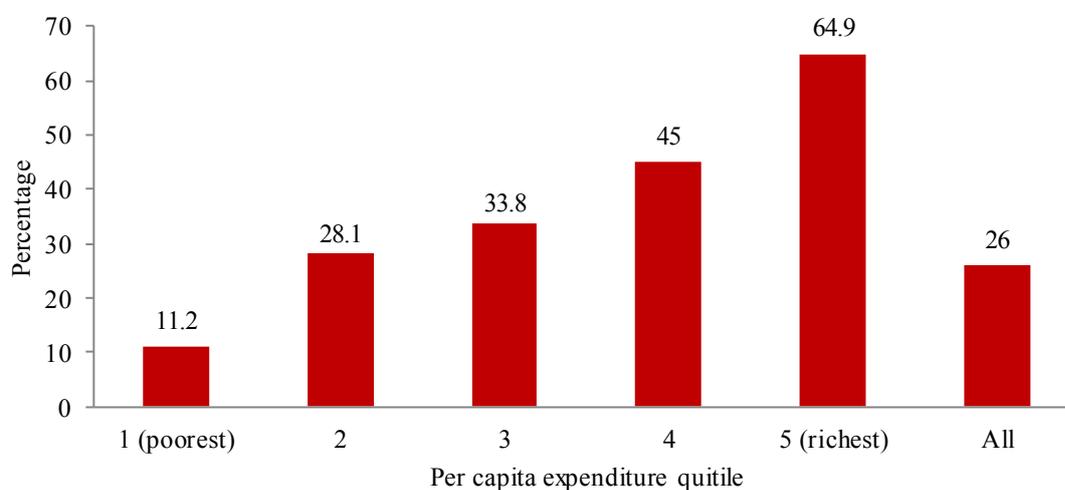
Figure 3.13 shows the percentages of households having electricity and solar energy panels across regions. The incidence of households with solar energy panels is the highest in Barisal division (10.2 percent of households) and the lowest in Rangpur division (only 1.5 percent of households).

Given that the outer walls and the roof form the main part of the dwelling, information on these is provided in Tables 3.22–3.24. Permanent walls are those made of tin, brick, and/or

Figure 3.13—Households having electricity and solar energy panels across regions of rural Bangladesh
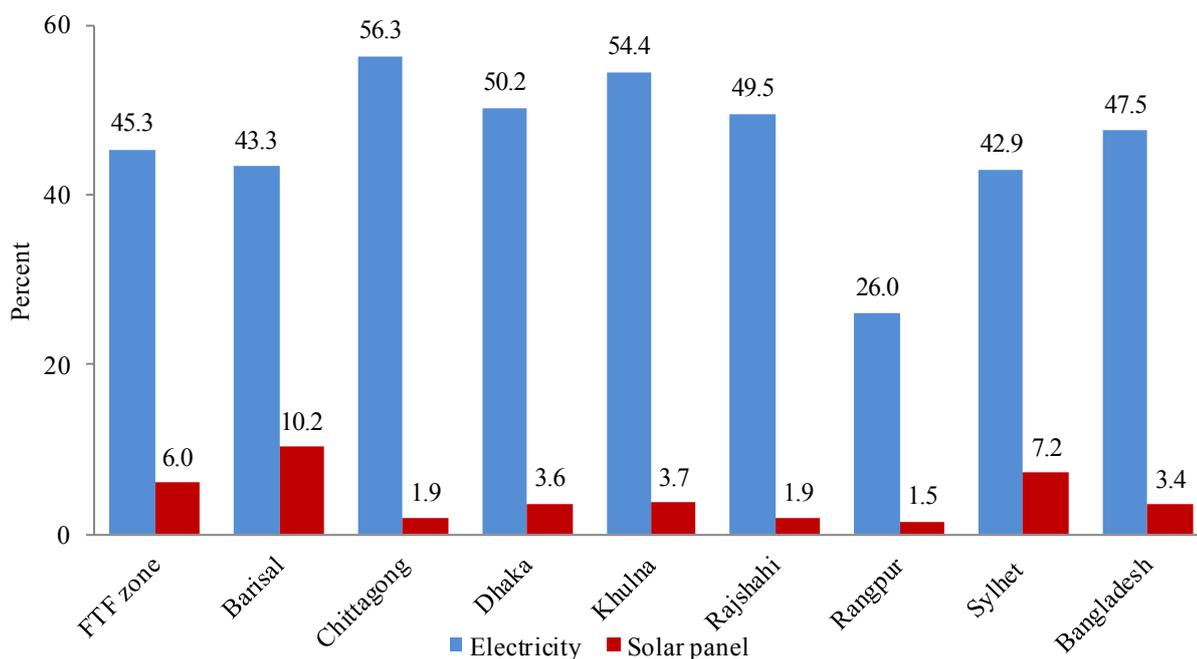
cement. Nonpermanent materials include bamboo, mud, jute sticks, and thatch. About 69 percent of dwellings in the FTF zone and 62 percent of dwellings in entire rural Bangladesh have permanent wall structures. The proportion of households having permanent walls ranges from 48 percent in Sylhet division to 88 percent in Barisal division. The vast majority of all households have tin as their roofing material.

Regarding information on types of latrines (Tables 3.25–3.27), about 53 percent of households in the FTF zone and 49 percent of the households in overall rural Bangladesh have access to *pucca* (permanent) but unsealed latrines. In contrast to 28 percent of the households having sanitary (water-sealed) latrines in the FTF zone, the rate varies from 20 percent in Barisal division to 37 percent in Chittagong division.

Tables 3.28–3.30 present the source of cooking and lighting fuel. Firewood is the main source of cooking fuel in the FTF zone (47 percent), followed by dried leaves (24 percent) and dried cow dung (24 percent). Firewood as the major source of cooking fuel ranges from 15 percent in Rajshahi division to 67 percent in Chittagong division, and dried cow dung as the major cooking fuel source varies from 6 percent in Chittagong division to 35 percent in Khulna, Rajshahi, and Rangpur divisions. Figure 3.14 shows the percentages of households across regions with electricity and kerosene oil as sources of lighting energy. Rural households in Rangpur division are quite exceptional among the regions in the country in terms of sources of lighting energy—only 26 percent of households have electricity and 71 percent of households use kerosene.

Tables 3.31–3.33 provide information on sources of drinking water. Tubewells are the main source of drinking water in the FTF zone (82 percent) and in overall rural Bangladesh (85 percent). However, as shown in Figure 3.15, tubewells as the major source of drinking water vary widely across regions in terms of whether they are owned by households or belong to

the communities. Although 81 percent of households in Barisal division use tubewells as their source of drinking water, only 12 percent of the households use their own tubewell and 69 percent depend on community tubewells. The opposite scenario prevails is Rangpur division, where 72 percent of the households use their own tubewells and 26 percent use community tubewells as their source of drinking water.

Figure 3.14—Electricity and kerosene oil as sources of lighting energy across rural Bangladesh
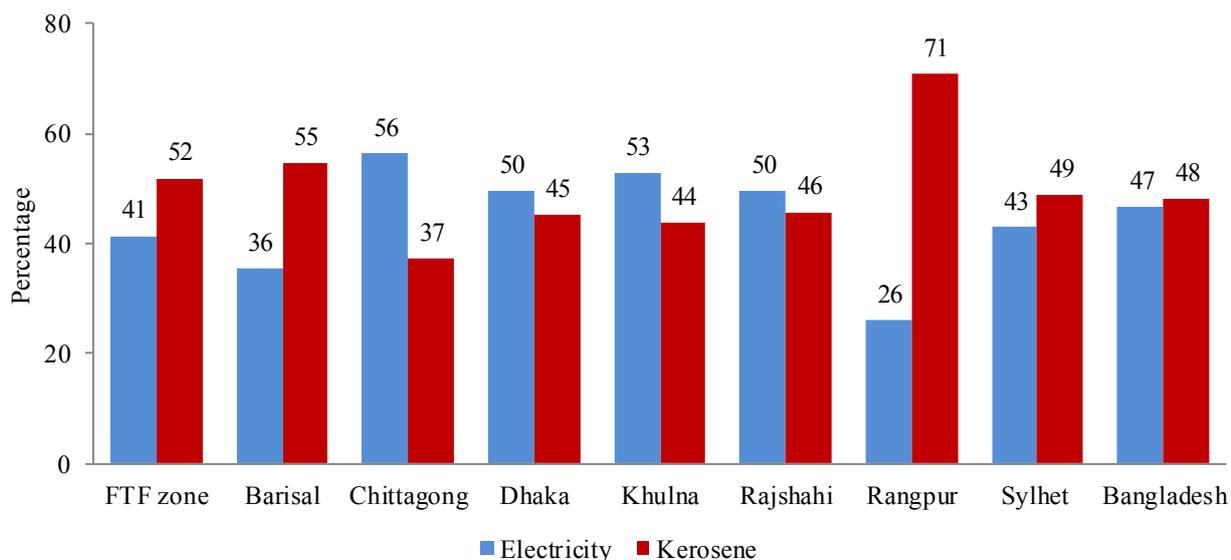
Figure 3.15—Privately owned and community tubewells as sources of drinking water across regions of rural Bangladesh
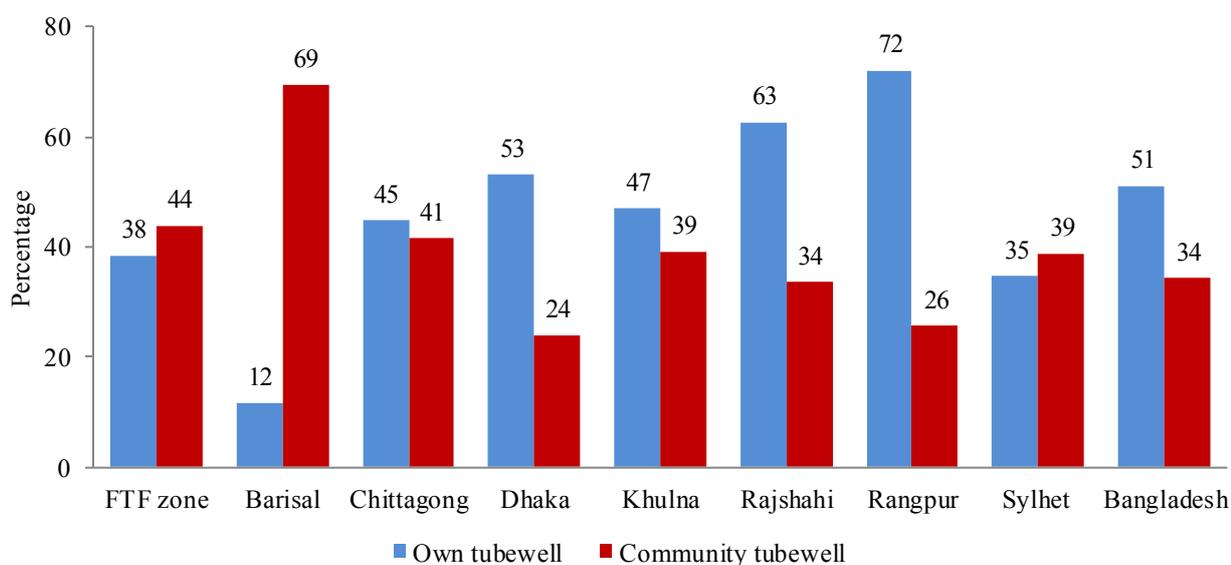
4. FOOD AVAILABITY: AGRICULTURAL PRODUCTION AND PRACTICES

Bangladesh has made commendable progress in domestic food production. In the early 1970s, Bangladesh was a severely food deficit country, with a population of about 75 million and heavily dependent upon food aid. Today, the population is about 160 million and the country is self-sufficient in rice production, which has tripled over the past three decades.

While Bangladesh has experienced steady advances in food availability through the adoption of high-yielding varieties and other agricultural innovations, it faces formidable challenges to feed its growing future population. The population is expected to increase from 160 million in 2011 to 185 million people by 2020 and 222 million by 2050. Key challenges to ensuring food availability in the country include water resources and land area constraints, soil degradation and climate change on the supply side, coupled with a rapidly urbanized and more affluent population on the demand side.

Based on the Bangladesh Integrated Household Survey (BIHS) data of the International Food Policy Research Institute (IFPRI) and the Bangladesh Policy Research and Strategy Support Program (PRSSP), this section presents household- and farm-level information on the factors affecting domestic food production in the Feed the Future (FTF) zone and in other regions of rural Bangladesh. The section is organized as follows: Section 4.1 presents the structure of land distribution and land tenure arrangements; section 4.2 shows the pattern of crops grown and the use of irrigation, fertilizers, seeds, and labor inputs for crop production; section 4.3 discusses farmers' access to agricultural extension services and finance; section 4.4 gives the yields of agricultural production; section 4.5 provides estimates of costs and profitability of rice production; and section 4.6 describes farmers' marketing practices and estimates of farm-level rice stocks.

4.1 The Structure of Land Distribution and Land Tenure Arrangements

4.1.1 Incidence of Landlessness and Inequality in Land Distribution

Land is the most important factor of agricultural production. However, 51 percent of households in the FTF zone and 57 percent of households in entire rural Bangladesh are landless—they do not own any cultivable land. The incidence of landlessness ranges from 47 percent in Khulna division to 67 percent in Chittagong division (Figure 4.1).

Turning next to inequality measures, Tables 4.1 and 4.2 describe the patterns of land distributions in the FTF zone and in entire rural Bangladesh respectively, the simplest way to measure inequality. In the tables, the households are divided into 20 equal groups and are ranked from lowest to highest according to their ownership of total cultivable land. The average size of owned cultivable land for each group is also reported in the tables. The figures indicate that the distribution of arable land is extremely unequal. Among those who own cultivable land, the bottom 25 percent of all households own only 4.0 percent of total cultivable land. At the other extreme, the top 5 percent of all households own 26 percent and the top 10 percent own 38.9 percent of all cultivable land in the FTF zone (Table 4.1). In rural Bangladesh as a whole, the bottom 25 percent of all households own only 3.7 percent of total cultivable land, and the top 10 percent own 39.8 percent all cultivable land (Table 4.2).

Figure 4.1—Prevalence of landlessness in rural Bangladesh, by regions
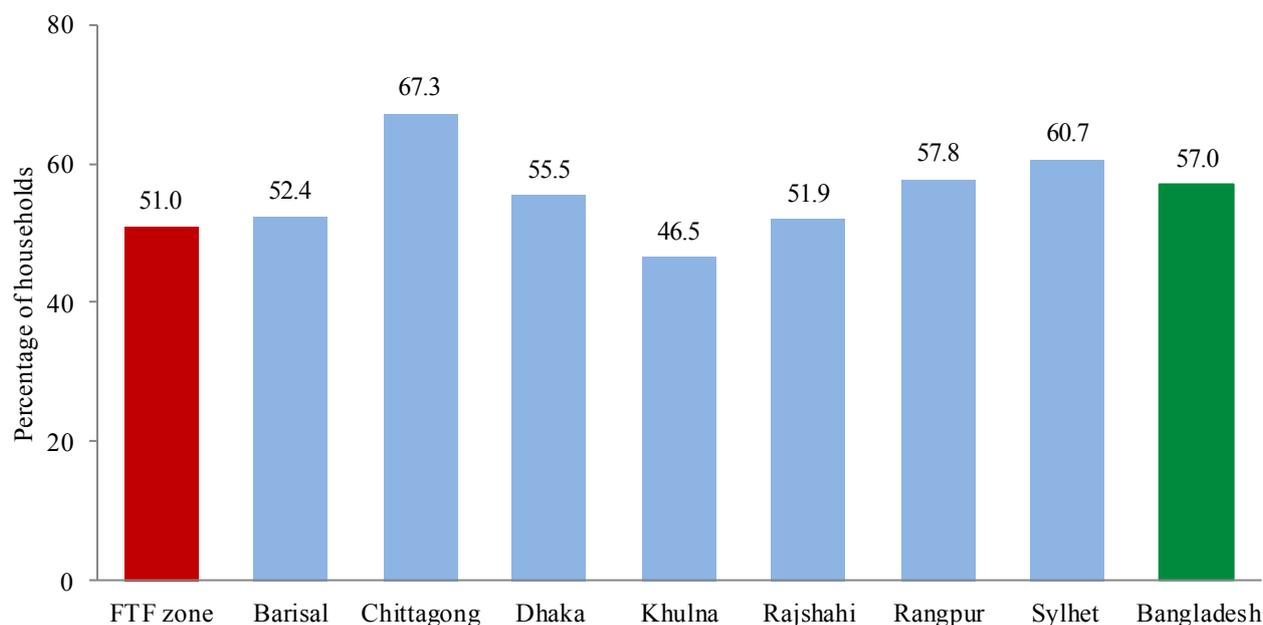
The most widely used summary measure of inequality is the Gini coefficient, which is mainly used for comparing inequality over time and space. The Gini coefficient varies between 0 (everyone has the same amount of land) and 1 (one person has all the land). The estimated Gini coefficients for distribution of cultivable land are 0.776 including the landless and 0.551 excluding the landless for the FTF zone. For entire rural Bangladesh, these Gini coefficients are 0.803 including the landless and 0.548 excluding the landless. Interestingly, the inequality in landownership is the highest in Chittagong division when the prevalence of landlessness is considered. However, the inequality is the lowest in the same division among those who own cultivable land (Figure 4.2).

In rural Bangladesh, about one-third of the farmers are pure tenants, that is, they do not own any cultivable land. These farmers have either sharecropping or cash-lease arrangements with landlords for their operated land (see section 4.1.3, below). Tables 4.3 and 4.4 present the distribution of operated land by 20 equal groups, respectively, for the FTF zone and overall rural Bangladesh. The distribution of operated land is relatively less unequal than that of owned cultivable land. For example, in the FTF zone, the bottom 25 percent of all households utilize 5.2 percent of total operated land, and the top 10 percent operate 31.5 percent of all operated land (Table 4.3).

The estimated Gini coefficients for distribution of operated land are 0.456 for the FTF zone and 0.478 for overall rural Bangladesh (Figure 4.3). The analysis shows that the inequality in operated land is highest in Barisal division (0.514) and lowest in Dhaka division (0.441).

The Gini coefficient can be interpreted in the context of a Lorenz curve. Figure 4.4 shows Lorenz curves of land distribution in rural Bangladesh. The interpretation of the Lorenz curve for land distribution is as follows. After ranking all households by landholding size, the Lorenz curve plots the cumulative percentage of total landholding on the cumulative percentage of households. This determines the percentage of total landholding realized by, say, the bottom 25 percent of the households. The 45-degree line represents the line of perfect equality, where everyone has the same amount of land. The area between the 45-degree line

and the Lorenz curve gives a measure of the extent of inequality. The Gini coefficient is measured as the ratio of the area between the Lorenz curve and the 45-degree line of perfect equality and the area of the triangle underneath the 45-degree line. Figure 4.4 shows that the distribution of owned cultivable land is more unequal than the distribution of operated landholding, even when the landless are excluded from the estimation.

Figure 4.2—Inequality in cultivable landownership: Gini coefficient

Legend: ■ Gini coefficient including landless ■ Gini coefficient excluding landless

Data:
Region	Including landless	Excluding landless
FTF zone	0.776	0.551
Barisal	0.796	0.571
Chittagong	0.839	0.503
Dhaka	0.781	0.508
Khulna	0.764	0.558
Rajshahi	0.789	0.580
Rangpur	0.797	0.520
Sylhet	0.833	0.575
Bangladesh	0.803	0.548
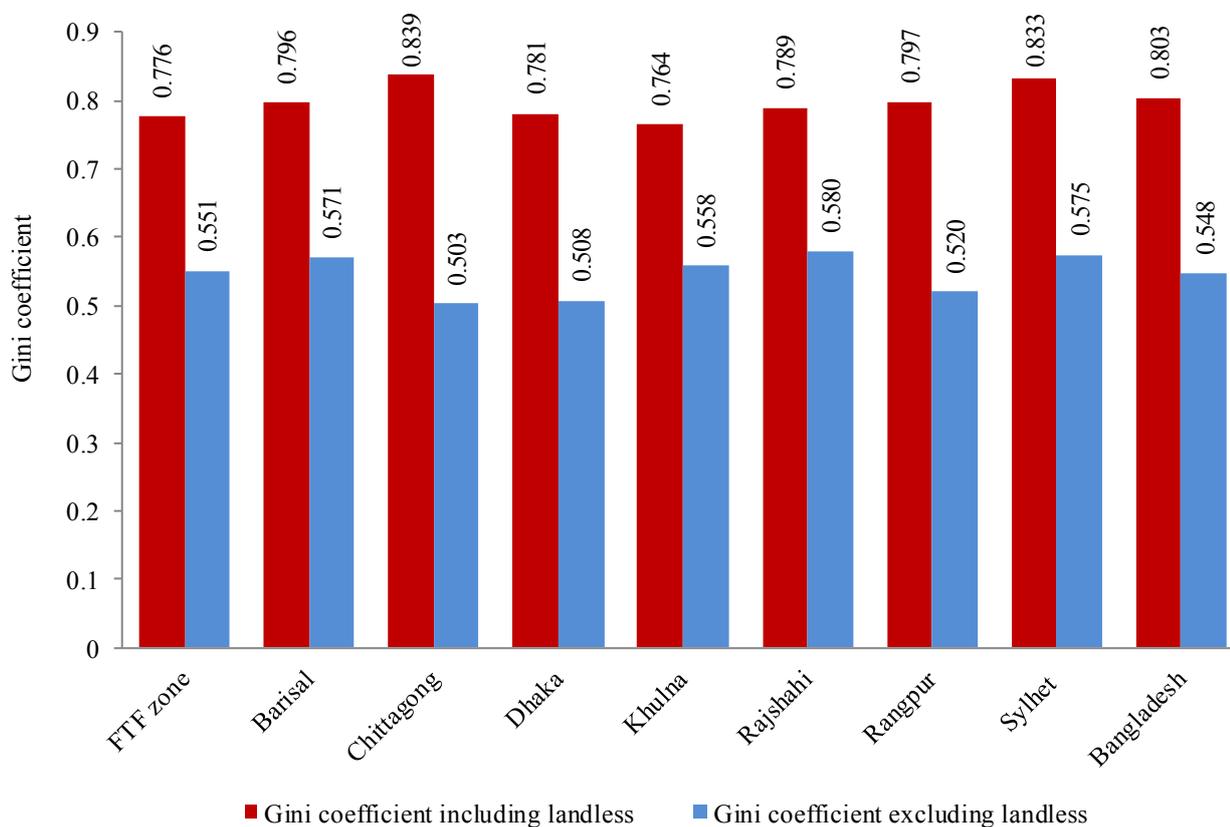
Figure 4.3—Inequality in operated landholding: Gini coefficient

Data:
Region	Gini coefficient
FTF zone	0.456
Barisal	0.514
Chittagong	0.466
Dhaka	0.441
Khulna	0.445
Rajshahi	0.503
Rangpur	0.497
Sylhet	0.456
Bangladesh	0.478
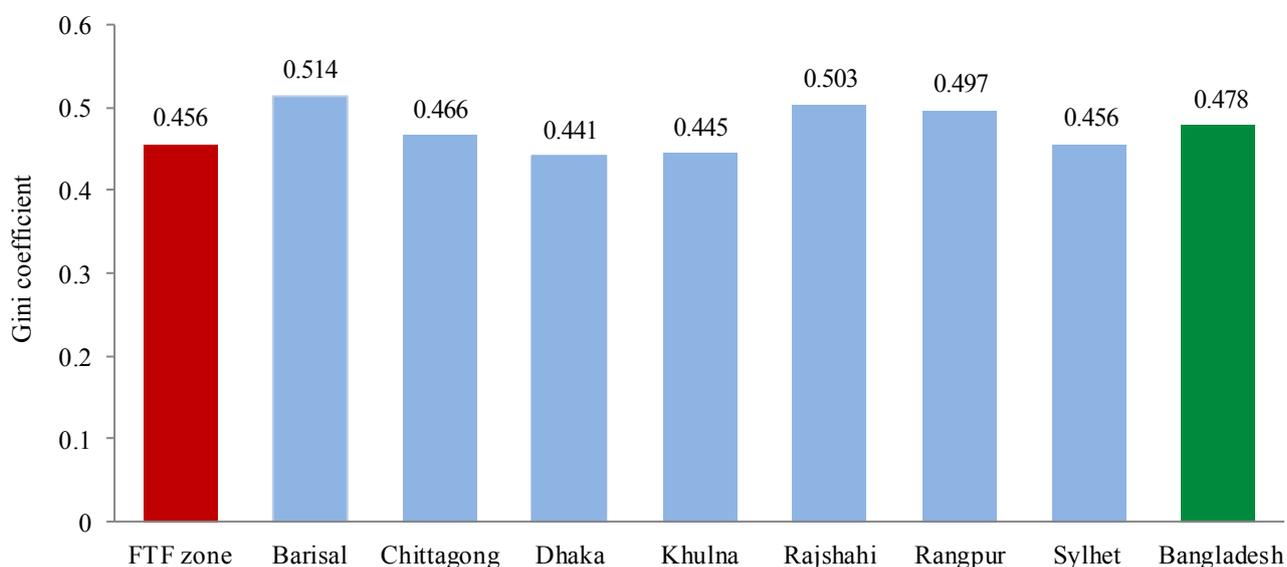
Figure 4.4—Lorenz curves of land distribution in rural Bangladesh
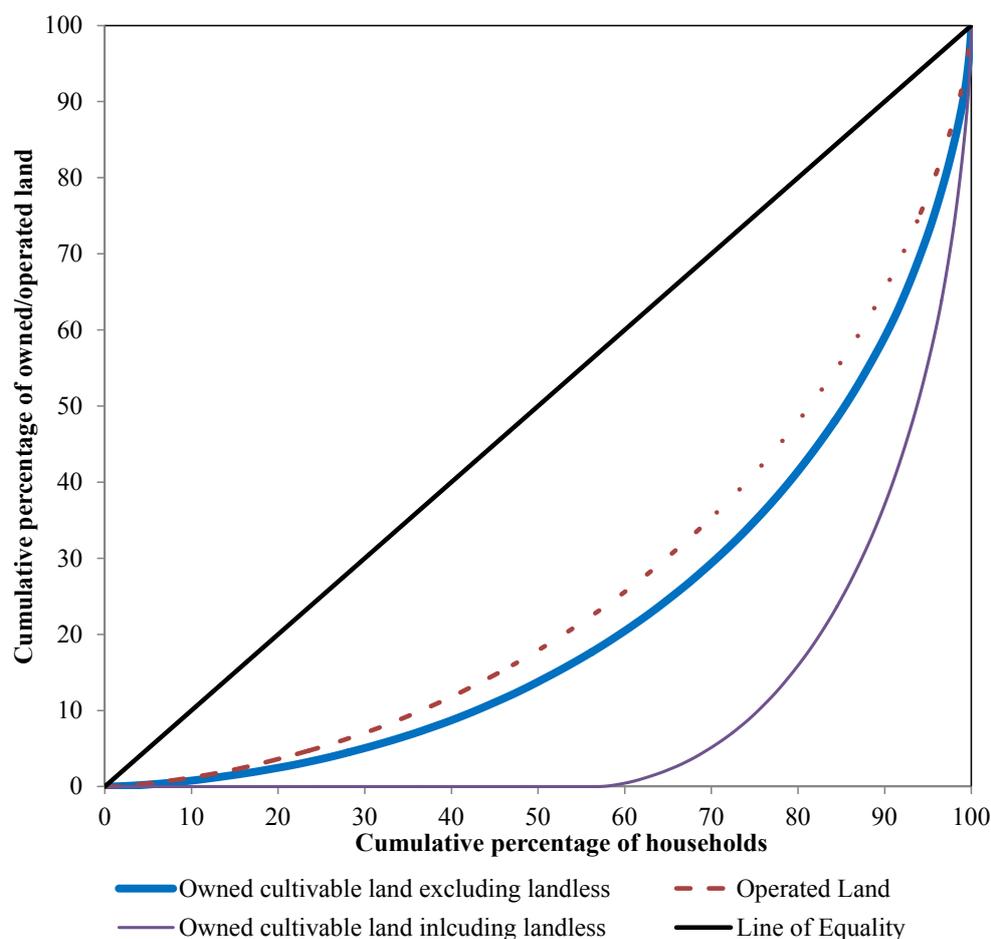
4.1.2 Farm Size Groups

Much of the farmer-level analysis in this section disaggregates the sample farmers into four operated farm size groups: (1) marginal farmers (operating less than 0.5 acre of land); (2) small farmers (operating 0.5 to 1.49 acres of land); (3) medium farmers (operating 1.5 to 2.49 acres of land); and large farmers (operating 2.5 acres or more land). The four farm size groups match the cut-off points of the six operated farm size groups presented in the 2010 Household Income and Expenditure Survey (HIES) report of the Bangladesh Bureau of Statistics (BBS 2011) by aggregating the smallest two HIES farm size groups under the marginal farm category and the largest two groups under the large farm category.

Table 4.5 presents the distribution of operated land by each of the four farm size groups in the FTF zone, across divisions, and in overall rural Bangladesh. The results are presented in terms of percentage of all farmers and percentage of total operated land. Figures 4.5 and 4.6 show the distribution of operated land by farm size groups, respectively, in the FTF zone and in entire rural Bangladesh. About one-third of all farmers in the FTF zone are marginal farmers who operate only about 8 percent of total operated land in the zone. At the other extreme, only about 8 percent of all farmers in the FTF zone are large farmers who operate about 27 percent of total operated land in the zone (Figure 4.5). Similar patterns are observed in overall rural Bangladesh (Figure 4.6).

Table 4.6 provides the number of plots cultivated by each of the four farm size groups in the FTF zone. The average number of plots per farmer is 3.7 plots, ranging from 1.6 plots per marginal farmer to 7.6 plots per large farmer. The average number of plots per farmer varies from 2.8 plots per farmer in Chittagong division to 4.9 plots per farmer in Rajshahi division (Table 4.7).

Figure 4.5—Distribution of operated land by farm size groups: FTF zone
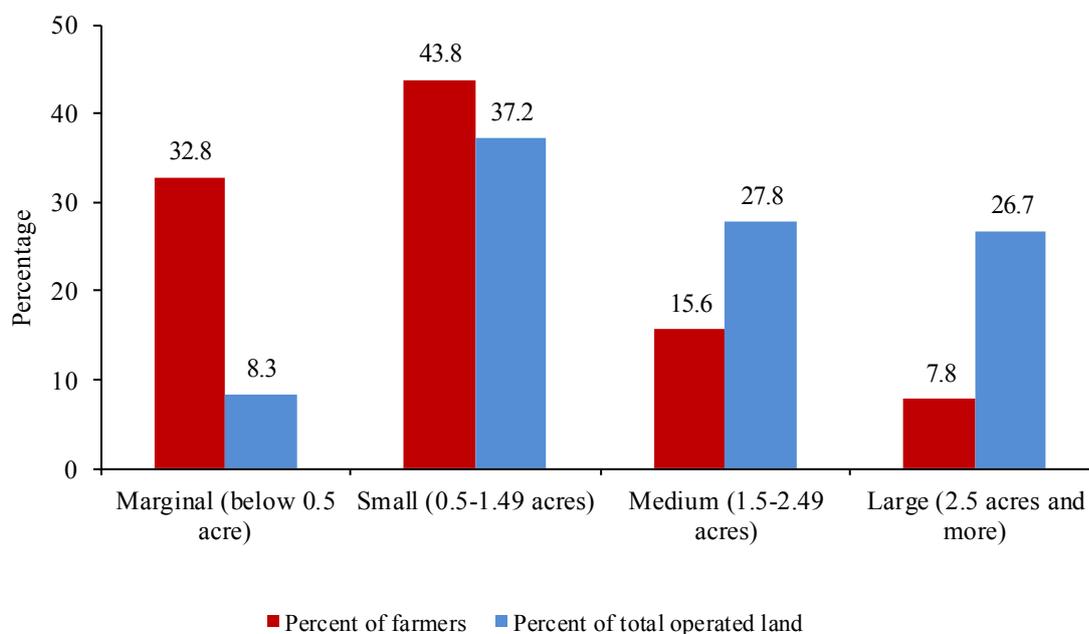
Figure 4.6—Distribution of operated land by farm size groups: Rural Bangladesh
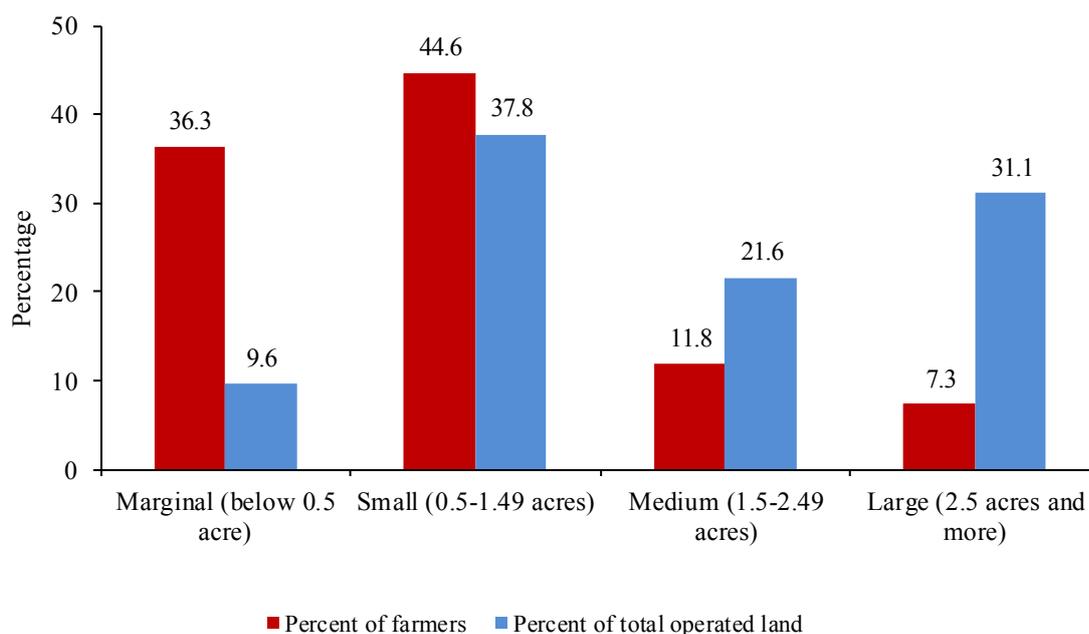
The average size of operated land per farm household in the FTF zone is 1.1 acres, ranging from only 0.23 acres per marginal farmer to 4.2 acres per large farmer (Table 4.8). On average, the smallest size of operated land per farmer is 0.8 acre in Chittagong division and the largest size is 1.5 acres per farmer in Sylhet division. The average farm size in rural Bangladesh is 1.0 acre (Table 4.9).

4.1.3 Patterns of Land Tenure

Table 4.10 presents land tenure arrangements by farm size groups and Table 4.11 shows the regional patterns. In the FTF zone, 28 percent of all households who operate land for cultivation are pure tenants, that is, they do not own any cultivable land. The proportion of pure-tenant farmers is 34 percent in overall rural Bangladesh, and the rate ranges from 24 percent in Barisal division to 37 percent in Chittagong division. About 37 percent of farmers in the FTF zone as well as at the national level cultivate only their own land. The proportion of mixed-tenant farmers—those who cultivate their own land and also take land in as sharecroppers and/or leaseholders—is 35 percent in the FTF zone and 29 percent in entire rural Bangladesh (Figure 4.7).

The dominant tenurial arrangement in Bangladesh is sharecropping, where the produce is shared between the cultivator and the landowner in different proportions that have been agreed upon prior to cultivation. About 40 percent of the farmers are sharecroppers in both the FTF zone and at the national level. This group of sharecroppers includes those who do not own any cultivable land (that is, pure tenant), as well as those who own land and sharecrop other people's land. About 15 percent of the farmers in the FTF zone and about 13 percent of the farmers in overall rural Bangladesh have cash-lease arrangements, either as pure tenants or as those with their own land plus cash-leased land. The proportion of farmers with mixed-tenancy arrangements (operating sharecropped plus cash-leased land, either as pure tenants or landowners) is 8 percent in the FTF zone and 10 percent at the national level (Figure 4.8).

Land tenure patterns in the FTF zone are quite similar to those prevailing in rural Bangladesh as a whole (Table 4.10). For example, approximately one-half of all marginal farmers do not have any land lease arrangements; they cultivate only their own land. This is perhaps a manifestation of their risk aversion. For the marginal farmers who are pure tenants, the sharecropping arrangements represent an overwhelming majority—almost three-fourths of all pure-tenant farmers are sharecroppers. Only about 17 percent of the large farmers are pure tenants, and the majority of them opt for sharecropping as the mode of renting land. It is interesting to note that the majority of the large farmers supplement their own land with some form of sharecropping and/or cash leasing. In the FTF zone, this proportion is about 58 percent.

4.2 Crops Grown and the Use of Inputs for Crop Production

This section presents the results of the BIHS showing the patterns of crops grown by farmers and the use of irrigation, fertilizers, seeds, and labor for crop production. These results have been obtained from detailed plot-level data collected in the BIHS.

Figure 4.7—Land tenure patterns in the FTF zone and across divisions

Legend: Pure tenant (no owned land) · Own land only · Mixed tenant (own land + land taken in)
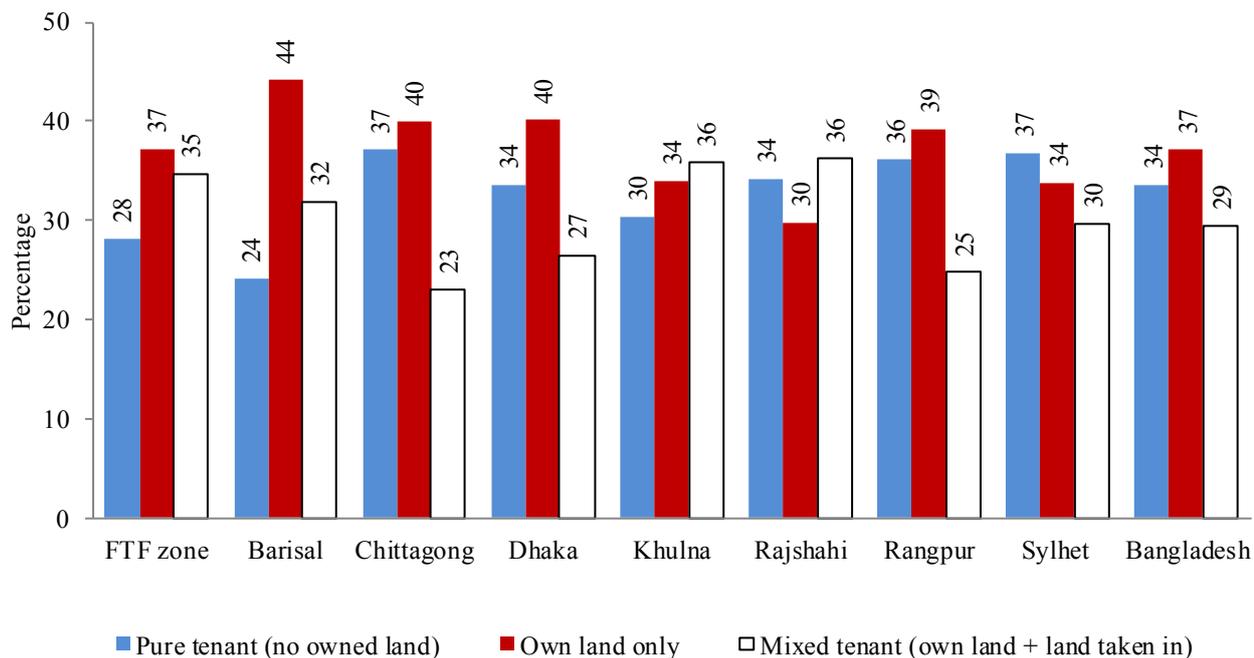
Figure 4.8—Forms of tenancy in the FTF zone and rural Bangladesh

Legend: FTF zone · Rural Bangladesh
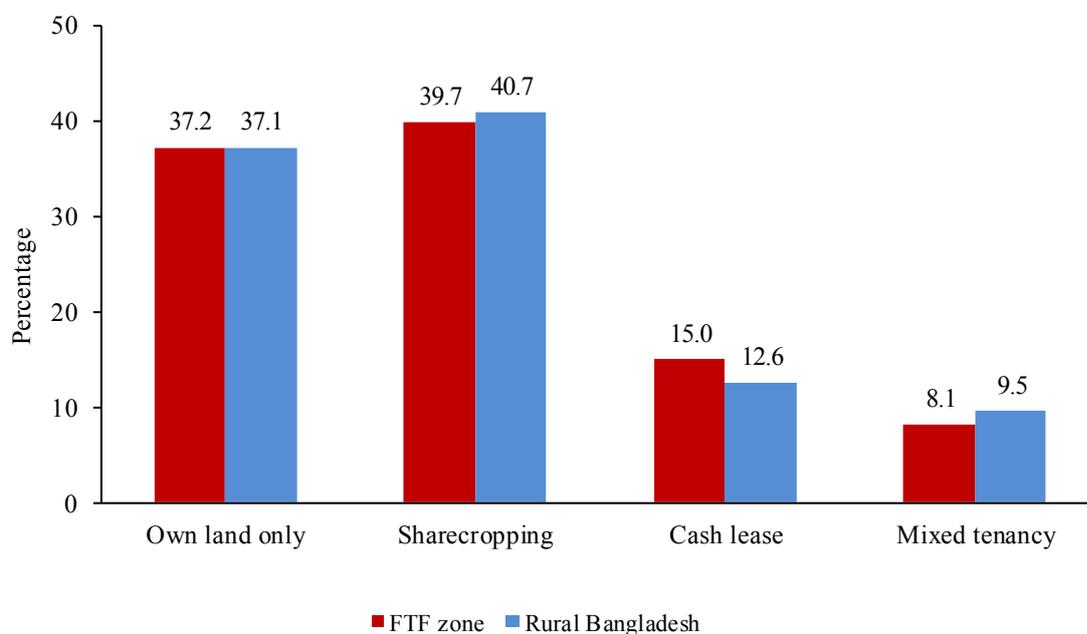
4.2.1 Patterns of Crops Grown by Farmers

Table 4.12 shows the shares of individual crops on total cropped land in the FTF zone, by divisions, and in entire rural Bangladesh.[6] The shares are expressed in percentages. Rice has the overwhelming dominance in the cropping patterns. The analysis indicates that, on average, rice accounts for about 77 percent of the total cropped area of sample households at the national level. The share of rice on total cropped land varies from about 68 percent in the FTF zone to as high as 94 percent in Sylhet division. The patterns are consistent with agricultural statistics reported by the BBS. For example, the *Statistical Yearbook of Bangladesh–2011* reports that rice represents 79 percent of total cropped area in Bangladesh and 97 percent of total cropped area in Sylhet division (BBS 2011). Sylhet division shows a rather unique and almost a rice monoculture cropping pattern, probably because of its considerable land area under tea plantations (which are excluded from total cropped land calculations) and hilly topography. On the other hand, the relatively low share of rice on the total cropped land in the FTF zone indicates a more balanced and diversified cropping pattern in the zone in contrast to other regions of the country.

The FTF zone is comprised of twenty districts in three divisions—Barisal, Dhaka, and Khulna. The fact that rice accounts for 68 percent of total cropped land in the FTF zone (although the rates are 79 percent in Barisal, 76 percent in Dhaka, and 73 percent in Khulna) can be empirically explained. Of Dhaka division's seventeen districts, five (Faridpur, Gopalganj, Madaripur, Rajbari, and Shariatpur) are included in the FTF zone. According to the BIHS data, rice accounts for 49 percent of total cropped land in these five districts. Indeed, agricultural statistics reported by the BBS reveal that, on average, the share of rice on total cropped land in these five districts of Dhaka division was 47 percent in 2010–11, although the average share of rice in Dhaka division was 78 percent (BBS 2011). The relatively low share of rice in these five districts pulled down the average share of rice on total cropped area in the FTF zone.

4.2.2 Irrigation

Irrigation is one of the most critical factors of agricultural production in Bangladesh. Tripling rice production in the country since the early 1970s would not have been possible without irrigation. Access to irrigation is the single most important determinant of *boro* rice cultivation. Among the three rice crops (*aus, aman,* and *boro*), *boro* accounted for about 56 percent of total rice production in 2010–11.

Irrigation plays three crucial roles in increasing foodgrain production in Bangladesh: (1) irrigation enables farmers to grow an additional *boro* rice or wheat crop during the dry winter season, and thus increases cropping intensity and eases the land constraint; (2) irrigation complemented with fertilizers and modern high-yielding rice varieties significantly raises rice yields in comparison to rain-fed rice cultivation; and (3) supplemental irrigation can take much of the risk out of the two predominantly rain-fed rice seasons—*aus* and *aman* (Ahmed and Sampath 1992).

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[6] The crop shares are calculated as follows: Share of crop X (say, rice) on total cropped land = Total area under crop X cultivated by all sample households in a region (say, FTF zone) from December 1, 2010, to November 30, 2011 (12 months), divided by total area under all crops cultivated by all sample households in the region from December 1, 2010, to November 30, 2011. Estimates are based on plot-level data, taking the cropping intensity into account (that is, how many crops were grown on each plot in the 12-month period). Permanent trees (such as mango, jackfruit, coconut, and betel leaf trees) and plantations (such as tea and rubber plantations) are excluded from total cropped land calculations.

Analysis of the BIHS data suggests that about 60 percent of total cropped area of farm households in the FTF zone and 64 percent of total cropped areas in rural Bangladesh are irrigated. Irrigation coverage of cropped areas tends to decrease as farm size increases in the FTF zone: while about 67 percent of cropped areas of marginal farmers is irrigated in the FTF zone, the rate is about 55 percent for large farmers (Figure 4.9). The rate of irrigation coverage ranges from only about 15 percent of total cropped land in Barisal division to about 85 percent in Rajshahi division (Figure 4.10).

Figure 4.9—Percentage of gross cropped area irrigated by farm size groups: Rural Bangladesh
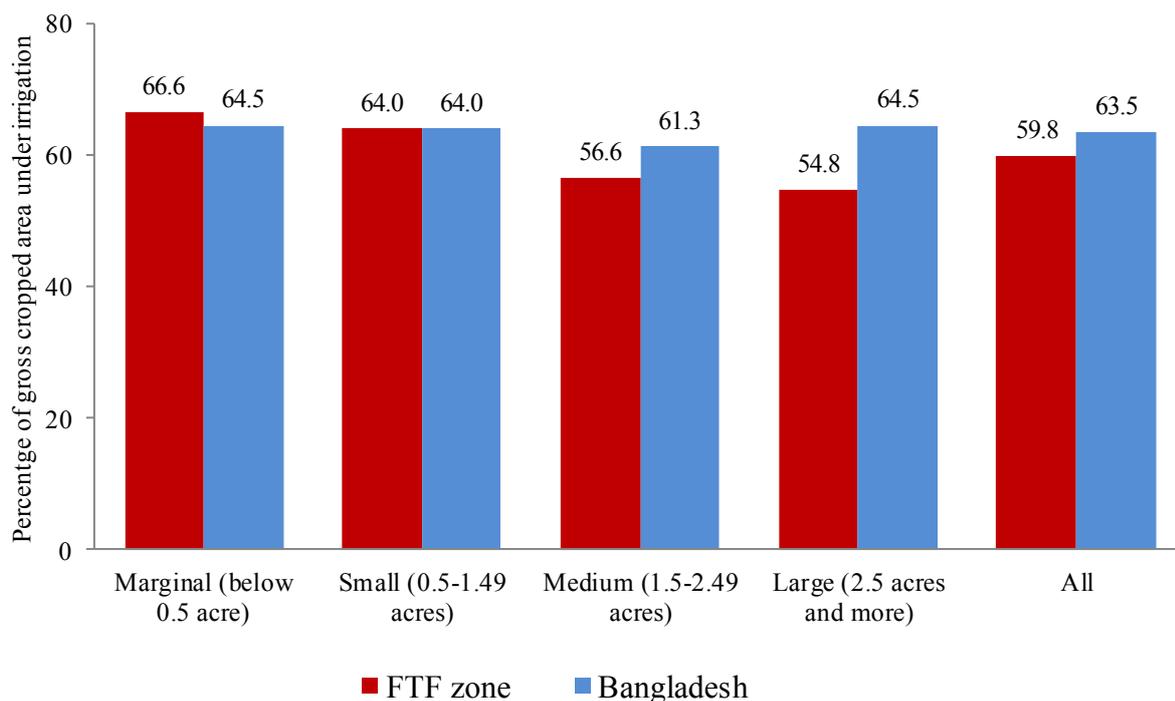
Figure 4.10—Percentage of gross cropped area irrigated by divisions
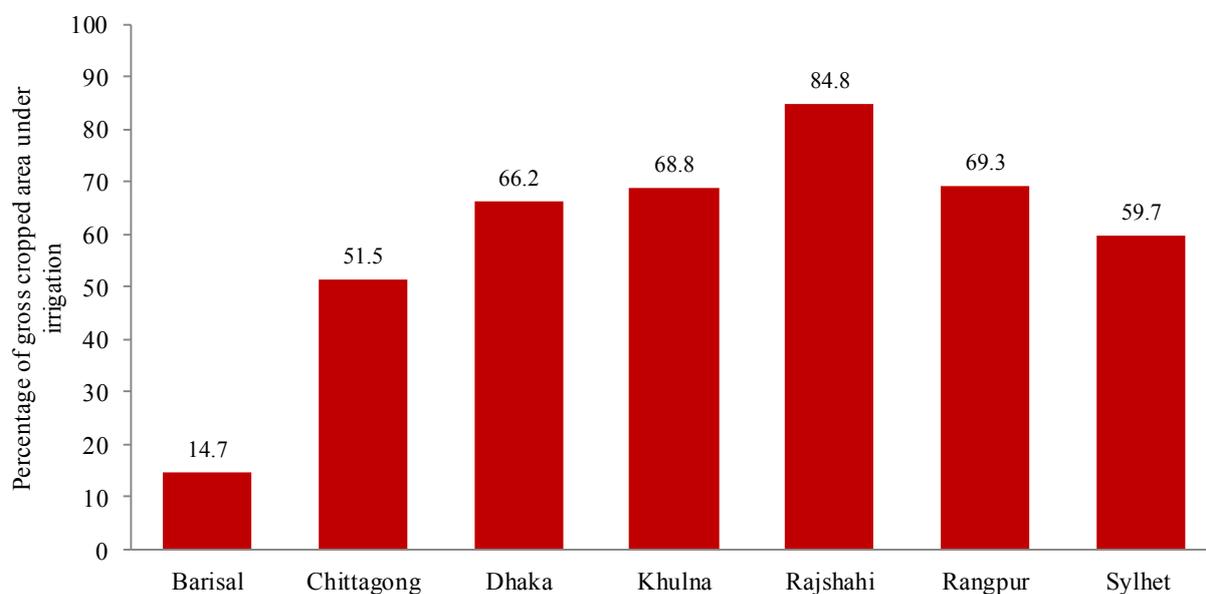
Irrigation induces farmers to adopt HYV technology for rice cultivation. About 80 percent of total HYV rice area in the FTF zone and about 76 percent of total HYV rice area in the country are cultivated under irrigation (Figure 4.11). Rice yields are about 74 percent higher on irrigated plots, compared to nonirrigated plots in the FTF zone. At the national level, rice yields are 32 percent higher with irrigation (Figure 4.12).

Groundwater is the main source of irrigation for 59 percent of farmers in the FTF zone and 61 percent of farmers in entire rural Bangladesh. About 18 percent of farmers in the FTF zone use surface water for irrigation, compared to about 11 percent of farmers who use surface water for irrigation at the national level (Figure 4.13). While only about 9 percent of farmers in the country and about 14 percent of farmers in the FTF zone grow crops without irrigation (they totally depend on rainfall as the source of water for cultivation), this proportion varies widely across divisions—from only 1 percent in Rajshahi division to as high as 65 percent in Barisal division. Surface water is virtually the only source of irrigation for 35 percent of farmers who use irrigation in Barisal division (Table 4.12).

Bangladeshi farmers use both traditional and modern methods of irrigation. Traditional methods include *done* (a water-lifting devise), swing basket, and dug-well; and modern techniques used are shallow tubewell, deep tubewell, low-lift pump, hand pump, and sophisticated canal gravity-flow irrigation schemes. Among these, *done,* swing basket, and low-lift pump use surface water, while dug-well, shallow tubewell, deep tubewell, and hand pump use groundwater as irrigation sources.

The shallow tubewell is the predominant method of irrigation utilized by farmers both in the FTF zone and at the national level for *boro* rice cultivation. The second most important method is low-lift pump in the FTF zone and deep tubewell in entire rural Bangladesh (Figure 4.14). However, the methods of irrigation vary extensively across divisions. For example, while the shallow tubewell is used by only about 3 percent of the farmers in Barisal division who use irrigation for *boro* rice cultivation, about 96 percent of them use low-lift pumps for irrigation. In contrast, the use of low-lift pumps by farmers in Rajshahi division is negligible (only about 1 percent); instead, they mainly use shallow tubewells (58 percent of farmers) and deep tubewells (40 percent of farmers) for irrigating their *boro* paddy fields (Table 4.14).

Figure 4.11—Use of irrigation and adoption of HYV rice technology

FTF zone   Rural Bangladesh
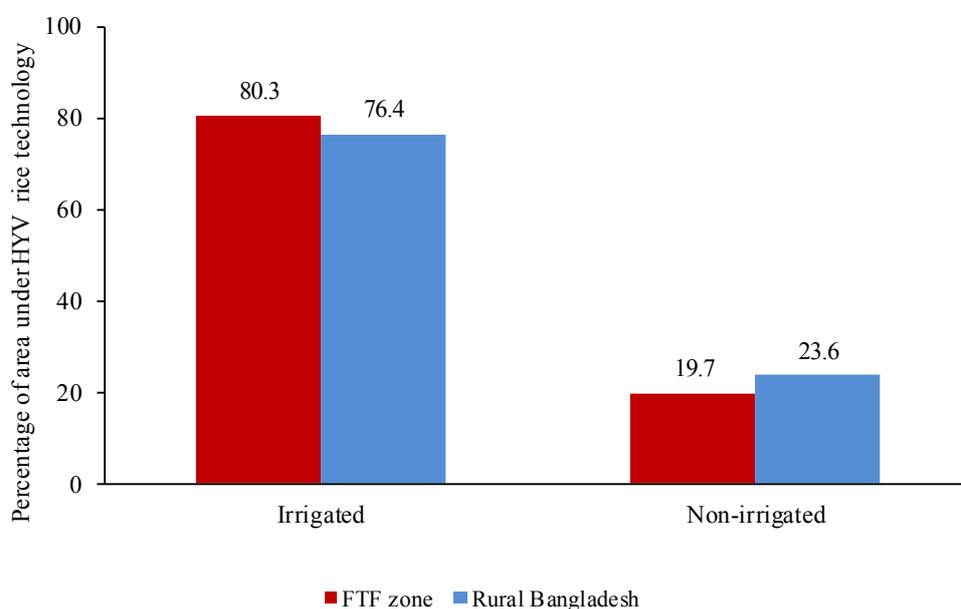
Figure 4.12—Use of irrigation and rice yields

Legend: FTF zone, Rural Bangladesh

(Bar chart values — Rice yields (metric ton/hectare))

Irrigated plots: FTF zone 3.3, Rural Bangladesh 3.3
Non-irrigated plots: FTF zone 1.9, Rural Bangladesh 2.5
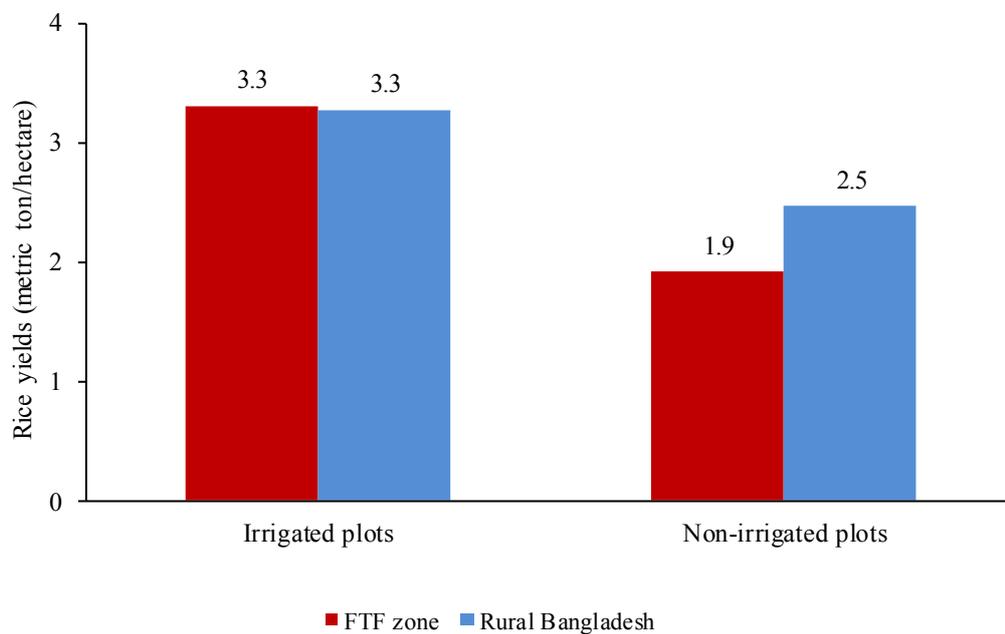
Figure 4.13—Sources of irrigation for farmers

Legend: FTF zone, Rural Bangladesh

(Bar chart values — Percentage of farmers)

Ground water: FTF zone 59.4, Rural Bangladesh 61.0
Surface water: FTF zone 17.8, Rural Bangladesh 11.3
Ground & surface water: FTF zone 8.9, Rural Bangladesh 18.5
Rainfed: FTF zone 13.9, Rural Bangladesh 9.2
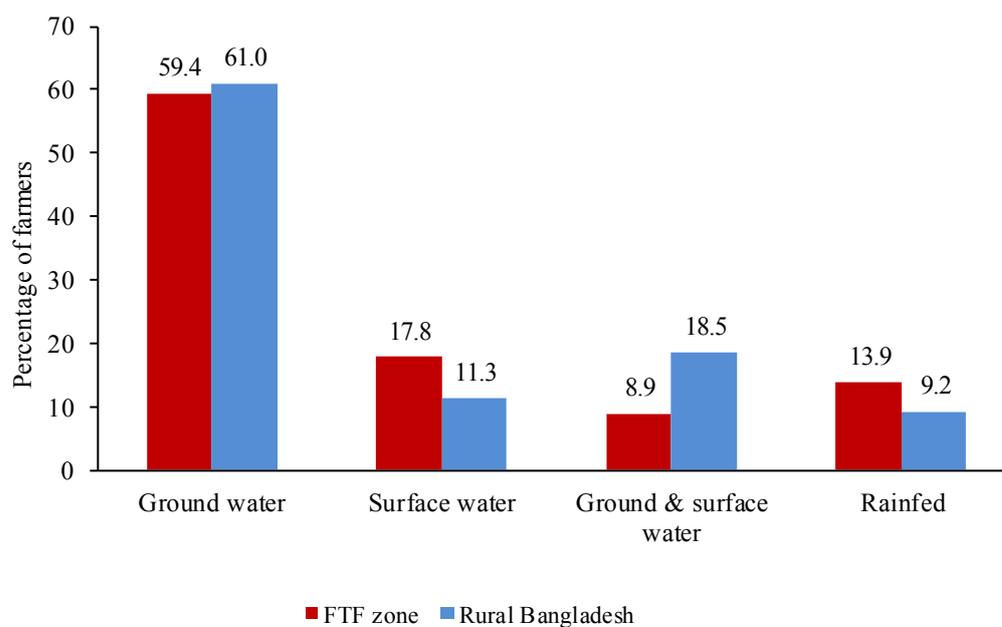
Figure 4.14—Methods of irrigation used by farmers
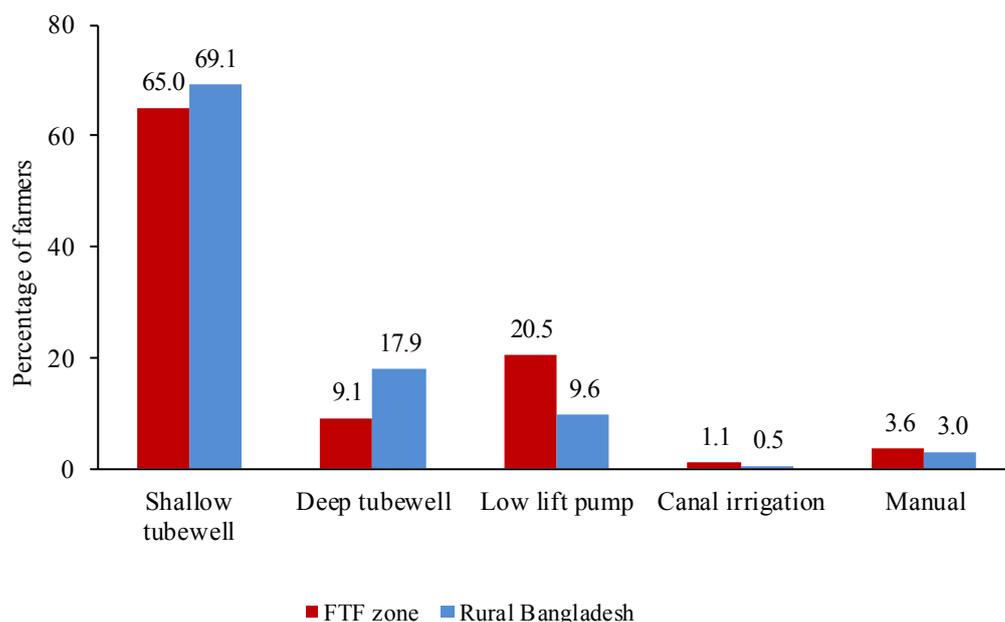
Figure 4.15 shows that farmers in the FTF zone use diesel fuel to run their irrigation equipment to irrigate about 77 percent of their total irrigated area, a rate that is about 67 percent at the national level. Farmers use electricity to operate their irrigation equipment to irrigate about 17 percent of their total irrigated area in the FTF zone and 32 percent of the irrigated area in overall Bangladesh. Manual energy is used mainly for the traditional irrigation methods such as *done,* swing baskets, and dug-wells.

Figure 4.15—Energy used for irrigation
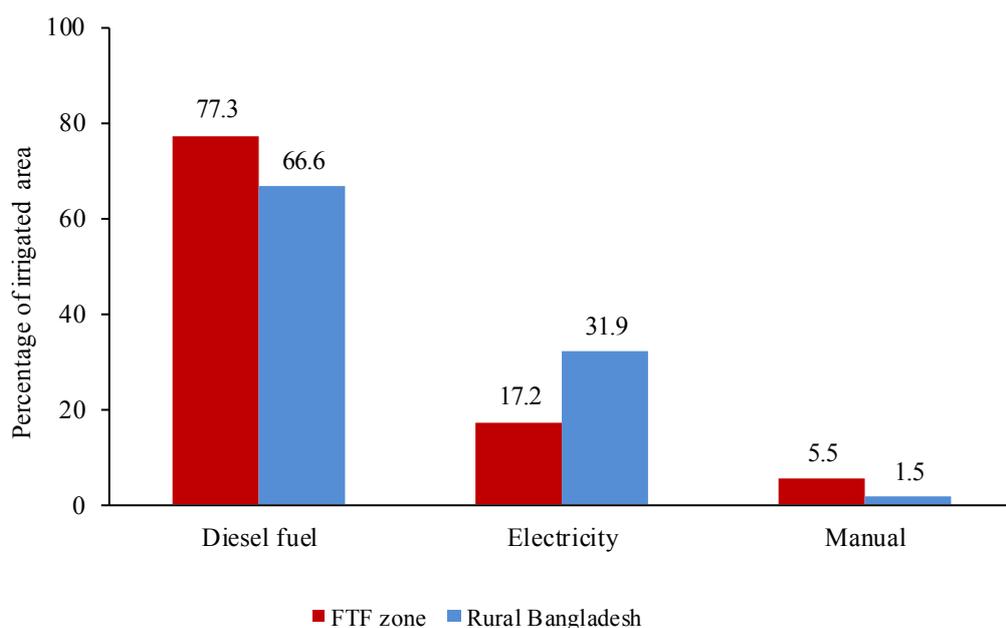
4.2.3 Fertilizer Use

Table 4.15 presents the use of fertilizers for rice cultivation by farm size groups in the FTF zone and in entire rural Bangladesh. The table reports the use of four main types of fertilizers: urea, triple super phosphate (TSP), di-ammonium phosphate (DAP), and muriate of potash (MoP). In general, smaller farmers tend to use relatively larger amounts of fertilizers than larger farmers. For example, marginal farmers and small farmers in the FTF zone use 11 percent and 15 percent higher amounts of urea fertilizer, respectively, compared to large farmers for cultivating *boro* rice (Figure 4.16).

Figure 4.16—Fertilizer use for HYV boro rice cultivation by farm size groups in the FTF zone
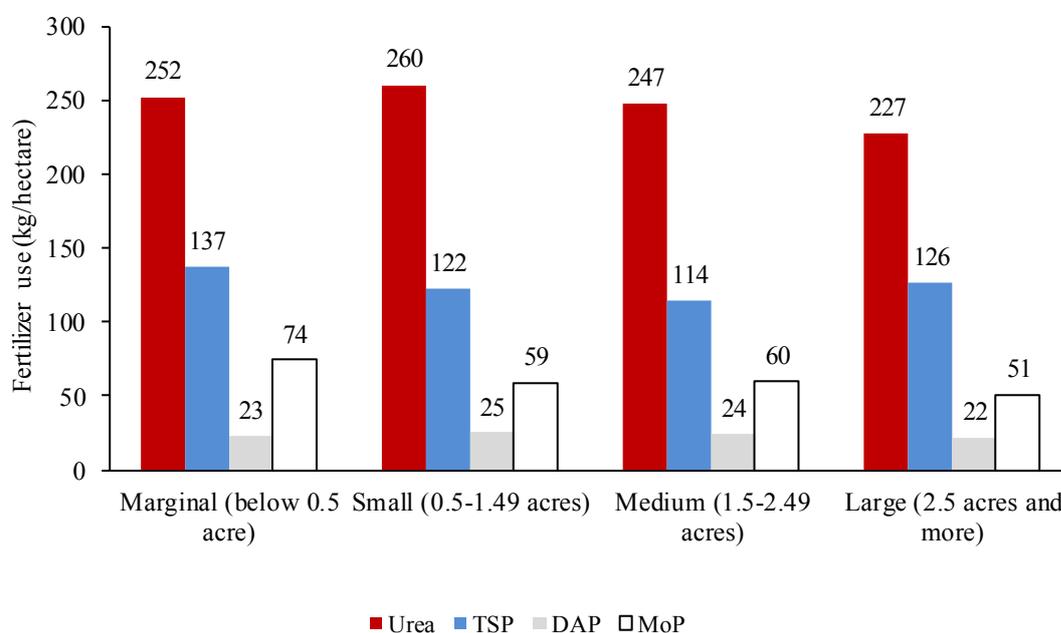
The use of fertilizers can be compared to the recommended dosage to determine whether farmers use adequate amount of fertilizers. The recommended dosage for HYV *aman* rice cultivation is 166 kilograms per hectare (kg/ha) for urea, 101 kg/ha for TSP, and 69 kg/ha for MoP. For production of *boro* rice, the recommended dosage is 269 kg/ha for urea, 131 kg/ha for TSP, and 121 kg/ha for MoP. For cultivating HYV *aman* rice, for example, farmers in the FTF zone use about 8 percent more urea than the recommended dosage, but use 12 percent less TSP and 39 percent less MoP than the recommended dosages (Figure 4.17). Similar patterns hold for HYV *aman* rice cultivation at the national level—using higher-than-recommended dosages for urea, but lower-than-recommended dosages for TSP and MoP. For cultivating HYV *boro* rice, farmers in the FTF zone use less than the recommended dosages for urea, TSP, and MoP (Figure 4.18). Again, similar patterns are observed for Bangladesh as a whole (Table 4.15).

Figure 4.17—Comparing actual fertilizer application to recommended dosages for HYV aman rice cultivation in the FTF zone
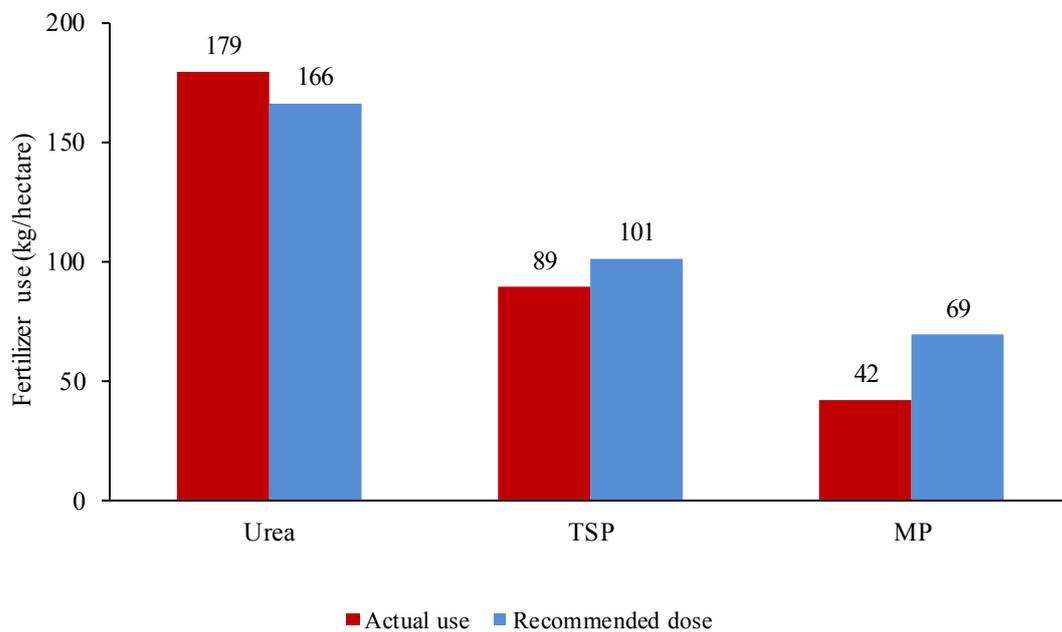
Figure 4.18—Comparing actual fertilizer application to recommended dosages for HYV boro rice cultivation in the FTF zone
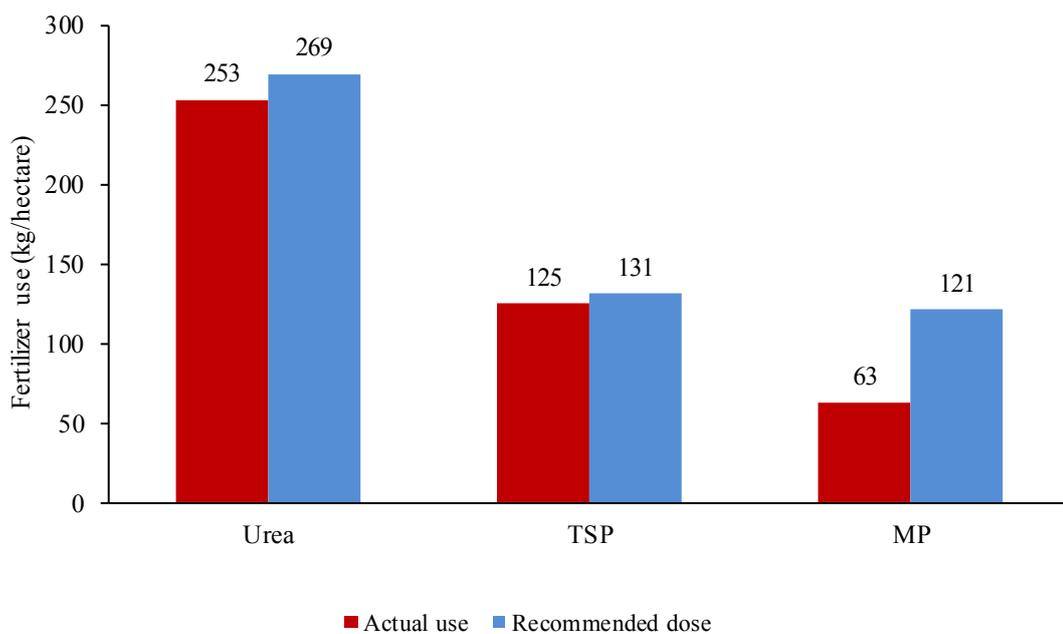
4.2.4 Use of Seeds by Variety and Source

Rice

Table 4.16 shows the rates of cultivation of local and modern varieties of rice by farm size groups. The adoption of agricultural technology by farmers is relatively high for rice in Bangladesh; the use of HYV seeds is predominant for rice cultivation. For the two *kharif* (summer) crops of *aus* and *aman* as well as for the *rabi* (winter) rice crop of *boro*, the FTF zone appears to have a greater diffusion of technology than the country as a whole. The adoption of hybrid *boro* rice is more prevalent among the large farmers, given its input intensity and higher seed cost. The use of hybrid rice technology is considerably higher in the FTF zone compared to the country as a whole. This is mainly due to Khulna division, which has among the highest proportions of *boro* hybrid farmers in Bangladesh.

Table 4.17 shows the source of rice seeds by farm size groups. Almost one-half of the *aus* and *aman* farmers use seeds saved from the last harvest, either from their own harvest or from gifts received from their neighbors, friends, or relatives. This practice is positively correlated with farm size. Farmers' use of their own seeds is 35 percent in the FTF zone and 42 percent for the entire country. For farmers who purchase seeds, about 47 percent of *aus* farmers and 41 percent of *aman* farmers in the FTF zone buy seeds from local shops, though they are not aware of the exact brand of the seed. Similar patterns are seen in the country as a whole. The purchase of seeds directly from the Bangladesh Agricultural Development Corporation (BADC) outlets is insignificant. However, it is important to note here that even though only a small proportion of farmers buy rice seeds directly from BADC, many farmers do use BADC seeds that they buy from local shops or from other dealers who buy from BADC, as the community survey (a component of BIHS) findings suggest.

The situation is quite different for *boro* rice cultivation, with most farmers purchasing their seeds. The BIHS results (not shown in Table 17) suggest that the most popular *boro* HYVs are BR-28 and BR-29, which have been developed by the Bangladesh Rice Research Institute (BRRI). More than 90 percent of the *boro* farmers grow these two varieties, while the rest grow hybrid rice in *boro* season. As with *aus* and *aman*, very few *boro* farmers purchase seeds directly from BADC outlets.

What stands out across the three rice crops is the fact the majority of the farmers do not know the brand of the seed they buy. Knowing the different seed brands can help farmers make informed choices, since large, well-known seed companies most likely have better-quality seeds for establishing their good reputation in the market. Among the hybrid *boro* seeds, the most popular ones reported by farmers are *Hira,* ACI5, and *Lal Teer*.

Other Major Field Crops

Pulses (legumes) grown in Bangladesh are predominantly of local varieties. The FTF zone is a relatively popular pulse growing area (Table 4.18). A very large proportion of farmers in the FTF zone (74 percent in FTF) and in entire Bangladesh (84 percent) use their saved seeds for pulse cultivation (Table 4.19).

For wheat, the second most important cereal in Bangladesh, only HYVs are grown in the country. Unlike rice, a small proportion of farmers use saved seeds for growing the next wheat crop. As in the case of rice, farmers are largely unaware of the seed brands they use (Table 4.19).

Most farmers use saved seeds for growing oilseeds (Table 4.18), and these are largely of the local variety (Table 4.18). The local variety is also more popular for potatoes (Table 4.18), but the seeds are largely purchased from private stores (Table 4.19).

For growing jute, an important cash crop in Bangladesh, farmers mostly used their saved seeds. A sizable number of farmers—between 35 and 40 percent—buy the seeds from local shops (Table 4.19). Most of the jute grown in Bangladesh is of the local variety (Table 4.18).

4.2.5 Use of Labor for Agricultural Production Practices

Rice Cultivation

Table 4.20 provides the results of BIHS data on labor use for transported *aman* (t. *aman,* both local and HYV) and HYV *boro* rice cultivation in the FTF zone and entire rural Bangladesh. The results are disaggregated by male and female labor and by activities from land preparation to harvest. Rice cultivation is highly labor intensive in Bangladesh. For example, total labor (male and female) use per hectare of HYV *boro* cultivation is 1,076 hours, or 135 person-days, on average at the national level, using the 8-hour-per-day norm. At the national level, HYV *boro* cultivation requires 25 percent more labor than HYV t. *aman* cultivation and 57 percent more labor than local t. *aman* cultivation. Among various activities, planting and weeding require maximum labor input, followed by harvesting.

Rice cultivation practices in Bangladesh are overwhelmingly male dominated, accounting for 95–99 percent of total labor use (Table 4.21). Only about 1 percent of total labor for local t. *aman* cultivation is female in both the FTF zone and Bangladesh as a whole. The rate is about 4 percent for HYV t. *aman* and 3 percent for HYV *boro* cultivation in the FTF zone. This minimal participation of women is mainly geared toward weeding activities.

In contrast, women perform a substantial proportion of rice post-harvest operations. For instance, in the FTF zone, total labor use for post-harvest activities of HYV *boro* cultivation (carrying, threshing, drying, sorting, and packaging/bundling) amounts to 130 hours (16 days) per crop (Table 4.22), of which women's labor use accounts for 32 hours, or 25 percent. The use of female labor is particularly high for paddy drying, ranging from 58 percent to 71 percent of total labor use for this activity (Table 4.23).

Cultivation of Vegetables and Potatoes

Table 4.24 suggests that, compared to rice, the cultivation of vegetables and potatoes requires considerably more labor per hectare. For example, the use of labor (male and female) for cultivation of tomatoes in the FTF zone amounts to 2,828 hours (or 353 person days) per hectare, which is 2.7 times more than the use of labor for HYV *boro* rice cultivation in the zone.

Women play a significant role in the production of high-value crops, such as vegetables. For example, at the national level, women's participation accounts for 42 percent of total labor use for sweet gourd cultivation, 38 percent for tomatoes, 20 percent for leafy vegetables, and 18 percent for potatoes (Table 4.25).

Livestock Rearing

Tables 4.26 and 4.27 estimate the shares of male and female time spent for rearing livestock by income groups in the FTF zone and in entire Bangladesh, respectively. For instance, the

share of women's time spent for raising chickens and ducks is more than 90 percent at the country level. Women's time also accounts for 55 percent of total time for raising goats and about 30 percent for taking care of milk cows in rural Bangladesh (Table 4.27). Similar patterns are observed in the FTF zone (Table 4.26).

4.2.6 Use of Mechanical Power for Land Preparation

The use of mechanical power for farmland preparation is quite high—76 percent of farmers in the FTF zone and 72 percent of farmers at the national rural level use two-wheeler power tillers. Overall, rural Bangladesh has a higher usage of four-wheeler tractors (16 percent) compared to the FTF zone average of 12 percent (Figure 4.19). However, almost one-third of the farmers still use draft animals for land preparation, mainly for land leveling after machine plowing.

Figure 4.19—Percentage of farmers using machines for land preparation
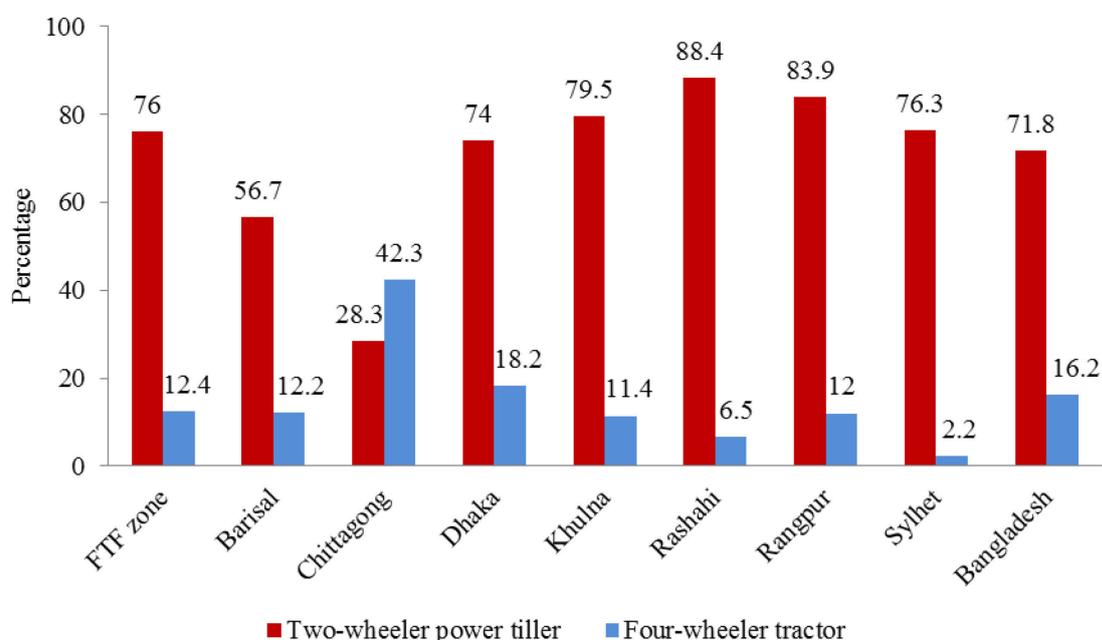
The divisional distribution of power tiller usage by farmers is quite skewed, with Chittagong division reporting only 28 percent usage compared to more than 50 percent usage in all other divisions, with the highest incidence of 88 percent usage in Rajshahi division. Though Chittagong division reported low usage of power tillers, it boasts the highest division-wise tractor usage at 42 percent, while the rate is less than 20 percent in all the remaining six divisions.

4.3 Farmers' Access to Agricultural Extension Services and Credit

This section provides an analysis of information collected by BIHS on two important agricultural services: extension or advisory services and credit support.

Agricultural extension services can play a central role in the agricultural development process—in terms of both technology transfer and human resource development. The

importance of credit is ubiquitously accepted as a critical input that contributes to the amplification of agricultural growth. Hence, the availability of credit and its distribution are equally important for agricultural development.

The focus of this analysis is concentrated on outreach of agricultural extension services and its impacts on technology adoption and productivity and access to credit (public and private). This analysis compares the performance of agricultural service institutions in the FTF zone in the south and at the national level.

4.3.1 Outreach of the Agricultural Extension Services and Its Benefits

As shown in section 4.1.2, marginal and small farmers constitute the largest share of farmers in Bangladesh. However, the outreach of agricultural extension services to these two groups of farmers is very low in absolute terms and considerably less than the service provided to medium and large farmers (Figure 4.20).

Figure 4.20—Percentage of farmers who consulted an agricultural extension agent during 12 months preceding the survey
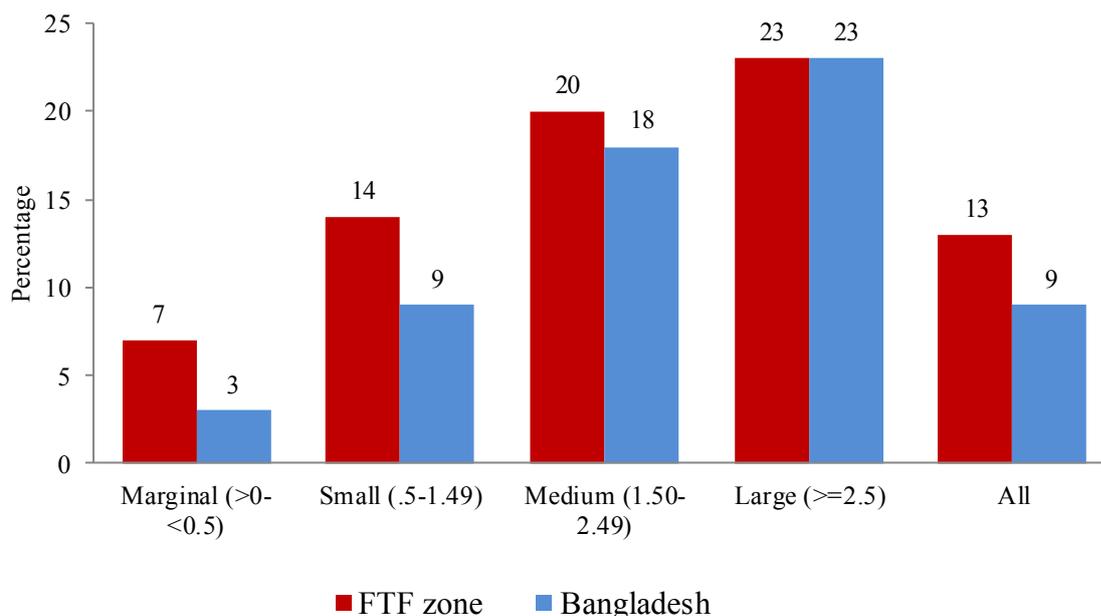
Although the extension service is significantly skewed toward the medium and large farmers, most farmers report that the advice they receive from extension agents is very useful for their agricultural production practices (Figure 4.21). This signifies the importance of the extension service.

Figure 4.21—Percentage of farmers visited by extension agents who found the advice useful
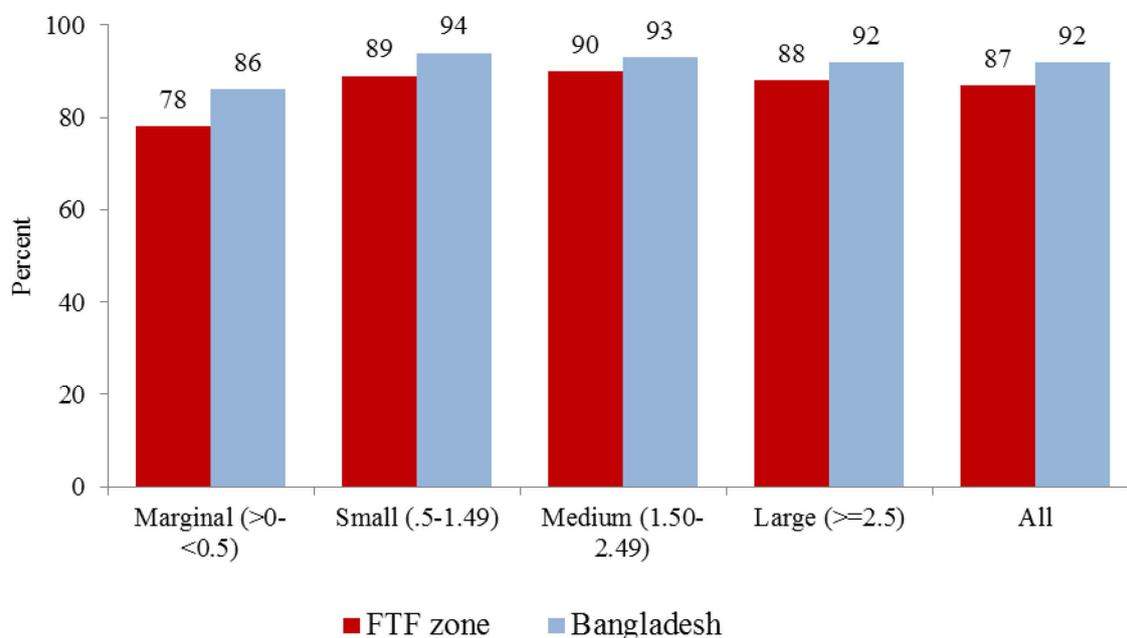
In the descriptive analysis, no significant relationship is apparent between access to agricultural extension services and the adoption of HYV technology in rice production. There is also no noticeable difference in rice productivity among marginal, medium, and large farmers by the visit of extension agents. However, the group of small farmers, comprising about 45 percent of all farmers in the BIHS sample, appears to benefit from the visit of extension workers. Figure 4.22 shows that farmers who were visited by extension agents in the FTF zone and in Bangladesh as a whole realized about 14 percent and 19 percent higher yields of *boro,* respectively, compared to farmers who were not visited by agents.

4.3.2 Farmers' Access to Credit

Credit is a critical input for farmers. Figure 4.23 shows that, on average, almost 70 percent of all categories of farmers have loans. However, Tables 4.28 and 4.29 reveal that the access to formal agricultural credit institutions, such as the Bangladesh Krishi Bank (BKB) in the FTF zone and the Rajshahi Krishi Unnayan Bank (RAKUB) in entire Bangladesh is relatively very low. Moreover, the outreach of these two credit institutions is more toward the medium and large farmers than marginal and small farmers.

Access to credit appears to assist farmers with adopting new technologies. The rate of cultivation of HYV *boro* rice is higher among farmers who take agricultural credit than among those who do not take such credit (Figure. 4.24).

Figure 4.22—Yields of HYV boro rice for small farmers: Visited vs. not visited by extension workers
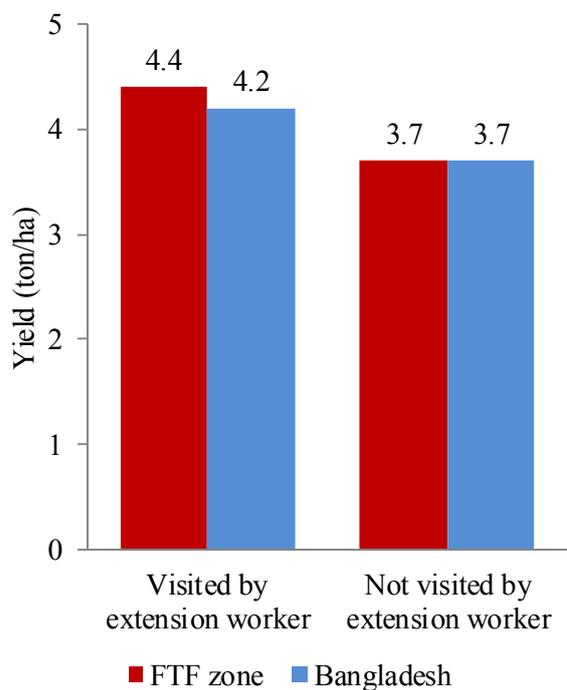
Figure 4.23—Incidence of borrowing by farm size groups
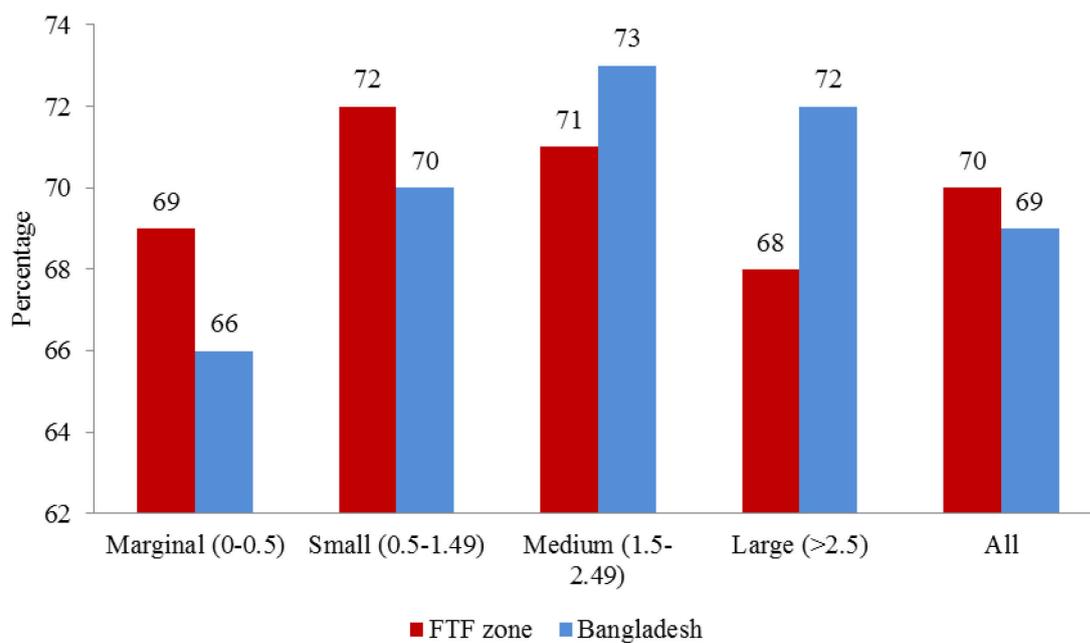
Figure 4.24—Percentage of farmers cultivating HYV boro rice: Agricultural credit vs. no credit
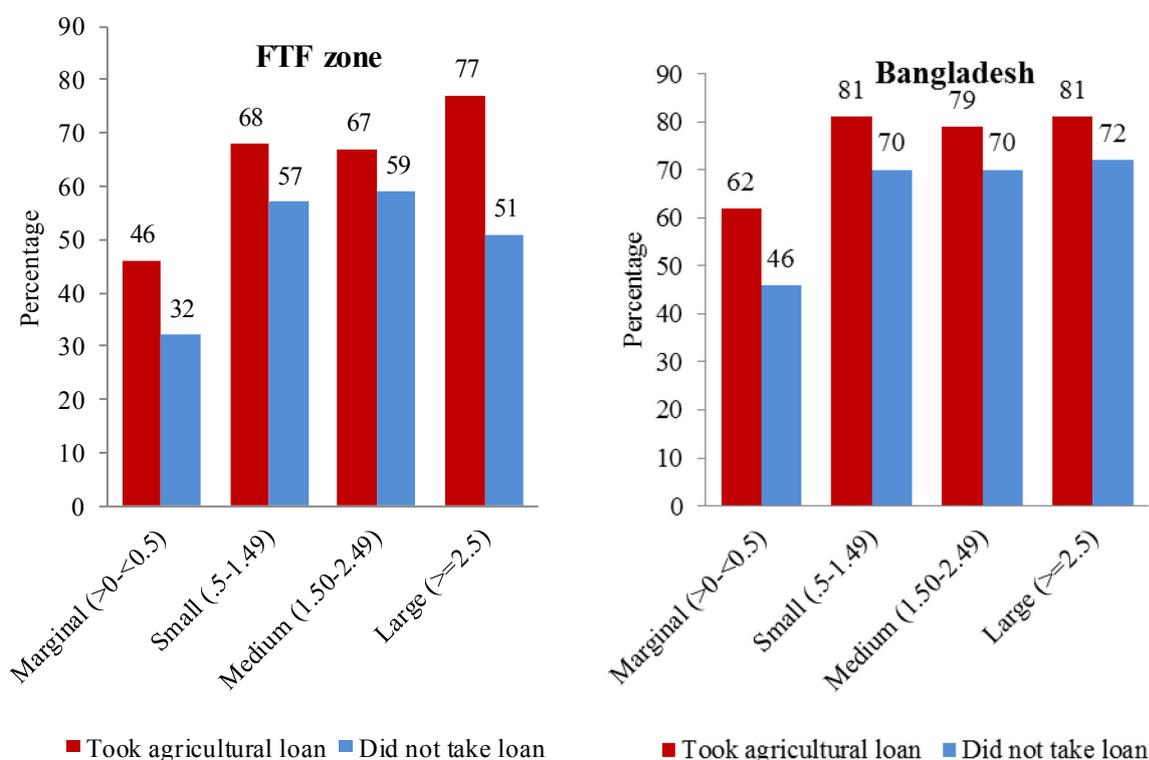
4.4 Yields of Agricultural Production

4.4.1 Crop Yields

Average yields of different types of rice and other major crops grown by sample farmers are reported in Table 4.30 (for the FTF zone) and Table 4.31 (for entire rural Bangladesh) by farm size groups. Figure 4.25 compares rice yields of farmers in the FTF zone to those in Bangladesh as a whole. The Bangladesh average rice yield is about 3 percent higher than that in the FTF zone. Among all types of rice grown, broadcast *aman* (b. *aman*) rice has the lowest yield and hybrid *boro* rice has the highest yield. Across divisions, average rice yields range from 1.97 metric tons/ha in Barisal division to 3.07 tons/ha in Dhaka division (Table 4.32).

Average rice yields tend to decline as farm size increases (Figure 4.26). For example, marginal farmers in the FTF zone get 22 percent higher rice yields than larger farmers get.

Except for green gram, yields of all other crops reported in Tables 4.30 and 4.31 are lower in the FTF zone than at the national level. Yields of eggplant and potatoes are substantially lower in the FTF zone.

It is noteworthy that in terms of crop yields in the FTF zone, marginal farmers appear more efficient in all varieties of *aman* production as well as HYV *boro* production and black gram production; large farmers are more efficient in *aus* and hybrid *boro* production; small farmers

are more efficient in wheat, lentil, and potato production; and medium farmers are more efficient in green gram, mustard, and eggplant production.

However, in terms of crop yields in overall rural Bangladesh, there are some similarities and dissimilarities. Marginal farmers appear more efficient in two of three varieties of *aman* production as well as HYV *boro*, wheat, eggplant, and black gram production; large farmers are more efficient in all *aus*, lentil, and potato production; small farmers are more efficient in hybrid *boro* production; and medium farmers are more efficient in HYV t. *aman* and mustard production.

Figure 4.25—Average rice yields in the FTF zone and in entire Bangladesh
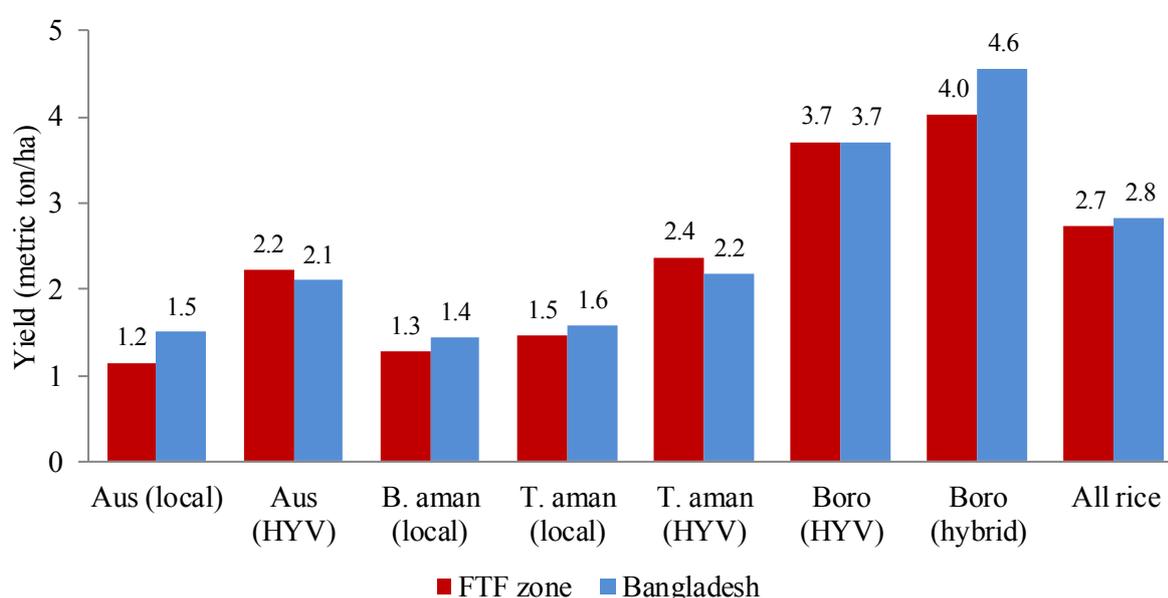
4.4.2 Livestock Holding and Production of Milk and Eggs

Tables 4.33 and 4.34 present the patterns of livestock holding by income groups in the FTF zone and in entire rural Bangladesh. While livestock holding in terms of bullocks and milk cows is almost similar in the FTF zone and in rural Bangladesh, the FTF zone appears to have a slightly higher average number of ducks (1.8) than rural Bangladesh (1.2), though rural Bangladesh has on average a slightly higher number of chickens (5.1) than the FTF zone (4.7).

Tables 4.35 and 4.36 show the average annual production of milk and eggs by income groups. Average production of milk per producer is about 4 percent lower and average production of eggs per producer is about 19 percent lower in the FTF zone, respectively than production of milk and eggs at the national level. In terms of average production for all households in the FTF zone, milk production is slightly higher (52 liters/year) than in overall rural Bangladesh (49 liters/year), while egg production in overall rural Bangladesh is quite a bit higher (155 eggs/year/household) than in the FTF zone (136 eggs/year/household).

Figure 4.26—Average rice yields by farm size groups
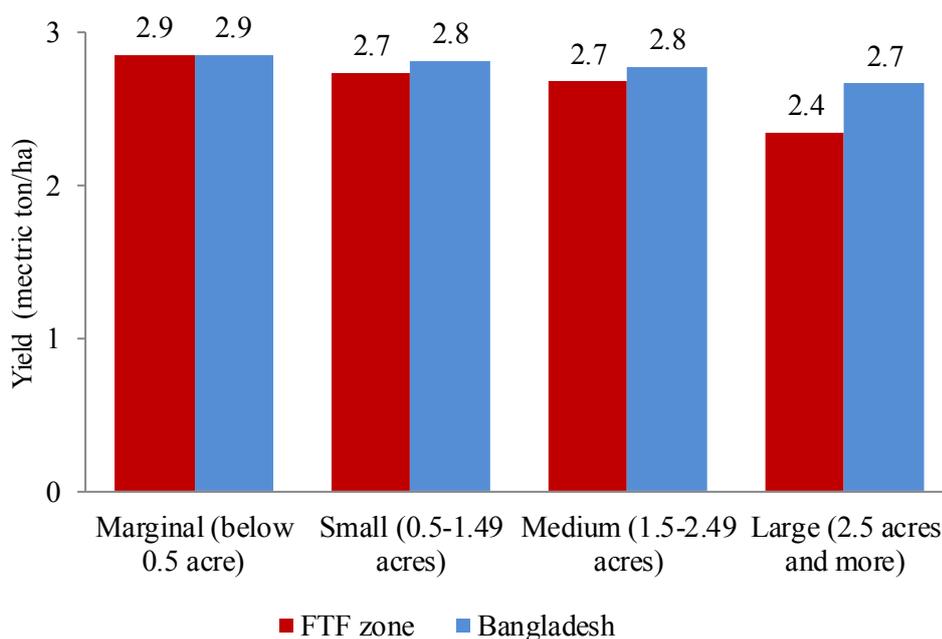
4.5 Costs and Profitability of Producing Rice

This section provides the estimates of costs of production of and returns for rice. The relevant cost considerations are those of providing incentives to farmers to introduce HYV rice production. In Bangladesh, the growth in rice production comes almost exclusively from two sources: (1) expansion of irrigated HYV *boro* areas, and (2) a switch from local-variety *aman* to HYVs. The Government of Bangladesh also announces paddy and rice procurement prices for *aman* and *boro* rice crops, but not for *aus* rice. Therefore, this analysis calculates only the costs and returns for *aman* (local and HYV) and irrigated HYV *boro*.

4.5.1 Conceptual Issues

In Bangladesh, there is a general tendency among concerned people to compare the harvest price to the average production cost to evaluate farmers' profitability, even though there are inherent conceptual problems for using the average cost of production to estimate farmers' returns. It is the cost of production at the margin and not the average cost that is relevant in using production cost as a guide to measure farmers' profitability, if such guidance is necessary (Ahmed 1994). The remarks of Timmer, Falcon, and Pearson (1983) may be noted in this context:

> The supply curve for a farm crop is directly related to its marginal cost curve, that is, the additional cost of producing additional units of output. The point at which a rational farmer chooses to be on the cost curve (or the supply function) depends not only on the price of inputs but also on the absolute and relative prices of the various crop outputs. Even for a single crop on a given farm, the cost of production is a fiction; there is only a schedule of costs and outputs. These schedules vary by farm and by agroclimatic zone. Both conceptually and empirically, therefore, the search for a single cost of production is fruitless,

despite the tendency of government procurement agencies and price control boards to justify their prices on just such a basis. Various estimates over a wide range can all be correct even if the numbers are generated from reliable farm surveys. There cannot be one right answer even with perfect measurements (Timmer, Falcon, and Pearson 1983).

Nevertheless, the use of cost of production remains popular as a basis for determining paddy and rice procurement prices issued by the Government of Bangladesh.

4.5.2 Estimating Paddy Production Costs and Returns

The method of estimating paddy production costs and returns is as follows:

- BIHS collected detailed plot-level data on the use of various inputs and prices of these inputs. The average prices are multiplied by respective input coefficients to calculate per-hectare costs of these inputs. Costs of irrigation, seedling raising, pesticide use, and mechanical power per plot are obtained directly from BIHS and converted into per-hectare costs.

- Most farmers in Bangladesh rely heavily on family labor for crop cultivation. If family members cannot find jobs, or if family labor will not be offered to the market when the crop in question is not produced, then the opportunity cost of family labor may be near zero. However, when labor must be hired to supplement family labor, the use of market wage rate to value family labor may be appropriate (Ahmed 1994). BIHS collected information on the use of both hired and family labor per plot in hours for various production activities. Labor wages vary at different stages of crop cultivation (such as at land preparation, planting, weeding, and harvesting time). Hired and family labor coefficients for different activities are multiplied by respective wages for these activities to obtain hired and family labor costs.

- Inclusion of land rent in the cost of production calculations involves both conceptual and empirical issues. Land rent should reflect the true opportunity cost of the land for production of any particular crop. The opportunity cost of land is the net value of production foregone when the land is engaged in its next-best alternative use. Clearly, the opportunity cost of land will vary between crop seasons, and between agroclimatic zones within the same season. Empirically it is very difficult, if not impossible, to calculate the true opportunity cost of land for production of any particular crop. Also, as the supply of land is fixed, land rent is determined by demand and, therefore, is affected by product price. If the harvest price of the crop in question is expected to be higher than the previous year's price, land rental is likely to be higher as well for cultivation of that crop.

  Recognizing these caveats, average land rents are calculated in this exercise from BIHS data. While BIHS collected both renting-out and renting-in prices for land, the renting-out price is used for calculating land rent, which determines the opportunity cost of land, not the renting-in price.

- Total cost per hectare is obtained by adding input costs, costs of irrigation, seedling raising, pesticide use, and mechanical power; hired and family labor costs; and imputed land rent for both farmer-owned and rented-in land. Dividing the cost per hectare by paddy yield gives cost per metric ton of paddy. On the revenue side, total paddy production per hectare is multiplied by farmers' selling price of paddy to calculate gross revenue or return per hectare. Dividing the gross revenue per hectare by paddy yield gives

gross revenue per metric ton of paddy. Subtracting the cost of production from gross revenue gives the net profit of producing paddy.

4.5.3 Results

Table 4.37 presents the detailed breakdown of costs of inputs per hectare for irrigated *boro* paddy cultivation for the FTF zone, across divisions, and in the country as a whole. The total costs of production of *boro* paddy per hectare, including the imputed costs of family labor and land rent, are almost identical in the FTF zone (Tk 83,803/ha) and in entire Bangladesh (Tk 84,172). However, the costs vary from Tk 65,816/ha in Sylhet division to Tk 94,749/ha in Chittagong division. Tables 4.41 and 4.45 provide the breakdown of costs of inputs per hectare for HYV *aman* and local *aman* cultivation, respectively.

Table 4.38 presents costs of inputs as percentages of full costs per hectare, and Table 4.39 shows costs of inputs as percentages of cash costs per hectare for irrigated *boro* paddy cultivation. Full costs include imputed land rent and imputed cost of family labor, but cash costs exclude these items. For entire Bangladesh, hired labor cost has the biggest share (19.7 percent) of full cost, followed closely by family labor (19.0 percent), land rent (18.6 percent), and irrigation (14.0 percent). The ranking for the FTF zone is family labor (19.1 percent), land rent (17.4 percent), hired labor (16.7 percent), and irrigation (16.6 percent). On a cash cost basis, hired labor represents the largest cost component (31.6 percent) at the national level, followed by irrigation (22.4 percent) and fertilizer (18.4 percent). The FTF zone shows the same pattern, although the magnitudes of the shares differ. Tables 4.42 and 4.43 report costs of inputs as percentages of full cost and cash cost, respectively, for HYV *aman* paddy cultivation. The cost shares for local *aman* paddy are presented in Tables 4.46 and 4.47. Figure 4.27 shows the input costs as percentages of cash and full costs of production of HYV *boro* paddy in rural Bangladesh.

Figure 4.27—Shares of input costs in cash and full costs of production of HYV boro paddy in rural Bangladesh
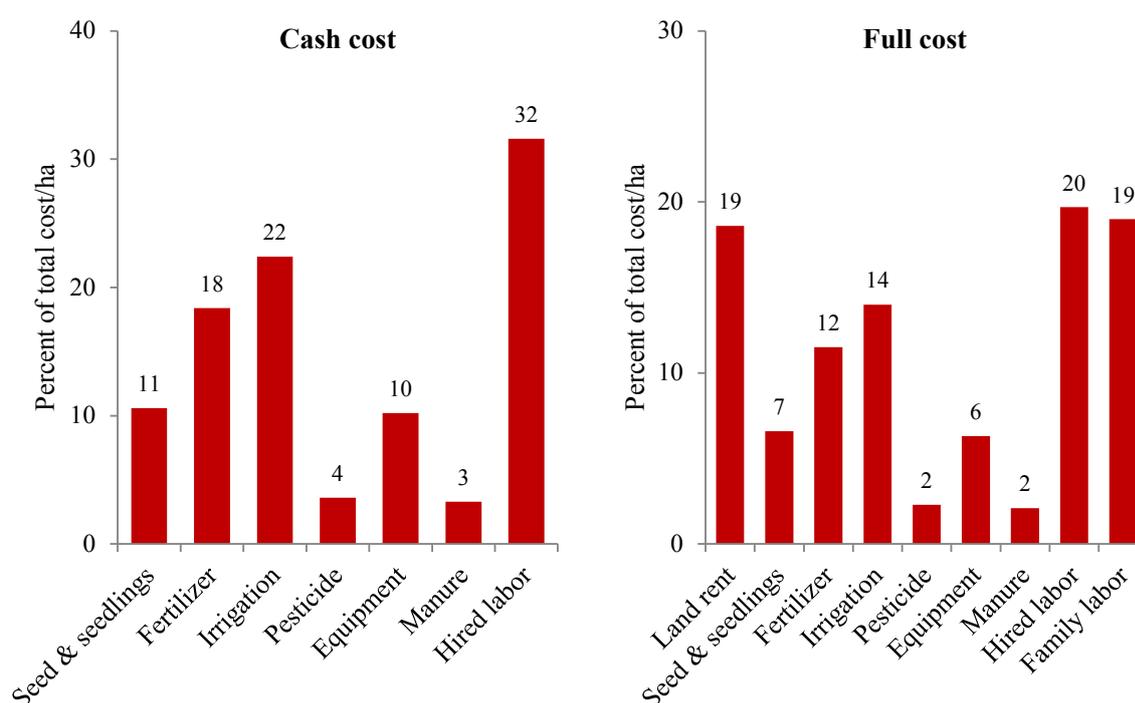
Figure 4.28 shows full costs and cash costs of production of irrigated HYV *boro*, HYV *aman*, and local *aman* paddy per hectare and per metric ton. Interestingly, costs per hectare and costs per ton show stark opposite patterns for the three rice crops. For example, full cost per hectare is the lowest for local *aman*, and the cost increases by about 14 percent for HYV *aman* cultivation and by 57 percent for HYV *boro* cultivation. By contrast, the full cost per metric ton of paddy is the highest for local *aman*, and the cost declines sharply for HYV *aman* and HYV *boro*. The full cost per metric ton of *boro* paddy is 37 percent less than that of local aman. Crop output can increase substantially if farmers adopt modern technologies (such as biochemical technology and irrigation). Within such a technological environment, the farmers' production cost per unit of output declines because of increased yields. As Figure 4.25 shows, the average yield of local *aman* is only 1.6 metric tons of rice per hectare for the national sample. The yield increases to 2.4 tons/ha for HYV. The average yield is 3.7 tons/ha for HYV *boro*, more than double the yield of local *aman*. This analysis also demonstrates the importance of investment in agricultural research for technology development.

The cost of producing a ton of paddy is the relevant concept for the purpose of pricing, rather than cost of production per hectare. Cost per ton can be viewed in terms of a break-even point, indicating the price that farmers must receive for their crop in order to cover their costs. Did the government's paddy procurement price cover the average cost of paddy production in 2011? The government's domestic procurement price of paddy was Tk 18/kg (Tk 18,000/ton) in 2011 for the *aman* and *boro* seasons. The information provided in Figure 4.28 indicates that the procurement price covered the full cost (including the imputed values of land rent and family labor) of *boro* paddy cultivation. However, for local and HYV *aman*, the procurement price covered only the cash cost of production.

Section 4.1.3 on land tenure patterns reveals that 34 percent of the farmers in Bangladesh do not own any cultivable land. Did the government procurement price cover the cost of production of one-third of all farmers who are pure tenants and, therefore, must pay rent for the land they cultivate (either in cash or in terms of crop share)? Taking into account the imputed value of land rent but not the imputed value of family labor in cost calculations, the costs per ton of producing *boro*, HYV *aman*, and local *aman* are Tk 13,033, Tk 16,867, and Tk 19,970 respectively. Thus, the 2011 paddy procurement price covered the cost of production (including imputed land rent but not family labor) for pure-tenant farmers who cultivated HYV *boro* and HYV *aman*, but not for those who cultivated local t. *aman*.

Table 4.40 presents the costs and profitability of cultivating irrigated *boro* paddy per unit of land (hectare) and per unit of output (metric ton). Costs and profitability are reported on full cost and cash cost bases. Net profit is calculated by subtracting the full cost (including imputed costs of family labor and land rent) from the value of paddy (paddy output multiplied by farmers' selling price of paddy). Gross profit equals the value of paddy minus the cash cost (excluding imputed costs of family labor and land rent). Tables 4.41–4.48 present costs and profitability of cultivating HYV *aman* paddy and local *aman* paddy. Figure 4.29 shows the profitability of producing one metric ton of local *aman*, HYV *aman*, and HYV *boro* paddy in 2011. On a cash cost basis (that is, when imputed values of land rent and family labor are not taken into account in cost calculations), the rates of profit per ton are 68 percent of total cash cost for HYV *boro*, 45 percent for HYV *aman*, and 26 percent for local *aman*. However, when the imputed values of land rent and family labor are considered in the cost calculations, then only HYV *boro* cultivation registers a small profit margin (about 6 percent of the full cost). Local and HYV *aman* farmers appear to incur considerable loss when the profitability is calculated on full cost basis.

Figure 4.28—Costs of production of paddy for major rice crops: Rural Bangladesh
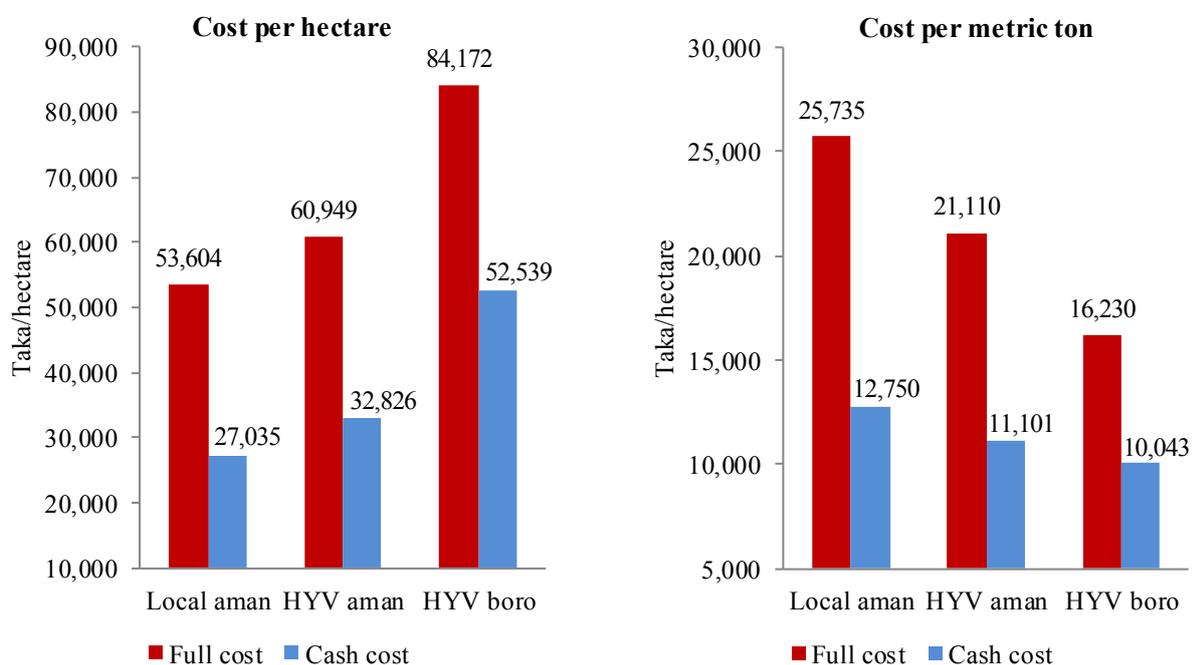
Figure 4.29—Profitability of producing one metric ton of paddy in Bangladesh in 2011
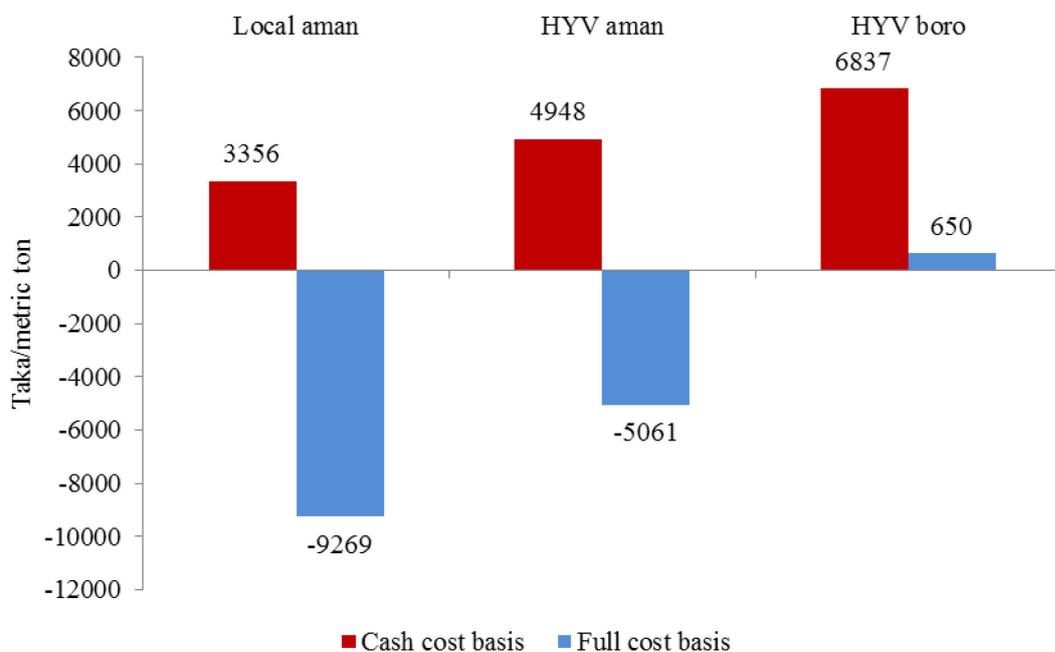
4.6 Farmers' Marketing Practices for Rice and Other Commodities

This section provides the results of an analysis of the marketing practices of farmers in Bangladesh based on data from BIHS. The analysis addresses three broad categories of questions: Are most Bangladeshi farmers commercial? How do small landholders trade their products? How much are the farm households' rice stock holdings for marketing purposes at the national level?

4.6.1 Production and Market Surplus Rates

Table 4.49 shows the results of the analysis of average production (kilograms) and marketed surplus rates of different agricultural products per farm household. Two types of gross marketed surplus rates are reported: a direct measure, which is the product sold as a percentage of total product harvested, and an indirect measure that adds to the product sold the output paid for services (rent, labor, and irrigation), as this output is often marketed by its recipients.

The results are discussed for rice and other crops separately. Several salient results for the analysis of rice emerge:

First, on average, rice farmers in Rajshahi division have the largest rice output, while farmers in Chittagong division have the smallest output. This result is expected, as Rajshahi and Rangpur are the main rice production areas and, as section 4.1.2 shows, farmers in Chittagong division are smaller (operated land-wise) than farmers in other divisions and, therefore, are physically constrained in having a bigger harvest.

Second, although the distributions of farmers in the FTF zone and at the national level are similar, farmers in the FTF zone have lower output per farm (about 19 percent less) than the national average.

Third, the analysis of the direct and indirect gross marketed surplus rates for paddy shows interesting results about payment of farm resources. Rice farmers use around 18 percent of harvested output to pay for services (rent, labor, and irrigation), and market about half of their gross output (considering indirect marketed surplus rates) during the year.

Farmers in Chittagong division have the lowest marketed surplus rates, while Rajshahi and Rangpur division farmers have the highest marketed surplus rates. Again, these results are not surprising, as Chittagong has the highest share of marginal and small farmers, while high rice production areas are traditionally located in Rajshahi and Rangpur divisions. Furthermore, FTF farmers have slightly lower marketed surplus rates compared to the national average and, therefore, appear as somewhat less commercial farmers.

Several salient results from the analysis of other products emerge:

First, there is evidence of product differentiation across divisions in the country. For example, wheat is an important crop in Chittagong, Rajshahi, and Rangpur divisions, but much less important in Barisal and Sylhet divisions. Nonleafy vegetables are important crops in Chittagong and Rajshahi divisions, but the average production of nonleafy vegetables per farmer is the lowest in Barisal division. Although cropping patterns vary across divisions in the country, farmers in the FTF zone have cropping and commercialization patterns similar to the national averages.

Second, wheat is a highly commercial commodity, as it has the highest marketed surplus rates compared to the other crops (including rice) considered in this analysis—it reaches a marketed surplus rate of 91 percent in Rangpur division and has the second highest per-farm household output. These rates are noticeably different from the other nonrice crop rates, which have lower quantities per farm and/or have considerably lower marketed surplus rates.

4.6.2 Transaction Attributes for Paddy

Tables 4.50 and 4.51 present the results of the transaction attributes analysis for paddy farmers disaggregated by divisions and farm size groups, respectively. The analysis focuses on the main transaction characteristics, such as per-farm quantity sold and price differentiation, type of buyer, location of sales, and whether farmers receive services from buyers. The key findings are discussed below.

Quantity Sold and Price Differentiation

First, the quantity of paddy sold per farmer is the highest in Rajshahi division and the lowest in Chittagong division. On average, farmers in the FTF zone sell 23 percent less paddy than the national average, implying that rice farmers in the FTF zone are relatively less commercial.

Second, the price of paddy received by farmers is quite similar across divisions.

Third, the price of paddy received by farmers is virtually the same across farm size groups (Table 4.51). Large farmers sell much more paddy than marginal farmers, yet they receive the same price as marginal producers. This indicates that the rice market is competitive in Bangladesh.

Type of Buyer

The analysis of the BIHS data suggests that the farmers sell their output mostly to wholesalers from rural and urban wholesale markets. However, the rate of selling paddy output to wholesalers varies from 51 percent in Barisal division to 80 percent in Khulna division (Table 4.50). While one-third of marginal farmers sell their paddy to village collectors, the rate is 26 percent for large farmers (Table 4.51).

Location of Sale

The analysis reveals considerable variations in the location of paddy sales by farmers across divisions. Around 80 percent of the farmers of Rajshahi and Rangpur divisions sell their paddy at their farms. By contrast, only about one-third of the farmers in the FTF zone and in Dhaka division sell paddy at their farms. About 39 percent of the farmers in the FTF zone sell their paddy at local retail markets, and 29 percent of the farmers sell at the wholesale markets.

These results compared to the type of buyers indicate that although most farmers tend to sell their paddy to wholesalers, they generally do not carry their output to wholesale markets. Instead, most wholesalers appear to buy paddy directly from the farmers at their farm premises.

Advance Payments

Do farmers receive advance payments from buyers? Since most farmers in Bangladesh are credit constrained (as section 4.3.2 suggests), it would be natural to expect them to take

advance payments from buyers to finance their production. However, the analysis of the BIHS data reveals that virtually no farmers receive advance payments from paddy buyers.

4.6.3 Farm-Level Monthly Rice Stocks

BIHS collected information on households' month-end rice and paddy stock from December 2010 to November 2011. The results of the data are presented in Table 4.52. The quantities are expressed in terms of rice. Key findings are: (1) rice stocks fluctuate throughout the year, peaking around May during the *boro* harvest season and again in November for the *aman* season; (2) the stock held by farmers in May is twice as large as the average monthly stock (roughly 4 million metric tons), which highlights the importance of *boro* rice; and (3) the stocks held by farmers in Dhaka, Rajshahi, and Rangpur represent about 68 percent of the total stock available in the country.

5. ACCESS TO FOOD: FACTORS INFLUENCING THE PURCHASING POWER OF HOUSEHOLDS

Poverty and food insecurity are interlinked. The most startling consequence of widespread poverty in Bangladesh is that about one-fifth of the country's 160 million people cannot afford an adequate diet. The poor do not have sufficient purchasing power to secure their access to food, even when food is available in local markets. Chronically underfed and highly vulnerable, this segment of the population remains largely without assets (other than its own labor power) to cushion lean-season hunger or the crushing blows of illness, flooding, and other calamities. The poor are highly vulnerable to shocks (such as natural disasters or crop failures) that cause sudden losses of real income and, hence, transitory food insecurity. Sudden increases in food prices, such as the surge in 2007–08 and again in 2010–11 also result in transitory food insecurity, particularly for low-income households, by reducing their real income. Family coping strategies (such as the consumption of less food, the withdrawal of children from schools, and the distress sale of productive assets) often aggravate the risks of destitution.

The economic setting presented in this section is the fundamental basis for access to food at the household level. Various factors that can affect a household's access to food in terms of its purchasing capacity are analyzed from the Bangladesh Integrated Household Survey (BIHS) data. This section specifically assesses household welfare by analyzing the proportion of the rural population living on less than $1.25 a day, household consumption expenditure (as proxy for income) and its distribution, labor force participation and types of employment, wages, private transfers and remittances, household involvement in rural nonagricultural enterprises, credit and savings, participation in social safety net programs, and incidence of shocks and household coping mechanisms.

5.1 The Family Welfare Indicator

The family welfare indicator measures the proportion of the population living below $1.25 dollars per person per day, converted into Bangladeshi Taka (Tk) at the 2005 purchasing power parity (PPP) exchange rate. This measurement is based on the value of average daily consumption expenditure per person. As explained in section 3, expenditures on consumption of food and nonfood items were aggregated to construct total consumption expenditures. Quantities of goods produced by the household for home consumption were valued at the average unit market prices of commodities. The term "family welfare indicator" is used in this report to distinguish the estimates from the conventional measurement of "poverty" by the Bangladesh Bureau of Statistics based on the cost of basic needs method of poverty estimates. The estimation of the family welfare indicator involved the following steps:

1. Daily per capita consumption expenditures from the BIHS data were adjusted for inflation using the Basic Needs Price Index (2005 base year) obtained from the World Bank.

2. The international poverty line of $1.25 per day was used, measured at the 2005 PPP exchange rate for Bangladesh: PPP$1.00 = Tk 25.494 (World Bank).[7]

Figure 5.1 illustrates the percentage of the population who lived below PPP $1.25 per person per day in 2011–12 in the Feed the Future (FTF) zone, the administrative divisions, and entire rural Bangladesh. The figure shows that 40.5 percent of the population in the FTF zone lived below PPP $1.25 per person per day in 2011–12. While 38.2 percent of the population in rural Bangladesh was living below the family welfare threshold, there are pronounced regional differences in the incidence. The rate varies widely across divisions, ranging from a low of 31.0 percent in Chittagong division to as high as 65.5 percent in Rangpur division. Although Rajshahi division ranks the second highest, the rate in this division is 23.1 percentage points lower than that in Rangpur division.

Figure 5.1—Family welfare indicator: Percentage of people living on less than PPP $1.25/day
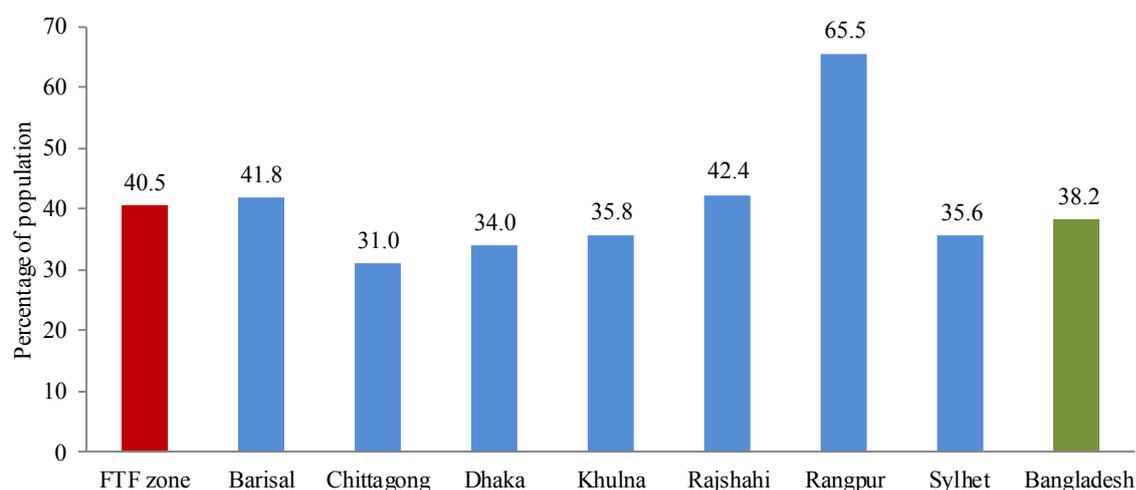
5.2 Household Income and Its Distribution

Increased income of households is a basic requirement for improved access to food. Estimates of household consumption expenditures are used as a proxy for income because of the difficulty in accurately measuring income and because expenditure data are less prone to error, easier to recall and more stable over time than income data. Since expenditures represent income, the terms "expenditure" and "income" are used interchangeably. Consumption expenditures are measured as the sum of total food and nonfood (nondurable and durable) consumption expenses.

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[7] Source: PovcalNet, The World Bank. For more details on the construction and updating of $1.25 a day poverty lines for Bangladesh, see:
http://wwwds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2008/12/10/000333037_2008121 0001004/Rendered/PDF/443210ESW0P09910Box334107801PUBLIC1.pdf,
http://wwwds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2003/07/26/000094946_0305080 4024314/Rendered/PDF/multi0page.pdf,

Figure 5.2 provides the estimates of consumption expenditures per person per month. At the national rural level, average monthly per capita expenditure was Tk 2,692 at 2011–12 current prices, which was only 1.2 percent higher than the estimate for the FTF sample of households at Tk 2,660 per person per month.

The highest average monthly per capita expenditure was Tk 3,090 in Chittagong division, followed by Tk 2,952 in Sylhet division. The lowest average monthly per capita expenditure was Tk 1,989 in Rangpur division, which was about 26 percent lower than the national rural average.

Figure 5.2—Monthly per capita consumption expenditures
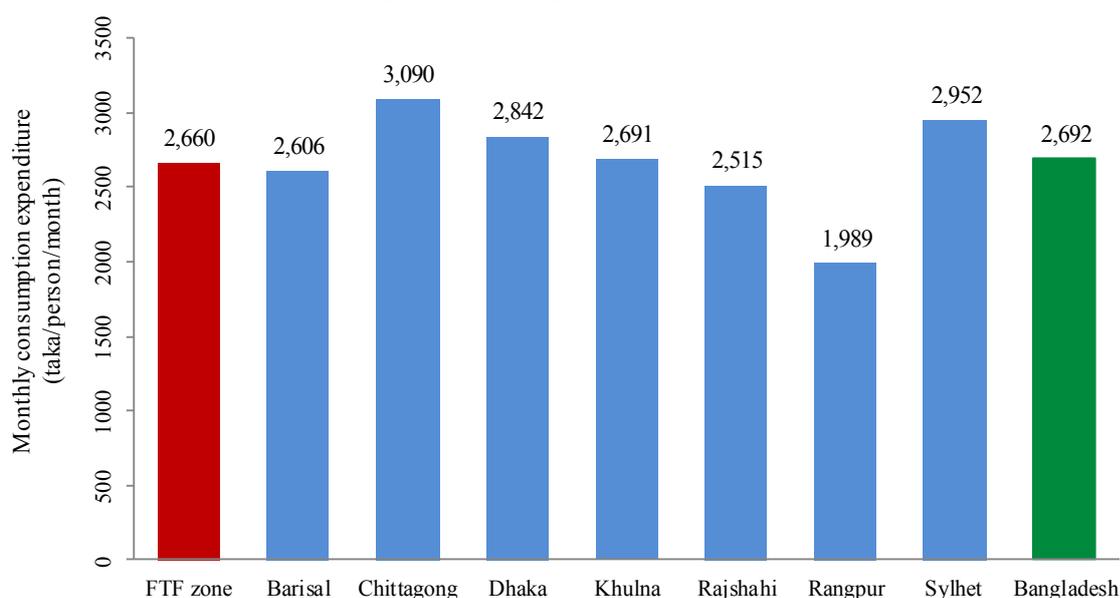
Tables 5.1 and 5.2 present the patterns of income distribution in the FTF zone and in entire rural Bangladesh, respectively. In these tables, the population in the respective areas was divided into 20 equal groups from poorest to richest, and the percentage of average per capita expenditure (as a proxy for income) that accrued to each group is reported. The figures in Table 5.1 indicate that while the richest 10 percent of the population in the FTF zone earned 22.7 percent of all income, the poorest 10 percent earned only 4.3 percent of the total income. The distribution of income at the national rural level shows a similar pattern: the poorest 10 percent of the population earned 4.2 percent of total income in rural Bangladesh, while the richest 10 percent earned 23.2 percent of all income (Table 5.2).

The most widely used summary measure of inequality is the Gini coefficient.[8] The estimated Gini coefficients for income distribution are 0.284 for the FTF zone and 0.307 for overall rural Bangladesh (Figure 5.3). The inequality in income distribution is highest in Sylhet division (0.319) and lowest in Rangpur division (0.273).

Comparisons among estimates presented in Figures 5.1, 5.2, and 5.3 indicate that the incidence of poverty (termed as the family welfare indicator) and inequality in income

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[8] The Gini index is a measure of inequality. In percentage terms, the index varies between 0 (everyone has the same income) and 100 (the richest person has all the income).

distribution are negatively correlated across regions, whereas there is a positive relationship between average income and income inequality.

Figure 5.3—Gini coefficients for income inequality, by region
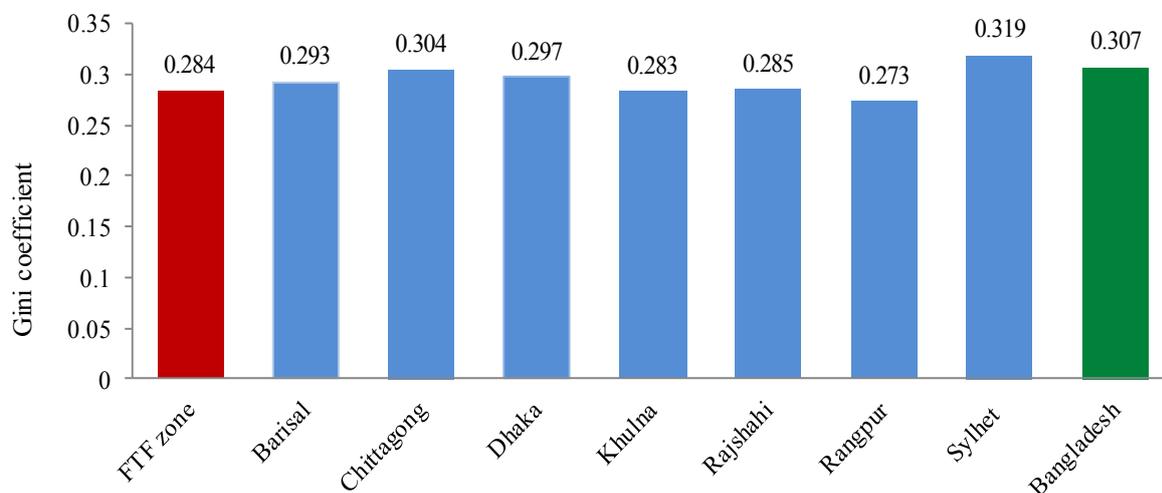
5.3 Food and Nonfood Budget Shares

A comparison of the budget shares of food and nonfood expenditures between the FTF zone and entire rural Bangladesh shows similar expenditure patterns (Tables 5.3 and 5.4). Overall, the sample households spent almost two-thirds of their total expenditures on food. As household income rises, the share spent on food falls, conforming to Engel's Law (Figure 5.4). Expenditures on fuel represent the second highest share of the budget. The third highest budget share is housing in the FTF zone and clothing and footwear at the national rural level, as Figure 5.5 illustrates. Among the nonfood expenditure shares, fuel and lighting, house rent, and transport and communication constitute approximately 60 percent of the nonfood budget. The budget shares for health and education expenses for male and female members of households are quite similar. Overall, the share of expenses on clothing tends to decline slightly as income rises. Unlike urban dwellers, people living in rural Bangladesh are not expected to increase their budget share on clothing with the increase in income. In absolute terms, however, richer households spend considerably higher amounts of money on clothing than do poorer households.

Across divisions, the patterns of food and nonfood expenditures are quite homogenous (Table 5.5). However, in terms of absolute figures, Rangpur division has the lowest food and nonfood consumption expenditures. Sylhet division has the highest per capita monthly food expenditure, while Chittagong division has the highest per capita monthly nonfood expenditure.

Figure 5.4—Food budget share by income groups: FTF zone and rural Bangladesh
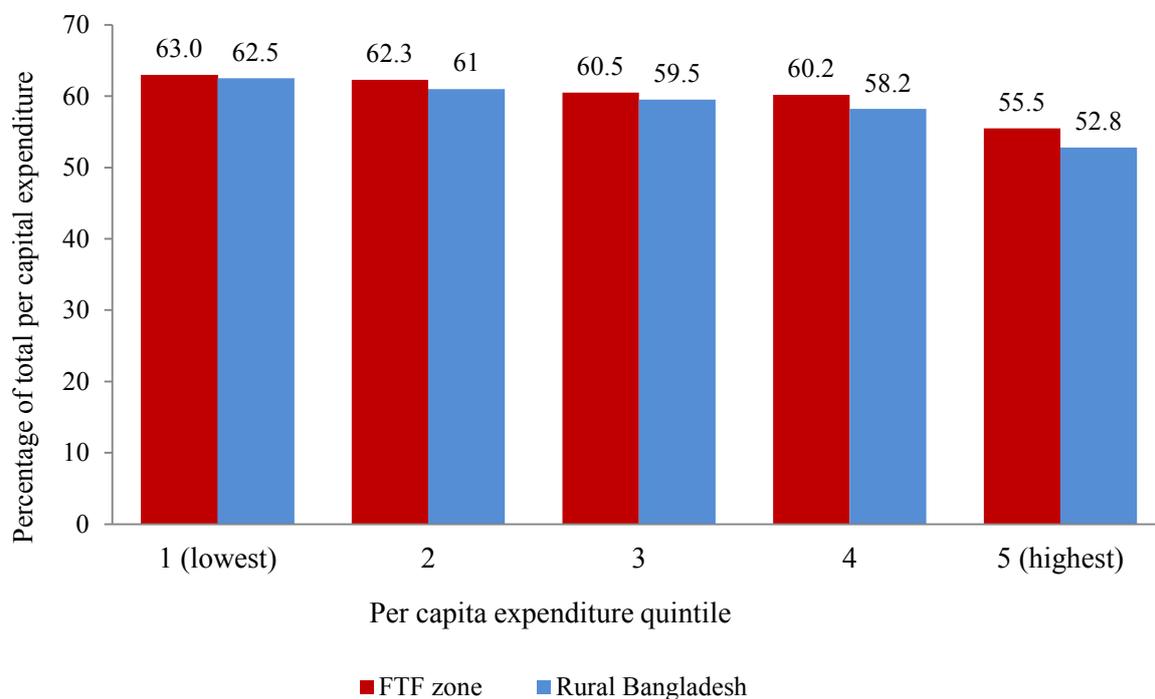
Figure 5.5—Budget share of consumption items: FTF zone and rural Bangladesh
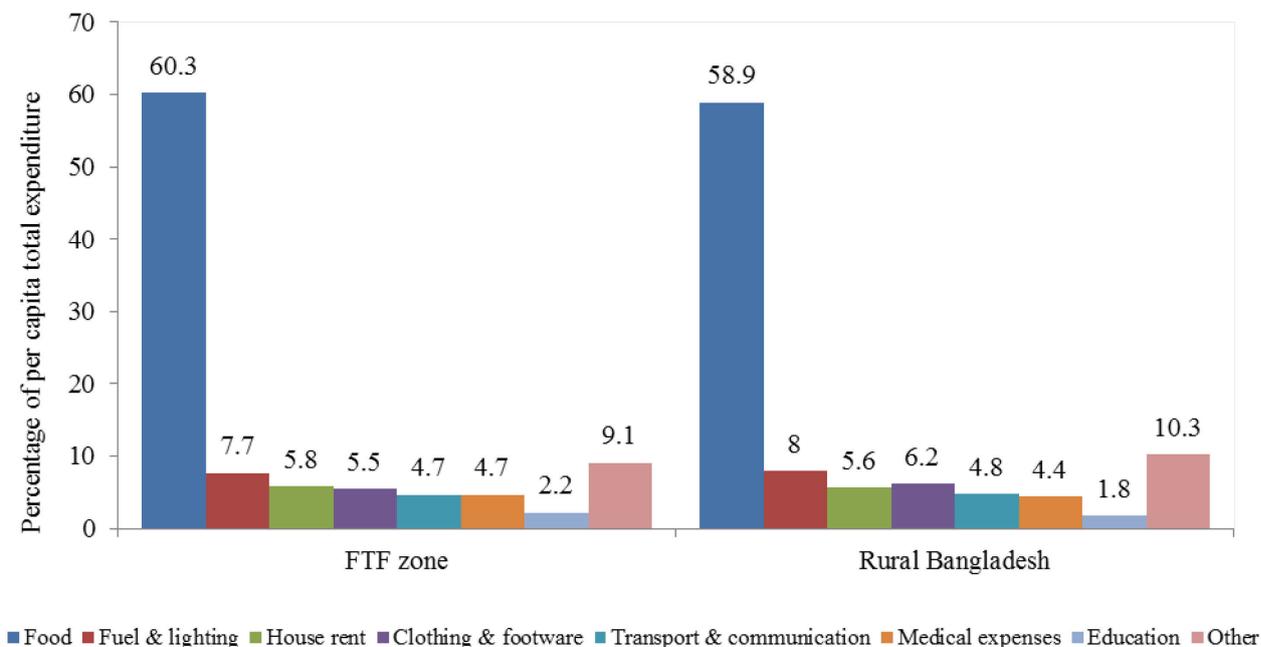
Tables 5.6 and 5.7 present budget shares of food items in total food budgets in the FTF zone and in entire rural Bangladesh, respectively. The lowest income quintile spends close to half of the total food budget on rice, while the richest quintile spends a little more than one-fifth. Besides rice, the other food items with relatively high food budget shares include vegetables, big fish, meat, and oils. However in no case does any of these items account for more than 10 percent of the food budget. It is interesting to note that for most of these nonrice food items, there is similarity in food budget shares across income groups, except for the protein-rich foods, which include meat, big fish, milk, and milk products. The patterns of food budget shares of these protein-rich foods as well as fruits indicate a strong and positive relationship with income.

At the divisional level, the share of food expenditure on rice ranges from 29 percent in Chittagong division to 42 percent in Rangpur division (Table 5.8). This is no surprise, since Chittagong has the highest income, while Rangpur has the lowest income among the seven divisions. So it appears that the highest share of rice in the food budget in Rangpur is consistent with its status of being the poorest division, and vice versa for Chittagong division. Chittagong also has the highest food budget shares of vegetables, meat, and fruits compared to the other divisions.

5.4 Labor Force Participation and Types of Employment

Tables 5.9–5.11 present the labor force participation rates and employment status of household members age 15 years and over. By definition, the labor force consists of everyone above the age of 15 who is employed (including individuals working without pay) or unemployed but actively seeking employment. People not counted in the labor force include students, retired people, disabled people, and discouraged workers who are not seeking work.

The labor force participation rate for all household members age 15 and above is about 73 percent both in the FTF zone and in entire rural Bangladesh. However, there are considerable differences in labor force participation rates in terms of males and females. In the FTF zone, the overall labor force participation rate for males is 86 percent, while for females, it is 61 percent. The rates are 87 percent for males and 60 percent for females in rural Bangladesh as a whole. The labor force participation rate is the highest for the poorest income group, the rate declines as household income increases, and this relationship is more pronounced for males (Tables 5.9 and 5.10).

Rural Bangladesh is predominantly an agrarian society with low rates of employment in the nonfarm sector. Farming is by far the main source of employment, with 71 percent of the total labor force in the FTF zone and 66 percent in entire rural Bangladesh engaged in farming. Wage labor (agricultural and nonagricultural) is negatively correlated with household income—12 percent of the labor force in the FTF zone and at the national rural level belong to the lowest income quintile, and only 1.5 percent and 1 percent of the labor force in the FTF zone and in rural Bangladesh, respectively, are in the highest income quintile. In contrast, business and trade and salaried work are positively correlated with income. Unemployment rates (calculated as those reporting as being unemployed and looking for work, divided by the labor force) are very low—only 0.5 percent of the labor force in the FTF zone and 0.6 percent in rural Bangladesh as a whole were unemployed during the survey months (November 2011–March 2012), corresponding to the peak employment season in rural areas (Tables 5.9 and 5.10).

Table 5.11 shows that the overall rate of labor force participation is highest in Rangpur division (81.8 percent) and lowest in Chittagong division (59.7 percent). The patterns of

regional labor force participation rates reflect marked gender differences. Indeed, the overall lowest participation rate in Chittagong division is driven mostly by relatively very low participation rate by females (44.3 percent). On the other hand, the gender gap in labor force participation is the smallest in Rangpur division, owing to the high rate of participation by women (Figure 5.6).

Figure 5.6—Labor force participation, by region
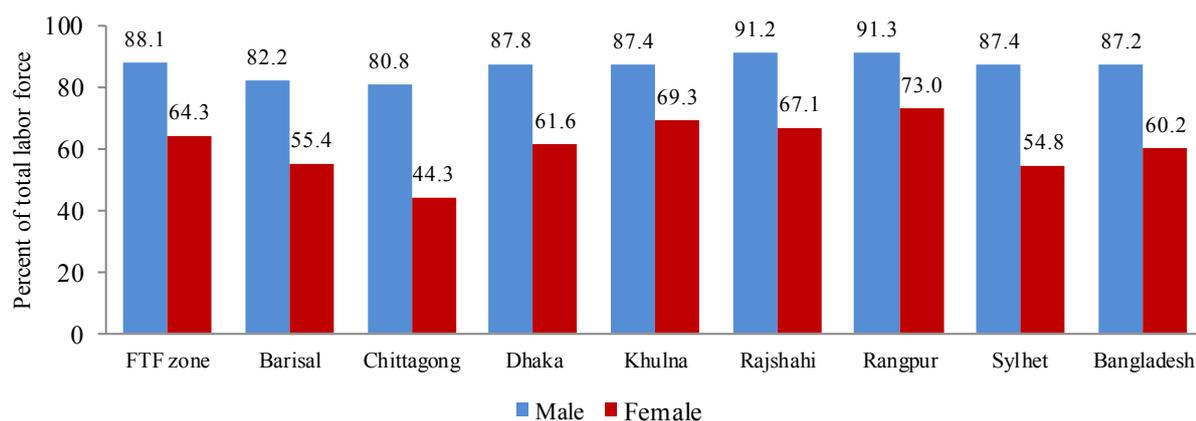
5.4.1 Agricultural Wages

Agricultural wage laborers are among the poorest in rural Bangladesh; therefore, the level of agricultural wage has a large bearing on the incidence of poverty and food insecurity. Agricultural wages have increased quite sharply in recent years, enabling the rural poorest to improve their livelihoods significantly (Zhang et al. 2013).

Figure 5.7 shows the pattern of daily agricultural wages in the FTF zone and across divisions in rural Bangladesh. Wages represent average wage received by a worker in seven days prior to the survey date. The wages were estimated by adding cash wages to the value of in-kind (usually food) wage, if any. The average daily wage was Tk 220.3 for males and Tk 199.9 for females in the FTF zone. The daily wage rate at the national rural level for males (Tk 222.5) was 16.0 percent higher than the rate for females (Tk 191.8). The gender gap in wage rates was biggest in Barisal division—the male wage was 31.4 percent higher than the female wage, and smallest in Rangpur division—the male wage was only 3.8 percent higher than the female wage. The agricultural wages for both males and females were the highest in Chittagong division. The lowest wage for males was recorded in Rangpur division, and for females in Rajshahi division.

Figure 5.8 shows the amount of rice (in kilograms) that could be purchased by one day's wage for males and females across regions. The BIHS data suggest that on average, a rural household with 4.7 members consumes 2.33 kilograms of rice per day (average daily per capita rice consumption is 495.5 grams). The average daily agricultural wage for a male worker in rural Bangladesh during the survey could buy 7.6 kilograms of rice, which is 3.3 times higher than the rice consumption of an average rural household.

Figure 5.7—Average daily wage rates of agricultural laborers, by region
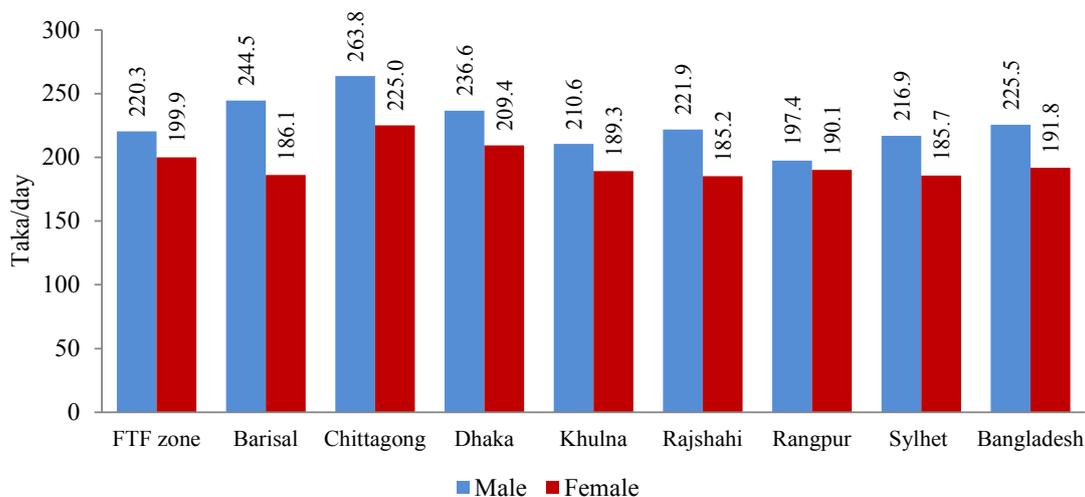
Figure 5.8—Kilograms of rice that could be bought by daily agricultural wage, by region
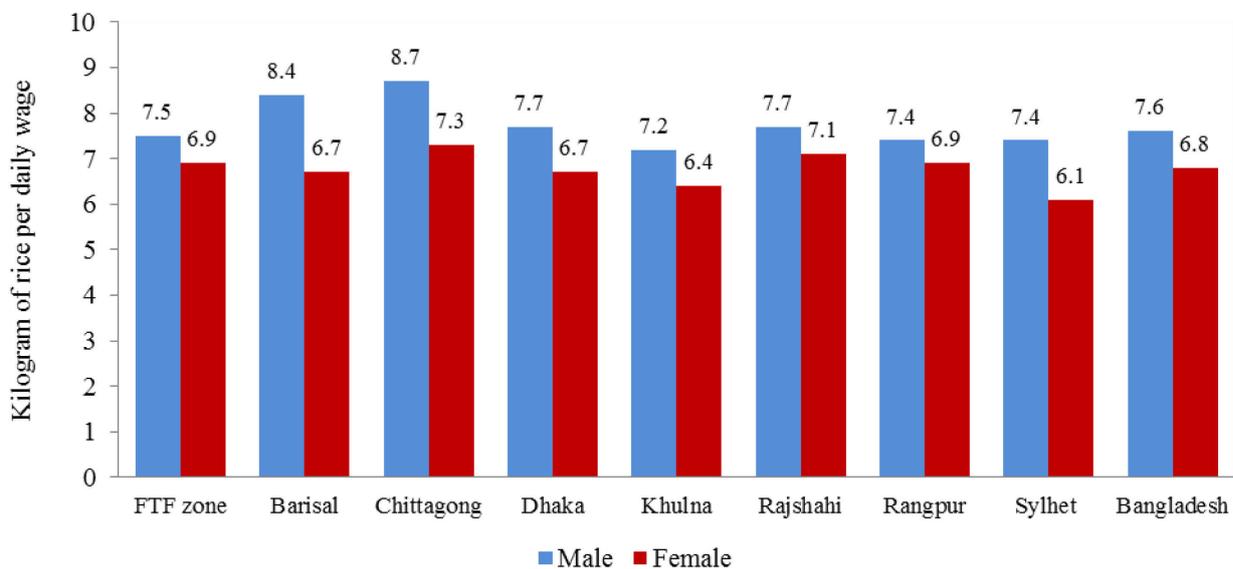
5.5 Private Transfers and Remittances

In the FTF zone, 21.9 percent of the households received private transfers either from within Bangladesh or abroad: 16.9 percent of the households received private assistance from within the country, 4.4 percent received remittance from abroad, and 0.6 percent received transfers from both home and abroad (Table 5.12). In rural Bangladesh as a whole, 23.7 percent of the households received private transfers either from within the country or abroad. Compared to the FTF zone, private transfers received from inside Bangladesh are lower (14 percent of the households) and from out of the country are higher (9.2 percent of the households) in entire rural Bangladesh.

A higher percentage of households in the richer expenditure quintiles received transfers than those in the poorer quintiles (Tables 5.12 and 5.13). In terms of the average size of total private transfers (average of all households) received from within the country and abroad, the top quintile received about nine times the amount of transfers received by the bottom quintile in the FTF zone. The magnitude for rural Bangladesh as a whole is much higher, with the top quintile receiving about 18 times the amount of transfers received by the poorest quintile. The national rural average size of international remittance (Tk 12,999 per year) is 2.8 times the average size of private transfers received from within the country (Tk 4,715 per year).

An analysis of the BIHS data suggests that, on average, total private transfers account for one-tenth of average annual household income (in terms of consumption expenditure) in the FTF zone. Domestic transfers account for 4.5 percent and international remittances account for 5.5 percent of this average annual household income in the FTF zone. Total transfers represent 13.3 percent of household income for households in the richest income quintile and only 4.3 percent of income for households in the poorest quintile group (Table 5.12). At the national rural level, the average total private transfers represent 13.8 percent of average annual household income; domestic transfers account for 3.7 percent, and remittances from abroad account for 10.2 percent. Private transfers as a percentage of total household income are higher for richer households, accounting for 23.6 percent of average total income of the richest 20 percent of all, compared to only 4.1 percent for the households in the poorest quintile group (Table 5.13). Private transfers as a percentage of total household income vary widely across divisions, with the highest incidence in Chittagong and the lowest in Rajshahi. The highest transfer in Chittagong division is driven by remittance from abroad—total private transfers account for 29.7 percent of average total annual income of households, while international remittances account for 25.1 percent (Table 5.14).

Table 5.14 shows that Barisal division represents the highest percentage of domestic transfer recipients (30.7 percent of households), followed by Chittagong division (17.6 percent of households). Rajshahi division has the lowest percentage of transfer recipients from within the country (7.2 percent of households). Chittagong division has the highest percentage of households (24.4 percent) receiving remittance from abroad, followed by Sylhet division (18.9 percent of households). Rangpur division has the lowest percentage of international remittance recipients (1.3 percent of households). Figure 5.9 shows the average size (average of all sample households) of domestic private transfers and international remittances received by region.

Figure 5.9—Average size of private transfers and international remittances received, by region
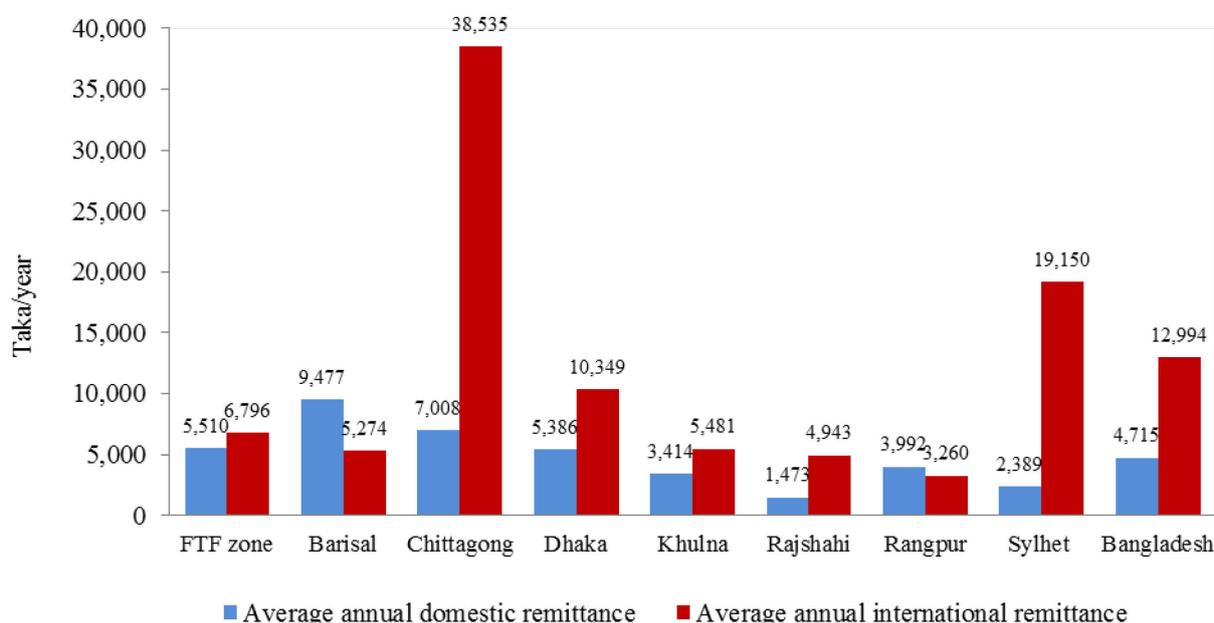
5.6 Nonagricultural Enterprises

This section provides the results of how rural households are involved in their own nonagricultural enterprises in Bangladesh, based on data from BIHS. The analysis addresses three broad categories of topics: (1) participation in nonagricultural enterprises by all rural household in Bangladesh; (2) among nonagricultural enterprises, how those are distributed across occupational sectors; and (3) by occupational sector, the business characteristics.

The analysis is not a study of nonagricultural enterprises, as BIHS is not a survey of enterprises; rather, it is a survey of rural households. Therefore, the analysis addresses nonagricultural enterprises owned and operated by rural households. Furthermore, most of the analysis is not conducted at the household level (only participation in nonagricultural enterprises is done at the household level), as rural households can be engaged in more than one business, and those businesses can have characteristics that vary greatly (inter- and intra-occupational category). Thus, the results are discussed at the business level.

5.6.1 Participation in Nonagricultural Enterprises by Rural Households in Bangladesh

Table 5.15 shows the results of the analysis conducted at the division, national, and FTF zone levels. The results of participation in nonagricultural enterprises are as follows:

First, there is evidence that rural households are engaged in self-employment. At the national level, around one-third of rural households participate in any kind of self-employment. "Trade-related" businesses are the preferred type of business by rural households, as its share is twice as high as "services-type" businesses and four times higher than "manufacturing-type" businesses.

Second, FTF zones have a lower share of households (18 percent fewer households) engaged in rural business compared to both the national-level average and the divisional-level averages where the FTF zones are located (Barisal, Dhaka, and Khulna).

Third, the analysis of participation in nonagricultural enterprises by income quintile at the national (Table 5.16) and FTF zone (Table 5.17) levels shows that participation in trade-related businesses increases as households belong to richer income quintiles. Participation in trade-related businesses doubles from the poorest to the richest quintile for the national sample, and it almost triples for the FTF zone sample.

5.6.2 Distribution of Nonagricultural Enterprises by Occupational Sector

The salient results on the distribution of rural enterprises by occupational sector are as follows:

First, most of nonagricultural businesses owned by rural households are trade-related enterprises, as 62 percent of the rural businesses are trade-related. This share is more than twice as high as manufacturing (25 percent) businesses, and more than four times higher than service-oriented (13 percent) businesses at the national level. There are similar distributions of occupational category at the FTF zone and divisional levels.

Second, income quintile analysis shows very interesting results. The shares of trade- and manufacturing-related enterprises increase (implying a decrease of service-oriented enterprises) as income level increases. Two-thirds of rural enterprises in the top two income quintiles are trade-oriented enterprises, which once again mirrors the results obtained at the national, divisional, and the FTF zone levels.

Third, there is a great variation of the distribution of rural enterprises across income quintiles in the FTF zone. The share of trade-oriented enterprises increases sharply with income levels, as it doubles from the poorest to the richest income quintile, while manufacturing remains constant, and there is a sharp decline (36 percent less) of service-oriented enterprises across income quintiles. This result shows the difference of importance of occupational sectors across income levels, as almost three-fourths of the rural businesses in the richest quintile are trade-oriented businesses, while service-oriented businesses are roughly half of the businesses in the poorest income quintile.

5.6.3 Business Characteristics by Occupational Sector

Characteristics of Manufacturing-oriented Businesses

The salient results of the analysis of the manufacturing sector are as follows:

First, profits generated by manufacturing businesses vary greatly across divisions. Profits in Barisal are almost three times higher than those in Rajshahi, thus showing a great variation of profits across divisions. Manufacturing businesses are generally located in fixed premises inside or outside the homestead (77 percent), and operate around 10 months out of a calendar year. Interestingly, only around 8 percent of these businesses are registered, and on average generate employment of 0.5 persons (outside of household members) per year.

Second, analyzing manufacturing businesses by income quintiles shows that the richest quintile has profits 125 percent higher than the businesses in the lowest quintile, and registration of businesses is also six times higher for the richest income quintile compared to

the poorest quintile. However, it is evident that the majority of businesses operate unregistered without regard to the income quintile to which they belong.

Third, the differences in profits and registration are more evident by analyzing the FTF zone. Virtually no manufacturing business is registered in the poorest income quintile of the FTF zone, while 29 percent of businesses are registered in the richest quintile. Surprisingly, profits vary across quintile without a constant pattern, as the manufacturing businesses in the poorest quintile do not have the lowest profits (as businesses in the third quintile have the lowest profits), yet the richest quintile still has the highest profits.

Characteristics of Service-oriented Businesses

The salient results of the analysis of the services sector are as follows:

First, profits generated by service-oriented businesses vary across divisions, yet they vary less compared to the manufacturing sector. As expected, service-oriented businesses tend to have a nonfixed location of operations, and they operate on average 10 months of the year, regardless of regional location (including the FTF zone). Interestingly, registration is a more common practice among service-oriented businesses than in manufacturing, as roughly one-fifth of the rural businesses are registered, which is still a very low share of registration within the sector, but 140 percent higher than the manufacturing sector.

Second, consistent with the results found in the manufacturing sector, service-oriented businesses have higher profits as they belong to higher income quintiles. Businesses in the richest quintile have 131 percent higher profits than businesses in the poorest quintile. Furthermore, registration of businesses follows the same pattern as the manufacturing sector, with registration of businesses in the richest quintile being roughly three times higher than registration in the poorest quintile.

Third, the analysis of the service businesses by income quintiles in the FTF zone shows similar quintile-led differences compared to those at the national level. Profits for businesses within the richest quintile are 155 percent higher than for those in the poorest quintile, and the share of registered businesses is four times higher within the richest quintile compared to those in the poorest quintile.

Characteristics of Trade-oriented Businesses

The salient results of the analysis of the trade-oriented business sector are as follows:

First, as expected, trade-related businesses have the highest profits compared to other occupational sectors (manufacturing and services). They tend to operate ten months of the year, which implies that they are nonseasonal businesses. They also tend to be located in fixed premises outside of the homestead, and they have a very low share of registered businesses (one-tenth of trade businesses).

Second, the analysis of trade businesses by income quintile yields results similar to those in the manufacturing and service sectors. Profits of trade businesses within the richest quintile are 171 percent higher than those in the poorest quintile. Furthermore, registration is 5.5 times higher for businesses within the richest quintile compared to those in the poorest quintile. The analysis of the FTF zone produced similar results compared to the national-level averages.

5.7 Access to Credit

Disaggregated by income quintile groups, Tables 5.18 (for the FTF zone) and 5.19 (for entire rural Bangladesh) present information on average loan size and the distribution of loans as a percentage of total loan amounts by source of loan. Average loan size is lower for households in the FTF zone (Tk 41,232 per household) than in rural Bangladesh as a whole (Tk 52,216 per household). The loan size increases with household income, reflecting greater ease of borrowing for higher-income households. Nongovernmental organizations (NGOs) are the primary source of credit for all households. NGOs tend to be more important loan sources for poorer households, indicating these households' lower access to credit from commercial sources as well as NGOs' targeting performance. Indeed, richer households borrow relatively higher percentages from banks than do poorer households. For all households, informal networks of relatives and friends and credit or savings groups (other than NGOs) account for a higher proportion of loans than moneylenders.

Tables 5.20 and 5.21 show the patterns of loan use by sample households in the FTF zone and in rural Bangladesh as a whole, respectively. It is important to note that eliciting information from lenders on the purpose of loans can be misleading because financial resources are generally fungible, and it is difficult to trace the activity financed by the loan. This fungibility problem is somewhat reduced when information is elicited directly from borrowers (as opposed to lenders), as was done in the BIHS survey. Of course, some level of misreporting will nonetheless exist, which should be borne in mind when interpreting the results.

The patterns of loan use in the FTF zone are quite similar to those in entire rural Bangladesh. About 43 percent of loans in the FTF zone and about 41 percent of loans at the national rural level are used to finance productive activities. About 16 percent of total loans are used for agricultural enterprises. Households also use credit to finance consumption, with poorer households more likely to do so as compared to richer households. On average, about one-fifth of loans are used to finance food consumption. The sources of loans used for consumption purpose are mostly informal sources, like friend/families, shops/dealers, etc.

Among all sources of loans, commercial banks charge the lowest rates of interest (10–13 percent), closely followed by NGOs (around 14 percent). In contrast, village moneylenders charge 40–70 percent interest (Tables 5.22 and 5.23).

5.8 Savings Patterns

Tables 5.24 and 5.25 provide information on savings by income groups in the FTF zone and in entire rural Bangladesh, respectively. On average, 61 percent of households in the FTF zone and 59 percent of the households at the national rural level reported having any savings. As expected, low-income households have lower amounts of savings than high-income households. In terms of the place of savings, NGOs account for the bulk of savings, with 40 percent of household savings in the FTF zone and 38 percent of savings at the national rural level being held by NGOs (the rates are higher for households in the lower-income groups). The second most important place of savings is banks, and third most important place is insurance companies. This pattern indicates that NGOs perform better than traditional financial institutions, such as banks, in mobilizing savings from rural households.

Tables 5.26 and 5.27 show survey respondents' planned used of savings. Households across the board reported that they would use their savings mainly to prepare for difficult times.

The second most important use of savings would be for the future of the children in the household.

5.9 Participation in Social Safety Net Programs

Poverty and food insecurity are interlinked. The most startling consequence of widespread poverty in Bangladesh is that about one-fifth of the country's population cannot afford an adequate diet. A well-functioning social safety net system can effectively improve food security by increasing the real incomes of the poor. Therefore, the need for targeted safety net interventions to improve the food security and livelihoods of the extreme poor remains strong.

Bangladesh has a comprehensive portfolio of both food- and cash-based social safety net programs. Currently, there are more than 90 such programs. The safety net programs can be categorized in accordance with the specific objective that each program is designed to achieve. For example, programs may be designed to develop infrastructure, provide educational incentives to the poor, mitigate disaster consequences, or provide livelihood support to disadvantaged groups, such as the aged and the disabled. Using these categorizations, it is possible to group existing programs in Bangladesh into five categories, as presented in Box 5.1.

<div align="center">Box 5.1—Characteristics of key safety net programs</div>

Public works programs: The Food for Work (FFW) and Test Relief (TR) programs distribute foodgrain (rice and wheat) as wage payment to both male and female workers in labor-intensive public works programs. The Rural Employment Opportunity for Public Asset (REOPA) program, a follow-up to the Rural Maintenance Program (RMP), provides cash wages and training for income-generation activities to participating female beneficiaries. In 2008, the Government of Bangladesh introduced the Employment Generation for Hard Core Poor program (later known as the Employment Generation Program for the Poorest). All these programs require participants to do physical work for building and maintaining rural infrastructure. They are generally self-targeted because the poor are typically the only people willing to take on onerous, low-paying jobs requiring manual labor.

Training programs: The Vulnerable Group Development (VGD) program exclusively targets poor women and provides a monthly food ration for 24 months. Although it was introduced as a relief program in the mid-1970s, VGD has evolved over time to integrate food security with development objectives. The development package includes training on income-generating activities; awareness-raising for social, legal, health, and nutrition issues; and basic literacy and innumeracy. Beneficiaries of VGD programs are selected by the government administrative structures.

Education programs: The Food for Education (FFE) program, established in early 1990s, distributed monthly foodgrain rations to poor households if they sent their children to primary schools. Due to governance concerns, FFE was terminated in 2002 and has been replaced by the cash-based Primary Education Stipend Program (PESP). The School Feeding (SF) program distributes micronutrient-fortified energy biscuits to primary school children. The Government of Bangladesh also pioneered conditional cash transfers and provided cash assistance to girls in secondary schools through the Female Secondary School Assistance Program (FSSAP) conditional on their attendance. The program was redesigned in 2008 and renamed the Secondary Education Access and Quality Enhancement Program, and now includes boys from poor families as well as girls.

Relief programs: These programs are designed as a mechanism for mitigating the consequences of natural disasters like floods and cyclones. There are currently only two such programs: Vulnerable Group Feeding (VGF) and Gratuitous Relief (GR) programs. Unlike other programs, these programs have no preset criteria or conditionality for participation. They are relief programs that try to help the poor cope during times of natural disaster and smooth their consumption.

Programs for disadvantaged groups: These programs are essentially unconditional cash transfers and include the Old-Age Allowance Scheme; the Allowance for Widowed, Deserted, and Destitute Women; the Honorarium Program for Insolvent Freedom Fighters; the Fund for Housing for the Distressed; the Fund for Rehabilitation of Acid Burnt Women and Physically Handicapped; and the Allowance for the Distressed and Disabled Persons.

Source: Ahmed et al. 2010.

BIHS collected information on social safety net participation and benefits received by participating households. Tables 5.28 and 5.29 show the incidence of participation in major safety net programs by income groups in the FTF zone and in entire rural Bangladesh, respectively. The primary education stipend program has the highest coverage of households among all safety net programs—about a quarter of all households are beneficiaries of this program. The program is designed to provide cash stipends to 40 percent of all primary school students belonging to poor households living in rural areas.

Figure 5.10 shows that 45 percent of the households in rural Bangladesh participate in at least one social safety net program. In any safety net system, there are problems of exclusion (i.e., leaving out those who are needy) and inclusion (i.e., providing benefits to those who do not need them). It is evident from the figure that, although the safety net system Bangladesh is progressive, it excludes many poor populations and includes many nonpoor populations. While 61 percent of the households in the poorest income quintile are beneficiaries of at least one safety net program, 22 percent of the households in the highest income group also receive benefits from the system in rural Bangladesh.

Figure 5.10—Percentage of households participating in at least one safety net program by income groups: Rural Bangladesh
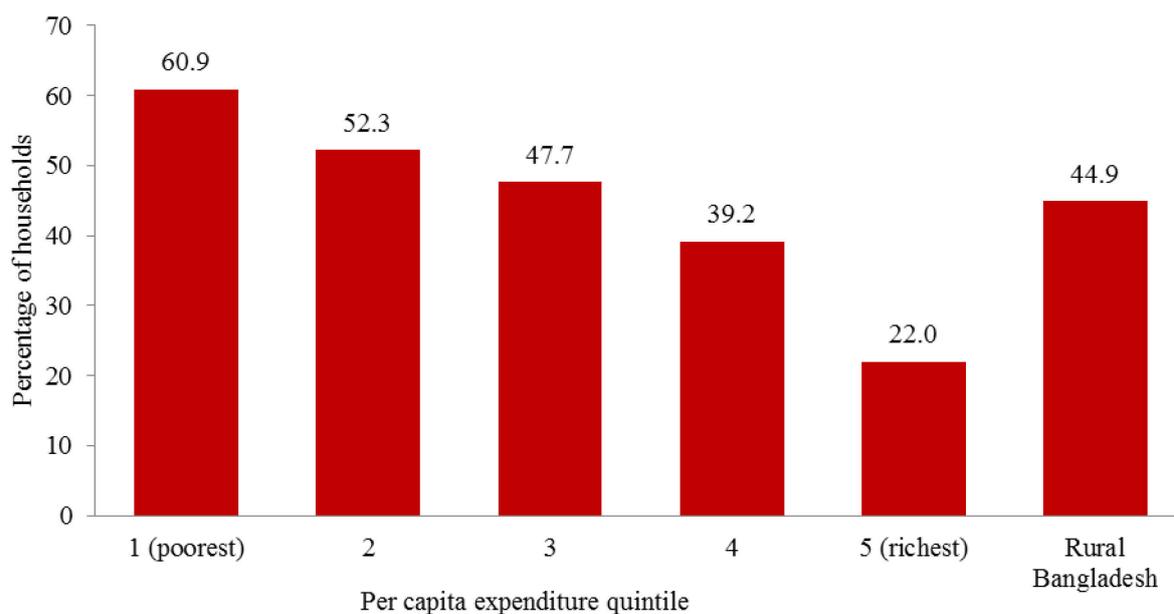
The BIHS results also show that half of the households in the FTF zone participate in at least one safety net program. As Figure 5.11 shows, across the divisions, Chittagong has the lowest coverage rate (38 percent), while Barisal has the highest rate (53.6 percent).

Figure 5.11—Percentage of households participating in at least one safety net program, by region
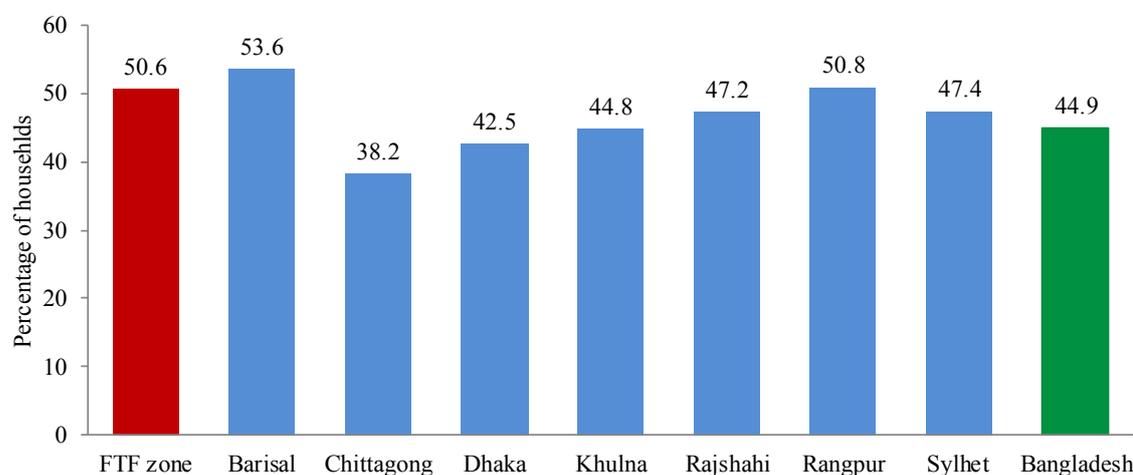
Figure 5.12 compares safety net coverage rates across divisions, with corresponding rural headcount poverty estimates based on data from the 2010 Household Income and Expenditure Survey (HIES), as reported by the Bangladesh Bureau of Statistics (BBS 2011). The patterns show that, while coverage rates are positively correlated with division-level rural poverty rates, there are considerable gaps between safety net coverage rates and poverty incidences in Rajshahi (17.2 percentage points), Sylhet (16.9 percentage points), Barisal (14.4 percentage points) and Khulna (13.8 percentage points) divisions.

Table 5.30 provides data on the distribution of total safety net participants of major programs by income groups in rural Bangladesh. The Employment Generation Program for the Poorest (EGPP) targets the poorest most effectively, followed by the school feeding program. The work requirement of the EGGP makes the program strongly self-targeted. Both male and female beneficiaries do physical work in the program that mainly involves earth moving. About half (49 percent) of the total EGPP participants belong to the poorest 20 percent of the households. However, around 29 percent of the EGPP participants were in the top three income quintiles in 2011, suggesting that there is still room for improvement in targeting performance of the program (Figure 5.13).

Figure 5.12—Incidence of participation in safety net programs and 2010 rural poverty rates, by division

Safety net participation (BIHS)   Rural poverty headcount (2010 HIES)
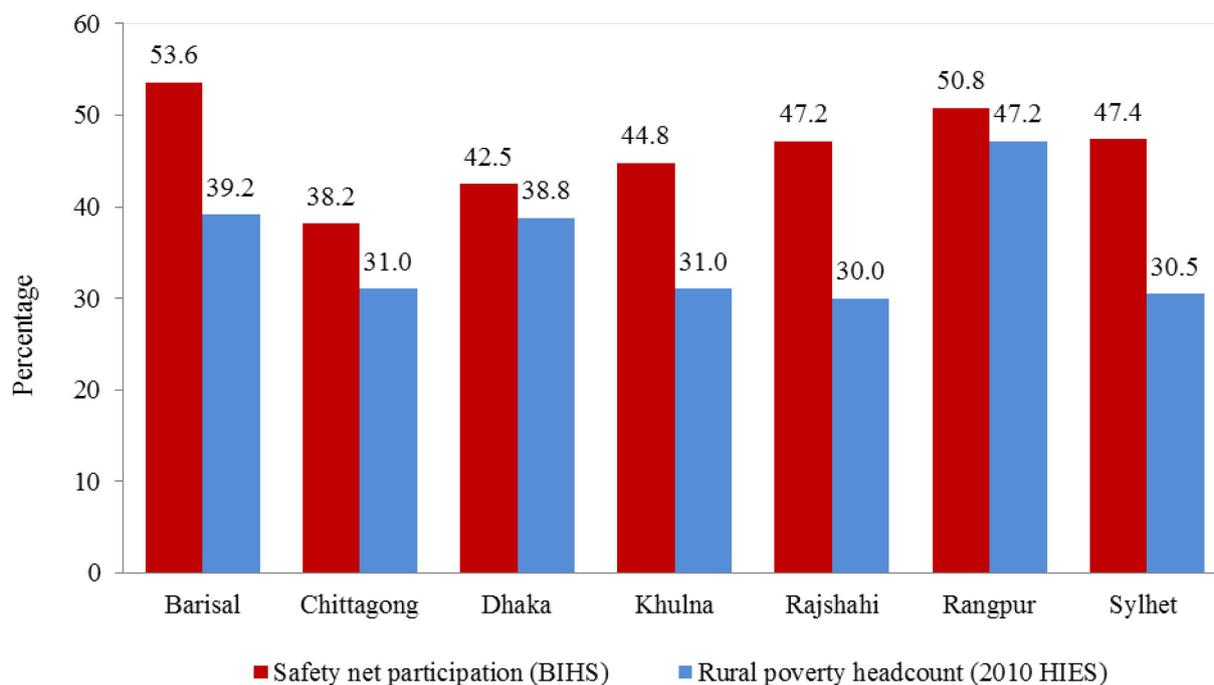
Figure 5.13—Distribution of participants of selected safety net programs, by income groups: Rural Bangladesh

Primary education stipend program
School feeding program
Employment Generation Program for the Poorest
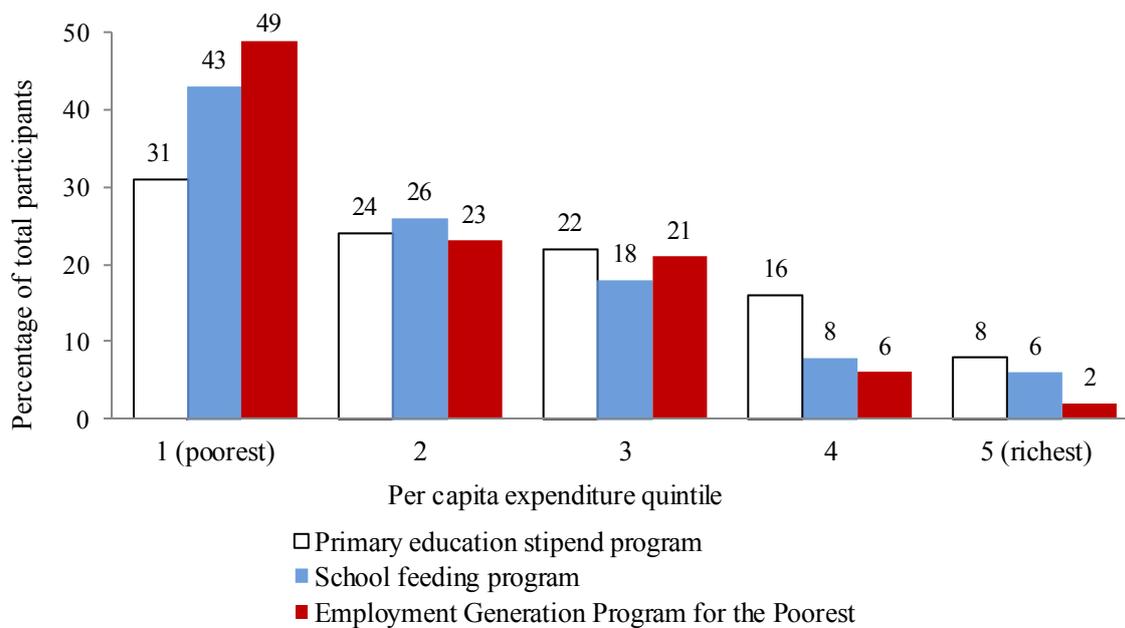
Figure 5.14 shows the distribution of all safety net participants at the rural national level by income groups. About 29 percent of all safety net beneficiaries belong to the poorest 20 percent of the households in the income distribution in rural Bangladesh. On the other hand, around 26 percent of all beneficiaries are in the highest two income groups comprising 40 percent of all households.

Figure 5.14—Distribution of all safety net participants by income groups: Rural Bangladesh
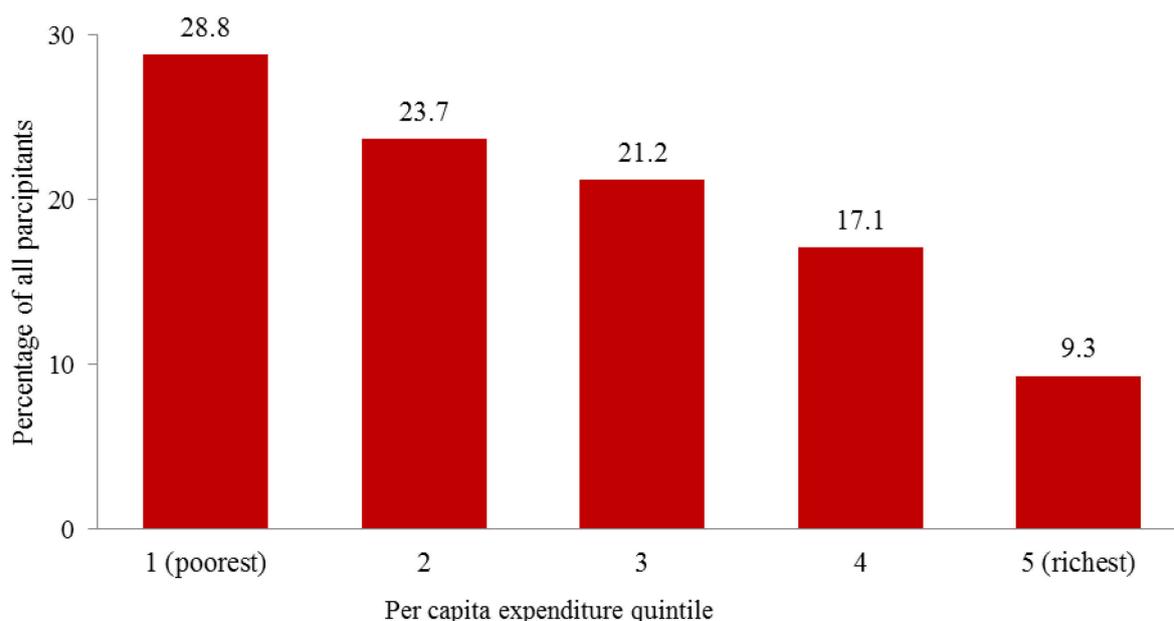
5.10 Shocks and Coping Mechanisms

Many households in Bangladesh normally meet food requirements, but run the very real risk of losing access to food due to shocks. These shocks often lead to sudden losses of real income and, hence, cause acute food insecurity.

Some income-related shocks are covariate in nature, affecting all populations in a society or community. These shocks may include natural disasters, such as floods, cyclones, or droughts; macroeconomic crises; or civil conflicts. These events often exert adverse effects on households through lower real incomes due to loss of crops, reduced employment, lower wages, or higher prices, especially for food. In addition, poor households face idiosyncratic shocks that have more intense impacts on a particular family. Such idiosyncratic shocks include crop failures, death or serious illness of primary income earners, loss of jobs, crime and violence, etc. Poor households have little or no savings and the thinnest asset base; therefore, they are typically most vulnerable to both covariate and idiosyncratic risks. For them, risk reduction through preventive measures is beyond their capacity. Informal risk management instruments such as private transfers or community level support systems are effective mainly when risks are household-specific. However, they tend to break down once a large shock strikes the entire community (Ahmed et al. 2004).

When hit by negative income shocks, if formal or informal protection mechanisms are inadequate or unavailable, then the poor might use undesirable and costly coping strategies, such as pulling children out of school, distress sales of their assets at very low prices, and the reduction of food intake, all of which could compromise their future earning capacities and lead to deeper poverty and food insecurity.

BIHS collected information on shocks and household coping mechanisms to mitigate the effects of shocks. Tables 5.31 and 5.32 show the proportion of households affected by various types of shocks in the five years prior to the survey in the FTF zone and in entire rural Bangladesh, respectively. Medical expenses due to illness or injuries were the most common cause of crisis, affecting more than one-fifth of all households on average. This was followed by loss of productive assets due to factors other than floods (storms, cyclones, river erosion, theft, fire, etc.) in the FTF zone, which was affected by two severe cyclones: *Sidr* in November 2007 and *Aila* in May 2009. The second most common cause of loss of productive assets for rural Bangladesh as a whole was the impact of the food price surge in recent years. These shocks affected households across the board, even affecting households in the high-income groups.

Tables 5.33 (for the FTF zone) and 5.34 (for entire rural Bangladesh) show the measures the affected households took to cope with relatively severe shocks: death of the main earner, serious injury or illness, severe floods and other natural disasters, and loss of assets. The most common coping measure was to do nothing, followed by taking loans from formal and informal sources, and taking help from others. Some differences in coping mechanisms can be seen across the expenditure distribution. For instance, lower-income households, while tending to do nothing, were more likely to take help from others than higher-income households.

6. UTILIZATION: FOOD CONSUMPTION AND NUTRITION

Improvements in food availability and access to food at the household level do not necessarily translate into the eradication of nutritional risks confronted by vulnerable individuals within the households. Bangladesh has made considerable progress in addressing undernutrition in its population as a whole. However, levels of stunting, underweight, wasting, and childhood anemia are very high, as are levels of maternal chronic energy deficiency and anemia. According to the 2011 Bangladesh Demographic and Healthy Survey data, the proportion of underweight children is 36 percent and the proportion of stunted children is as high as 41 percent (BDHS 2011). Anemia is also a widespread problem, with estimates suggesting that anemia rates among infants could be as high as 90 percent. The prevalence of low-birth-weight babies is estimated at 30–50 percent of live births. More than one-quarter of women suffer from undernutrition, having a body mass index of less than 18.5. Slightly more than half of pregnant women and one-third of all women are anemic, and iron-deficiency anemia is also a chronic problem among young children (Ahmed et al. 2011; Sen et al. 2010).

With this backdrop, this section presents the current food consumption and nutrition patterns in the Feed the Future (FTF) zone and in rural Bangladesh as a whole. The section is organized as follows. Section 6.1 presents the patterns of dietary diversity in terms of frequency of consumption of different types of foods, section 6.2 shows the quantity of various types of food consumed, section 6.3 provides energy shares of food items and costs of calories, section 6.4 shows intrahousehold patterns of macro- and micronutrient intakes, section 6.5 presents anthropometric measurements of children and other age groups of household members and infant and young child feeding practices, and section 6.6 shows the incidence of illness among household members.

6.1 Frequency of Consumption of Different Food Groups

Tables 6.1 and 6.2 summarize the frequency of weekly household consumption of 17 food groups in the FTF zone of influence and the whole of Bangladesh, respectively, disaggregated by expenditure quintiles. Table 6.3 illustrates the regional patterns in the frequency of weekly household consumption of 17 food groups. The tables show that, while the frequency of consumption of different food groups increases with income, dietary diversity is not yet widely attained in the FTF zone, as well as the rest of rural Bangladesh, regardless of household income.

Rice is the main staple for all households, while vegetables, potatoes, fish, oil, and fats are, on average, consumed four to six days a week by rich and poor households alike.

Cereals (maize, barley, millet, etc.) are rarely consumed by either the poor or the rich. Protein-rich food (poultry, meat, eggs, dairy, beans, lentils, etc.) and vitamin and micronutrient-rich food (e.g., fruits) appear to be infrequently consumed in richer households and are rarely consumed in the poor households. Table 6.3 presents results similar to those in Tables 6.1 and 6.2, revealing the lack of regional variation in dietary diversity across rural Bangladesh.

6.2 Quantity of Food Consumed

Tables 6.4 and 6.5 present the quantity of food consumed by income groups in the FTF zone and rural Bangladesh as a whole. The results indicate that rice is consumed in the largest

amounts across income groups in the FTF zone and national samples. Other commodities that are consumed in relatively large amounts include potatoes and a number of vegetables (labeled as "other vegetables" in the tables). Such items as chicken and beef and different types of fruits not only are consumed infrequently (as demonstrated in tables 6.1-6.2), but are also consumed in very small quantities.

Richer households consume greater amounts of food, as expected. While the increase is more gradual for staples, such as rice or potatoes, the quantity consumed for such items as chicken and beef increases dramatically in the richer quintiles. For example, a person in the poorest quintile in the national sample consumes, on average, 1.0 grams of beef per day; however, a person in the richest quintile consumes about 20 grams per day.

Table 6.6 illustrates the patterns in the quantity of food consumed across the divisions. Rice is consumed in the greatest quantities across all divisions. Such food as meat and poultry and vitamin A-rich fruits and vegetables is consumed in very little amounts. The results also indicate that Rangpur is worse off than the rest of the country in terms of food consumption. The amount of beef, chicken, poultry, and fish (which are probably considered as luxury items by less well-off households) consumed is the lowest in Rangpur. It may be expected, therefore, that the consumption of cheaper items will be much higher in Rangpur. In fact, the consumption of potatoes as well as green leafy vegetables (which are relatively inexpensive) is the highest in Rangpur.

6.3 Calorie Share of Food Items and Cost of Calories

Tables 6.7 and 6.8 summarize the per capita daily calorie intake and source of calories by different food groups in the FTF zone and the whole of Bangladesh respectively, disaggregated by income quintiles. The tables show that daily per capita intake of food energy in the FTF zone, at 2,167 kilocalories (kcal)/person/day, is slightly lower than the national average.

For both samples, calorie intake increases with income. Rice accounts for 71 percent of total calories consumed in the FTF zone as well as at the national level, implying very little diversity in diet. All across the country (including the FTF zone), the poor predominantly depend on rice as their main source of calories. Rice accounts for 77–78 percent of the calories consumed for those in the lowest income quintile, compared to 63–64 percent for those in the highest income quintile. Oils and vegetables other than leafy vegetables contribute to the next highest share of calories in both samples, though at around at 7–8 percent for both samples, the percentage is still very low compared to the share obtained from rice.

Table 6.9 illustrates the divisional variations in per capita daily calorie intake and calorie source by different food groups. Chittagong reports the lowest average per capita daily calorie intake (2,036 kcal/person/day), while Dhaka reports the highest (2,370 kcal/person/day). Households in Rangpur are predominantly dependent on rice as the main source of calories, which accounts for 77 percent of the calories consumed, which is higher than the rest of the divisions. Meat, dairy, and poultry products each contributes to barely 1 percent of the calorie share. The low divisional figures and percentages are reflected in the national averages (Table 6.8).

6.3.1 Calorie-Deficient Households

Until 2005, the BBS used to estimate and report poverty incidences using two methods: the direct calorie intake (DCI) method and the cost of basic needs (CBN) method using data from the HIES. However, in the 2010 HIES report, poverty incidences were based only on the CBN method of poverty estimates (BBS 2011).

The DCI method measured poverty incidences by taking into account the minimum level of food energy to maintain normal health as the threshold to measure poverty. For Bangladesh, the minimum calorie threshold is 2,122 kcal/person/day, which is known as the food poverty line. BBS identifies people or households failing to acquire this level are termed as absolute food poor, and those who cannot acquire 1,805 kcal/person/day are termed as hard-core poor (BBS 2007).

An analysis of the BIHS data has been carried out to estimate the percentages of households that could not afford to acquire 2,122 kcal/person/day and 1,805 kcal/person/day. The results are illustrated in Figure 6.1. In 2011–12, 36.8 percent of households in the FTF zone and 35.3 percent of households in the rural national sample were food energy-deficient who could not afford an adequate diet. Furthermore, 17.5 percent of the households in the FTF zone and 16.5 percent of the households in entire rural Bangladesh were below the lower food energy threshold of 1,805 kcal/person/day and, therefore, remained severely food energy-deficient. According to BBS, 39.5 percent of the households in rural Bangladesh were absolute poor who could not afford 2,122 kcal/person/day, and 17.9 percent were hard-core poor who failed to acquire 1,805 kcal/person/day in 2005 (BBS 2007).

Figure 6.1–Percentage of households below food energy thresholds
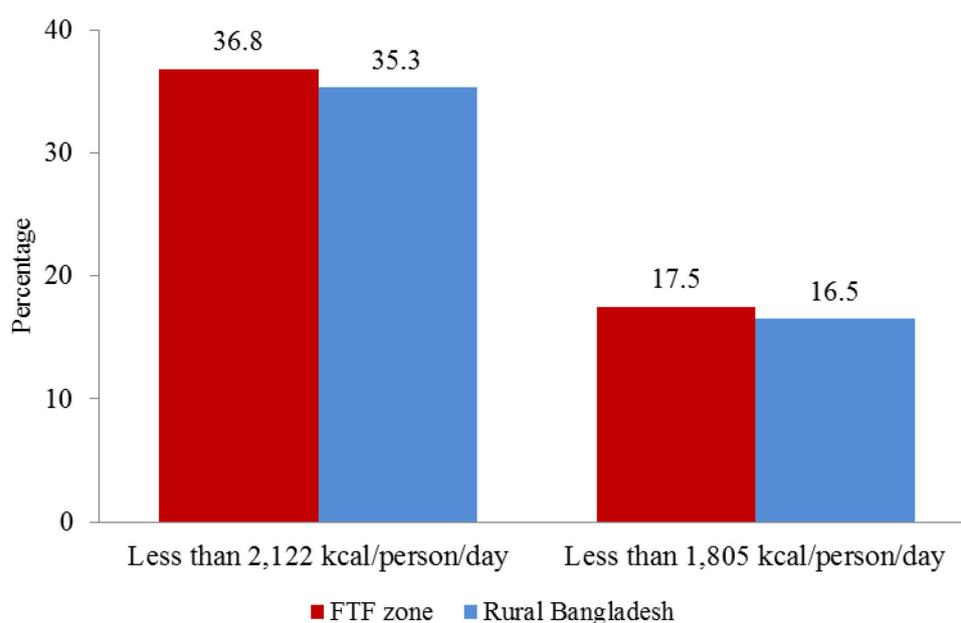
6.3.2 Cost of Calories by Food Groups

Tables 6.10 and 6.11, along with Figure 6.2, demonstrate the cost of calories by food and income groups in the FTF zone and rural Bangladesh. In the FTF zone as well as at the national level, the cost of calories increases with income, which is expected, since richer

households can afford to buy food of a better quality compared to households belonging to the lower quintiles. The increase in spending is more striking for certain food items. For example, in the FTF zone, the highest quintile pays Bangladeshi Taka (Tk) 163/1,000 kcal for small fish, while the lowest quintile pays Tk 120/1,000 kcal. In rural Bangladesh, the top quintile pays Tk 161/1,000 kcal for fruits, while the lowest quintile pays Tk 90/1,000 kcal. For staple food items, such as rice, there is not much variance in the amount of money spent across the income groups.

Figure 6.2—Cost of calories by food groups
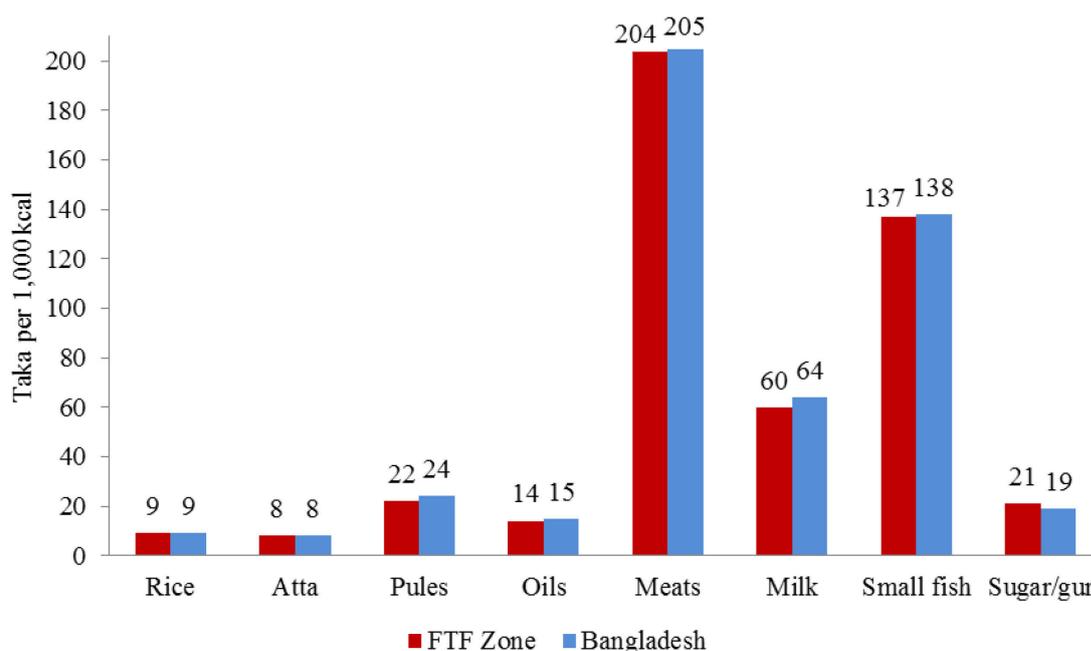
Table 6.12 shows the cost of calories by food groups and divisions. Households living in Dhaka division pay the highest price for calories from rice (Tk 9.3/1,000 kcal) compared to other divisions, and pays a 6 percent higher price than the national average price. This indicates that households living in Dhaka consume a relatively higher quality of rice and, hence, pay a higher price for rice.

Households in Rangpur division pay the lowest price for rice and some other food items, such as vegetables, milk, and big fish. Among the divisions, meat is the most expensive item. Big fish is the second most expensive item, for which people pay Tk 152.3/1,000 kcal in Barisal, compared to people in Rangpur who pay Tk 93.8/1,000 kcal.

6.4 Intrahousehold Patterns of Nutrient Intakes

BIHS is the first nationally representative household survey in the country that collected data on intrahousehold food consumption. The analysis presented here is based on individual food intake data, collected in the dietary intake module of the household survey, using a combination of 24-hour food recall and food-weighing methods to estimate consumption quantities of various food items by individual household members. Female enumerators with expertise and long experience in administering the dietary intake module (including past International Food Policy Research Institute [IFPRI] surveys in Bangladesh) collected the dietary intake data.

The person with primary responsibility for preparing and distributing meals in the family was asked about recipes prepared; ingredients for these recipes; the sources of these ingredients (produced by the household, purchased in the market, collected, given by others); and amounts of recipes eaten by various family members and guests. In addition, individual-level information was collected on leftovers/recipes eaten from the previous day, meals taken away from home, food given away, and food fed to animals. If meals were purposely missed or skipped by particular family members, respondents were asked to provide a reason (e.g., felt ill). In some cases, family members were absent from home for one, two, or all three meals, and it was not known what was eaten. This information was also recorded. Persons missing meals due to being absent from home whose food intakes were not known are excluded from the analysis. The analyses are based on dietary intake data from 23,135 persons in the national sample and 8,388 persons in the FTF zone sample. The analysis includes the following nutrients: food energy in terms of calories, protein, vitamin A, iron, and zinc. Appropriate conversion factors were used to calculate quantities of nutrients contained in foods eaten by individual household members.

6.4.1 Daily per Capita Calorie Intake

Tables 6.13 and 6.14 illustrate the patterns of calorie intake by income and age groups in the FTF zone and rural Bangladesh as a whole. A number of noticeable patterns emerge from the analysis.

First, both in the FTF zone and at the national rural level, on average, the amount of calories consumed increases with income. However, the FTF figures are consistently lower than those at the national level. The two poorest income groups of both samples are either below or barely at the nutritional threshold of 2,122 kcal/person/day.

Second, while calorie consumption increases across income groups for males and females in each age group, females in general consume less than males. Whether this gender disparity in intake translates into poorer nutrition will be understood when looking at the food energy (calorie) adequacies in the next group of tables.

The results across age groups confirm the overall positive income-calorie intake relationship as well. However, several uneven patterns are observed among preschoolers, primary school-age children, and the elderly in the FTF zone. Among primary school-age children and preschoolers, intakes drop at the highest quintile (though not by a large margin). This is probably owing to the decrease in intakes of females in these age groups in the top quintiles. Calorie consumption among elderly women is highest in the middle quintile. A similar pattern for the elderly is reflected at the national level, this time for both men and women.

6.4.2 Food Energy Adequacy

The results for food energy adequacy (or calorie adequacy), presented in Tables 6.15 and 6.16, as well as Figure 6.3, have been calculated using standard formula based on calorie intake, age, anthropometric measurements, gender and physical activity levels of the household members. In general, individuals with higher incomes have more adequate calorie intakes. Yet even the richest income groups in the FTF zone and the country as a whole consume insufficient amounts of calories. The national-level figures are higher than those of the FTF zone, especially for the lower-income groups, indicating that on average, the FTF zone is worse off in terms of calorie adequacy than the country as a whole.

Figure 6.3—Food energy adequacy by age groups: Rural Bangladesh
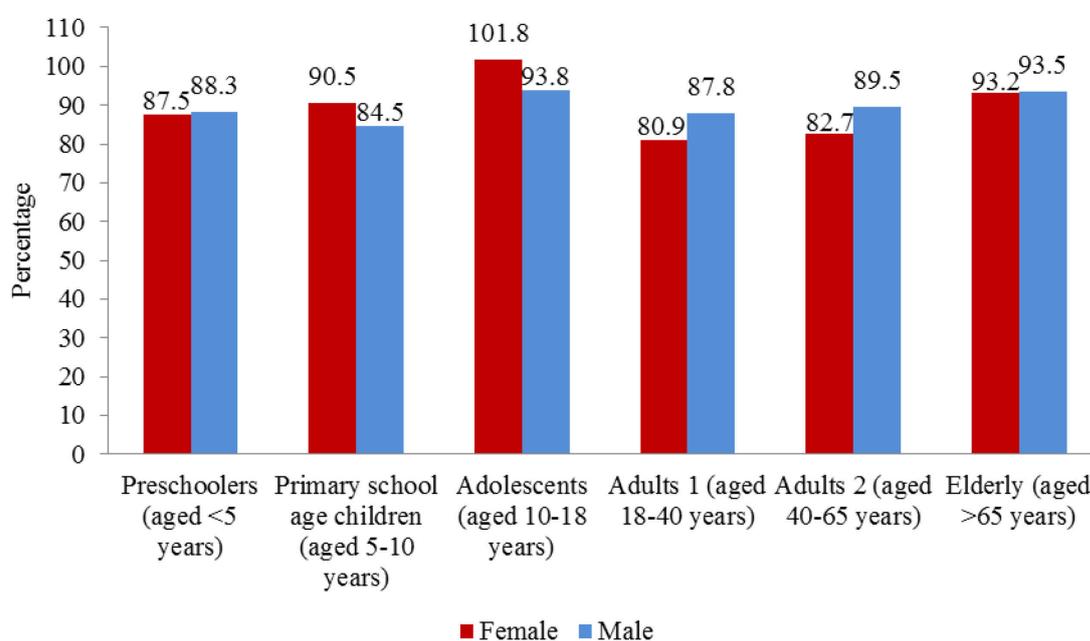
A cursory glance at the overall results may give the impression that females have less access to sufficient calories than males across all the income groups. However, looking at the age groups yields more interesting observations. Female primary school-age children and adolescents are better off in terms of calorie adequacy than the males in their group. This is consistent for the FTF zone as well as the national sample. However, adult men consume a more calorie-adequate diet than adult women. In fact, adult women are among the worst off in terms of calorie adequacy in both the samples.

With the lowest calorie adequacy among all age groups across both samples, preschool children of the FTF zone stand out from the rest. Additionally, it is seen that females in this age group are more calorie-sufficient in the bottom two quintiles, but as income increases, males perform better. In fact, the disparity is quite noticeable at the top two quintiles, with around 93 percent of males being calorie-adequate compared to around 78 percent of females.

6.4.3 Daily per Capita Protein Intake

Tables 6.17 and 6.18 (and Figure 6.4) illustrate the patterns of protein intake by income and age groups in the FTF zone and Bangladesh as a whole. Key features of the results are as follows.

First, both in the FTF zone and at the national level, on average, the amount of protein consumed increases with income. However, as in the case of calories, the FTF figures for protein intake are consistently lower than those at the national level.

Looking at the results by gender, females in general consume less protein than males, although their intakes increase with income. Similarly, the results across age groups confirm the overall positive calorie-income relationship.

Figure 6.4—Daily per capital protein intake, by age groups: Rural Bangladesh
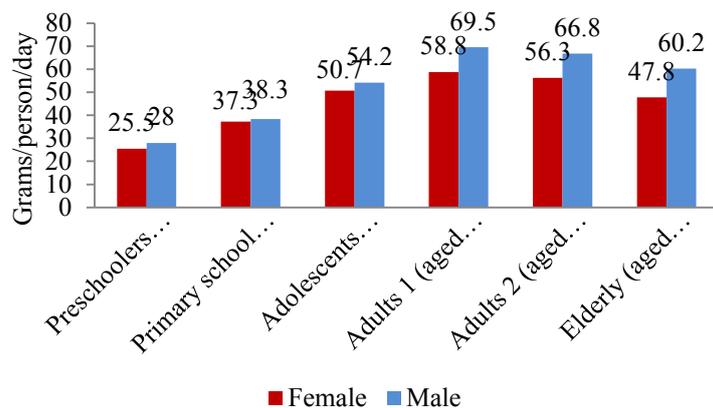
6.4.4 Per Capita Consumption of Vitamin A

Tables 6.19 and 6.20 , as well as Figure 6.5, show the variations in daily per capita vitamin A intake by age and income groups in the FTF zone and rural Bangladesh as a whole, recorded in retinol-equivalent micrograms per person per day.

Figure 6.5—Daily per capita vitamin A intake, by age groups: Rural Bangladesh
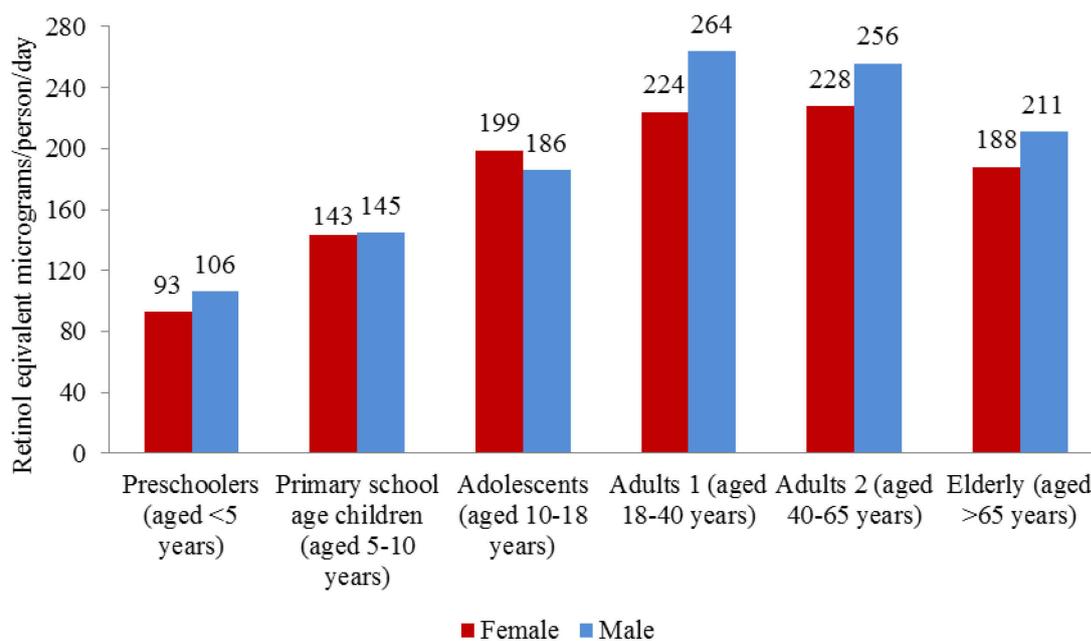
It is interesting to note that, contrary to the results for calorie and protein intakes, average vitamin A intakes in the FTF zone are consistently greater than those at the national level. For both samples, per capita intake increases with age, but starts to fall once the age rises to 65 or older. For women, the intake is relatively higher between the reproductive ages of 18 and 40, which is an encouraging observation. Male intake is higher across most age groups, except among primary school-age children (in the FTF zone) and adolescents (in rural Bangladesh).

There is no consistent pattern of progression in vitamin A intake across expenditure quintiles in the two samples. Even though in many cases intake increases with quintile, the differences are not substantial. In some cases, the intake falls with increasing quintile. For example, vitamin A intake among adolescents in both samples increases at the second quintile, drops by a large margin at the third quintile, and then increases again.

6.4.5 Per Capita Consumption of Iron

Tables 6.21 and 6.22 and Figure 6.6 show daily per capita iron intake by age and income groups in the FTF zone and at the national level, recorded in milligrams per person per day. For both samples, per capita intake increases with age, but starts to fall once the person reaches age 65. Intakes for women between the ages of 18 and 40 are the highest at 11.9 milligrams (FTF zone) and 11.4 milligrams (national level). However, the average intake is higher for males than for females across all age groups. This finding is a cause for concern, because adolescent girls and young adult women require much higher iron intakes than their male counterparts.

In both the FTF zone and at the national level, on average, the amount of iron consumed increases with income. However, the FTF figures for iron intake are generally lower than those at the national level.

Figure 6.6—Daily per capita iron intake, by age groups: Rural Bangladesh
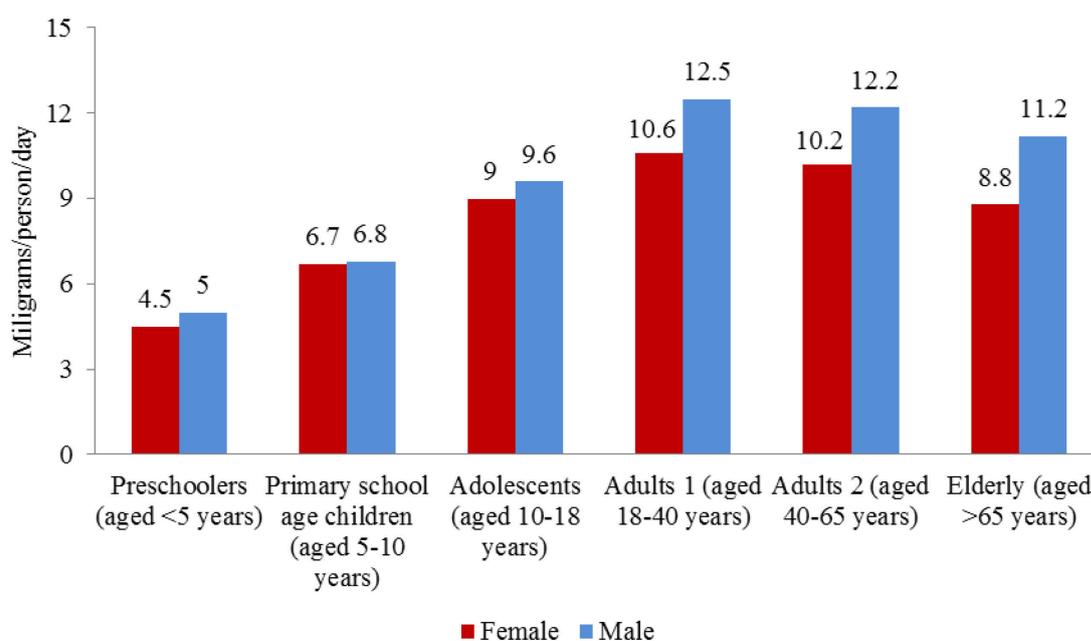
6.4.6 Per Capita consumption of Zinc

Figure 6.7 illustrates patterns of daily per capita zinc intake by income and age groups in the FTF zone and rural Bangladesh as a whole. Detailed results are presented in Tables 6.23 (FTF zone) and 6.24 (rural Bangladesh).

Table 6.23 shows that per capita zinc intake increases with age, but starts to fall among the elderly (age 65 and older) for both sexes in the FTF zone. Intake for women between the ages of 18 and 40 is the highest at 7.4 milligrams. The average intake is relatively higher for males than for females across age groups. In general, with some exceptions, average intake tends to increase with income.

For rural Bangladesh, per capita zinc intake increases with age, but starts to gradually decrease once the person reaches age 40, for both sexes (Table 6.24). Intake for both men and women is the highest between the ages of 18 and 40. The average intake is marginally higher for males than for females across all age groups. Similar to intakes in the FTF zone, average intakes of zinc in Bangladesh mostly increase with expenditure quintiles.

Figure 6.7—Daily per capita zinc intake, by age groups: Rural Bangladesh
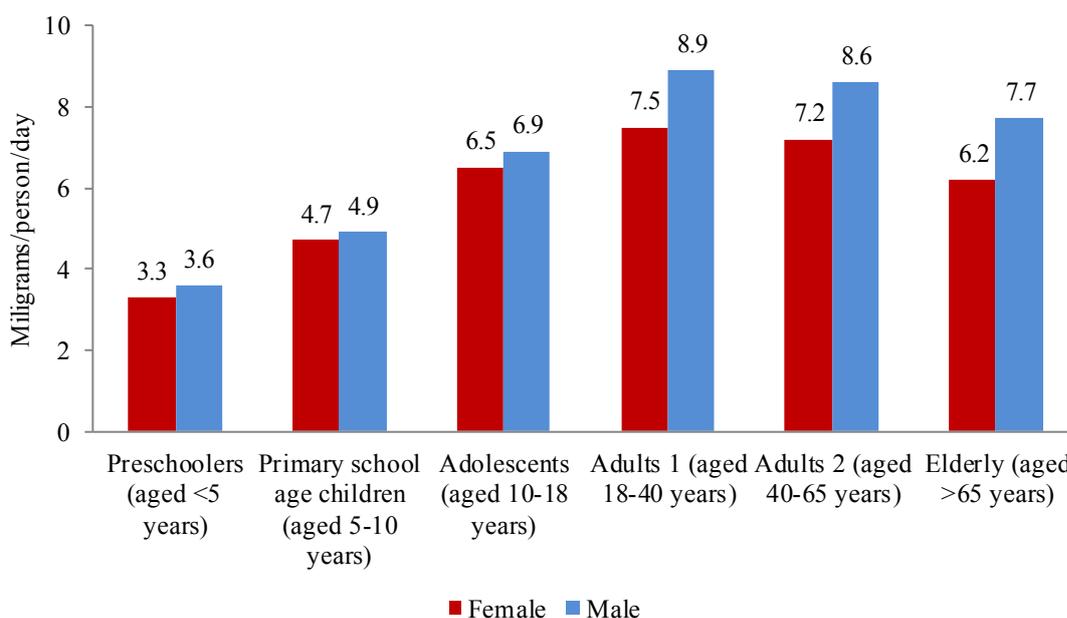
6.5 Infant and Young Child Feeding Practices

Despite recent improvement in the prevalence of stunting and underweight among children under 5 years of age, childhood undernutrition in Bangladesh remains a complex public health challenge for policy makers and program managers alike. Strong evidence supports the critical role that proper feeding practices play in the growth and health of infants and children, but coverage of key interventions to improve exclusive breastfeeding and complementary feeding remains disappointingly low in resource-poor settings where need is

the greatest (Lutter et al. 2011).Greater coverage of high-quality interventions to promote exclusive breastfeeding for the first six months of life, continued breastfeeding after the introduction of complementary foods, and ensured adequate dietary diversity and meal frequency are urgently needed if the national goal is better nutritional outcomes for Bangladesh's most vulnerable subgroups of infants and children.

While the anthropometric data collected by the BIHS allows for estimates of under-nutrition, prevalence estimates of under-nutrition are not presented in this report since the U.S. Agency for International Development (USAID) relies on the Bangladesh Demographic and Health Survey (BDHS) for Feed the Future reporting of nutrition indicators. Since the BIHS survey is based on rural households only while the BDHS includes an urban and a rural sample, any differences between the BDHS and the BIHS would be primarily attributable to the overall design of the survey sample.

 Comparison of infant and young child feeding (IYCF) indicators from the FTF zone and nationally representative sample of rural Bangladesh from the BIHS reveal some similarities as well as some disparities among the two samples (Figure 6.8).

Figure 6.8—Infant and young child feeding practices: Comparing the FTF zone and rural Bangladesh
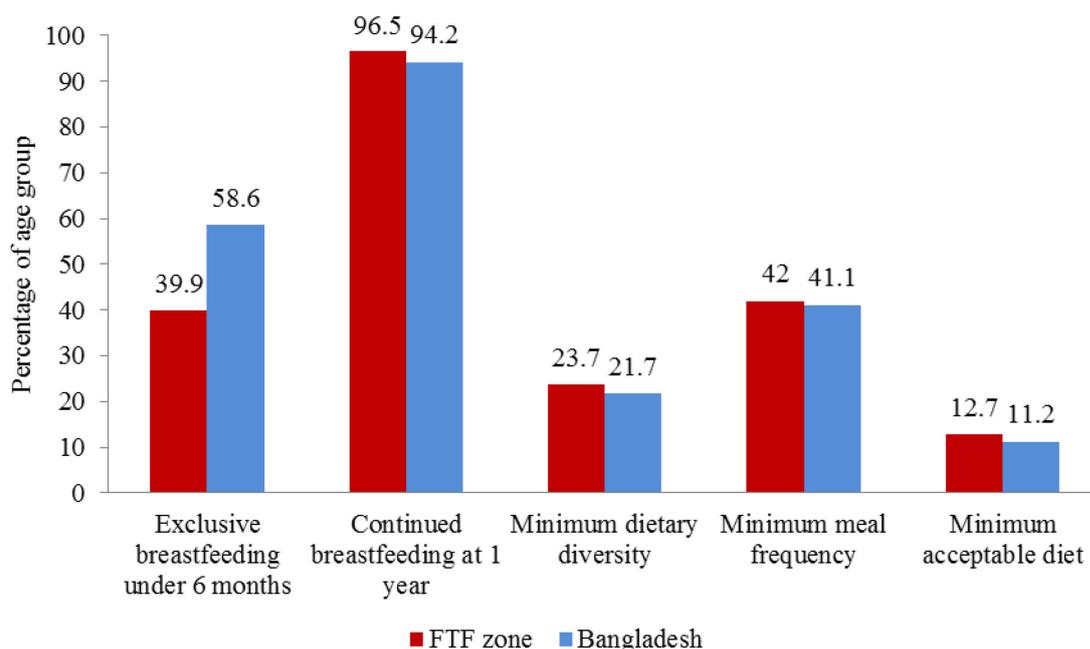
The prevalence of exclusive breastfeeding among infants younger than 6 months appears high in rural Bangladesh (58.5 percent). However, less than half (39.9 percent) of the infants living in the FTF zone are exclusively breastfed. At the national level, exclusive breastfeeding during the first 6 months of life increased from 43 percent in 2007 BDHS to 64 percent in 2011 BDHS (NIPORT 2013). A predominant majority of Bangladeshi children age 6 to 23 months reportedly continue to receive breast milk while being given complementary foods.

After 6 months of age, when it is considered safe and appropriate for children to begin receiving solid, semisolid, or soft foods in addition to breast milk, only one-fifth of these children are generally meeting the minimum criteria established for adequate dietary diversity. The percentage of children who received complementary foods the minimum number of times during the previous day varies widely, with much lower proportions (41.1 percent and 42.0 percent) reported in the FTF zone and in rural Bangladesh, respectively, compared to nationwide (64.5 percent). When dietary diversity and minimum meal frequency indicators are combined to reflect a minimum acceptable diet for children age 6 to 23 months, a similar pattern emerges, with percentages in the rural regions (11.2 percent) and the FTF zone (12.7 percent) being much lower than the national estimate (20.9 percent).

Detailed analysis of the types of foods fed to children in the different age groups is not possible to conduct with the FTF sample, given the small number of children in each of the age groups. However, from the BIHS sample, which is somewhat larger, some findings on the ages of introduction of different foods are presented, as well as on the diversity of foods fed to children in the 6–8-month age group—a crucial age group for establishing adequate IYCF.

First, Table 6.25 highlights that both exclusive breastfeeding and adequate complementary feeding are compromised by either the early introduction of several liquids/foods (i.e., before 6 months of age) or the late introduction of several high-nutrient-value foods (after 9 months of age). Almost 70 percent of children had received water before 6 months of age, about half the children had received non-breast milk liquids, and almost one-third had received gruels or animal milks in the 0–6-month age group. These patterns compromise the achievement of exclusive breastfeeding for this age group. Although it is encouraging that a majority of children in the 6–8-month age group had received all types of the recommended food groups for this age group (cereals, fish, meat, eggs, legumes, green vegetables), 20–25 percent of children had been introduced to these foods only after 9 months of age, depending on the type of food in question. Table 6.26 provides further details on the types of foods consumed by children 6–8 months of age, based on the 24-hour recall of food items. This reinforces the importance of establishing adequate complementary feeding patterns for this age group.

Figure 6.9 presents the different food groups consumed in the past 24 hours by child sex and Figure 6.10 depicts the achievement of minimum diet diversity (more than four food groups in the last 24 hours) for children 6–23 months of age, by child sex as well as by division and wealth group. There are no differences in the consumption of different foods by child sex.

The findings in Figure 6.10 suggest that there is substantial variability in achievement of minimum diet diversity by region and by income group, but that overall, achievement is low. Even in the highest-income group in the BIHS sample, only about a third of children 6–23 months of age had achieved minimum diet diversity.

Figure 6.9—Percentage of children 6–23 months of age achieving minimum diet diversity, by child sex: Rural Bangladesh
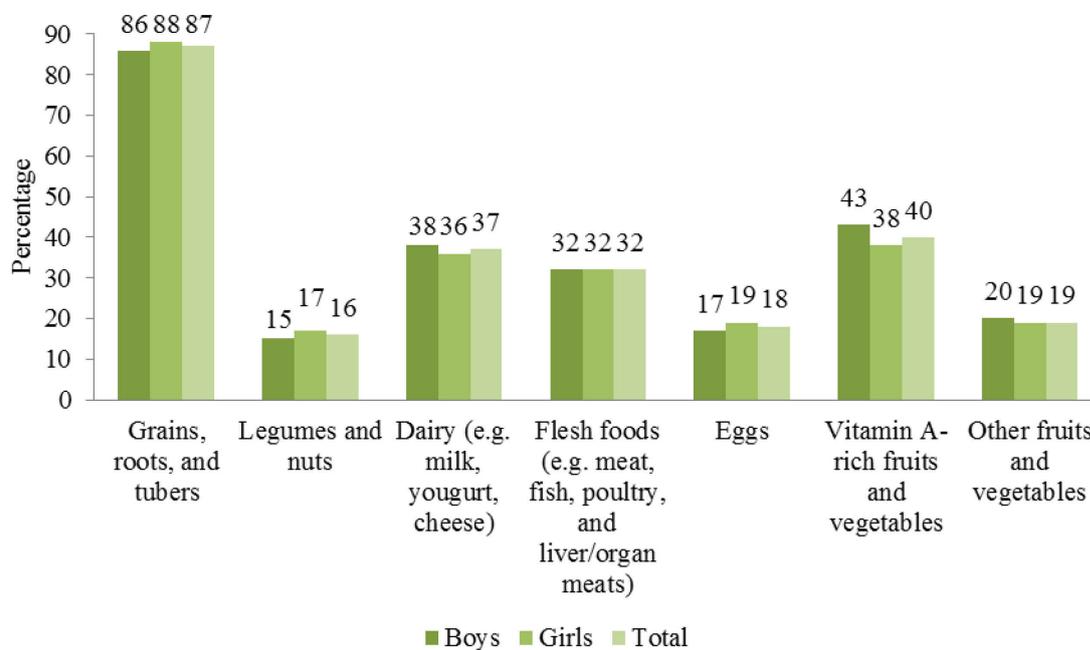
Figure 6.10—Percentage of children 6–23 months of age achieving minimum diet diversity, by division and by income groups: Rural Bangladesh
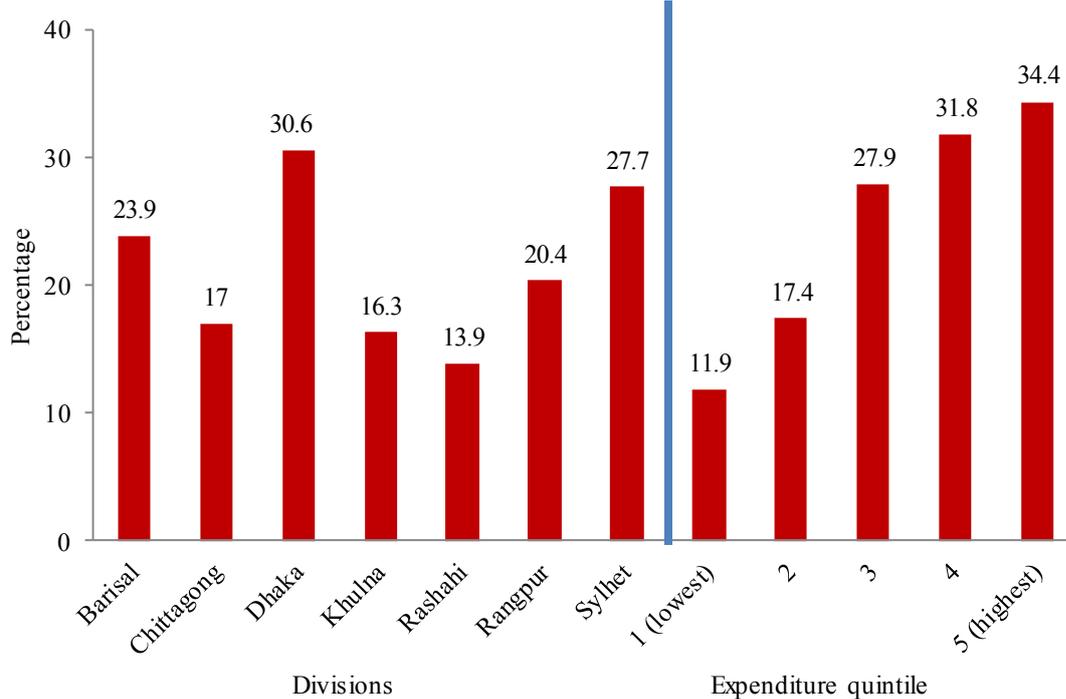
6.5.1 Anthropometric Measurements of Other Household Members

BIHS measured the height and weight of all household members in the sample households in the FTF zone and in entire rural Bangladesh. Tables 6.27 and 6.28 present mean heights of household members by age group and gender in the FTF zone and the whole of rural Bangladesh.

In both samples, there is little variation in mean height of household members between males and females across all age groups of children up to 10 years. However, for the four age groups older than 10 years, the mean heights of males are greater than those of females. The biggest difference between the heights of males and females is observed for the age group 65 years and older: the average height of males is around 9 percent higher than the average height of females in both samples.

Tables 6.29 and 6.30 show the mean weights of household members by age group and sex in the FTF zone and at the rural national level, respectively. In the FTF zone, the mean weight of household members segregated by age group and sex shows slight variances. Among the nine age groups from less than 5 years to 10 years, the difference in mean weight among males and females is less than 1 kilogram (kg). However, females weigh significantly less than males among adults. For example, in the age group between 18 and less than 40 years, males weigh 6.4 kg more than females. Similar results are shown for the age group between 40 and less than 65 years, where females weigh 6.0 kg less than males, and for the for the age group 65 years and above, where on males weigh 7.46 kg more than females, on average.

The patterns of weight differences between males and females are quite similar between rural Bangladesh and the FTF zone.

6.6 Incidence of Illness

Tables 6.31 and 6.32 show the incidence of illness of all household members across age and income groups within 30 days prior to the BIHS in the FTF zone and at the national level. The results are recorded in terms of percentage of household members. The following results are notable:

First, diarrhea is an important cause of child morbidity, so its incidence in children is a crucial indicator of health outcomes. The incidence of this disease among children younger than 5 years of age is 6 percent in the FTF zone and 7 percent at the national level. There is no discernible relationship between incidence of diarrhea and income. In fact, for the national sample, the incidence of diarrhea is highest in the top and bottom quintiles.

Second, the incidence of illness/injury is the highest among children (age 5 and younger), and the elderly (aged 60 and older), in both the FTF zone and the entire country. Among the types of illnesses reported, prevalence of prolonged fever and persistent coughs is the highest across the age groups.

7. SUMMARY AND CONCLUSIONS

A thorough understanding of the factors influencing food availability, access, and utilization is crucial for effective policy design to improve the food security of the Bangladeshi people. Such understanding comes from context-specific and timely information. It is thus important to broaden the collection of and access to accurate data on the wide-ranging determinants of food security.

This report presents results of analyses of the 2011–12 Bangladesh Integrated Household survey (BIHS) data on various topics that, combined, represent the current food security situation in Bangladesh. The study looks at how that situation varies between the Feed the Future (FTF) zone of influence in the southern region and other regions throughout the country. The BIHS was conducted under the Bangladesh Policy Research and Strategy Support Program (PRSSP), implemented by the International Food Policy Research Institute (IFPRI) with financial support from the U.S. Agency for International Development (USAID). The BIHS sample is statistically representative at the following levels: (1) rural Bangladesh nationwide, (2) rural areas of each of the country's seven administrative divisions, and (3) the FTF zone.

Summary

Characteristics of Survey Households

A person who can read and write a sentence in Bengali is considered to be literate. Overall, the female population has a lower literacy rate than the male population. Literacy rates have strong, positive relationships with income. Rangpur division has the lowest literacy rates (51 percent for males and 48 percent for females), in contrast to Barisal division (66 percent for males and 64 percent for females).

Net school enrollment rates are higher in the FTF zone than national rural average rates. In the FTF zone, 86 percent of boys and 89 percent of girls are enrolled in primary schools, and 67 percent of boys and 72 percent of girls are enrolled in secondary schools. While girls overtake boys in terms of enrollment at both primary and secondary levels of education, the difference is larger at the secondary level. This pattern is an indication of the success of the female secondary education stipend programs in attracting girls to school.

Among the selected assets in the analysis, ownership of mobile phones is most prevalent. Three-quarters of households in the FTF zone and 73 percent of households in entire rural Bangladesh own functional mobile phones. Over 90 percent of households in the richest quintile and even half of all households in the poorest quintile own mobile phones. New information and knowledge are critical inputs for improved agricultural practices and marketing of agricultural products, and mobile phone technology holds great promise in delivering information to resource-poor farmers through agricultural extension services. Besides agriculture, mobile-based interventions are also promising for enhancing education, nutrition, and health, which are important food security attributes. Clear policies need to be formulated taking into account the critical role of the private sector in this context.

In addition to being an indicator of wealth, an electricity connection has important beneficial impacts on education, communication, and general lifestyle. About 45 percent of households in the FTF zone and 48 percent of households in entire rural Bangladesh have electricity. The percentage of households with electricity connections increases sharply as household income increases. The percentage of households having electricity varies widely across regions of

rural Bangladesh, ranging from 26 percent of households in Rangpur division to 56 percent in Chittagong division.

Food Availability

Land is the most important factor of agricultural production. However, 51 percent of households in the FTF zone and 57 percent of households in entire rural Bangladesh are landless—they do not own any cultivable land.

In rural Bangladesh, about one-third of the farmers are pure tenants—that is, they do not own any cultivable land. In the FTF zone, 28 percent of all households who operate land for cultivation are pure tenants. These farmers have either sharecropping or cash-lease arrangements with landlords for their operated land. Much of the farmer-level analysis in this study disaggregates the sample farmers into four operated farm size groups: (1) marginal farmers (operating less than 0.5 acre of land), (2) small farmers (operating 0.5–1.49 acres of land), (3) medium farmers (operating 1.5–2.49 acres of land), and (4) large farmers (operating 2.5 acres or more).

About one-third of all farmers in the FTF zone are marginal farmers, who operate only about 8 percent of total operated land in the zone. At the other extreme, only about 8 percent of all farmers in the FTF zone are large farmers, who operate about 27 percent of total operated land in the zone. Similar patterns are observed in overall rural Bangladesh.

The dominant tenurial arrangement in Bangladesh is sharecropping, where the produce is shared between the cultivator and the landowner in different proportions that have been agreed upon prior to cultivation. About 40 percent of the farmers are sharecroppers both in the FTF zone and at the national level. Land tenure patterns in the FTF zone are similar to those prevailing in rural Bangladesh as a whole.

Rice is overwhelmingly dominant in the country's cropping patterns. On average, rice accounts for about 77 percent of the total cropped area of sample households at the national level. The share of rice on total cropped area varies, from about 68 percent in the FTF zone to as high as 94 percent in Sylhet division. Sylhet division shows a rather unique, almost rice monoculture cropping pattern, probably because of its considerable land area under tea plantations (which are excluded from total cropped land calculations) and its hilly topography. On the other hand, the relatively low share of rice on the total cropped land in the FTF zone indicates a more balanced and diversified cropping pattern in the zone in contrast to other regions of the country.

Irrigation is one of the most critical factors of agricultural production in Bangladesh. Tripling rice production in the country since the early 1970s would not have been possible without irrigation. About 60 percent of total cropped area of farm households in the FTF zone and 64 percent of total cropped areas in rural Bangladesh are irrigated. The rate of irrigation coverage ranges from only about 15 percent of total cropped land in Barisal division to about 85 percent in Rajshahi division.

Irrigation induces farmers to adopt high-yielding-variety (HYV) technologies for rice cultivation. About 80 percent of total HYV rice area in the FTF zone and about 76 percent of total HYV rice area in the country are cultivated under irrigation. Rice yields are about 74 percent higher on irrigated plots compared to nonirrigated plots in the FTF zone. At the national level, rice yields are 32 percent higher with irrigation.

Groundwater is the main source of irrigation for 59 percent of farmers in the FTF zone and 61 percent of farmers in entire rural Bangladesh. About 18 percent of farmers in the FTF zone use surface water for irrigation, compared to about 11 percent of farmers who use surface water for irrigation at the national level.

Farmers in the FTF zone use diesel fuel to run their irrigation equipment to irrigate about 77 percent of their total irrigated area, compared to about 67 percent at the national level.

In general, smaller farmers tend to use relatively larger amounts of fertilizers than larger farmers. For example, marginal farmers and small farmers in the FTF zone use 11 percent and 15 percent higher amounts of urea fertilizer, respectively, compared to large farmers for cultivating *boro* rice.

Almost one-half of the *aus* and *aman* farmers use seeds saved from the last harvest, either from their own harvest or received as gifts from their neighbors, friends, or relatives. The situation is quite different for *boro* rice cultivation, with most farmers purchasing their seeds.

What stands out across the three rice crops is the fact that the majority of the farmers do not know the brand of the seed they buy. Knowing the different seed brands can help farmers make informed choices, since large, well-known seed companies most likely have better-quality seeds for establishing their good reputation in the market.

Rice cultivation practices in Bangladesh are overwhelmingly male dominated, accounting for 95–99 percent of total labor use. Only about 1 percent of the total labor force for local transported *aman* (t. *aman*) cultivation is female, both in the FTF zone and in Bangladesh as a whole. The female labor rates are about 4 percent for HYV t. *aman* and 3 percent for HYV *boro* cultivation in the FTF zone. This minimal participation of women is mainly geared toward weeding activities.

In contrast, women perform a substantial proportion of rice post-harvest operations. For instance, in the FTF zone, total female labor use for post-harvest activities of HYV *boro* cultivation (carrying, threshing, drying, sorting, and packaging/bundling) amounts to 130 hours (16 days) per crop, of which women's labor use accounts for 32 hours, or 25 percent. The use of female labor is particularly high for paddy drying, ranging from 58 percent to 71 percent of total labor use for this activity.

Women play a significant role in the production of high-value crops, such as vegetables. For example, at the national level, women's participation accounts for 42 percent of total labor use for sweet gourd cultivation, 38 percent for tomatoes, 20 percent for leafy vegetables, and 18 percent for potatoes.

The share of women's time spent for raising chickens and ducks is over 90 percent at the country level. Women's time also accounts for 55 percent of total time for raising goats and about 30 percent for taking care of milk cows in rural Bangladesh.

The use of mechanical power for farmland preparation is quite high: 76 percent of farmers in the FTF zone and 72 percent of farmers at the national rural level use two-wheeler power tillers.

Marginal and small farmers constitute the largest share of farmers in Bangladesh. However, the outreach of agricultural extension services to these two groups of farmers is very low in absolute terms and considerably less than the service provided to medium and large farmers.

Credit is a critical input for farmers. However, their access to formal agricultural credit institutions, such as the Bangladesh Krishi Bank (BKB) and the Rajshahi Krishi Unnayan Bank (RAKUB), is relatively very small. Moreover, the outreach of these two credit institutions is more toward medium and large farmers than marginal and small farmers.

This study provides the estimates of costs of production and returns for rice cultivation. Full cost (including the imputed values of land rent and family labor) per hectare is lowest for local *aman* cultivation, and increases by about 14 percent for HYV *aman* cultivation and by 57 percent for HYV *boro* cultivation. By contrast, the full cost per metric ton of paddy is the highest for local *aman*, and the cost declines sharply for HYV *aman* and HYV *boro*. The full cost per metric ton of *boro* paddy is 37 percent—less than that of local *aman*.

Crop output can increase substantially if the farmers adopt modern technologies, such as biochemical technology and irrigation. Within such a technological environment, the farmers' production cost per unit of output declines because of increased yields. The average yield of local *aman* is only 1.6 metric tons of rice per hectare (tons/ha) for the national sample. The yield increases to 2.4 tons/ha for HYV *aman* and to 3.7 tons/ha for HYV *boro*—more than double the yield of local *aman*. This analysis demonstrates the importance of investment in agricultural research for productivity improvements.

Did the government's paddy procurement price cover the average cost of paddy production in 2011? The government's domestic procurement price of paddy was Bangladeshi Taka (Tk) 18 per kilogram (Tk 18,000 per metric ton) in 2011 for the *aman* and the *boro* seasons. The procurement price covered the full cost of *boro* paddy cultivation. However, for local and HYV *aman*, the procurement price covered only the cash cost of production.

Did the government procurement price cover the cost of production of pure tenants who must pay rent for the land they cultivate (either in cash or in terms of crop share)? Taking into account the imputed value of land rent but not the imputed value of family labor in cost calculations, the costs per ton of producing *boro*, HYV *aman*, and local *aman* are Tk 13,033, Tk 16,867, and Tk 19,970, respectively. Thus, the 2011 paddy procurement price covered the cost of production (including imputed land rent but not family labor) of HYV *boro* and HYV *aman* for the pure-tenant farmers, but not for mixed-tenant farmers who cultivated local t. *aman*.

On a cash cost basis (that is, when the full-cost, imputed values of land rent and family labor are not taken into account in cost calculations), the rates of profit per ton are 68 percent of total cash cost for HYV *boro*, 45 percent for HYV *aman*, and 26 percent for local *aman*. However, when the imputed values of land rent and family labor are considered in the cost calculations, only HYV *boro* cultivation registers a small profit margin (about 6 percent of full cost). Local and HYV *aman* farmers appear to incur considerable loss when the profitability is calculated on a full-cost basis.

BIHS collected information on households' month-end rice and paddy stock from December 2010 to November 2011. Key findings are (1) rice stocks fluctuate throughout the year, peaking around May during the *boro* harvest season and again in November for the *aman* season; (2) the stocks held by farmers in May are twice as large as the average monthly stock (roughly 4 million metric tons), which highlights the importance of *boro* rice; and (3) the stocks held by farmers in Dhaka, Rajshahi, and Rangpur represent about 68 percent of the total stock available in the country.

Economic Access to Food

In the FTF zone, 40.5 percent of the population lived below the purchasing power parity exchange rate of $1.25 per person per day in 2011–12. While 38.2 percent of the population in rural Bangladesh was living below the family welfare threshold, there are pronounced regional differences in the incidence, with the rate ranging from a low of 31.0 percent in Chittagong division to as high as 65.5 percent in Rangpur division.

The labor force participation rate for all household members age 15 and above is about 73 percent both in the FTF zone and in entire rural Bangladesh. However, there are considerable differences in labor force participation rates in terms of males and females: in the FTF zone, the overall labor force participation rate for males is 86 percent, while for females, it is 61 percent. The rates are similar in rural Bangladesh as a whole. The labor force participation rate is the highest for the poorest income group and declines as household income increases, and this relationship is more pronounced for males.

Rural Bangladesh is predominantly an agrarian society, with low rates of employment in the nonfarm sector. Farming is by far the main source of employment, with two-thirds of the total labor force in rural Bangladesh engaged in farming. The overall rate of labor force participation is highest in Rangpur division (82 percent) and lowest in Chittagong division (60 percent). The patterns of regional labor force participation rates reflect marked gender differences. Indeed, the overall lowest participation rate in Chittagong division is driven mostly by relatively very low participation rate by females (44 percent). On the other hand, the gender gap in labor force participation is the smallest in Rangpur division, owing to the high rate of participation by women (73 percent).

Agricultural wage laborers are among the poorest in rural Bangladesh. Therefore, the level of agricultural wage has a large bearing on the incidence of poverty and food insecurity. Agricultural wages have increased quite sharply in recent years, enabling the rural poorest to improve their livelihoods significantly.

The BIHS data suggest that, on average, a rural household with 4.7 members consumes 2.33 kilograms of rice per day (average daily per capita rice consumption is 495.5 grams). Average daily agricultural wage for a male worker in rural Bangladesh during the survey could buy 7.6 kilograms of rice, which is 3.3 times higher than the average rice consumption of a rural household.

In the FTF zone, 21.9 percent of the households received private transfers either from within Bangladesh or abroad: 16.9 percent of the households received private assistance from within the country, 4.4 percent received remittance from abroad, and 0.6 percent received transfers from both home and abroad. A higher percentage of households in the richer expenditure quintiles received transfers than those in the poorer quintiles. Chittagong division has the highest percentage of households (24 percent) receiving remittance from abroad, followed by Sylhet division (19 percent), and by Rangpur division at the lowest end of the scale (1.3 percent).

At the national rural level, the average total private transfers (average of both recipient and nonrecipient households) represent 13.8 percent of average annual household income, domestic transfers account for 3.7 percent, and remittances from abroad account for 10.2 percent. Private transfers as a percentage of total household income are higher for richer households, accounting for 23.6 percent of average total income of the richest 20 percent of all, compared to only 4.1 percent for the households in the poorest quintile group. Private

transfers as a percentage of total household income vary widely across divisions, with the highest incidence in Chittagong and the lowest in Rajshahi. The highest transfer in Chittagong division is driven by remittance from abroad—total private transfers account for 29.7 percent of average total annual income of households, while international remittances account for 25.1 percent.

Most of nonagricultural businesses owned by rural households (62 percent) are trade-related enterprises. This share is more than twice as high as manufacturing (25 percent) businesses, and more than four times higher than service-oriented (13 percent) businesses at the national level. Trade-related businesses have the highest profits compared to other occupational sectors (manufacturing and services). They tend to be located in fixed premises outside of the homestead, and represent a very low share of registered businesses (one-tenth of trade businesses).

Turning next to household access to credit, average loan size is lower for households in the FTF zone (Tk 41,232 per household) than in rural Bangladesh as a whole (Tk 52,216 per household). The loan size increases with household income, reflecting greater ease of borrowing for higher-income households. Nongovernmental organizations (NGOs) are the primary source of credit for all households. NGOs tend to be more important loan sources for poorer households, indicating these households' lower access to credit from commercial sources as well as NGOs' targeting performance.

On average, 61 percent of households in the FTF zone and 59 percent of the households at the national rural level reported having any savings. In terms of the place of savings, NGOs account for the bulk of savings, with 40 percent of household savings in the FTF zone and 38 percent of savings at the national rural level held by NGOs. The rates are higher for households in the lower-income groups.

In rural Bangladesh, 45 percent of households participate in at least one social safety net program. In any safety net system, there are problems of exclusion (i.e., leaving out those who are needy) and inclusion (i.e., providing benefits to those who do not need them). Although Bangladesh's safety net system is quite progressive, it excludes many poor and includes many nonpoor households. While 61 percent of the households in the poorest income quintile are beneficiaries of at least one safety net program, 22 percent of the households in the highest income group also receive benefits from the system in rural Bangladesh.

Among all safety net programs, the Employment Generation Program for the Poorest (EGPP) targets the poorest most effectively, followed by the school feeding program. The work requirement of the EGGP makes the program strongly self-targeted. Both male and female beneficiaries do physical work in the program that mainly involves earth moving. About half (49 percent) of the total EGPP participants belong to the poorest 20 percent of the households. However, around 29 percent of the EGPP participants were in the top three income quintiles in 2011, suggesting that there is room for improving the program's performance targeting mechanisms.

On average, cash transfers account for 70 percent and the value of food transfers account for 30 percent of total annual transfers received by safety net beneficiaries. Compared to the recipients in the poorest quintile, the average amount of cash transfers is 31 percent higher for safety net participants belonging to the richest quintile (22 percent of the households in the richest quintile are recipients of safety net transfers).

The analysis suggests that safety net programs must improve their targeting effectiveness to reach the poorest of the poor. For an efficient safety net system in Bangladesh, the administrative and institutional capacities to target the poorest and run the programs, and the fiscal affordability of programs, are critical considerations.

The analysis of the BIHS data shows that medical expenses due to illness or injuries were the most common cause of crisis, affecting more than one-fifth of all households, on average. A well-designed and targeted health insurance program holds promise to effectively mitigate the health risks faced by the poor.

Food Utilization and Nutrition

Bangladesh has made commendable progress in food production. However, a considerable share of households is food energy-deficient. An analysis of the BIHS data shows that in 2011–12, 36.8 percent of households in the FTF zone and 35.3 percent of households in the rural national sample were food energy-deficient, who could not afford an adequate diet to provide 2,122 kilocalories per person per day (kcal/person/day). Furthermore, 17.5 percent of the households in the FTF zone and 16.5 percent of the households in entire rural Bangladesh were below the lower food energy threshold of 1,805 kcal/person/day and, therefore, remained severely food energy-deficient.

BIHS is the first nationally representative household survey in the country that collected data on intrahousehold food consumption, using a combination of 24-hour food-recall and food-weighing methods to estimate consumption quantities of various food items by individual household members. In general, individuals with higher incomes have more adequate calorie intakes. Yet, even the richest income groups in the FTF zone and the country as a whole consume insufficient amounts of calories. The national-level figures are greater than those of the FTF zone, especially for the lower-income groups, indicating that, on average, the FTF zone is worse off in terms of calorie adequacy than the country is as a whole.

Female primary school-age children and adolescents are better off in terms of calorie adequacy than the males in their age group. This is consistent for the FTF zone as well as the national sample. However, adult men consume a more calorie-adequate diet than women. In fact, adult women are among the worst off in terms of calorie adequacy in both the samples. With the lowest calorie adequacy among all age groups across both samples, preschool children of the FTF zone stand out from the rest.

Overall, the findings emphasize the need to continue to support and address both exclusive breastfeeding and adequate complementary feeding, to ensure that children under age 2 have diets of adequate nutrient quality. Practices, such as early introduction of liquids, compromise exclusive breastfeeding. And even though a majority of babies are introduced to high-nutrient-value foods in the right age group (6–8 months), there is much room for improvement. Continued efforts to scale up counseling by frontline health workers and to shape social norms around infant and young child feeding will be important.

Last, but not least, there are practically no differences in the types of complementary foods offered to boys and girls. This is an important finding, in the face of a general notion that gender discrimination in feeding children is widespread and starts early. Overall, the differences in achievement of minimum diet diversity by child age, by administrative division, and by per capita expenditure quintile are greater than differences due to child gender. The differences by division and expenditure quintile likely reflect both food availability and access, but a striking finding here is the poor diet quality, even among high-income quintile groups in these rural areas.

Conclusions

In rural Bangladesh, land tenure is a major constraint, particularly for the food insecure, who, for a large part, do not own the land that they work. About one-third of the farmers do not own any cultivable land. Therefore, they have insecure, prohibitive, and unstable access to land through sharecropping or land-leasing arrangements, which reduce the impact of agricultural development interventions on their livelihoods. These farmers must pay rent for the land they cultivate, which makes farming a low-profit enterprise for them. Greater investment in agricultural research for increased productivity will result in lower production cost per unit of output for these farmers and higher profitability, if crop yields increase with the adoption of modern agricultural technology.

Improvement in food security can be enhanced by rapidly increasing the incomes of small landholding farmers. These farmers dominate the agricultural sector in Bangladesh. Providing them with adequate access to institutional credit and effective agricultural extension services is critical for agricultural development in the FTF zone and in rural Bangladesh as a whole.

Since Bangladesh currently has very little fallow arable land available, future production increases will have to come from higher yields. This will mean developing new technologies and innovations through research to address production problems in flood, drought, and salinity-induced stressed conditions, while at the same time trying to reduce gaps in yields and increase yields in high-potential areas. Emerging food and agricultural technologies offer significant promise for augmenting agricultural productivity, but only if they are disseminated to farmers through effective extension systems and are supported by appropriate policies and institutions.

Food security in Bangladesh has historically relied on growth in rice—the country's major crop in terms of area cultivated and income generated (or value added). Future agricultural growth, however, will likely need to increasingly emphasize higher-value crops, as well as fish, poultry, and dairy products, in part because of land constraints.

Generally, labor productivity is known to be relatively low in agriculture, compared to other sectors of the economy. In Bangladesh, the capacity to absorb the growing rural labor force in agriculture is extremely limited, because of no scope for expansion of the land, the intensity of cropping has almost reached the limit, and the growth of crop production now depends almost entirely on technological progress, resulting in low employment response of increased output. Therefore, a shift of rural labor force out of agriculture, accompanied by faster agricultural growth, is key to boosting rural incomes. This requires the creation of nonfarm employment opportunities in higher-productivity sectors.

Rapid development of rural-urban food value chains is important for generating nonfarm employment and incomes. The growth of the agro-processing sector would lead to enhanced rural employment. Modern food retail is currently very small, but it is growing rapidly. While private-sector activities are increasingly creating rural employment opportunities and income, the public sector should complement them. The government's role in providing an enabling policy environment for the private sector is crucial in this regard.

A well-functioning social safety net system can effectively improve Bangladesh's food security by increasing the real incomes of its poor. Bangladesh possesses a wealth of institutional diversity and a wide range of experience in assisting the poor through social safety net programs. To confirm its commitment to establishing a comprehensive social

protection strategy, in fiscal year 2011–12 the Government of Bangladesh allocated US$2.7 billion, accounting for 14 percent of its budget, to cover more than 70 safety net program. The safety net budget represented 2.4 percent of the nation's gross domestic product for 2011–12.

A number of safety net programs have been effective in augmenting the incomes of extremely poor households in Bangladesh and are helping them cope with stresses and shocks. Nevertheless, important issues remain. Programs must improve their targeting effectiveness to reach the poorest of the poor. The targeting errors of exclusion and inclusion are large in most programs. Many programs have limited coverage, are uncoordinated, and are not adequately funded. Program resources and, hence benefits to program participants, are spread too thin. For an efficient safety net system in Bangladesh, the administrative and institutional capacities to target the poorest and run the programs, and the fiscal affordability of programs, are critical considerations.

In Bangladesh, tripling rice production in the past three decades has, to a large extent, solved the foodgrain availability problem. While rice production has increased significantly, it has not been matched by increased production (and consumption) of noncereal production of vegetables, fruits, fish, eggs, and meat. This imbalance has adverse implications for protein and micronutrient intakes, especially for the poor and the poorest.

Rice is overwhelmingly dominant in the cropping patterns as well as in the diet of the people. Rice accounts for 77 percent of total cropped area and 71 percent of the total dietary energy intakes on average. One of the most important causes of widespread malnutrition is the deficiency in the habitual diet in Bangladesh, with rice contributing most of the total dietary energy and other foods contributing much less than required. As a result, food consumption patterns show very little dietary diversity. A large share of the Bangladeshi population is food-insecure due to poor dietary quality. The solution lies in increased consumption of high-quality foods (such as fruits, vegetables, fish, meat, milk), which the poor desire but cannot afford.

Agriculture can play an important role by contributing to the improved quality (diversity) of the family diet, reducing micronutrient undernutrition. This brings to the fore the policy issue of reorienting agriculture for ensuring the supply of nonrice food for improved dietary quality. In Bangladesh, investments in agricultural research to improve productivity of nonstaple foods have been somewhat neglected in favor of cereal-centric investments to improve productivity of rice and wheat. Review of agricultural investments in high-value-added and high-nutrition value-added nonstaples is urgently needed.

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TABLES

TABLES FOR SECTION 3: PROFILE OF SURVEY HOUSEHOLDS

Table 3.1—Characteristics of survey households by income groups: Feed the Future zone

Item	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
Household size (person)	5.0	5.0	4.7	4.5	4.0	4.7
Dependency ratio* (percent)	116.3	100.2	82.1	79.5	66.8	90.5
Primary-school-age children (6-11 years) who do not go to school	16.1	14.6	10.7	7.6	10.1	12.8
Secondary-school-age children (11-18 years) who do not go to school	38.9	31.6	27.5	28.2	17.4	29.6
Years of schooling, male household head	2.4	2.8	3.4	4.2	6.4	3.8
Years of schooling, wife of household head	2.6	3.0	3.2	4.0	5.1	3.6
Years of schooling of adult male aged 15 and above	3.0	4.0	4.7	5.4	7.2	4.8
Years of schooling of adult female aged 15 and above	2.8	3.6	4.2	4.7	5.9	4.1
No schooling adult male (percent)	51.9	38.9	35.8	29.9	19.8	35.9
No schooling adult female (percent)	52.5	45.9	40.9	34.6	24.7	40.5
Female-headed household (percent)	17.2	14.7	11.2	17.6	22.1	16.6
Average owned cultivable landholding size (decimal)	29.2	44.7	56.7	85.8	137.4	70.6
Less than 0.5 acre of cultivable land owned (percent)	86.0	71.7	64.1	50.5	41.4	62.8
Per capita monthly expenditure (Tk)	1,313	1,809	2,285	2,956	4,964	2,660
Principal occupation of household head (percent)						
Agricultural day laborer	22.4	15.0	9.0	3.8	2.8	11.2
Nonagricultural day labor	6.6	7.1	5.5	2.3	0.6	4.7
Salaried	2.5	2.0	4.8	4.8	8.6	4.3
Self employed	8.1	6.9	6.2	9.4	7.1	7.6
Rickshaw/van puller	6.5	5.9	4.4	1.8	0.7	4.1
Business/trade	5.1	10.6	12.5	11.6	19.6	11.4
Production business	0.9	0.5	0.6	0.3	0.4	0.5
Livestock related work	-	0.2	-	0.4	0.2	0.2
Farming	40.5	44.2	51.8	57.6	44.3	47.5
Non-earning occupations	7.5	7.6	5.3	8.0	15.6	8.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
*Dependency ratio= number of dependents (less than 15 or over 60 years of age) divided by number of working age people (15 to 60 years).

Table 3.2—Characteristics of survey households by income groups: Rural Bangladesh

Item	1 (lowest)	2	3	4	5 (highest)	All
	Per capita expenditure quintile					
Household size (person)	5.0	4.8	4.7	4.6	4.5	4.7
Dependency ratio* (percent)	121.5	98.7	90.2	82.1	70.6	94.4
Primary-school-age children (6-11 years) who do not go to school	26.1	16.6	16.4	13.0	14.1	18.7
Secondary-school-age children (11-18 years) who do not go to school	44.4	38.4	28.3	27.7	21.5	32.0
Years of schooling, male household head	1.6	2.6	3.0	4.0	5.9	3.3
Years of schooling, wife of household head	2.0	2.7	3.1	3.6	4.7	3.1
Years of schooling of adult male aged 15 and above	2.3	3.4	4.1	5.3	6.6	4.3
Years of schooling of adult female aged 15 and above	2.3	3.3	3.9	4.5	5.6	3.9
No schooling adult male (percent)	63.2	48.0	42.8	31.5	23.5	42.3
No schooling adult female (percent)	62.8	51.4	44.3	38.7	29.5	45.9
Female-headed household (percent)	15.6	14.5	14.1	16.5	25.3	17.1
Average owned cultivable landholding size (decimal)	17.9	34.0	46.4	66.9	126.6	57.0
Less than 0.5 acre of cultivable land owned (percent)	91.0	78.5	71.3	63.5	46.1	70.7
Per capita monthly expenditure (Tk)	1,323	1,838	2,344	3,041	5,155	2,692
Principal occupation of household head (percent)						
Agricultural day laborer	26.5	14.9	9.1	5.1	1.3	12.3
Nonagricultural day labor	8.2	6.6	5.1	3.6	1.0	5.1
Salaried	2.6	3.1	3.8	4.3	6.9	4.0
Self employed	8.3	9.2	8.5	7.3	5.9	7.9
Rickshaw/van puller	8.2	5.6	5.2	1.4	1.2	4.6
Business/trade	5.6	10.9	11.2	14.6	18.1	11.7
Production business	0.7	0.9	0.5	0.8	0.5	0.7
Livestock related work	0.4	0.2	0.0	0.2	0.3	0.2
Farming	33.2	41.3	48.4	51.5	44.6	43.3
Non-earning occupations	6.3	7.3	8.3	11.3	20.1	10.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
*Dependency ratio= number of dependents (less than 15 or over 60 years of age) divided by number of working age people (15 to 60 years).

Table 3.3—Characteristics of survey households by division: Rural Bangladesh

Description	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
				Division				
Household size (person)	4.8	5.1	4.6	4.4	4.6	4.4	5.9	4.7
Dependency ratio* (percent)	100.9	114.0	98.2	75.1	77.4	85.9	105.5	94.4
Primary-school-age children (6-11 years) who do not go to school	16.1	22.9	19.9	12.6	15.4	20.8	16.0	18.7
Secondary-school-age children (11-18 years) who do not go to school	30.6	39.2	30.3	24.7	23.1	26.8	45.8	32.0
Years of schooling, male household head	4.0	3.6	3.0	4.0	3.1	3.0	3.2	3.3
Years of schooling, wife of household head	3.9	3.5	2.8	3.8	2.9	3.0	3.0	3.1
Years of schooling of adult male aged 15 and above	4.9	4.6	4.0	5.1	4.2	3.7	4.0	4.3
Years of schooling of adult female aged 15 and above	4.6	4.4	3.6	4.4	3.6	3.2	3.6	3.9
No schooling adult male (percent)	32.4	37.8	46.4	36.2	44.5	49.4	39.5	42.3
No schooling adult female (percent)	33.9	41.4	48.6	42.2	49.4	51.8	48.3	45.9
Female-headed household (percent)	24.5	34.4	18.0	10.2	4.5	9.4	19.0	17.1
Average owned cultivable landholding size (decimal)	60.4	33.1	56.5	82.7	62.7	48.7	74.8	57.0
Less than 0.5 acre of cultivable land owned (percent)	67.6	79.5	68.5	63.0	70.9	72.9	69.6	70.7
Per capita monthly expenditure (Tk)	2,606	3,090	2,842	2,691	2,515	1,989	2,952	2,692
Principal occupation of household head (percent)								
Agricultural day laborer	10.7	5.5	9.9	9.6	16.6	26.3	10.1	12.3
Nonagricultural day labor	5.6	4.7	4.7	5.9	3.4	5.4	9.3	5.1
Salaried	4.7	3.8	3.7	4.9	3.5	3.6	5.5	4.0
Self employed	7.6	9.8	7.0	6.3	7.7	8.0	10.1	7.9
Rickshaw/van puller	2.1	4.1	4.9	4.2	6.1	5.3	2.5	4.6
Business/trade	13.5	12.0	10.5	11.2	12.0	12.8	11.6	11.7
Production business	1.1	0.9	0.5	1.1	0.8	0.2	1.0	0.7
Livestock related work	0.3	0.1	0.0	0.5	0.2	0.5	0.0	0.2
Farming	43.1	32.2	48.6	52.2	47.6	34.8	42.7	43.3
Non-earning occupations	11.5	26.9	10.2	4.1	2.0	3.1	7.3	10.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

*Dependency ratio= number of dependents (less than 15 or over 60 years of age) divided by number of working age people (15 to 60 years).

Table 3.4—Literacy rates by income groups: Feed the Future zone

Description	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
For people aged 7 years and over						
Male	56.7	64.6	67.2	80.0	82.8	69.6
Female	54.3	63.8	63.2	73.8	77.9	66.0
All	55.4	64.1	65.2	76.7	80.3	67.7
For people aged 15 years and over						
Male	46.4	57.0	62.2	77.9	82.2	65.1
Female	42.5	55.7	55.5	68.2	75.1	59.2
All	44.3	56.3	58.8	72.7	78.6	62.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: A person who can read and write a sentence in Bangla is considered to be literate.

Table 3.5—Literacy rates by income groups: Rural Bangladesh

Description	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
For people aged 7 years and over						
Male	49.9	59.6	63.8	73.7	80.1	64.5
Female	51.1	59.4	64.4	68.4	75.1	62.8
All	50.5	59.5	64.1	70.9	77.4	63.6
For people aged 15 years and over						
Male	37.3	50.2	57.1	68.8	77.3	57.6
Female	37.6	48.7	55.7	61.6	71.0	54.4
All	37.5	49.4	56.4	65.0	74.0	55.9

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: A person who can read and write a sentence in Bangla is considered to be literate.

Table 3.6—Literacy rates by division: Rural Bangladesh

Description	Division							Bangladesh
	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	
	(percent)							
For people aged 7 years and over								
Male	70.9	68.7	61.3	68.9	61.3	58.9	68.2	64.5
Female	69.7	67.2	60.3	64.8	60.6	58.2	62.4	62.8
All	70.3	67.9	60.8	66.8	61.0	58.6	65.2	63.6
For people aged 15 years and over								
Male	65.9	62.7	53.4	64.3	54.9	50.9	60.5	57.6
Female	64.0	60.5	50.8	58.9	50.4	48.2	53.3	54.4
All	64.9	61.4	52.1	61.5	52.7	49.5	56.7	55.9

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: A person who can read and write a sentence in Bangla is considered to be literate.

Table 3.7—Highest level of education attained by population aged 25 and over by income groups: Feed the Future zone

	Per capita expenditure quintile					All
Description	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
No schooling						
Male	58.7	43.8	43.8	37.2	24.0	41.6
Female	61.4	55.3	52.1	44.3	32.0	49.2
All	60.2	49.7	48.0	41.0	28.2	45.6
Below primary						
Male	12.9	18.9	14.7	11.0	5.7	12.8
Female	14.9	15.8	13.9	13.2	12.1	14.0
All	14.0	17.3	14.3	12.2	9.1	13.4
Primary passed						
Male	25.1	31.6	34.0	38.1	41.2	34.0
Female	22.7	26.4	29.4	35.8	43.5	31.4
All	23.8	28.9	31.6	36.9	42.4	32.6
Secondary passed						
Male	2.4	4.0	4.0	6.5	12.1	5.7
Female	0.4	1.3	3.3	3.8	7.0	3.1
All	1.3	2.6	3.6	5.1	9.4	4.4
Higher secondary passed						
Male	0.6	0.5	1.4	2.5	7.5	2.4
Female	0.2	0.7	0.9	1.5	3.1	1.3
All	0.4	0.6	1.2	2.0	5.2	1.8
Received bachelor's degree or above						
Male	0.3	1.0	2.1	4.8	9.6	3.5
Female	0.5	0.5	0.4	1.3	2.2	1.0
All	0.4	0.7	1.3	2.9	5.7	2.2

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.8—Highest level of education attained by population aged 25 and over by income groups: Rural Bangladesh

| Description | Per capita expenditure quintile | | | | | All |
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
No schooling						
Male	69.6	54.3	50.6	40.1	28.1	49.1
Female	71.4	62.3	55.6	50.6	39.3	56.1
All	70.6	58.5	53.2	45.7	34.2	52.8
Below primary						
Male	11.4	12.5	11.7	8.9	8.5	10.7
Female	10.0	11.4	11.6	9.4	10.9	10.6
All	10.7	11.9	11.7	9.2	9.8	10.7
Primary passed						
Male	17.1	27.7	29.9	37.6	35.5	29.4
Female	18.2	25.0	29.9	34.8	39.4	29.3
All	17.7	26.3	29.9	36.1	37.7	29.3
Secondary passed						
Male	1.4	4.1	4.2	6.9	11.3	5.4
Female	0.2	1.0	1.9	3.7	6.0	2.5
All	0.7	2.5	3.0	5.2	8.4	3.9
Higher secondary passed						
Male	0.5	1.3	2.0	3.6	7.8	2.9
Female	0.1	0.2	0.5	0.9	2.9	0.9
All	0.3	0.7	1.2	2.2	5.1	1.8
Received bachelor's degree or above						
Male	-	0.2	1.6	3.0	8.6	2.5
Female	0.1	0.1	0.4	0.5	1.6	0.5
All	0.1	0.2	1.0	1.7	4.8	1.5

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.9—Highest level of education attained by population aged 25 and over by division: Rural Bangladesh

				Divisions				
Description	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
					(percent)			
No schooling								
Male	38.0	44.5	53.5	41.3	51.9	53.9	48.1	49.1
Female	44.1	50.7	59.4	50.8	59.0	61.8	61.4	56.1
All	41.3	48.2	56.6	46.2	55.4	57.9	55.3	52.8
Below primary								
Male	13.8	13.8	8.4	10.9	11.8	8.6	12.2	10.7
Female	15.1	11.0	10.7	10.1	11.7	8.2	8.2	10.6
All	14.5	12.2	9.6	10.5	11.8	8.4	10.1	10.7
Primary passed								
Male	34.1	29.0	29.0	34.1	24.9	28.6	31.4	29.4
Female	34.1	33.2	26.9	32.9	26.9	26.1	28.2	29.3
All	34.1	31.5	27.9	33.5	25.9	27.4	29.6	29.3
Secondary passed								
Male	6.5	5.8	4.9	7.1	5.6	4.3	4.3	5.4
Female	4.8	3.5	2.0	3.1	1.7	2.2	1.6	2.5
All	5.5	4.5	3.4	5.0	3.7	3.2	2.8	3.9
Higher secondary passed								
Male	3.6	4.5	2.9	2.4	2.9	2.0	1.9	2.9
Female	1.5	1.0	0.8	1.2	0.3	1.1	0.4	0.9
All	2.5	2.5	1.8	1.8	1.6	1.6	1.1	1.8
Received bachelor's degree or above								
Male	3.9	2.4	1.4	4.2	2.9	2.6	2.2	2.5
Female	0.4	0.5	0.2	1.9	0.3	0.5	0.1	0.5
All	2.0	1.3	0.7	3.0	1.6	1.6	1.1	1.5

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.10—Type of school attended by children enrolled in primary school by income groups: Feed the Future zone

| Type of school attended | Per capita expenditure quintile | | | | | All |
	1 (lowest)	2	3	4	5 (highest)	
	(percent of enrolled students)					
Government school	68.5	65.6	63.9	67.3	56.6	65.6
Nongovernment registered	21.8	21.5	19.2	17.1	21.3	20.4
Nongovernment, non-registered	1.6	0.9	3.4	2.3	2.6	2.0
Ananda school	-	0.8	0.9	0.8	1.7	0.7
BRAC school	4.0	3.5	2.4	2.1	3.5	3.2
Other NGO school	0.3	1.2	-	-	0.8	0.5
Aliya Ebtedayi madrasa	2.3	3.5	6.1	4.2	3.6	3.8
Quomi madrasa	0.7	0.6	0.3	2.5	-	0.8
Other	0.9	2.4	3.9	3.9	10.0	3.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.11—Type of school attended by children enrolled in primary school by income groups: Rural Bangladesh

| Type of school attended | Per capita expenditure quintile | | | | | All |
	1 (lowest)	2	3	4	5 (highest)	
	(percent of enrolled students)					
Government school	68.0	63.5	68.5	65.1	59.1	65.6
Nongovernment registered	18.2	22.3	16.1	17.1	23.8	19.2
Nongovernment, non-registered	1.0	2.3	3.1	6.2	4.8	3.0
Ananda school	1.9	0.3	0.4	0.3	0.8	0.8
BRAC school	4.3	3.2	2.6	2.4	2.0	3.1
Other NGO school	0.4	1.3	0.3	0.3	0.3	0.6
Aliya Ebtedayi madrasa	4.4	4.6	4.9	4.1	5.1	4.6
Quomi madrasa	0.4	1.2	0.3	0.6	0.9	0.7
Other	1.5	1.3	3.9	3.9	3.2	2.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.12—Type of school attended by children enrolled in primary school by division: Rural Bangladesh

Type of school attended	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
				Division				
	(percent of enrolled students)							
Government school	61.4	66.5	71.6	57.9	54.7	64.9	72.5	65.6
Nongovernment registered	28.6	14.3	15.1	27.1	32.0	17.6	11.6	19.2
Nongovernment, non-registered	1.0	2.3	4.0	2.8	4.0	2.6	2.5	3.0
Ananda school	-	-	1.0	-	0.5	3.5	0.1	0.8
BRAC school	0.8	0.9	2.9	5.7	3.5	4.0	6.1	3.1
Other NGO school	0.3	-	0.8	0.4	0.3	1.2	0.8	0.6
Aliya Ebtedayi madrasa	3.5	8.6	2.8	2.7	2.9	4.7	5.8	4.6
Quomi madrasa	0.8	1.3	0.7	1.2	-	0.3	0.1	0.7
Other	3.6	6.3	1.1	2.2	2.2	1.2	0.6	2.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.13—Type of school attended by children enrolled in secondary school by income groups: Feed the Future zone

Type of school attended	1 (lowest)	2	3	4	5 (highest)	All
	Per capita expenditure quintile					
	(percent of enrolled students)					
Government school	12.8	9.6	8.3	8.1	9.9	9.7
Nongovernment registered	65.6	70.2	72.8	75.3	72.7	71.4
Nongovernment, non-registered	4.5	6.1	8.7	4.9	4.0	5.8
Aliya Dakhil madrasa	11.4	10.7	7.5	9.2	9.8	9.7
Quomi madrasa	1.5	-	1.7	-	-	0.6
Other	4.3	3.3	1.1	2.5	3.6	2.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.14—Type of school attended by children enrolled in secondary school by income groups: Rural Bangladesh

Type of school attended	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent of enrolled students)					
Government school	13.5	9.3	8.9	7.9	11.0	9.9
Nongovernment registered	69.5	74.5	75.1	79.1	72.8	74.6
Nongovernment, non-registered	4.0	1.1	4.9	2.8	4.4	3.5
BRAC school	1.5	-	0.2	-	0.3	0.3
Aliya Dakhil madrasa	7.8	12.1	8.7	8.1	9.6	9.2
Quomi madrasa	-	0.8	0.3	0.6	0.6	0.5
Other	3.7	2.3	1.9	1.5	1.3	2.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.15—Type of school attended by children enrolled in secondary school by division: Rural Bangladesh

Type of school attended	Division							Bangladesh
	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	
	(percent of enrolled students)							
Government school	4.5	10.8	11.1	5.8	5.6	15.6	16.5	9.9
Nongovernment registered	82.8	71.4	79.2	66.4	83.6	66.9	64.2	74.6
Nongovernment, non-registered	0.3	3.2	1.4	15.2	-	1.4	5.8	3.5
BRAC school	-	0.8	-	-	-	1.0	1.0	0.3
Aliya Dakhil madrasa	7.8	11.7	6.7	8.7	10.3	9.3	10.7	9.2
Quomi madrasa	-	1.1	0.5	-	-	0.8	0.4	0.5
Other	4.7	1.0	1.1	4.0	0.5	5.0	1.6	2.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.16—School enrolment of children by income groups: Feed the Future zone

| Description | \multicolumn{5}{c}{Per capita expenditure quintile} | All |
	1 (lowest)	2	3	4	5 (highest)	
	(percent)	
Net primary school enrollment of children aged 6-11 years						
All	83.9	85.4	89.3	92.4	89.9	87.2
Boys	81.6	80.6	88.9	93.9	91.0	85.6
Girls	86.0	90.8	89.7	90.7	88.9	88.9
Net secondary school enrollment of children aged 11-18years						
All	61.1	68.4	72.5	71.8	82.6	70.4
Boys	57.4	60.5	77.4	71.6	78.5	68.6
Girls	64.4	76.1	67.3	72.0	87.1	72.3

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Note: Net primary school enrollment rate = All primary-school-going children aged 6-11 years/all children aged 6-11 years.

Net secondary school enrollment rate = All secondary-school-going children 11-18 years/all children aged 11-18 years.

Table 3.17—School enrolment of children by income groups: Rural Bangladesh

| Description | \multicolumn{5}{c}{Per capita expenditure quintile} | All |
	1 (lowest)	2	3	4	5 (highest)	
	(percent)	
Net primary school enrollment of children aged 6-11 years						
All	73.9	83.4	83.6	87.0	85.9	81.3
Boys	73.6	80.1	79.8	86.3	84.0	79.4
Girls	74.2	86.8	86.6	87.6	88.2	83.0
Net secondary school enrollment of children aged 11-18 years						
All	55.6	61.6	71.7	72.3	78.5	68.0
Boys	50.6	51.8	67.8	70.0	75.1	63.3
Girls	60.1	69.6	75.2	74.5	81.4	72.1

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Note: Net primary school enrollment rate = All primary-school-going children aged 6-11 years/all children aged 6-11 years.

Net secondary school enrollment rate = All secondary-school-going children 11-18 years/all children aged 11-18 years.

Table 3.18—School enrolment of children by division: Rural Bangladesh

Description	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
					Division			
					(percent)			
Net primary school enrollment of children 6-11 years								
All	83.9	77.1	80.1	87.4	84.6	79.2	84.0	81.3
Boys	82.6	77.0	78.0	83.5	82.1	77.7	81.4	79.4
Girls	85.4	77.2	82.1	91.3	86.8	80.7	86.4	83.0
Net secondary school enrollment of children 11-18 years								
All	69.4	60.8	69.7	75.3	76.9	73.2	54.2	68.0
Boys	72.7	55.3	64.2	74.4	64.3	71.6	49.0	63.3
Girls	66.2	64.9	75.1	76.2	88.9	74.5	58.6	72.1

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Note: Net primary school enrollment rate = All primary-school-going children aged 6-11 years/all children aged 6-11 years.

Net secondary school enrollment rate = All secondary-school-going children 11-18 years/all children aged 11-18 years.

Table 3.19—Selected household asset ownership by income groups: Feed the Future zone

Asset	1 (lowest)	2	3	4	5 (highest)	Total
			Per capita expenditure quintile			
			(percent)			
Electric fan	13.2	26.0	33.1	41.2	60.0	34.7
Radio	6.3	6.0	6.6	6.9	8.7	6.9
Cassette player	2.2	2.8	3.4	7.8	13.9	6.0
Television	8.9	16.0	21.9	31.7	47.3	25.1
Mobile phone	51.5	71.4	77.3	83.3	90.2	74.7
Sewing machine	3.0	3.6	5.6	4.4	6.2	4.5
Bicycle	22.1	29.9	35.0	35.2	35.3	31.5
Hand tube well	13.9	17.7	22.4	26.8	33.0	22.7
Rickshaw/van	10.6	8.8	10.4	6.1	3.8	7.9
Boat	6.7	5.1	6.6	7.4	6.4	6.4
Motor cycle	0.3	1.0	1.2	3.1	9.4	3.0
Solar panel	3.0	5.6	4.4	6.4	10.6	6.0
Fishing net	26.6	28.9	25.3	29.5	30.3	28.1

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.20—Selected household asset ownership by income groups: Rural Bangladesh

Asset	Per capita expenditure quintile					Total
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
Electric fan	13.1	26.9	37.5	52.3	67.5	38.7
Radio	2.0	3.4	4.4	4.4	5.5	3.9
Cassette player	1.2	1.6	3.9	8.0	16.6	6.1
Television	6.8	16.9	21.0	34.7	51.8	25.7
Mobile phone	49.6	67.1	74.7	83.2	92.1	72.8
Sewing machine	2.4	3.5	4.2	4.5	7.4	4.3
Bicycle	18.5	25.0	29.4	32.6	31.5	27.2
Hand tube well	14.5	16.6	25.1	28.4	39.1	24.4
Rickshaw/van	10.1	8.3	9.2	4.1	3.2	7.1
Boat	1.8	2.1	1.6	3.1	1.7	2.1
Engine boat	0.3	0.4	0.3	0.3	0.8	0.4
Motor cycle	0.2	0.4	0.9	2.7	10.5	2.8
Solar panel	1.0	2.8	1.8	5.3	6.5	3.4
Fishing net	13.3	19.3	19.7	24.0	27.0	20.5

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.21—Selected household asset ownership by division: Rural Bangladesh

Asset	Division							Bangladesh
	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	
	(percent)							
Electric fan	27.9	49.1	41.9	44.3	40.2	19.0	34.9	38.7
Radio	4.1	3.2	2.8	7.4	6.7	1.7	2.2	3.9
Cassette player	4.1	9.1	5.8	6.5	5.5	2.8	9.3	6.1
Television	19.8	27.8	25.2	30.6	30.3	17.1	25.3	25.7
Mobile phone	70.2	81.6	70.1	77.2	74.1	64.3	70.6	72.8
Sewing machine	3.6	5.0	4.1	4.8	4.7	3.3	4.4	4.3
Bicycle	12.4	14.0	20.4	48.3	38.6	39.6	13.6	27.2
Hand tube well	5.7	14.2	38.2	35.2	12.1	20.8	22.1	24.4
Rickshaw-van	3.6	4.7	7.2	9.6	9.8	8.1	2.1	7.1
Boat	5.0	1.0	3.1	0.9	1.4	0.0	5.3	2.1
Engine boat	1.9	0.2	0.4	0.4	0.2	0.4	0.4	0.4
Motor cycle	1.4	1.4	2.5	5.0	3.6	3.3	2.1	2.8
Solar panel	10.2	1.9	3.6	3.7	1.9	1.5	7.2	3.4
Fishing net	31.9	14.1	17.6	29.8	23.5	14.4	27.9	20.5

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.22—Electricity and structure of dwelling by income groups: Feed the Future zone

Characteristic	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
Household has electricity	25.6	39.7	43.7	52.5	65.0	45.3
Structure of walls [a]						
Permanent	51.5	64.1	64.1	76.8	88.9	69.0
Nonpermanent	48.5	35.9	35.9	23.2	11.1	31.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Roofing material						
Concrete/brick	0.5	2.0	1.0	5.9	12.2	4.3
Tin	82.7	87.3	89.7	87.2	85.3	86.4
Thatching	7.8	3.0	1.2	1.5	0.5	2.8
Other	9.1	7.7	8.0	5.5	2.1	6.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

[a] Permanent materials are fired bricks, concrete, wood, and tin sheets.

Table 3.23—Electricity and structure of dwelling by income groups: Rural Bangladesh

Characteristic	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
Household has electricity	25.3	36.9	46.8	60.1	71.5	47.5
Structure of walls [a]						
Permanent	44.7	57.8	62.3	68.7	80.4	62.3
Nonpermanent	55.3	42.2	37.7	31.3	19.6	37.7
Roofing material						
Concrete/brick	0.1	0.4	0.7	3.0	10.0	2.7
Tin	91.7	93.9	94.5	93.8	89.0	92.6
Thatching	7.3	4.2	3.2	2.3	0.7	3.7
Other	0.9	1.4	1.6	0.9	0.4	1.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

[a] Permanent materials are fired bricks, concrete, wood, and tin sheets.

Table 3.24—Electricity and structure of dwelling by division: Rural Bangladesh

Characteristic	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
								Division
	(percent)							
Household has electricity	43.3	56.3	50.2	54.4	49.5	26.0	42.9	47.5
Structure of walls [a]								
Permanent	87.6	68.8	76.1	53.5	42.8	48.8	48.2	62.3
Nonpermanent	12.4	31.3	23.9	46.5	57.2	51.2	51.8	37.7
Roofing material								
Concrete/brick	1.0	5.2	1.5	5.6	2.2	0.4	3.9	2.7
Tin	94.1	89.7	96.2	80.9	97.2	94.1	90.8	92.6
Thatching	5.0	5.1	2.3	5.2	0.5	5.6	5.2	3.7
Other	0.0	0.0	0.1	8.3	0.0	0.0	0.0	1.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
[a] Permanent materials are fired bricks, concrete, wood, and tin sheets.

Table 3.25—Types of latrine by income groups: Feed the Future zone

Item	1 (lowest)	2	3	4	5 (highest)	All
	Per capita expenditure quintile					
	(percent)					
None (open field)	2.4	1.9	1.0	1.0	0.0	1.3
Kutcha (fixed place)	24.1	18.4	15.8	14.7	9.4	16.5
Pucca (unsealed)	54.1	55.8	60.6	47.4	45.6	52.7
Sanitary without flush	18.1	22.9	21.4	36.7	43.1	28.4
Sanitary with flush	0.0	0.5	0.5	0.3	2.0	0.7
Community latrine	1.3	0.5	0.7	0.0	0.0	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.26—Types of latrine by income groups: Rural Bangladesh

Item	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
None (open field)	7.1	4.5	3.3	2.1	1.1	3.7
Kutcha (fixed place)	27.4	22.1	20.6	16.3	8.8	19.3
Pucca (unsealed)	49.0	53.4	51.4	47.3	42.1	48.7
Sanitary without flush	13.2	17.0	21.9	31.9	45.3	25.5
Sanitary with flush	0.1	0.1	0.1	0.2	1.6	0.4
Community latrine	3.3	2.6	2.6	2.2	1.0	2.3
Other	0.0	0.3	0.1	0.0	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.27—Types of latrine by division: Rural Bangladesh

Item	Division							Bangladesh
	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	
	(percent)							
None (open field)	1.4	1.2	3.1	0.6	7.4	8.8	2.2	3.7
Kutcha (fixed place)	17.4	10.2	24.9	8.9	27.8	19.3	19.4	19.3
Pucca (unsealed)	60.5	47.0	47.9	66.3	38.3	44.2	45.6	48.7
Sanitary without flush	20.0	37.0	20.7	23.5	24.8	24.7	29.0	25.5
Sanitary with flush	0.7	0.3	0.3	0.6	0.2	0.2	1.7	0.4
Community latrine	0.0	4.1	3.1	0.2	1.6	2.8	1.8	2.3
Other	0.0	0.3	0.1	0.0	0.0	0.0	0.3	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.28—Source of fuel by income groups: Feed the Future zone

Item	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
Source of cooking fuel						
Electricity	1.3	2.0	2.5	1.0	1.2	1.6
Kerosene	1.0	0.5	1.0	0.3	0.5	0.7
Firewood	35.0	41.3	41.5	49.2	66.0	46.6
Dried cow dung	24.3	25.5	28.4	27.4	13.7	23.9
Rice bran/saw dust	0.3	0.2	0.7	1.4	0.5	0.6
Dried leaves	35.6	27.2	22.3	17.9	15.0	23.6
Other	2.6	3.3	3.6	2.8	3.2	3.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Source of lighting fuel						
Electricity	23.4	34.1	40.5	48.3	60.4	41.3
Solar electricity	3.7	6.0	5.3	8.2	9.8	6.6
Kerosene	72.4	59.8	54.0	43.1	29.6	51.8
Other	0.6	0.0	0.3	0.5	0.3	0.3
Total	99.9	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.29—Source of fuel by income groups: Rural Bangladesh

Item	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
Source of cooking fuel						
Electricity	0.8	0.9	1.6	2.1	3.1	1.7
Kerosene	0.4	0.6	0.7	0.4	0.3	0.5
Firewood	26.0	32.9	35.1	41.8	57.6	38.3
Dried Cow Dung	26.7	24.9	23.9	21.0	13.9	22.3
Rice bran/saw dust	2.5	4.0	2.9	3.1	2.2	3.0
Dried Leaves	38.7	33.5	32.9	27.9	18.9	30.6
Other	4.9	3.2	3.0	3.6	4.0	3.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
Source of lighting fuel						
Electricity	25.0	35.7	46.2	58.8	70.2	46.6
Solar Electricity	1.8	3.4	2.4	6.5	7.3	4.2
Kerosene	72.0	59.8	49.9	33.6	21.2	48.0
Other	1.2	1.1	1.4	1.2	1.3	1.2
Total	100	100	100	100	100	100

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.30—Source of fuel by division: Rural Bangladesh

Item	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
				Division				
				(percent)				
Source of cooking fuel								
Electricity	0.71	5.2	1.4	0.9	1.0	0.0	0.7	1.7
Kerosene	0.0	0.9	0.5	0.6	0.5	0.2	0.3	0.5
Firewood	53.1	67.4	33.8	43.0	14.7	23.9	43.9	38.3
Dried Cow Dung	9.8	5.9	18.3	34.6	34.8	34.8	15.8	22.3
Rice bran/saw dust	0.5	0.8	3.7	0.4	8.3	1.8	2.2	3.0
Dried Leaves	35.7	13.8	39.3	19.1	37.2	35.5	27.1	30.6
Other	0.2	5.9	3.0	1.5	3.4	3.7	10.0	3.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Source of lighting fuel								
Electricity	35.5	56.3	49.5	52.8	49.5	26.0	42.9	46.6
Solar Electricity	9.8	2.8	4.3	3.5	3.5	3.0	8.3	4.2
Kerosene	54.5	37.2	45.1	43.7	45.7	70.7	48.8	48.0
Other	0.2	3.8	1.1	0.0	1.4	0.4	0.0	1.2
Total	100	100	100	100	100	100	100	100

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.31—Source of drinking water by income groups: Feed the Future zone

Item	1 (lowest)	2	3	4	5 (highest)	All
			Per capita expenditure quintile			
			(percent)			
Supply water (piped), inside house	2.8	2.0	2.5	1.2	3.2	2.3
Supply water (piped), outside house	0.0	0.3	0.5	1.0	0.8	0.5
Own tubewell	25.5	33.3	38.8	42.5	51.8	38.4
Community tubewell	55.2	46.4	45.5	42.3	30.3	43.9
Rain water	0.0	0.0	0.0	0.0	0.2	0.0
Pond/river/canal	4.9	4.8	3.4	3.5	3.5	4.0
Other	11.7	13.2	9.4	9.5	10.3	10.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.32—Source of drinking water by income groups: Rural Bangladesh

Item	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
Supply water (piped), inside house	0.7	1.2	0.8	1.0	1.9	1.1
Supply water (piped), outside house	0.0	0.1	0.3	0.7	1.1	0.4
Own tubewell	39.8	43.6	48.7	58.4	66.9	51.1
Community tubewell	44.8	39.5	36.0	28.7	20.6	34.2
Rain water	0.1	0.2	0.3	0.1	0.1	0.2
Ring well/indara	0.1	0.0	0.1	0.3	0.1	0.1
Pond/river/ canal	2.9	2.9	3.0	1.9	2.4	2.6
Other	11.6	12.3	10.7	8.9	7.1	10.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 3.33—Source of drinking water by division: Rural Bangladesh

Item	Division							Bangladesh
	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	
	(percent)							
Supply water (piped), inside house	1.0	1.9	0.8	1.1	1.7	0.6	0.8	1.1
Supply water (piped), outside house	0.0	0.5	0.2	0.9	1.0	0.0	0.4	0.4
Own tubewell	11.7	44.7	53.1	46.9	62.6	72.0	34.6	51.1
Community tubewell	69.3	41.4	23.9	39.1	33.5	25.6	38.8	34.2
Rain water	0.2	0.1	0.2	0.4	0.0	0.2	0.0	0.2
Ring well/indara	0.0	0.3	0.1	0.0	0.0	0.0	0.6	0.1
Pond/river/canal	4.5	3.5	0.6	7.2	1.2	1.1	5.1	2.6
Other	13.3	7.6	21.2	4.4	0.0	0.6	19.7	10.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

TABLES FOR SECTION 4: FOOD AVAILABITY

Table 4.1—Distribution of owned cultivated land: Feed the Future zone

Group	Size of average cultivable land owned	Share of total cultivable land in each group
	(decimal/household)	(percent)
1 (lowest)	5.3	0.29
2	10.5	0.55
3	15.2	0.75
4	19.1	1.09
5	24.3	1.29
6	30.2	1.57
7	35.1	1.69
8	40.9	2.01
9	47.8	2.91
10	54.5	2.51
11	62.0	2.92
12	70.5	3.73
13	82.1	4.19
14	95.5	5.06
15	113.0	6.10
16	134.7	6.35
17	158.4	8.24
18	188.4	9.80
19	249.3	12.96
20 (highest)	508.7	25.96
All households	97.1	100.00

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.2—Distribution of owned cultivated land: Rural Bangladesh

Group	Size of average cultivable land owned	Share of total cultivable land in each group
	(decimal/household)	(percent)
1 (lowest)	5.23	0.27
2	10.8	0.56
3	15.3	0.73
4	18.9	1.01
5	23.8	1.16
6	29.3	1.45
7	33.8	1.62
8	39.9	1.93
9	47.8	2.59
10	56.1	3.42
11	63.9	2.28
12	72.2	3.61
13	84.5	4.76
14	97.3	4.17
15	111.8	5.45
16	132.7	6.63
17	158.2	7.64
18	196.2	9.81
19	274.2	13.59
20 (highest)	528.7	26.22
All households	97.5	100.00

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.3—Distribution of operated land: Feed the Future zone

Group	Size of average operated land	Share of total operable land in each group
	(decimal/household)	(percent)
1 (lowest)	7.6	0.36
2	15.9	0.76
3	22.3	1.18
4	29.6	1.18
5	35.7	1.71
6	42.0	2.02
7	49.9	2.48
8	57.2	2.61
9	65.0	3.02
10	75.6	4.36
11	84.3	3.10
12	94.9	4.33
13	104.6	5.11
14	117.1	5.16
15	132.9	5.96
16	152.9	7.23
17	174.9	8.26
18	205.4	9.54
19	261.5	12.15
20 (highest)	415.6	19.31
All households	106.2	100.00

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.4—Distribution of operated land: Rural Bangladesh

Group	Size of average operated land	Share of total operable land in each group
	(decimal/household)	(percent)
1 (lowest)	8.9	0.47
2	16.4	0.74
3	22.1	1.18
4	28.7	1.37
5	33.1	1.61
6	38.6	1.78
7	46.7	2.91
8	53.1	1.96
9	59.7	2.78
10	66.6	3.19
11	74.7	3.60
12	83.6	4.15
13	95.6	4.97
14	106.4	4.66
15	120.9	6.12
16	140.7	6.83
17	162.4	7.55
18	194.8	9.60
19	256.7	12.29
20 (highest)	444.4	21.58
All households	99.3	100.00

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.5—Distribution of operated land by farm size groups

Farm Size	Division								Bangladesh
	FTF zone	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	
	(percent of all farmers)								
Marginal farmer (below 0.5 acres)	32.82	33.15	45.87	36.35	29.60	37.17	43.13	15.99	36.32
Small farmer (0.5-1.49 acres)	43.82	42.54	42.2	47.29	46.26	42.51	41.53	46.39	44.57
Medium farmer (1.5-2.49 acres)	15.61	12.71	7.95	11.46	16.09	11.5	8.31	19.75	11.81
Large farmer (2.5 acres and above)	7.75	11.60	3.98	4.90	8.05	8.82	7.03	17.87	7.31
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	(percent of total operated land)								
Marginal farmer (below 0.5 acres)	8.31	7.13	16.10	11.03	7.81	9.49	12.95	2.71	9.61
Small farmer (0.5-1.49 acres)	37.18	32.08	45.88	46.51	37.20	35.62	39.99	27.01	37.75
Medium farmer (1.5-2.49 acres)	27.77	18.45	18.75	23.79	28.42	20.07	17.76	23.83	21.58
Large farmer (2.5 acres and above)	26.74	42.34	19.27	18.67	26.56	34.82	29.30	46.44	31.06
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.6—Number of operated plots by farm size groups: Feed the Future zone

| Farm size (in acres) | Number of plots | | | St. dev. |
	Mean	Minimum	Maximum	
Marginal (>0-<0.5)	1.64	1	13	1.07
Small (.5-1.49)	3.87	1	18	2.19
Medium (1.50-2.49)	6.20	1	22	3.32
Large (>=2.5)	7.60	2	31	4.85
All	3.72	1	31	3.11

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.7—Number of operated plots by division: Rural Bangladesh

| Division | Number of plots | | | St. dev. |
	Mean	Minimum	Maximum	
Barisal	3.31	1	31	3.48
Chittagong	2.76	1	19	2.40
Dhaka	3.53	1	15	2.63
Khulna	3.90	1	18	2.99
Rajshahi	4.92	1	31	4.80
Rangpur	3.25	1	13	2.56
Sylhet	3.58	1	16	2.67
All	3.67	1	31	3.25

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.8—Average size of operated land by farm size groups: Feed the Future zone

Farm size (in acres)	Operated land size			St. dev.
	Mean	Minimum	Maximum	
	(acres/farm household)			
Marginal (>0-<0.5)	0.23	0.01	0.50	0.14
Small (.5-1.49)	0.91	0.50	1.49	0.28
Medium (1.50-2.49)	1.90	1.50	2.47	0.27
Large (>=2.5)	4.18	2.50	25.18	3.11
All	1.06	0.01	25.18	1.42

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.9—Average size of operated land by division: Rural Bangladesh

Division	Operated land size			St. dev.
	Mean	Minimum	Maximum	
	(acres/farm household)			
Barisal	1.09	0.01	15.90	1.70
Chittagong	0.67	0.01	8.62	0.83
Dhaka	0.90	0.01	6.30	0.84
Khulna	1.11	0.01	20.30	1.42
Rajshahi	1.19	0.02	13.53	1.73
Rangpur	0.95	0.03	12.00	1.19
Sylhet	1.48	0.01	17.36	1.77
All	0.99	0.01	20.30	1.30

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.10—Land tenure arrangements by farm size groups

Tenurial arrangement	Feed the Future zone					Rural Bangladesh				
	Marginal	Small	Medium	Large	All	Marginal	Small	Medium	Large	All
	(percent of farmers)									
Pure tenant	35.4	29.2	13.7	16.8	28.1	41.0	33.5	18.4	17.4	33.5
Sharecropping	73.4	58.4	53.8	38.1	63.9	74.7	62.2	46.0	56.3	67.0
Cash lease	23.6	25.0	39.1	33.3	25.8	21.6	16.7	18.2	7.5	18.8
Both	3.0	16.7	7.1	28.6	10.3	3.7	21.1	35.8	36.2	14.1
Own land only	51.9	29.9	28.0	25.5	37.2	48.8	30.2	25.4	31.9	37.1
Mixed tenant (own land + land taken in)	12.7	40.9	58.3	57.7	34.7	10.2	36.3	56.3	50.8	29.4
Sharecropping	63.7	65.8	60.2	53.9	62.5	68.3	66.0	58.5	47.9	62.3
Cash lease	31.1	18.9	22.6	25.7	22.4	23.7	18.3	25.8	23.8	21.4
Both	5.2	15.3	17.3	20.4	15.2	8.0	15.7	15.7	28.2	16.3

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: Marginal farmers are with operated landholding below 0.5 areas; small farmers, between 0.5 and 1.49 acres; medium farmers, between 1.50 and 2.49 acres; and large farmers, 2.5 acres and more.

Table 4.11—Land tenure arrangements across divisions

Tenurial arrangement	Division							
	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
	(percent of farmers)							
Pure tenant	24.1	37.1	33.5	30.3	34.1	36.1	36.8	33.5
Sharecropping	66.1	60.3	72.0	53.9	68.2	72.8	72.7	67.0
Cash lease	25.4	27.6	16.5	22.2	20.5	13.2	5.3	18.8
Both	8.5	12.2	11.5	23.9	11.4	14.0	22.0	14.1
Own land only	44.1	39.9	40.1	33.9	29.7	39.2	33.7	37.1
Mixed tenant (own land + land taken in)	31.8	23.0	26.5	35.8	36.2	24.7	29.6	29.4
Sharecropping	56.4	69.1	69.8	63.0	45.0	74.4	59.4	62.3
Cash lease	25.6	16.5	17.5	19.6	32.1	19.2	13.2	21.4
Both	18.0	14.4	12.7	17.4	22.9	6.4	27.4	16.3

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.12— Share of crops on total cropped land by Feed the Future zone and divisions of rural Bangladesh: December 2010 to November 2011

Crop	FTF zone	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
					Division				
				(percent of total cropped area)					
Rice	67.6	79.4	75.3	76.2	73.0	71.6	82.3	94.3	76.8
Wheat	1.3	0.2	0.5	0.7	1.5	3.7	2.2	-	1.5
Potato	0.3	0.7	4.0	0.6	0.4	3.2	2.2	1.8	1.7
Eggplant	1.0	0.8	0.8	0.9	1.5	0.6	0.2	0.2	0.8
Other vegetables	3.8	3.9	5.1	3.8	1.6	2.0	0.4	2.2	2.7
Lentil	2.5	0.1	0.2	1.5	1.5	0.7	0.0	-	0.8
Other pulses	4.0	10.5	1.4	1.6	2.9	2.5	0.0	0.3	2.1
Mustard	1.1	-	1.3	2.1	0.8	1.5	0.5	0.2	1.3
Sugarcane	0.2	-	0.4	0.3	0.2	2.7	0.5	-	0.8
Chili	2.1	0.6	2.1	1.3	1.7	0.2	0.5	0.3	1.0
Onion	1.2	-	0.2	1.2	0.9	1.9	0.8	-	1.0
Jute	9.2	0.4	1.7	7.1	6.1	4.4	3.5	0.3	4.7
All other crops	5.7	3.3	6.8	2.9	7.9	5.0	7.0	0.5	5.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.13—Source of irrigation by division: Rural Bangladesh

Source of Irrigation	FTF zone	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
					Division				
				(percent of farmers)					
Rainfed	13.9	64.6	17.4	5.1	10.7	1.0	4.5	14.7	9.2
Groundwater	59.4	0.5	34.7	67.4	58.9	71.8	81.3	16.8	61.0
Surface water	17.8	34.9	37.8	9.1	8.1	2.4	1.1	50.8	11.3
Groundwater & surface water	9.0	0	10.1	18.4	22.4	24.8	13.1	17.7	18.5

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.14—Method of irrigation for HYV/hybrid boro rice cultivation by division: Rural Bangladesh

Irrigation method	FTF zone	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
					Division				
				(percent of farmers)					
Manual	3.7	1.5	4.4	2.3	6.9	1.3	0.8	14.4	3.0
Shallow tubewell	65.0	2.9	50.6	76.3	79.7	58.6	90.5	35.4	69.1
Deep tubewell	9.1	0	4.4	14.0	5.9	40.1	5.3	0.7	17.9
Low lift pump	20.5	95.6	40.0	7.0	6.7	0.1	2.5	48.6	9.6
Canal irrigation	1.1	0	0.7	0.5	0.8	0	0.8	0.9	0.5

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.15—Fertilizer use by type of rice and farm size groups: Feed the Future zone and rural Bangladesh

		Farm size groups (operated land)									
		Feed the Future zone					Bangladesh				
Type of rice	Fertilizer	Marginal	Small	Medium	Large	Total	Marginal	Small	Medium	Large	Total
		(kilograms/hectare)									
T aman (local)	Urea	103	93	97	87	96	161	132	124	105	139
	TSP	50	39	31	15	38	46	41	36	17	40
	DAP	6	13	0	3	8	6	9	4	2	7
	MoP	15	11	5	5	10	18	17	15	14	17
T aman (HYV)	Urea	196	175	176	141	179	192	171	187	155	179
	TSP	100	92	72	79	89	68	56	68	53	61
	DAP	19	24	19	16	21	13	15	21	19	15
	MoP	45	46	33	30	42	38	37	44	42	39
Boro (HYV and hybrid)	Urea	252	260	247	227	253	272	248	255	219	254
	TSP	137	122	114	126	125	107	102	105	87	103
	DAP	23	25	24	22	24	28	28	30	32	29
	MoP	74	59	60	51	63	67	69	72	67	69

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Note: Marginal farmers are with landholding below 0.5 areas; small farmers, between 0.5 and 1.49 acres; medium farmers, between 1.50 and 2.49 acres; and large farmers, 2.5 acres and more.

Table 4.16—Incidence of cultivation of local and modern rice varieties by farm size groups: Feed the Future zone and rural Bangladesh

	Farm size groups (operated land)									
	Feed the Future zone					Rural Bangladesh				
Types of rice seed	Marginal	Small	Medium	Large	All	Marginal	Small	Medium	Large	All
Aus	(percent of farmers)									
Local	6.06	0.00	10.20	0.00	3.91	34.67	10.18	18.89	21.13	20.55
HYV	93.94	100.00	89.80	100.00	96.09	65.33	89.82	81.11	78.87	79.45
Aman										
Local	16.64	9.04	8.32	4.08	10.25	16.74	10.90	9.38	4.35	11.93
HYV	85.54	89.50	91.68	95.92	89.75	82.63	89.10	91.67	95.65	88.01
Boro										
HYV	91.35	87.66	83.61	74.16	86.60	94.76	92.58	93.97	92.53	93.41
Hybrid	9.62	16.02	23.01	33.82	17.33	5.70	10.56	12.33	15.72	9.78

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Marginal farmers are with landholding below 0.5 areas; small farmers, between 0.5 and 1.49 acres; medium farmers, between 1.50 and 2.49 acres; and large farmers, 2.5 acres and more.

Table 4.17—Source of rice seed by farm size groups: Feed the Future zone and rural Bangladesh

Source of seed for different rice seasons	Farm size groups (operated land)									
	Feed the Future zone					Rural Bangladesh				
	Marginal	Small	Medium	Large	All	Marginal	Small	Medium	Large	All
Aus					(percent of farmers)					
Own/gift	35.35	67.98	39.72	73.93	52.46	42.91	37.88	74.80	79.78	47.08
From seed dealers of big seed companies	0.00	0.00	10.36	0.00	1.97	0.00	0.00	0.00	0.00	0.00
From pvt shop (do not know seed brand)	69.71	32.02	49.92	26.07	47.21	57.09	65.52	25.20	30.33	55.22
Govt (BADC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aman										
Own/gift	31.13	60.59	64.38	56.92	53.53	31.20	52.56	66.76	67.86	49.12
From seed dealers of big seed companies	1.82	1.46	0.00	0.00	1.03	1.27	1.66	1.43	0.00	1.36
From pvt shop (do not know seed brand)	62.69	38.17	29.17	29.30	41.24	67.96	46.60	37.02	32.64	50.74
Govt (BADC)	4.36	4.15	6.45	13.77	5.87	0.00	2.21	1.43	3.38	1.53
Boro										
Own/gift	26.89	35.94	41.67	34.67	34.58	27.34	43.44	56.86	64.97	42.25
From seed dealers of big seed companies	2.89	3.01	2.43	10.22	3.54	2.48	2.81	2.09	4.67	2.79
From pvt shop (do not know seed brand)	61.54	57.79	52.13	52.96	57.25	68.81	50.80	43.76	33.87	53.81
Govt (BADC)	10.62	6.80	9.09	12.86	8.76	2.61	5.17	3.01	3.82	3.99

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Note: Marginal farmers are with landholding below 0.5 areas; small farmers, between 0.5 and 1.49 acres; medium farmers, between 1.50 and 2.49 acres; and large farmers, 2.5 acres and more.

Table 4.18—Technology adoption for non-rice crops: Feed the Future zone and rural Bangladesh

	Farm size group (operated land)									
	Feed the Future zone					Rural Bangladesh				
Type of seed	Marginal	Small	Medium	Large	All	Marginal	Small	Medium	Large	All
					(percent of farmers)					
Pulses										
Local	90.79	86.45	90.82	87.13	88.28	83.98	87.74	89.92	76.27	85.85
HYV	9.24	11.43	13.11	12.87	11.43	17.82	10.83	10.08	20.42	13.45
Oilseeds										
Local	68.06	83.56	88.01	83.48	82.04	69.90	73.78	71.19	64.96	71.11
HYV	31.94	20.20	7.16	11.01	17.06	28.15	29.16	25.92	35.17	29.14
Potatoes										
Local	100.00	65.45	55.03	66.67	66.97	31.19	43.55	32.47	53.02	40.65
HYV	0.00	23.15	44.97	33.33	28.37	65.99	51.51	67.53	52.76	57.78
Jute										
Local	69.57	53.28	54.34	58.98	57.73	69.53	63.56	67.55	49.46	64.50
HYV	26.46	43.55	50.28	41.02	40.76	25.35	35.46	36.85	46.71	34.14

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Note: Marginal farmers are with landholding below 0.5 areas; small farmers, between 0.5 and 1.49 acres; medium farmers, between 1.50 and 2.49 acres; and large farmers, 2.5 acres and more.

Table 4.19—Source of seeds by farm size groups for selected non-rice crops: Feed the Future zone and rural Bangladesh

| | Farm size group (operated land) | | | | | | | | | |
| | Feed the Future zone | | | | | Rural Bangladesh | | | | |
Source of seed	Marginal	Small	Medium	Large	All	Marginal	Small	Medium	Large	All
					(percent of farmers)					
Wheat										
Own/gift	7.75	26.63	21.74	25.00	22.51	5.02	15.81	21.76	28.34	15.31
From seed dealers of big seed companies	0.00	2.43	0.00	0.00	1.26	0.00	0.93	5.71	0.00	1.62
From pvt shop (not know seed brand)	92.25	68.43	73.89	75.00	73.65	94.98	83.26	78.37	71.66	84.25
Govt (BADC)	0.00	7.38	4.37	0.00	5.10	0.00	0.93	0.00	10.69	1.18
Pulses										
Own/gift	44.33	56.32	67.62	65.77	56.88	33.76	43.48	49.68	55.24	43.75
From seed dealers of big seed companies	1.65	0.74	0.00	0.00	0.72	3.35	0.00	0.00	0.00	0.75
From pvt shop (not know seed brand)	56.82	45.27	38.25	40.67	45.95	62.89	57.80	54.60	46.77	57.07
Govt (BADC)	0.00	0.63	1.97	0.00	0.67	0.00	0.54	0.00	3.72	0.72
Oilseeds										
Own/gift	48.09	59.25	70.16	51.35	59.50	28.63	43.65	57.53	44.48	44.27
From seed dealers of big seed companies	4.01	0.00	2.40	0.00	1.50	0.00	1.23	0.00	0.00	0.53
From pvt shop (not know seed brand)	47.91	44.85	32.24	53.25	42.62	68.72	58.75	46.08	62.23	58.15
Govt (BADC)	4.01	2.07	0.00	0.00	1.50	2.65	0.00	0.00	3.55	1.03
Potatoes										
Own/gift	35.27	23.15	44.97	0.00	28.37	23.57	53.40	42.80	45.17	44.06
From seed dealers of big seed companies	0.00	0.00	0.00	0.00	0.00	2.72	1.22	1.79	5.67	2.44
From pvt shop (not know seed brand)	64.73	65.45	55.03	100.00	66.97	73.59	49.18	51.93	57.77	55.95
Govt (BADC)	0.00	11.40	0.00	0.00	4.66	3.87	0.00	6.09	0.00	1.99
Jute										
Own/gift	0.32	9.60	10.60	21.76	10.75	6.85	8.12	9.38	20.15	9.08
From seed dealers of big seed companies	1.12	3.82	1.50	0.00	2.41	1.08	2.65	1.07	0.00	1.75
From pvt shop (not know seed brand)	89.56	91.07	87.92	89.40	89.94	92.42	90.84	91.57	84.88	90.84
Govt (BADC)	1.34	2.54	7.55	0.00	3.07	0.73	1.89	2.66	3.08	1.83

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Note: Marginal farmers are with landholding below 0.5 areas; small farmers, between 0.5 and 1.49 acres; medium farmers, between 1.50 and 2.49 acres; and large farmers, 2.5 acres and more.

Table 4.20—Average male and female labor use for rice cultivation, by activity

Category	Land preparation	Planting	Fertilizer application	Pesticide application	Weeding	Irrigation	Harvest	Total
	(hours per hectare)							
Male								
T. Aman local								
FTF zone	39.2	130.0	15.0	11.4	205.5	11.4	161.1	573.5
Bangladesh	44.0	190.7	14.1	10.6	194.9	16.1	204.7	675.1
T. Aman HYV								
FTF zone	89.4	215.3	28.6	16.6	226.1	50.1	232.3	858.3
Bangladesh	72.0	256.6	19.5	13.4	203.7	29.2	226.7	821.2
Boro HYV								
FTF zone	119.9	241.8	31.3	19.7	272.2	89.6	240.1	1014.7
Bangladesh	81.8	277.5	25.8	15.2	263.3	86.9	297.2	1047.8
Female								
T. Aman local								
FTF zone	1.0	0.6	0.0	0.0	0.9	0.0	4.9	7.4
Bangladesh	0.2	2.2	0.0	0.0	1.6	0.7	3.6	8.2
T. Aman HYV								
FTF zone	4.0	3.9	1.0	0.0	15.9	1.0	11.9	37.7
Bangladesh	1.4	5.3	0.4	0.0	11.9	0.3	18.4	37.6
Boro HYV								
FTF zone	5.5	5.0	1.2	0.1	18.5	0.5	13.7	44.4
Bangladesh	3.1	4.9	0.2	0.0	11.6	1.3	7.5	28.6

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.21—Share of male and female labor use for rice cultivation by activities

Category	Land preparation	Planting	Fertilizer application	Pesticide application	Weeding	Irrigation	Harvest	Total
	(percent of total labor hours)							
Male								
T. Aman local								
FTF zone	97.9	99.5	100.0	100.0	99.7	100.0	98.1	99.0
Bangladesh	100.0	98.9	100.0	100.0	99.4	96.6	97.8	98.6
T. Aman HYV								
FTF zone	96.4	98.8	97.4	100.0	93.8	98.6	95.8	96.5
Bangladesh	97.8	97.8	100.0	100.0	93.3	100.0	93.1	95.4
Boro HYV								
FTF zone	97.5	98.6	97.7	100.0	95.0	99.3	96.1	97.0
Bangladesh	97.3	98.4	100.0	100.0	96.0	98.4	98.4	97.9
Female								
T. Aman local								
FTF zone	2.1	0.5	0.0	0.0	0.3	0.0	1.9	1.0
Bangladesh	0.0	1.1	0.0	0.0	0.6	3.4	2.2	1.4
T. Aman HYV								
FTF zone	3.6	1.2	2.6	0.0	6.2	1.4	4.2	3.5
Bangladesh	2.2	2.2	0.0	0.0	6.7	0.0	6.9	4.6
Boro HYV								
FTF zone	2.5	1.4	2.3	0.0	5.0	0.7	3.9	3.0
Bangladesh	2.7	1.6	0.0	0.0	4.0	1.6	1.6	2.1

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.22—Average male and female labor use by rice postharvest activities

Category	Carrying	Threshing	Drying	Sorting	Packaging	Total
			(hours per crop)			
Male						
T. Aman local						
All FTF	13.3	15.0	6.0	2.6	5.4	42.2
Bangladesh	24.7	16.4	7.5	3.6	6.2	58.4
T. Aman HYV						
All FTF	43.4	21.0	6.2	2.2	4.2	77.0
Bangladesh	40.3	26.4	5.7	3.2	3.8	79.3
Boro HYV						
All FTF	53.4	24.4	7.2	5.2	7.0	97.3
Bangladesh	43.2	23.6	8.0	3.6	5.1	83.4
Female						
T. Aman local						
All FTF	0.3	1.8	15.0	6.4	6.5	30.1
Bangladesh	0.2	1.7	16.6	5.9	6.7	31.2
T. Aman HYV						
All FTF	1.7	5.6	8.6	3.1	2.9	21.9
Bangladesh	0.8	3.8	12.7	7.1	3.8	28.1
Boro HYV						
All FTF	1.4	5.5	13.5	6.4	5.4	32.2
Bangladesh	0.7	4.2	18.2	8.1	4.8	36.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.23—Share of male and female labor use by rice postharvest activities

Farm size	Carrying	Threshing	Drying	Sorting	Packaging	Total
	(percent of total labor hours)					
Male						
T. Aman local						
All FTF	97.8	89.3	28.6	28.9	45.4	58.4
Bangladesh	99.2	90.6	31.1	37.9	48.1	65.2
T. Aman HYV						
All FTF	96.2	78.9	41.9	41.5	59.2	77.9
Bangladesh	98.1	87.4	31.0	31.1	50.0	73.8
Boro HYV						
All FTF	97.4	81.6	34.8	44.8	56.5	75.1
Bangladesh	98.4	84.9	30.5	30.8	51.5	69.8
Female						
T. Aman local						
All FTF	2.2	10.7	71.4	71.1	54.6	41.6
Bangladesh	0.8	9.4	68.9	62.1	51.9	34.8
T. Aman HYV						
All FTF	3.8	21.1	58.1	58.5	40.8	22.1
Bangladesh	1.9	12.6	69.0	68.9	50.0	26.2
Boro HYV						
All FTF	2.6	18.4	65.2	55.2	43.5	24.9
Bangladesh	1.6	15.1	69.5	69.2	48.5	30.2

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.24—Average male and female labor use for production of vegetables and potatoes

Category	Land preparation	Planting	Fertilizer application	Pesticide application	Weeding	Irrigation	Harvest	Total
				(hours per hectare)				
Male								
Leafy Vegetables								
FTF zone	255.1	277.6	88.5	55.1	355.0	125.7	593.8	1,750.9
Bangladesh	282.5	278.4	71.0	46.2	436.3	253.9	581.3	1,949.6
Sweet gourd								
FTF zone	33.6	240.1	12.4	5.6	359.4	211.8	701.5	1,564.4
Bangladesh	145.1	409.0	15.8	11.9	128.8	23.2	506.8	1,240.6
Tomatoes								
FTF zone	140.5	222.3	87.3	58.6	156.5	661.6	835.9	2,162.7
Bangladesh	420.4	294.5	109.3	50.2	255.2	152.6	555.0	1,837.1
Potatoes								
FTF zone	267.8	383.3	56.0	22.0	1,180.0	296.4	588.7	2,794.2
Bangladesh	95.4	420.9	36.3	39.2	223.2	73.5	288.2	1,176.6
Female								
Leafy Vegetables								
FTF zone	23.2	41.0	15.8	1.6	49.7	33.4	246.7	411.4
Bangladesh	31.8	55.3	18.9	3.1	37.7	98.3	231.9	477.0
Sweet gourd								
FTF zone	1.5	148.3	0.0	0.0	20.5	197.7	395.5	763.5
Bangladesh	0.0	190.7	95.3	0.0	149.0	0.0	466.2	901.2
Tomatoes								
FTF zone	90.7	11.6	0.0	0.0	0.0	363.3	199.2	664.8
Bangladesh	61.7	151.7	57.1	0.0	97.6	134.9	600.0	1,103.0
Potatoes								
FTF zone	0.0	22.2	0.0	0.0	80.0	20.1	105.8	228.1
Bangladesh	1.1	41.2	0.2	0.0	10.2	5.3	209.0	267.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.25— Share of male and female labor use for production of vegetables and potatoes

Category	Land preparation	Planting	Fertilizer application	Pesticide application	Weeding	Irrigation	Harvest	Total
				(percent of total labor hours)				
Male								
Leafy vegetables								
FTF zone	91.7	87.1	84.9	97.1	87.7	79.0	70.7	81.0
Bangladesh	89.9	83.4	79.0	93.7	92.0	72.1	71.5	80.3
Sweet gourd								
FTF zone	95.7	61.8	100.0	100.0	94.6	51.7	63.9	67.2
Bangladesh	100.0	68.2	14.2	100.0	46.4	100.0	52.1	57.9
Tomatoes								
FTF zone	60.8	95.0	100.0	100.0	100.0	64.6	80.8	76.5
Bangladesh	87.2	66.0	65.7	100.0	72.3	53.1	48.1	62.5
Potatoes								
FTF zone	100.0	94.5	100.0	100.0	93.6	93.7	84.8	92.5
Bangladesh	98.9	91.1	99.4	100.0	95.6	93.3	58.0	81.5
Female								
Leafy vegetables								
FTF zone	8.3	12.9	15.1	2.9	12.3	21.0	29.3	19.0
Bangladesh	10.1	16.6	21.0	6.3	8.0	27.9	28.5	19.7
Sweet gourd								
FTF zone	4.3	38.2	0.0	0.0	5.4	48.3	36.1	32.8
Bangladesh	0.0	31.8	85.8	0.0	53.6	0.0	47.9	42.1
Tomatoes								
FTF zone	39.2	5.0	0.0	0.0	0.0	35.4	19.2	23.5
Bangladesh	12.8	34.0	34.3	0.0	27.7	46.9	51.9	37.5
Potatoes								
FTF zone	0.0	5.5	0.0	0.0	6.4	6.3	15.2	7.5
Bangladesh	1.1	8.9	0.6	0.0	4.4	6.7	42.0	18.5

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.26—Looking after livestock: Feed the Future zone

Livestock caretaker		1 (lowest)	2	3	4	5 (highest)	All
				Per capita expenditure quintile			
		(percent)					
Bullock	Male	83.7	75.5	75.6	72.4	71.2	75.5
	Female	16.3	24.5	24.4	27.6	28.8	24.5
Milk cow	Male	81.8	64.9	67.6	64.7	72.9	69.6
	Female	18.2	35.2	32.5	35.3	27.1	30.4
Buffalo	Male	.	100.0	100.0	.	100.0	100.0
	Female	.	.	.	.	.	.
Goat	Male	47.1	52.2	53.4	44.1	50.2	49.4
	Female	52.9	47.8	46.6	55.9	49.8	50.6
Sheep	Male	50.0	0.0	100.0	100.0	.	60.0
	Female	50.0	100.0	0.0	0.0	.	40.0
Chicken	Male	11.6	12.3	9.2	8.7	8.4	10.0
	Female	88.4	87.7	90.8	91.3	91.6	90.0
Duck	Male	11.9	14.2	12.6	8.0	6.9	10.7
	Female	88.1	85.9	87.4	92.0	93.1	89.3
Other birds	Male	48.5	39.7	46.6	60.3	43.0	48.1
	Female	51.5	60.3	53.4	39.7	57.0	51.9
Others	Male	25.0	58.5	60.0	15.4	26.9	33.2
	Female	75.0	41.5	40.0	84.6	73.2	66.8

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.27—Looking after livestock: Rural Bangladesh

Livestock caretaker		1 (lowest)	2	3	4	5 (highest)	All
		\(percent\)					
Bullock	Male	64.5	67.8	69.0	72.4	70.8	68.8
	Female	35.6	32.2	31.0	27.6	29.3	31.2
Milk cow	Male	65.0	69.9	72.5	71.5	71.2	70.3
	Female	35.0	30.1	27.5	28.5	28.8	29.8
Buffalo	Male	100.0	100.0	100.0	100.0	72.2	91.9
	Female	0.0	0.0	0.0	0.0	27.8	8.1
Goat	Male	45.9	44.4	44.2	46.9	45.8	45.3
	Female	54.1	55.6	55.8	53.2	54.3	54.7
Sheep	Male	37.9	40.0	30.3	56.9	46.1	42.1
	Female	62.1	60.0	69.7	43.1	53.9	57.9
Chicken	Male	7.1	9.1	8.7	6.7	8.8	8.1
	Female	92.9	90.9	91.3	93.3	91.2	91.9
Duck	Male	5.5	9.2	7.8	6.1	6.8	7.1
	Female	94.5	90.9	92.2	93.9	93.3	92.9
Other birds	Male	52.4	30.3	49.8	38.2	35.2	40.9
	Female	47.6	69.7	50.2	61.8	64.8	59.2
Others	Male	48.5	66.7	59.2	48.4	23.6	50.4
	Female	51.5	33.3	40.8	51.7	76.5	49.7

Note: The header "Per capita expenditure quintile" spans columns 1 (lowest) through 5 (highest).

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.28—Source of credit by farm size groups: Feed the Future zone

Source of Credit	Marginal	Small	Medium	Large	All
			(percent)		
Relative/friend/neighbour	17.18	16.06	15.76	13.88	16.21
Bangladesh *Krishi* Bank	5.34	9.57	14.29	15.49	9.31
Other banks	9.8	9.77	10.72	17.11	10.6
Other financial institutions	0.82	0.73	0.0	1.3	0.71
NGO	24.39	24.47	21.81	13.64	23.05
Employer	0.17	0.15	0.0	0.0	0.12
Shop / dealer / trader	5.82	4.83	4.51	5.2	5.17
Money lender	3.86	3.8	3.29	5.85	3.93
Shamity (other than NGO)	5.11	4.43	2.87	0.65	4.09
Other	4.42	5.68	3.89	5.72	4.98
Does not have any loan currently	23.08	20.52	22.86	21.17	21.83
Total	100	100	100	100	100

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: Marginal farmers are with landholding below 0.5 areas; small farmers, between 0.5 and 1.49 acres; medium farmers, between 1.50 and 2.49 acres; and large farmers, 2.5 acres and more.

Table 4.29—Source of credit by farm size groups: Rural Bangladesh

| Source of Credit | Farm size groups | | | | All |
	Marginal	Small	Medium	Large	
	(percent)				
Relative/friend/neighbour	26.34	25	24.13	22.38	25.15
Bangladesh *Krishi* Bank	5.28	9.43	12.75	12.78	8.63
Rajshahi *Krishi Unnayon* Bank	0.25	0.69	0.63	1.99	0.64
Other banks	14	12.19	12.47	16.18	13.24
Other financial institutions	0.66	0.28	0.6	0.45	0.47
NGO	32.47	27.94	22.13	17.27	27.91
Employer	0.16	0.14	0.0	0.0	0.12
Shop/dealer /trader	4.59	4.99	6.33	6.21	5.12
Money lender	5.55	5.15	7.94	9.34	6.02
Shamity (other than NGO)	4.17	4.42	1.99	1.95	3.81
Other	6.53	9.77	11.02	11.46	8.9
Total	100	100	100	100	100

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: Marginal farmers are with landholding below 0.5 areas; small farmers, between 0.5 and 1.49 acres; medium farmers, between 1.50 and 2.49 acres; and large farmers, 2.5 acres and more.

Table 4.30—Average crop yields by farm size groups: Feed the Future zone

| Crop | Farm size groups | | | | FTF |
	Marginal	Small	Medium	Large	
	(metric ton/hectare)				
All Rice	2.86	2.74	2.68	2.35	2.73
Aus (local)	1.37	1.09	0.95	1.41	1.15
Aus (HYV)	2.25	2.26	1.97	2.36	2.22
B aman (local)	1.42	1.25	1.30	1.06	1.28
T aman (local)	1.53	1.46	1.46	1.10	1.46
T Aman (HYV)	2.43	2.36	2.40	2.17	2.37
Boro (HYV)	3.93	3.67	3.65	3.24	3.71
Boro (hybrid)	4.10	4.01	3.84	4.21	4.02
Wheat	2.31	2.75	2.68	2.37	2.65
Lentil	0.90	0.98	0.86	0.94	0.93
Green gram	0.55	0.77	0.80	0.79	0.74
Black gram	0.75	0.62	0.70	--	0.66
Mustard	0.61	0.94	1.14	0.54	0.88
Eggplant	5.24	6.58	6.67	3.35	6.03
Potatoes	12.98	13.26	7.72	6.58	10.52

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: Marginal farmers are defined as farmers with landholding below 0.5 acres, small farmers with landholding between 0.5 and 1.49 acres, medium farmers with landholding between 1.5 and 2.49 acres, large farmers with landholding equal or above 2.5 acres.

Table 4.31—Average crop yields by farm size groups: Rural Bangladesh

Crop	Farm size groups				Bangladesh
	Marginal	Small	Medium	Large	
	(metric ton/hectare)				
All Rice	2.86	2.82	2.78	2.67	2.82
Aus (local)	1.67	1.43	1.29	1.81	1.50
Aus (HYV)	2.16	2.06	2.00	2.19	2.10
B aman (local)	1.72	1.31	1.30	1.18	1.44
T aman (local)	1.96	1.34	1.88	1.17	1.57
T Aman (HYV)	2.14	2.18	2.27	2.17	2.18
Boro (HYV)	3.81	3.64	3.70	3.58	3.70
Boro (hybrid)	4.37	4.74	4.44	4.23	4.55
Wheat	3.24	2.88	3.21	2.34	3.00
Lentil	0.84	0.99	0.98	1.09	0.96
Green gram	0.71	0.71	0.65	0.68	0.69
Black gram	4.66	1.07	0.86	0.79	1.74
Mustard	1.01	1.05	1.21	1.17	1.10
Eggplant	21.10	15.59	12.70	18.41	17.02
Potatoes	13.76	13.96	13.59	14.28	13.90

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: Marginal farmers are defined as farmers with landholding below 0.5 acres, small farmers with landholding between 0.5 and 1.49 acres, medium farmers with landholding between 1.5 and 2.49 acres, large farmers with landholding equal or above 2.5 acres.

Table 4.32—Average crop yields by division: Rural Bangladesh

Crop	Divisions							Bangladesh
	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	
	(metric ton/hectare)							
All Rice	1.97	2.72	3.07	2.68	3.02	2.75	2.29	2.82
Aus (local)	1.04	1.60	1.38	1.51	1.66	2.35	1.91	1.50
Aus (HYV)	2.02	2.23	1.56	2.23	2.02	2.38	1.90	2.10
B aman (local)	1.41	1.31	1.57	1.04	1.53	1.46	1.18	1.44
T aman (local)	1.38	2.37	2.23	1.25	1.48	1.05		1.57
T Aman (HYV)	2.50	1.93	1.97	2.43	2.36	2.15	1.66	2.18
Boro (HYV)	3.53	3.47	3.77	3.53	3.95	3.73	2.90	3.70
Boro (hybrid)	--	3.97	5.40	3.98	4.84	4.34	4.29	4.55
Wheat	1.06	3.06	2.59	3.02	3.23	2.72	--	3.00
Lentil	0.53	0.81	0.96	1.10	0.54	0.89	--	0.96
Green gram	0.57	0.19	0.41	0.75	0.88	--	--	0.69
Black gram	--	1.41	0.79	0.58	3.14	0.79	--	1.74
Mustard	0.58	0.97	1.28	0.62	1.25	0.76	0.59	1.10
Eggplant	6.06	13.82	27.83	10.13	16.07	11.25	9.79	17.02
Potatoes	14.86	12.67	11.96	8.02	15.13	16.25	8.33	13.90

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.33—Average number of livestock holding by income groups as of November 1, 2011: Feed the Future zone

| Livestock | Per capita expenditure quintile | | | | | Total |
	1 (lowest)	2	3	4	5 (highest)	
	(number)					
Bullock	0.5	0.7	0.7	0.7	0.5	0.6
Milk cow	0.3	0.5	0.5	0.6	0.5	0.5
Goat	0.6	0.7	0.7	0.6	0.5	0.6
Chicken	4.9	3.7	4.1	5.4	5.4	4.7
Duck	1.6	1.8	1.8	1.9	2.1	1.8
Other birds	0.1	0.3	0.6	0.5	0.5	0.4
Others	0.1	0.1	0.1	0.3	0.2	0.2

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.34—Average number of livestock holding by income groups as of November 1, 2011: Rural Bangladesh

| Livestock | Per capita expenditure quintile | | | | | Total |
	1 (lowest)	2	3	4	5 (highest)	
	(number)					
Bullock	0.4	0.5	0.5	0.5	0.5	0.5
Milk cow	0.4	0.5	0.5	0.7	0.6	0.5
Goat	0.4	0.5	0.5	0.5	0.3	0.5
Chicken	3.4	3.7	6.6	4.6	7.7	5.1
Duck	0.8	1.2	1.2	1.2	1.5	1.2
Other birds	0.1	0.2	0.3	0.3	0.4	0.3
Others	0.0	0.1	0.2	0.1	0.1	0.1

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.35—Average annual production of milk and eggs by income groups: Feed the Future zone

Product	Per capita expenditure quintile					Total
	1 (lowest)	2	3	4	5 (highest)	
Average for producers						
Milk (liter/year)	158	144	212	252	360	234
Eggs (number/year)	102	130	183	327	241	199
Average for all households						
Milk (liter/year)	22	29	52	74	84	52
Eggs (number/year)	67	85	127	234	167	136

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.36—Average annual production of milk and eggs by income groups: Rural Bangladesh

Product	Per capita expenditure quintile					Total
	1 (lowest)	2	3	4	5 (highest)	
Average for producers						
Milk (liter/year)	177	196	194	241	379	244
Eggs (number/year)	85	132	199	114	691	245
Average for all households						
Milk (liter/year)	24	37	39	59	89	49
Eggs (number/year)	46	82	128	77	463	155

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.37—Input costs per hectare for irrigated boro paddy cultivation

Input	FTF zone	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
					(taka)				
Seed/seedling	4,757	3,957	6,902	6,049	4,549	6,710	3,769	4,159	5,549
Mechanical irrigation	13,453	8,648	11,386	12,079	13,641	11,332	10,380	6,864	11,431
Manual irrigation	477	842	333	217	854	315	64	575	327
Land rent	14,565	10,763	12,973	14,434	15,110	18,854	16,892	14,414	15,623
Urea	3,696	3,647	3,464	3,489	4,031	3,494	3,419	2,398	3,487
TSP	3,445	4,581	4,182	2,494	3,889	2,463	2,532	2,041	2,858
DAP	771	-	185	1,147	849	1,193	848	25	885
MP	1,528	663	1,401	1,509	1,832	1,312	1,374	563	1,416
Zinc	700	449	351	277	1,217	417	196	85	408
Ammonia	16	-	-	3	21	5	27	-	9
Gypsum	1,048	-	66	165	1,005	372	408	77	338
NPKS	23	-	9	36	6	8	9	17	17
Calcium	225	470	173	357	307	148	104	111	232
Manure	1,382	252	1,760	1,402	634	1,930	3,395	516	1,751
Pesticides	2,112	3,263	2,187	1,373	2,010	2,864	1,835	761	1,907
Drought animal	660	76	23	263	993	316	240	174	327
Power tiller	4,501	9,073	5,809	5,056	4,261	4,452	4,490	4,872	4,854
Seeding machine	76	-	-	1	37	-	-	-	5
Equipment for applying fertilizer	84	-	-	3	187	-	-	-	24
Pesticide sprayer	80	118	114	59	81	85	66	60	75
Weeding machine	60	562	0	-	-	23	-	5	11
Harvesting machine	118	680	-	77	-	81	4	-	49
Family labor									
Land preparation									
Male	2,722	619	2,098	1,948	3,346	1,978	1,691	1,884	2,082
Female	117	-	40	6	156	4	166	16	58
Transplanting									
Male	2,509	2,965	2,483	3,386	1,981	3,277	2,412	1,913	2,828
Female	105	-	156	22	60	98	244	27	97
Fertilizer application									
Male	74	249	182	59	49	24	220	61	96
Female	17	-	4	5	2	1	12	4	5
Pesticide application									
Male	586	458	414	306	627	608	406	165	430
Female	2	-	-	0	-	-	-	-	0
Weeding									
Male	3,330	2,988	4,773	4,854	3,524	4,675	3,248	3,126	4,240
Female	194	-	122	62	229	70	412	21	152
Irrigation									
Male	3,084	1,503	856	2,640	4,802	2,139	3,178	2,539	2,694
Female	18	-	29	37	10	26	13	11	24

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Input	FTF zone	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
								Division	
					(taka)				
Harvesting									
Male	2,961	3,144	2,942	3,842	2,467	3,234	2,849	1,848	3,156
Female	295	-	234	81	232	67	284	50	149
Hired labor									
Land preparation									
Male	903	471	673	540	576	257	296	661	465
Female	9	-	-	30	21	-	54	-	22
Transplanting									
Male	4,395	4,703	9,001	5,850	4,822	4,651	3,466	5,429	5,373
Female	48	-	79	14	10	85	46	26	41
Fertilizer application									
Male	74	249	182	62	49	24	220	61	97
Female	1	-	-	1	-	-	5	8	2
Pesticide application									
Male	62	77	132	59	85	70	77	11	74
Female	-	-	-	-	-	-	-	-	-
Weeding									
Male	3,677	2,838	7,172	4,372	3,348	2,232	1,635	2,817	3,544
Female	183	-	68	9	360	14	180	43	93
Irrigation									
Male	65	382	67	182	-	17	18	266	91
Female	-	-	-	-	-	-	-	-	-
Harvesting									
Male	4,585	5,090	11,693	7,031	4,951	6,697	4,554	7,115	6,761
Female	11	-	35	-	25	13	49	-	19
Total cost	83,803	73,778	94,749	85,889	87,244	86,636	75,785	65,816	84,172

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: All seed costs are included as cash costs.

Table 4.38—Costs of inputs as percentages of full costs per hectare for irrigated boro paddy cultivation

Region	Seed	Irrigation	Land rent	Fertilizer	Manure	Pesticide	Equipment	Family labor	Hired labor	Total
				(percent)						
FTF zone	5.7	16.6	17.4	13.7	1.6	2.5	6.7	19.1	16.7	100.0
Barisal	5.4	12.9	14.6	13.3	0.3	4.4	14.2	16.2	18.7	100.0
Chittagong	7.3	12.4	13.7	10.4	1.9	2.3	6.3	15.1	30.7	100.0
Dhaka	7.0	14.3	16.8	11.0	1.6	1.6	6.4	20.1	21.1	100.0
Khulna	5.2	16.6	17.3	15.1	0.7	2.3	6.4	20.0	16.3	100.0
Rajshahi	7.7	13.4	21.8	10.9	2.2	3.3	5.7	18.7	16.2	100.0
Rangpur	5.0	13.8	22.3	11.8	4.5	2.4	6.3	20.0	14.0	100.0
Sylhet	6.3	11.3	21.9	8.1	0.8	1.2	7.8	17.7	25.0	100.0
Bangladesh	6.6	14.0	18.6	11.5	2.1	2.3	6.3	19.0	19.7	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: Equipment include drought animal, power tiller and other agricultural machineries

Table 4.39— Costs of inputs as percentages of cash costs per hectare for irrigated boro paddy cultivation

Region	Seed	Irrigation	Fertilizer	Manure	Pesticide	Equipment	Hired labor	Total
			(percent)					
FTF zone	8.9	26.2	21.5	2.6	4.0	10.5	26.3	100.0
Barisal	7.7	18.6	19.2	0.5	6.4	20.6	27.0	100.0
Chittagong	10.2	17.4	14.6	2.6	3.2	8.8	43.1	100.0
Dhaka	11.2	22.7	17.5	2.6	2.5	10.1	33.5	100.0
Khulna	8.3	26.5	24.1	1.2	3.7	10.2	26.1	100.0
Rajshahi	13.0	22.6	18.2	3.7	5.6	9.6	27.3	100.0
Rangpur	8.6	23.9	20.4	7.8	4.2	11.0	24.2	100.0
Sylhet	10.5	18.7	13.4	1.3	1.9	12.9	41.4	100.0
Bangladesh	10.6	22.4	18.4	3.3	3.6	10.2	31.6	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: Equipment include drought animal, power tiller and other agricultural machineries.

Table 4.40—Total costs and profitability of irrigated boro paddy cultivation

Region/ Division	Cash cost Per hectare	Total cost Per hectare	Cash cost Per ton	Total cost Per ton	Value of crop Per hectare	Value of crop Per ton	Net profit (full cost basis) Per hectare	Net profit (full cost basis) Per ton	Gross profit (cash cost basis) Per hectare	Gross profit (cash cost basis) Per ton
					(taka)					
FTF zone	53,224	83,803	10,038	16,078	103,689	18,220	19,886	2,142	50,466	8,182
Barisal	51,089	73,778	11,198	16,557	75,815	14,773	2,038	(1,784)	24,727	3,574
Chittagong	67,444	94,749	14,178	20,298	84,962	16,034	(9,787)	(4,265)	17,518	1,856
Dhaka	54,208	85,889	10,223	16,407	98,395	17,197	12,506	790	44,188	6,973
Khulna	54,650	87,244	10,705	17,047	101,662	18,492	14,418	1,446	47,012	7,788
Rajshahi	51,580	86,636	8,772	14,807	110,399	16,832	23,763	2,025	58,820	8,060
Rangpur	43,758	75,785	8,402	14,750	91,347	16,206	15,562	1,456	47,589	7,804
Sylhet	39,738	65,816	8,697	14,858	76,090	15,841	10,274	983	36,352	7,143
Bangladesh	52,539	84,172	10,043	16,230	96,939	16,880	12,767	650	44,400	6,837

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Notes: All seed costs are included as cash costs. Net profit = value of crop per hectare–total cost per hectare. Gross profit = value of crop per hectare–cash cost per hectare.

Table 4.41—Input costs per hectare for HYV aman paddy cultivation

Input	FTF zone	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
					(taka)				
Seed/seedling	3,932	7,042	5,614	6,130	3,706	4,232	3,403	3,698	4,572
Mechanical irrigation	2,311	-	400	1,221	2,430	2,556	1,587	199	1,679
Manual irrigation	152	-	115	6	320	182	-	68	117
Land rent	14,367	10,763	12,973	14,434	15,110	18,854	16,892	14,414	15,854
Urea	3,394	2,862	3,517	3,016	4,014	4,014	3,040	2,416	3,452
TSP	2,450	1,267	2,499	1,026	2,905	1,757	1,147	1,375	1,715
DAP	631	30	374	544	646	446	508	48	475
MP	855	255	662	672	1,178	862	650	298	773
Zinc	520	-	110	52	668	442	104	-	270
Ammonia	37	-	-	1	39	4	12	-	11
Gypsum	552	-	39	38	436	178	121	2	158
NPKS	6	-	-	22	-	-	-	83	9
Calcium	170	-	75	93	168	154	77	5	109
Manure	549	34	491	377	405	1,316	1,181	638	775
Pesticides	1,735	1,083	1,735	688	1,661	1,984	1,355	758	1,413
Drought animal	450	596	80	162	474	223	471	467	319
Power tiller	4,270	4,782	6,033	4,548	4,536	4,780	4,491	4,602	4,721
Seeding machine	70	-	-	-	-	-	-	27	1
Equipment for applying fertilizer	-	-	-	4	-	-	-	3	1
Pesticide sprayer	49	76	23	35	40	52	45	94	45
Weeding machine	20	68	-	-	-	13	-	18	7
Harvesting machine	63	88	-	-	-	61	-	27	20
Family labor									
Land preparation									
Male	1,904	1,611	2,264	1,692	2,005	1,316	1,779	2,632	1,762
Female	55	-	10	11	36	7	86	16	29
Transplanting									
Male	2,523	4,119	3,001	3,242	2,159	2,699	2,216	2,236	2,678
Female	72	-	104	55	32	95	166	64	84
Fertilizer application									
Male	83	39	53	54	64	37	33	82	48
Female	24	-	2	4	-	8	8	4	5
Pesticide application									
Male	442	421	444	190	519	467	380	195	384
Female	1	-	-	-	1	1	-	-	0
Weeding									
Male	3,253	3,087	3,643	3,939	3,087	2,805	2,497	2,756	3,115
Female	135	-	266	152	139	29	257	507	160

(continued)

Input	FTF zone	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
					Division				
					(taka)				
Irrigation									
Male	1,262	457	196	620	1,282	803	1,324	279	866
Female	7	-	16	5	2	3	11	4	6
Harvesting									
Male	3,339	3,807	2,886	3,987	2,485	2,177	2,313	2,206	2,767
Female	104	16	2,105	587	60	71	152	83	354
Hired labor									
Land preparation									
Male	628	251	834	299	480	250	323	311	366
Female	8	-	-	-	-	-	-	5	0
Transplanting									
Male	3,834	3,132	7,694	5,951	4,251	3,498	3,664	3,409	4,507
Female	-	-	43	-	-	136	75	19	52
Fertilizer application									
Male	83	39	53	54	64	37	33	82	48
Female	6	-	14	11	9	-	6	-	6
Pesticide application									
Male	54	60	71	44	57	79	97	27	67
Female	-	-	-	-	-	-	-	-	-
Weeding									
Male	2,964	1,490	5,869	3,270	2,857	2,527	1,554	2,820	2,798
Female	104	-	189	3	125	72	169	-	89
Irrigation									
Male	105	49	21	10	-	16	9	13	12
Female	-	-	-	-	-	-	-	-	-
Harvesting									
Male	3,479	2,804	6,209	4,519	3,596	4,579	3,212	4,290	4,169
Female	115	-	179	2	30	27	63	8	39
Total cost	61,206	50,328	70,909	61,660	62,154	64,020	55,571	51,167	60,949
All seed costs are included as cash costs									

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.42—Costs of inputs as percentages of full costs per hectare for HYV aman paddy cultivation

Region	Seed	Irrigation	Land rent	Fertilizer	Manure	Pesticide	Equipment	Family labor	Hired labor	Total
					(percent)					
FTF zone	6.4	4.0	23.5	14.1	0.9	2.8	8.0	21.6	18.6	100.0
Barisal	14.0	-	21.4	8.8	0.1	2.2	11.1	26.9	15.6	100.0
Chittagong	7.9	0.7	18.3	10.3	0.7	2.4	8.7	21.1	29.9	100.0
Dhaka	9.9	2.0	23.4	8.9	0.6	1.1	7.7	23.7	22.7	100.0
Khulna	6.0	4.4	24.3	16.2	0.7	2.7	8.1	19.2	18.4	100.0
Rajshahi	6.6	4.3	29.4	12.3	2.1	3.1	8.0	16.5	17.6	100.0
Rangpur	6.1	2.9	30.4	10.2	2.1	2.4	9.0	20.2	16.6	100.0
Sylhet	7.2	0.5	28.2	8.3	1.3	1.5	10.3	21.1	21.6	100.0
Bangladesh	7.5	3.0	26.0	11.5	1.3	2.3	8.4	20.1	19.9	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: Equipment include drought animal, power tiller and other agricultural machineries.

Table 4.43—Costs of inputs as percentages of cash costs per hectare for HYV aman paddy cultivation

Division/Division	Seed	Irrigation	Fertilizer	Manure	Pesticide	Equipment	Hired labor	Total
					(percent)			
FTF zone	11.7	7.3	25.6	1.6	5.2	14.7	33.9	100.0
Barisal	27.1	-	17.0	0.1	4.2	21.6	30.1	100.0
Chittagong	13.1	1.2	16.9	1.1	4.0	14.3	49.3	100.0
Dhaka	18.7	3.7	16.7	1.1	2.1	14.5	43.2	100.0
Khulna	10.6	7.8	28.6	1.2	4.7	14.4	32.7	100.0
Rajshahi	12.3	7.9	22.8	3.8	5.8	14.9	32.5	100.0
Rangpur	12.4	5.8	20.7	4.3	4.9	18.3	33.6	100.0
Sylhet	14.3	1.0	16.4	2.5	2.9	20.3	42.6	100.0
Bangladesh	13.9	5.5	21.3	2.4	4.3	15.6	37.1	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: Equipment include drought animal, power tiller and other agricultural machineries.

Table 4.44—Total costs and profitability of HYV aman paddy cultivation

Region/ Division	Cash cost Per hectare	Total cost Per hectare	Cash cost Per ton	Total cost Per ton	Value of crop Per hectare	Value of crop Per ton	Net profit (full cost basis) Per hectare	Net profit (full cost basis) Per ton	Gross profit (cash cost basis) Per hectare	Gross profit (cash cost basis) Per ton
					(taka)					
FTF zone	33,613	61,206	9,650	17,979	64,701	17,322	3,495	(657)	31,087	7,671
Barisal	26,008	50,328	7,294	14,249	64,557	17,682	14,229	3,433	38,548	10,388
Chittagong	42,944	70,909	16,009	26,721	59,357	16,188	(11,552)	(10,534)	16,413	178
Dhaka	32,629	61,660	12,720	24,403	49,207	16,396	(12,453)	(8,007)	16,578	3,676
Khulna	35,135	62,154	10,546	18,836	60,344	16,712	(1,810)	(2,124)	25,209	6,166
Rajshahi	34,635	64,020	11,081	20,988	58,034	15,968	(5,986)	(5,020)	23,400	4,887
Rangpur	27,441	55,571	8,701	18,676	54,584	15,133	(987)	(3,543)	27,143	6,432
Sylhet	25,975	51,168	10,741	21,880	39,971	14,535	(11,197)	(7,345)	13,995	3,793
Bangladesh	32,826	60,949	11,101	21,110	55,410	16,049	(5,539)	(5,061)	22,584	4,948

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Notes: All seed costs are included as cash costs. Net profit = value of crop per hectare–total cost per hectare. Gross profit = value of crop per hectare–cash cost per hectare.

Table 4.45—Input costs per hectare for local aman paddy cultivation

Input	FTF zone	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
					(taka)				
Seed/seedling	4,343	4,147	5,530	4,726	3,871	3,395	4,759	2,240	4,396
Mechanical irrigation	541	-	343	1,024	1,613	1,591	1,345	282	912
Manual irrigation	12	-	-	14	71	135	166	-	50
Land rent	12,384	10,763	12,973	14,434	15,110	18,854	16,892	14,414	14,554
Urea	1,849	1,800	2,389	2,337	2,518	3,190	3,194	1,623	2,457
TSP	1,226	833	2,380	875	2,212	1,220	1,429	502	1,247
DAP	205	75	58	248	497	965	138	40	275
MP	301	80	599	340	740	472	618	119	405
Zinc	111	-	120	83	53	270	114	16	92
Ammonia	-	-	-	98	-	17	-	-	36
Gypsum	103	-	2	37	409	311	63	-	93
NPKS	-	-	-	26	-	-	-	38	10
Calcium	6	-	87	19	4	94	48	-	33
Manure	221	29	318	362	145	427	991	173	372
Pesticides	866	908	865	418	624	1,335	1,119	223	760
Drought animal	369	445	23	32	716	58	208	90	195
Power tiller	4,253	4,580	5,033	4,927	3,810	4,133	4,376	4,010	4,575
Seeding machine	26	3	-	-	-	-	-	-	0
Equipment for applying fertilizer	-	3	-	-	-	-	-	-	0
Pesticide sprayer	48	59	37	19	39	40	90	33	43
Weeding machine	8	-	-	-	-	-	-	-	-
Harvesting machine	190	12	-	-	-	-	-	-	2
Family labor									
Land preparation									
Male	1,700	1,224	2,261	1,400	1,903	891	1,940	2,396	1,567
Female	3	-	100	25	-	-	543	-	98
Transplanting									
Male	2,844	3,065	1,898	2,208	1,606	1,420	3,795	2,038	2,408
Female	31	37	177	1	-	-	1,101	-	186
Fertilizer application									
Male	38	-	61	25	3	6	-	20	17
Female	5	-	6	2	32	-	60	-	13
Pesticide application									
Male	341	289	186	158	369	249	362	36	237
Female	-	-	-	1	-	-	-	-	0
Weeding									
Male	3,226	2,388	4,388	3,451	2,350	3,716	4,049	1,854	3,318
Female	61	88	205	57	129	57	1,293	-	263

(continued)

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| Input | Division | | | | | | | | |
	FTF zone	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
					(taka)				
Irrigation									
Male	414	226	71	477	665	293	1,258	24	487
Female	-	-	29	77	-	-	14	-	31
Harvesting									
Male	4,014	2,736	4,206	3,168	2,557	2,572	3,617	2,421	3,117
Female	205	19	212	127	-	124	1,051	81	238
Hired labor									
Land preparation									
Male	730	88	415	472	411	50	348	439	330
Female	6	2	31	22	-	-	-	-	11
Transplanting									
Male	2,719	2,840	7,423	4,182	3,619	2,129	2,864	1,149	3,701
Female	61	-	-	-	-	-	-	-	-
Fertilizer application									
Male	38	-	61	25	3	6	-	20	16
Female	18	-	-	-	-	-	-	-	-
Pesticide application									
Male	42	28	255	14	10	56	7	-	44
Female	-	-	-	-	-	-	-	-	-
Weeding									
Male	2,097	1,370	3,021	3,624	2,479	1,524	1,237	741	2,386
Female	15	-	-	19	-	953	482	-	180
Irrigation									
Male	219	-	18	-	-	32	52	-	13
Female	-	-	-	-	-	-	-	-	-
Harvesting									
Male	3,166	2,596	7,854	4,753	3,398	5,220	3,517	3,382	4,395
Female	14	32	-	-	-	-	88	-	18
Total cost	48,757	40,767	63,632	54,359	52,048	55,807	63,230	38,404	53,604

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: All seed costs are included as cash costs.

Table 4.46—Costs of inputs as percentages of full costs per hectare for local aman paddy cultivation

Region	Seed	Irrigation	Land rent	Fertilizer	Manure	Pesticide	Equipment	Family labor	Hired labor	Total
					(percent)					
FTF zone	9.0	1.2	25.4	7.7	0.5	1.8	10.0	26.2	18.3	100.0
Barisal	10.2	-	26.4	6.8	0.1	2.2	12.5	24.7	17.1	100.0
Chittagong	8.7	0.5	20.4	8.9	0.5	1.4	8.0	21.7	30.0	100.0
Dhaka	8.8	1.9	26.6	7.5	0.7	0.8	9.1	20.8	23.8	100.0
Khulna	7.6	3.3	29.0	12.4	0.3	1.2	8.8	18.1	19.3	100.0
Rajshahi	6.1	3.1	33.8	11.7	0.8	2.4	7.6	16.7	17.9	100.0
Rangpur	7.5	2.4	26.7	8.9	1.6	1.8	7.4	30.2	13.6	100.0
Sylhet	5.8	0.7	37.5	6.1	0.5	0.6	10.8	23.1	14.9	100.0
Bangladesh	8.2	1.8	27.2	8.7	0.7	1.4	9.0	22.4	20.6	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: Equipment include drought animal, power tiller and other agricultural machineries.

Table 4.47—Costs of inputs as percentages of cash costs per hectare for local aman paddy cultivation

Region	Seed	Irrigation	Fertilizer	Manure	Pesticide	Equipment	Hired labor	Total
				(percent)				
FTF zone	18.2	2.3	16.0	0.9	3.6	20.6	38.3	100.0
Barisal	20.8	-	14.0	0.1	4.6	25.6	34.9	100.0
Chittagong	15.0	0.9	15.3	0.9	2.3	13.8	51.8	100.0
Dhaka	16.5	3.6	14.2	1.3	1.5	17.3	45.7	100.0
Khulna	14.2	6.2	23.6	0.5	2.3	16.8	36.4	100.0
Rajshahi	12.3	6.2	23.7	1.5	4.8	15.3	36.1	100.0
Rangpur	17.5	5.5	20.6	3.6	4.1	17.2	31.5	100.0
Sylhet	14.8	1.9	15.5	1.1	1.5	27.3	37.9	100.0
Bangladesh	16.3	3.6	17.2	1.4	2.8	17.8	41.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: Equipment include drought animal, power tiller and other agricultural machineries.

Table 4.48—Total costs and profitability of local aman paddy cultivation

Region	Cash cost Per hectare	Total cost Per hectare	Cash cost Per ton	Total cost Per ton	Value of crop Per hectare	Value of crop Per ton	Net profit (full cost basis) Per Hectare	Net profit (full cost basis) Per ton	Gross profit (cash cost basis) Per Hectare	Gross profit (cash cost basis) Per ton
					(taka)					
FTF zone	23,609	48,757	12,269	25,816	38,131	17,172	(10,626)	(8,644)	14,523	4,903
Barisal	19,933	40,767	10,354	21,413	34,267	16,735	(6,500)	(4,678)	14,334	6,382
Chittagong	36,859	63,632	15,657	27,888	46,604	15,362	(17,028)	(12,525)	9,745	(295)
Dhaka	28,624	54,359	13,027	25,574	41,928	16,444	(12,431)	(9,131)	13,304	3,417
Khulna	27,529	52,048	14,110	27,219	35,308	16,559	(16,740)	(10,660)	7,779	2,449
Rajshahi	27,626	55,807	13,747	28,333	32,689	15,165	(23,118)	(13,168)	5,063	1,418
Rangpur	27,255	63,230	12,432	27,607	41,255	15,874	(21,975)	(11,733)	14,000	3,443
Sylhet	15,120	38,404	8,579	22,803	28,685	14,832	(9,718)	(7,971)	13,565	6,252
Bangladesh	27,035	53,604	12,750	25,735	38,872	16,106	(14,732)	(9,629)	11,836	3,356

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Notes: All seed costs are included as cash costs. Net profit = value of crop per hectare–total cost per hectare. Gross profit = value of crop per hectare–cash cost per hectare.

Table 4.49—Total production and marketed surplus rates for selected products: Feed the Future zone and divisions of rural Bangladesh

					Division				
	FTF Zone	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
Total production (kg/farmer)									
Rice	1,529	1,801	1,279	1,803	1,593	2,533	1,877	2,303	1,891
Wheat	439	78	646	405	487	623	748	120	591
Pulses	185	187	134	200	164	301	67	347	196
Potatoes	455	557	442	209	260	656		703	467
Non Leafy Vegetables	420	47	622	557	329	618	188	221	437
Leafy Vegetables	133	14	347	80	140	50	19	72	98
Fruits	313	108	455	223	345	200	237	148	257
Marketed surplus rates (percent): direct (sold product only)									
Rice	32	31	14	31	35	43	40	27	36
Wheat	44	0	48	53	47	55	85	0	59
Pulses	55	51	53	49	54	69	22	22	53
Potatoes	15	8	12	7	0	21	0	6	11
Non Leafy Vegetables	28	5	22	19	22	34	10	12	20
Leafy Vegetables	12	3	24	9	8	8	2	25	9
Fruits	14	7	9	9	15	8	5	7	9
Marketed surplus rates(percent): indirect (sold product paid for services)									
Rice	50	47	36	47	48	60	51	53	52
Wheat	56	0	65	63	62	70	91	0	72
Pulses	68	65	60	66	64	77	41	44	66
Potatoes	31	23	23	31	17	47	0	34	29
Non Leafy Vegetables	37	15	34	30	31	47	25	21	32
Leafy Vegetables	23	11	37	23	19	20	16	34	21
Fruits	27	24	24	24	30	28	26	22	26

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.50—Rice transaction characteristics: Feed the Future zone and divisions of rural Bangladesh

	Division								
	FTF Zone	**Barisal**	**Chittagong**	**Dhaka**	**Khulna**	**Rajshahi**	**Rangpur**	**Sylhet**	**Bangladesh**
Transaction Attributes									
Product sold (kg/farmer)	1,290	1,474	633	1,541	1,224	2,529	1,655	1,463	1,668
Total value (Tk)	21,340	23,791	9,997	26,315	23,170	41,134	25,524	22,916	27,751
Unit value (Tk/kg)	16.5	16.1	15.8	17.1	18.9	16.3	15.4	15.7	16.6
					(percent)				
Type of Buyer									
Village collector	26	23	37	30	30	20	33	37	29
Wholesaler	71	76	51	67	70	80	61	55	68
Other buyer	3	1	12	3	0	1	7	7	3
Payment Mode									
In cash	99	100	98	100	100	100	99	100	100
In kind	1	0	2	0	0	0	0	0	0
Other	0	0	0	0	0	0	1	0	0
Location									
Farm premises	35	33	40	50	34	48	80	82	53
Local retail market	47	39	54	42	50	27	15	16	34
Wholesale market	19	29	6	8	16	25	4	2	13
Transportation means									
Manual/mechanical	84	87	77	91	82	98	98	87	91
Motorized	1	1	2	0	1	0	1	1	0
Animal	0	0	0	2	1	0	0	0	1
Other	15	11	22	6	17	2	1	13	7
HH receives advance payment from buyer	*2*	*0*	*2*	*0*	*2*	*0*	*1*	*0*	*1*

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.51—Rice transaction characteristics by farm size groups: Rural Bangladesh

| | Farm size groups | | | | |
	Marginal	**Small**	**Medium**	**Large**	**Total**
Transaction Attributes					
Product sold (kg/farmer)	370	983	2,109	5,225	1,668
Total value (Tk)	6,153	16,313	35,660	86,274	27,751
Unit value (Tk/kg)	16.6	16.6	16.9	16.5	16.6
			(percent)		
Type of Buyer					
Village collector	34	27	29	26	29
Wholesaler	60	69	69	72	68
Other buyer	6	4	1	2	3
Payment Mode					
In cash	100	100	100	100	100
In kind	0	0	0	0	0
Other	0	0	0	0	0
Location					
Farm premises	52	53	54	53	53
Local retail market	36	36	34	28	34
Wholesale market	11	12	13	19	13
Transportation means					
Manual/mechanical	93	93	89	84	91
Motorized	0	0	1	2	0
Animal	0	1	1	2	1
Other	7	6	9	12	7
HH receives advance payment from buyer	1	1	1	0	1

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 4.52—Monthly rice equivalent paddy stock at farm level: Feed the Future zone and divisions of rural Bangladesh

Month	FTF Zone	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
				(thousand metric tons)					
Dec-10	874	316	392	1,037	639	771	541	264	3,961
Jan-11	799	308	343	705	608	492	359	206	3,021
Feb-11	650	243	281	533	491	335	246	167	2,296
Mar-11	587	202	249	389	423	241	196	145	1,845
Apr-11	1,015	192	401	1,101	817	392	255	222	3,382
May-11	1,455	198	812	3,047	1,018	1,424	1,102	633	8,234
Jun-11	1,240	178	694	2,456	691	969	941	514	6,442
Jul-11	1,033	160	596	1,966	554	658	730	449	5,113
Aug-11	996	213	489	1,531	521	527	502	370	4,152
Sep-11	851	162	434	1,198	464	382	447	273	3,360
Oct-11	744	119	368	939	407	266	342	234	2,675
Nov-11	876	99	440	1,181	759	1,175	533	250	4,438

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

TABLES FOR SECTION 5: ACCESS TO FOOD

Table 5.1—Distribution of per capita income: Feed the Future zone

Per capita expenditure group	Average per capita expenditure	Share of total expenditure in each group
	(taka/month)	(percent)
1 (poorest)	1,019	1.91
2	1,275	2.39
3	1,411	2.65
4	1,536	2.88
5	1,650	3.10
6	1,747	3.28
7	1,863	3.50
8	1,975	3.71
9	2,096	3.93
10	2,212	4.15
11	2,349	4.41
12	2,484	4.66
13	2,641	4.96
14	2,834	5.32
15	3,049	5.72
16	3,303	6.20
17	3,626	6.81
18	4,123	7.74
19	4,805	9.02
20 (richest)	7,283	13.67
All households	2,660	100.00

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.2—Distribution of per capita income: Rural Bangladesh

Per capita expenditure group	Average per capita expenditure	Share of total expenditure in each group
	(taka/month)	(percent)
1 (poorest)	1,015	1.85
2	1,275	2.32
3	1,440	2.62
4	1,566	2.85
5	1,671	3.04
6	1,781	3.24
7	1,893	3.45
8	2,016	3.67
9	2,140	3.89
10	2,268	4.12
11	2,412	4.39
12	2,566	4.66
13	2,734	4.97
14	2,916	5.32
15	3,137	5.70
16	3,386	6.16
17	3,749	6.82
18	4,263	7.75
19	5,062	9.20
20 (richest)	7,675	13.96
All households	2,692	100.00

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.3—Budget share of consumption items by income groups: Feed the Future zone

Item	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
Monthly per capita total expenditure (taka)	1,313	1,809	2,285	2,956	4,964	2,660
Monthly per capita food expenditure (taka)	827	1,127	1,384	1,780	2,694	1,559
Monthly per capita nonfood expenditure (taka)	486	682	902	1,177	2,270	1,100
Budget share of expenditures			(percent)			
Food	63.0	62.3	60.5	60.2	55.5	60.3
Fuel and lighting	9.7	8.4	7.8	6.9	5.6	7.7
Personal care	1.5	1.5	1.4	1.2	1.0	1.3
Cleaning materials	1.4	1.4	1.4	1.3	1.2	1.3
Transport and communication	3.5	4.0	4.6	5.3	6.1	4.7
Adult clothing	3.5	3.7	3.9	3.6	3.5	3.6
Children clothing	1.2	0.9	0.9	0.7	0.5	0.8
Other clothing	0.5	0.5	0.6	0.6	0.5	0.5
Footwear	0.6	0.6	0.7	0.7	0.7	0.6
Beddings	0.2	0.3	0.4	0.4	0.4	0.4
Other household expenses	0.1	0.1	0.1	0.3	0.3	0.2
Medical treatment for male	1.7	1.8	2.3	2.0	3.3	2.2
Medical treatment for female	1.8	2.2	2.6	2.5	3.3	2.5
Education for male	0.9	1.1	1.2	1.4	1.3	1.2
Education for female	1.0	0.9	0.9	1.0	0.9	1.0
Remittances sent	0.0	0.0	0.1	0.2	0.9	0.3
Gifts given	0.1	0.2	0.2	0.2	0.4	0.2
Kurbani/milad	0.2	0.6	0.7	1.0	1.9	0.9
Entertainment	0.1	0.1	0.3	0.2	0.3	0.2
Legal fees	0.1	0.3	0.5	0.4	0.8	0.4
Utensils	0.1	0.1	0.2	0.2	0.2	0.2
Furniture repair	0.0	0.0	0.0	0.0	0.0	0.0
Personal items (bag, watch etc.)	0.4	0.4	0.5	0.5	0.5	0.5
Lighting (bulb etc.)	0.0	0.0	0.0	0.0	0.0	0.0
House rent	5.8	5.6	5.4	5.7	6.6	5.8
Use value of household durables	1.9	2.3	2.4	3.0	3.6	2.7
Narcotics and tobacco	0.5	0.3	0.3	0.4	0.4	0.4
Miscellaneous	0.0	0.0	0.1	0.1	0.2	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.4—Budget share of consumption items by income groups: Rural Bangladesh

Item	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
Monthly per capita total expenditure (taka)	1,323	1,838	2,344	3,041	5,155	2,692
Monthly per capita food expenditure (taka)	825	1,121	1,395	1,766	2,662	1,531
Monthly per capita nonfood expenditure (taka)	498	718	950	1,275	2,493	1,162
Budget share of expenditures				(percent)		
Food	62.5	61.0	59.5	58.2	52.8	58.9
Fuel and lighting	10.2	9.0	8.0	7.0	5.8	8.0
Personal care	1.5	1.5	1.3	1.2	1.1	1.3
Cleaning materials	1.6	1.5	1.4	1.3	1.1	1.4
Transport and communication	3.5	4.1	5.2	5.3	6.2	4.8
Adult clothing	3.8	3.9	3.7	3.6	3.4	3.7
Children clothing	1.2	1.0	0.8	0.8	0.6	0.9
Other clothing	0.6	0.6	0.7	0.6	0.6	0.6
Footwear	0.6	0.6	0.6	0.6	0.7	0.6
Beddings	0.2	0.3	0.4	0.4	0.5	0.4
Other household expenses	0.1	0.1	0.1	0.2	0.2	0.1
Medical treatment for male	1.6	1.8	2.2	2.3	3.1	2.2
Medical treatment for female	1.6	1.9	1.9	2.6	3.2	2.2
Education for male	0.6	0.8	1.0	1.1	1.1	0.9
Education for female	0.7	0.8	0.9	0.9	1.0	0.9
Remittances sent	0.0	0.1	0.1	0.2	0.4	0.2
Gifts given	0.2	0.2	0.2	0.3	0.5	0.3
Kurbani/milad	0.3	0.8	1.1	1.8	3.1	1.4
Entertainment	0.1	0.2	0.3	0.4	0.5	0.3
Legal fees	0.1	0.3	0.4	0.4	0.8	0.4
Utensils	0.1	0.1	0.2	0.1	0.2	0.1
Furniture repair	0.0	0.0	0.0	0.0	0.0	0.0
Personal items (bag, watch etc.)	0.5	0.5	0.5	0.6	0.9	0.6
Lighting (bulb etc.)	0.0	0.0	0.1	0.1	0.1	0.1
House rent	5.4	5.4	5.3	5.6	6.2	5.6
Use value of household durables	1.9	2.5	2.9	3.3	4.8	3.1
Narcotics and tobacco	1.0	1.0	1.0	0.8	0.7	0.9
Miscellaneous	0.0	0.0	0.2	0.2	0.5	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.5—Budget share of consumption items by division: Rural Bangladesh

	Division							
Item	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
Monthly per capita total expenditure (taka)	2,606	3,090	2,842	2,691	2,515	1,989	2,952	2,692
Monthly per capita food expenditure (taka)	1,541	1,660	1,667	1,486	1,380	1,146	1,817	1,531
Monthly per capita nonfood expenditure (taka)	1,064	1,431	1,176	1,205	1,135	843	1,135	1,162
Budget share of expenditures				(percent)				
Food	60.8	56.3	60.4	57.6	57.1	59.1	63.6	58.9
Fuel and lighting	7.4	7.5	8.2	8.2	8.0	9.3	6.9	8.0
Personal care	1.3	1.3	1.2	1.5	1.3	1.6	1.3	1.3
Cleaning materials	1.2	1.3	1.3	1.5	1.4	1.7	1.3	1.4
Transport and communication	3.2	5.3	4.2	5.8	5.5	4.7	4.4	4.8
Adult clothing	3.2	3.3	3.5	4.3	3.8	4.2	3.5	3.7
Children clothing	1.0	1.0	0.9	0.9	0.6	1.0	0.9	0.9
Other clothing	0.6	0.8	0.7	0.7	0.6	0.6	0.2	0.6
Footwear	0.5	0.6	0.6	0.8	0.5	0.6	0.5	0.6
Beddings	0.2	0.5	0.3	0.4	0.4	0.4	0.3	0.4
Other household expenses	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1
Medical treatment for male	2.5	2.5	2.1	2.1	2.2	1.8	2.0	2.2
Medical treatment for female	2.6	2.7	2.2	2.4	2.2	1.5	2.2	2.2
Education for male	1.3	1.0	0.9	1.2	0.9	0.7	0.6	0.9
Education for female	1.1	1.1	0.8	0.9	1.0	0.5	0.7	0.9
Remittances sent	0.2	0.0	0.2	0.3	0.1	0.1	0.1	0.2
Gifts given	0.3	0.4	0.2	0.3	0.3	0.2	0.2	0.3
Kurbani/milad	1.0	2.2	1.3	0.9	1.6	1.1	0.8	1.4
Entertainment	0.1	0.3	0.2	0.4	0.5	0.1	0.2	0.3
Legal fees	0.5	0.4	0.4	0.3	0.4	0.3	0.4	0.4
Utensils	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1
Furniture repair	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Personal items (bag, watch etc.)	0.4	0.5	0.5	0.5	0.7	0.9	0.4	0.6
Lighting (bulb etc.)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1
House rent	7.8	6.2	5.3	5.3	5.5	5.3	4.8	5.6
Use value of household durables	2.2	3.5	2.8	3.2	3.3	3.0	2.9	3.1
Narcotics and tobacco	0.2	0.7	1.0	0.4	1.1	1.2	1.4	0.9
Miscellaneous	0.1	0.1	0.3	0.1	0.2	0.2	0.3	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.6—Food budget share of selected food items by income groups: Feed the Future zone

| Item | Per capita expenditure quintile | | | | | All |
	1 (lowest)	2	3	4	5 (highest)	
	(taka/person/day)					
Monthly per capita food expenditure (Tk)	827	1,127	1,384	1,780	2,694	1,559
Food budget share	(percent)					
Rice	46.64	39.22	35.13	29.32	22.54	34.60
Atta	1.48	1.39	1.35	1.44	1.30	1.39
Other cereal	0.22	0.30	0.22	0.25	0.53	0.30
Pulses	1.80	1.87	1.72	2.00	2.00	1.88
Oils	6.57	6.63	6.16	6.00	5.60	6.20
Oil seed	0.08	0.09	0.10	0.08	0.08	0.09
Vegetables	9.26	10.09	9.27	9.26	8.55	9.29
Potatoes	3.23	2.96	2.71	2.34	1.92	2.63
Leafy vegetables	1.79	1.55	1.64	1.58	1.39	1.59
Meats	1.86	4.20	7.35	9.11	12.94	7.08
Eggs	1.16	1.65	1.73	1.90	2.13	1.71
Milk and milk products	0.69	1.09	1.51	2.19	2.87	1.67
Fruits	1.71	2.50	3.06	4.53	6.01	3.56
Big fish	6.09	8.27	9.45	10.72	12.34	9.37
Small fish	3.20	3.74	3.39	3.56	3.82	3.54
Spices	4.66	4.39	4.08	4.03	4.00	4.23
Salt	0.62	0.54	0.48	0.44	0.36	0.49
Sugar and gur	1.35	1.57	1.78	1.95	1.94	1.72
Beverages	1.29	1.28	1.67	1.67	2.00	1.58
Betel leaf/nut	1.83	1.70	1.76	1.71	1.76	1.75
Other prepared foods	4.47	4.98	5.44	5.93	5.91	5.34
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.7—Food budget share by food groups and income groups: Rural Bangladesh

Item	1 (lowest)	2	3	4	5 (highest)	All
			Per capita expenditure quintile			
			(taka/person/day)			
Monthly per capita food expenditure (Tk)	825	1,121	1,395	1,766	2,662	1,531
Food budget share			(percent)			
Rice	47.8	39.7	34.5	28.7	21.8	34.9
Atta	1.2	1.5	1.5	1.3	1.3	1.4
Other cereal	0.1	0.2	0.2	0.3	0.4	0.2
Pulses	1.1	1.4	1.5	1.5	1.7	1.4
Oils	6.1	6.1	6.1	5.7	5.6	5.9
Oil seed	0.0	0.0	0.1	0.1	0.1	0.1
Vegetables	9.9	10.4	9.9	9.9	9.1	9.8
Potatoes	4.2	3.5	3.0	2.6	2.0	3.1
Leafy vegetables	1.8	1.7	1.5	1.3	1.2	1.5
Meats	1.7	3.1	5.9	8.4	11.2	5.9
Eggs	1.2	1.5	1.6	1.8	2.1	1.6
Milk and milk products	0.8	1.6	2.2	2.7	3.6	2.1
Fruits	1.2	2.0	3.0	4.4	6.7	3.4
Big fish	5.1	7.5	8.6	9.5	11.6	8.4
Small fish	3.3	3.4	3.4	3.8	3.7	3.5
Spices	4.4	4.3	4.2	4.0	3.8	4.2
Salt	0.6	0.5	0.5	0.5	0.4	0.5
Sugar and gur	1.0	1.5	1.7	2.2	2.4	1.7
Beverages	1.3	1.8	1.9	2.0	2.3	1.9
Betel leaf/nut	2.1	2.1	2.4	2.5	2.2	2.3
Other prepared foods	5.0	6.0	6.2	6.8	6.8	6.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.8—Food budget share by division: Rural Bangladesh

Item	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
				Division				
				(taka/person/day)				
Monthly per capita food expenditure	1,541	1,660	1,667	1,486	1,380	1,146	1,817	1,531
Food budget share				(percent)				
Rice	33.8	29.3	34.2	35.2	37.5	42.3	30.8	34.9
Atta	1.6	2.0	1.2	1.2	1.8	0.4	1.6	1.4
Other cereal	0.2	0.2	0.3	0.3	0.2	0.1	0.3	0.2
Pulses	2.6	1.5	1.7	1.5	0.9	0.8	1.5	1.4
Oils	5.1	6.1	6.0	7.2	6.0	5.4	4.5	5.9
Oil seed	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1
Vegetables	8.7	11.1	10.2	10.1	8.6	8.8	10.5	9.8
Potatoes	2.8	2.9	2.8	3.0	3.0	4.3	2.6	3.1
Leafy vegetables	2.2	1.8	1.4	1.2	1.1	2.0	1.4	1.5
Meats	4.2	7.5	5.6	6.6	5.7	5.6	4.6	5.9
Eggs	1.6	1.4	1.7	2.1	1.7	1.6	1.1	1.6
Milk	1.1	2.3	2.6	1.4	2.3	1.8	2.6	2.1
Fruits	3.3	5.1	3.4	3.5	2.7	2.0	3.7	3.4
Big fish	7.5	9.3	9.2	10.1	7.7	5.0	8.9	8.4
Small fish	4.5	3.5	3.7	3.1	2.3	3.4	5.8	3.5
Spices	4.6	3.8	4.4	3.7	3.8	4.5	4.4	4.2
Salt	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.5
Sugar/gur	1.9	1.5	1.8	1.7	2.0	1.3	2.0	1.7
Beverages	2.2	2.2	1.5	1.4	2.4	1.7	2.4	1.9
Betel leaf/nut	4.7	2.4	2.6	0.9	1.4	1.9	4.1	2.3
Other prepared foods	7.1	5.6	5.2	5.1	8.3	6.6	6.8	6.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.9—Labor force participation of household members aged 15 years and over by income groups: Feed the Future zone

Indicator	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
In the labor force						
Male	88.1	87.0	86.4	85.4	80.4	85.7
Female	64.3	61.8	60.6	61.2	57.5	61.3
All	75.3	73.9	73.3	72.7	68.6	73.0
Type of employment (percentage of the labor force)						
Agricultural wage labor	12.0	8.1	6.3	3.1	1.5	6.5
Nonagricultural wage labor	6.1	3.7	3.3	2.0	1.4	3.4
Salaried	1.5	2.3	3.1	4.0	6.5	3.3
Rickshaw/van pulling	3.5	2.4	2.2	1.6	0.3	2.1
Business/trade	4.1	5.5	8.4	7.8	12.0	7.3
Nonagricultural production	1.6	1.0	0.6	0.4	0.2	0.8
Livestock related work	-	0.1	0.2	0.4	0.3	0.2
Farming	64.4	71.8	71.0	74.9	73.2	70.9
Self-employed in other activities	6.1	4.8	4.7	5.2	4.2	5.0
Unemployed (looked for work)	0.9	0.3	0.4	0.5	0.4	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.10—Labor force participation of household members aged 15 years and over by income groups: Rural Bangladesh

Indicator	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
In the labor force						
Male	92.3	89.4	88.5	84.5	80.4	87.2
Female	64.9	62.0	61.3	58.1	53.6	60.2
All	77.6	74.8	74.2	70.6	66.2	72.9
Type of employment (percentage of the labor force)						
Agricultural wage labor	12.0	9.4	7.1	3.4	1.0	7.7
Nonagricultural wage labor	6.1	5.8	4.3	3.1	1.8	4.6
Salaried	1.5	2.9	3.0	4.4	5.8	3.7
Rickshaw/van pulling	3.5	2.5	2.3	0.8	0.6	2.2
Business/trade	4.1	6.8	7.1	10.8	11.6	7.9
Nonagricultural production	1.6	1.2	1.2	1.0	0.5	1.1
Livestock related work	-	0.1	0.1	0.2	0.3	0.2
Farming	64.4	64.3	67.6	69.4	71.7	65.9
Self-employed in other activities	6.1	6.9	6.9	6.1	6.3	6.3
Unemployed (looked for work)	0.9	0.3	0.5	0.8	0.5	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.11—Labor force participation of household members aged 15 years and over by division: Rural Bangladesh

Indicator	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
					(percent)			
In the labor force								
Male	82.2	80.8	87.8	87.4	91.2	91.3	87.4	87.2
Female	55.4	44.3	61.6	69.3	67.1	73.0	54.8	60.2
All	68.0	59.7	74.1	78.0	79.2	81.8	70.2	72.9
Type of employment (percentage of the labor force)								
Agricultural wage labor	12.0	5.2	6.8	6.6	8.6	13.2	7.1	7.7
Nonagricultural wage labor	6.1	5.7	4.4	4.1	3.3	3.7	7.1	4.6
Salaried	1.5	4.7	3.4	4.1	3.2	2.6	5.7	3.7
Rickshaw/van pulling	3.5	2.0	2.2	2.5	2.5	2.1	1.5	2.2
Business/trade	4.1	10.4	7.8	6.3	7.3	5.9	7.8	7.9
Nonagricultural production	1.6	1.3	0.5	1.5	2.1	0.3	1.1	1.1
Livestock related work	-	0.1	0.1	0.5	0.3	-	-	0.2
Farming	64.4	59.1	68.3	70.3	66.9	67.3	60.7	65.9
Self-employed in other activities	6.1	10.6	5.6	4.0	5.8	4.4	8.8	6.3
Unemployed (looked for work)	0.9	1.0	0.8	0.2	0.1	0.5	0.3	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.12— Private transfer and remittance received by income groups: Feed the Future zone

	Per capita expenditure quintile					
	1 (lowest)	2	3	4	5 (highest)	All
	(Tk per household)					
For all households						
Average annual domestic remittance	2,320	3,197	4,098	8,231	9,756	5,510
Average annual international remittance	764	3,131	5,887	7,533	16,757	6,796
Average annual total remittance	3,083	6,328	9,985	15,764	26,513	12,306
	(percentage of annual household expenditure)					
Domestic remittance	3.2	3.4	3.6	5.9	4.9	4.5
International remittance	1.1	3.3	5.1	5.4	8.4	5.5
Total remittance	4.3	6.7	8.7	11.3	13.3	10.0
For remittance receiving households						
Average annual domestic remittance	16,336	23,328	31,081	37,197	39,730	31,422
Average annual international remittance	49,348	106,583	183,187	124,120	148,371	135,908
Average annual total remittance	19,908	39,030	60,892	59,727	75,419	56,192
	(percentage of households)					
Transfers from inside Bangladesh and abroad	0.3	0.4	0.0	1.8	0.7	0.6
Transfers from inside Bangladesh	13.9	13.3	13.2	20.3	23.9	16.9
Transfers from abroad	1.3	2.5	3.2	4.3	10.6	4.4

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.13—Private transfer and remittance received by income groups: Rural Bangladesh

	Per capita expenditure quintile					
	1 (lowest)	2	3	4	5 (highest)	All
	(Tk per household)					
For all households						
Average annual domestic remittance	2,072	2,793	3,419	6,102	9,683	4,715
Average annual international remittance	842	3,705	7,553	12,823	42,559	12,994
Average annual total remittance	2,914	6,498	10,972	18,925	52,242	17,708
	(percentage of annual household expenditure)					
Domestic remittance	2.9	3.0	3.0	4.2	4.4	3.7
International remittance	1.2	4.0	6.5	8.7	19.2	10.2
Total remittance	4.1	6.9	9.5	12.9	23.6	13.8
For remittance receiving households						
Average annual domestic remittance	16,378	23,424	26,956	36,070	51,353	32,479
Average annual international remittance	63,145	82,329	106,981	105,891	170,580	134,034
Average annual total remittance	20,963	40,357	55,824	67,391	122,637	74,728
	(percentage of households)					
Transfers from inside Bangladesh and abroad	0.1	0.3	0.1	0.9	1.2	0.5
Transfers from inside Bangladesh	12.6	11.6	12.6	16.0	17.7	14.0
Transfers from abroad	1.3	4.2	7.0	11.2	23.7	9.2

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.14—Private transfer and remittance received by division: Rural Bangladesh

	Division							
	Barisal	**Chittagong**	**Dhaka**	**Khulna**	**Rajshahi**	**Rangpur**	**Sylhet**	**Bangladesh**
	(Tk per household)							
For all households								
Average annual domestic remittance	9,477	7,008	5,386	3,414	1,473	3,992	2,389	4,715
Average annual international remittance	5,274	38,535	10,349	5,481	4,943	3,260	19,150	12,994
Total annual remittance	14,751	45,543	15,736	8,896	6,416	7,252	21,539	17,708
	(percentage of annual household expenditure)							
Domestic remittance	7.6	4.6	4.2	2.8	1.2	4.4	1.4	3.7
International remittance	4.3	25.1	8.0	4.5	4.1	3.6	11.5	10.2
Total remittance	11.9	29.7	12.1	7.4	5.3	8.0	12.9	13.8
For remittance receiving households								
Average annual domestic remittance	29,929	36,563	32,886	32,925	20,338	35,536	28,198	32,479
Average annual international remittance	116,579	138,037	135,399	148,000	130,318	221,250	100,640	134,034
Average annual total remittance	41,861	100,049	66,297	65,805	58,144	57,907	78,720	74,728
	(percentage of households)							
Transfers from inside Bangladesh and abroad	1.0	1.6	0.3	0.6	0.0	0.2	0.1	0.5
Transfers from inside Bangladesh	30.7	17.6	16.1	9.8	7.2	11.1	8.3	14.0
Transfers from abroad	3.6	26.4	7.4	3.2	3.8	1.3	18.9	9.2

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.15—Nonagricultural enterprise by division and Feed the Future zone

				Division					
	FTF zone	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
					(percent)				
Participation in nonagricultural Enterprises									
Share of HHs having a nonagricultural enterprise	15	24	27	31	34	44	30	35	33
Having a manufacturing enterprise	2	4	3	4	4	7	5	5	5
Having a services enterprise	4	6	8	7	12	14	7	9	9
Having a trade enterprise	10	16	17	21	22	30	19	23	21
Distribution of nonagricultural Enterprises									
Share of enterprises in Manufacturing	13	15	10	13	11	13	16	13	13
Services	27	24	29	20	30	26	23	25	25
Trade	61	61	61	66	59	61	61	62	62
Characteristics of Manufacture Businesses									
Profit in the last 12 months (Tk)	57,895	81,541	41,687	58,945	42,624	28,439	38,664	35,536	44,499
					(percent)				
Location of operation is at home	22	35	57	38	32	54	25	36	41
Fixed location outside from home	51	47	30	33	48	26	50	31	36
No fixed location	27	18	13	29	20	20	25	33	23
Months of operation per year	10.6	10.5	10.1	9.9	10.0	8.3	10.3	9.8	9.6
Share of profits kept by HH	98	96	96	98	96	100	100	96	98
Sale location is at home	22	35	50	28	32	46	43	36	38
Village market (within own village)	28	35	27	19	24	13	21	18	20
Village market (outside own village)	32	12	20	33	32	35	21	33	29
Town market	11	18	3	18	8	2	14	3	10
Other place	7	0	0	3	4	4	0	10	3
Share of businesses registered	14	12	7	9	16	7	4	8	8
Employees hired over the past year	0.6	0.3	0.2	0.8	0.8	0.3	0.6	0.4	0.5
Characteristics of Services Businesses									
Profit in the last 12 months (Tk)	44,530	44,030	48,302	51,585	45,514	43,832	35,951	54,015	46,302
					(percent)				
Location of operation is at home	7	11	4	5	6	10	7	8	7
Fixed location outside from home	21	25	21	35	20	32	34	35	29

(continued)

	Division								
	FTF zone	**Barisal**	**Chittagong**	**Dhaka**	**Khulna**	**Rajshahi**	**Rangpur**	**Sylhet**	**Bangladesh**
	(percent)								
No fixed location	72	64	75	60	74	58	59	57	64
Months of operation per year	10.8	11.1	10.7	9.4	10.6	9.3	9.6	10.5	10.0
Share of profits kept by HH	98	100	95	96	95	97	100	100	97
Sale location is at home	9	11	4	11	10	13	10	7	10
Village market (within own village)	18	18	21	19	23	28	17	22	22
Village market (outside own village)	44	39	52	45	44	26	46	36	41
Town market	24	21	21	23	20	27	17	9	22
Other place	5	11	1	3	3	6	10	26	6
Share of businesses registered	15	14	45	9	16	17	7	26	19
Employees hired over the past year	0.2	0.2	0.1	0.3	0.1	0.7	0.1	0.3	0.3
Characteristics of Trade Businesses									
Profit in the last 12 months (Tk)	50,563	52,649	60,712	57,260	51,600	46,998	39,672	53,141	52,142
	(percent)								
Location of operation is at home	15	17	19	13	16	23	13	16	17
Fixed location outside from home	60	66	57	63	58	52	56	51	58
No fixed location	25	17	24	25	26	25	31	33	26
Months of operation per year	10.3	10.6	10.2	9.8	10.6	9.5	10.7	10.1	10.1
Share of profits kept by HH	98	99	95	97	95	99	100	97	97
Sale location is at home	16	17	19	12	18	18	13	17	16
Village market (within own village)	34	52	37	36	29	34	38	24	35
Village market (outside own village)	34	23	30	34	39	35	31	36	34
Town market	13	8	13	17	11	13	15	12	14
Other place	3	0	1	1	3	0	4	11	2
Share of businesses registered	10	8	11	9	10	12	5	11	10
Employees hired over the past year	0.1	0.0	0.4	0.2	0.1	0.2	0.1	0.2	0.2

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.16—Nonagricultural enterprises by income groups: Feed the Future zone

	Per capita expenditure quintile					Total
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
Participation in Nonagricultural Enterprises						
Share of HHs having a nonagricultural enterprise	11	14	18	17	15	15
Having a manufacturing enterprise	2	3	2	3	2	2
Having a services enterprise	5	5	6	4	2	4
Having a trade enterprise	4	8	14	12	11	10
Distribution of Nonagricultural Enterprises						
Share of enterprises in Manufacturing	15	15	7	13	15	13
Services	47	33	28	21	11	27
Trade	38	52	65	65	74	61
Characteristics of Manufacture Businesses						
Profit in the last 12 months (Tk)	48,397	61,307	33,142	56,139	79,473	57,895
	(percent)					
Location of operation is at home	14	30	42	28	0	22
Fixed location outside from home	43	59	58	35	61	51
No fixed location	43	10	0	38	39	27
Months of operation per year	11.7	10.3	10.7	11.9	8.5	10.6
Share of profits kept by HH	100	92	100	100	100	98
Sale location is at home	14	30	42	28	0	22
Village market (within own village)	14	9	42	26	50	28
Village market (outside own village)	43	51	16	38	10	32
Town market	14	10	0	8	19	11
Other place	14	0	0	0	21	7
Share of businesses registered	0	30	0	0	29	14
Number of employees over the past 12 months	0.3	0.2	0.5	0.4	1.3	0.6
Characteristics of Services Businesses						
Profit in the last 12 months (Tk)	34,498	40,223	41,719	47,758	87,860	44,530
	(percent)					
Location of operation is at home	9	12	0	5	13	7
Fixed location outside from home	13	34	23	0	40	21
No fixed location	78	53	77	95	47	72
Months of operation per year	11.3	10.5	10.5	10.8	10.7	10.8
Share of profits kept by HH	98	99	96	100	100	98
Sale location is at home	5	13	8	10	13	9
Village market (within own village)	14	30	20	0	24	18
Village market (outside own village)	40	45	47	53	24	44
Town market	36	12	18	37	13	24
Other place	5	0	7	0	24	5
Share of businesses registered	9	5	19	18	36	15
Number of employees over the past 12 months	0.1	0.0	0.3	0.0	0.5	0.2
Characteristics of Trade Businesses						
Profit in the last 12 months (Tk)	38,356	29,361	41,348	56,836	74,498	50,563
	(percent)					
Location of operation is at home	16	23	15	15	6	15
Fixed location outside from home	50	63	55	55	73	60
No fixed location	34	13	30	29	22	25
Months of operation per year	10.4	10.4	9.9	10.6	10.5	10.3
Share of profits kept by HH	100	99	96	100	99	98
Sale location is at home	21	29	14	17	6	16
Village market (within own village)	33	26	32	35	41	34
Village market (outside own village)	23	25	43	30	39	34
Town market	23	14	8	13	14	13
Other place	0	6	3	4	0	3
Share of businesses registered	6	3	5	12	22	10
Number of employees over the past 12 months	0.1	0.0	0.0	0.1	0.3	0.1

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.17—Nonagricultural enterprises by income groups: Rural Bangladesh

	Per capita expenditure quintile					
	1 (lowest)	2	3	4	5 (highest)	Total
	(percent)					
Participation in Nonagricultural Enterprises						
Share of HHs having a nonagricultural enterprise	26	31	34	36	36	33
Having a manufacturing enterprise	3	5	4	5	6	5
Having a services enterprise	10	8	11	8	7	9
Having a trade enterprise	14	21	22	25	25	21
Distribution of Nonagricultural Enterprises						
Share of enterprises in Manufacturing	11	14	11	14	15	13
Services	36	23	29	20	19	25
Trade	52	63	60	67	67	62
Characteristics of Manufacture Businesses						
Profit in the last 12 months (Tk)	30,966	41,366	38,262	38,527	69,739	45,969
	(percent)					
Location of operation is at home	31	40	51	45	34	41
Fixed location outside from home	34	36	38	29	39	35
No fixed location	34	25	11	26	27	24
Months of operation per year	10.1	9.3	9.5	10.2	9.7	9.7
Share of profits kept by HH	96	94	100	100	97	98
Sale location is at home	31	30	40	44	37	37
Village market (within own village)	23	23	17	16	24	20
Village market (outside own village)	23	34	36	34	19	29
Town market	14	11	6	5	13	10
Other place	9	2	0	2	6	3
Share of businesses registered	3	13	4	2	16	8
Number of employees over the past 12 months	0.2	0.2	0.4	0.3	1.2	0.5
Characteristics of Services Businesses						
Profit in the last 12 months (Tk)	34,546	36,773	41,434	51,802	79,971	47,506
	(percent)					
Location of operation is at home	4	8	6	8	9	7
Fixed location outside from home	21	28	27	40	36	30
No fixed location	75	64	67	52	55	64
Months of operation per year	10.6	9.9	9.9	9.8	9.9	10.0
Share of profits kept by HH	97	98	97	98	96	97
Sale location is at home	5	10	13	8	9	9
Village market (within own village)	18	22	26	18	24	22
Village market (outside own village)	46	34	36	53	37	41
Town market	21	29	17	18	18	20
Other place	10	4	8	2	11	7
Share of businesses registered	14	16	18	20	36	20
Number of employees over the past 12 months	0.0	0.1	0.2	0.2	1.0	0.3
Characteristics of Trade Businesses						
Profit in the last 12 months (Tk)	31,394	35,433	44,700	54,217	85,080	53,128
	(percent)					
Location of operation is at home	21	18	17	15	11	16
Fixed location outside from home	43	52	54	60	71	58
No fixed location	36	29	29	24	17	26
Months of operation per year	9.7	10.0	10.0	10.2	10.2	10.1
Share of profits kept by HH	98	98	97	98	96	97
Sale location is at home	21	18	17	14	11	16
Village market (within own village)	32	32	37	35	34	34
Village market (outside own village)	30	33	31	35	36	33
Town market	13	15	10	14	17	14
Other place	4	2	4	2	2	3
Share of businesses registered	4	3	4	10	22	10
Number of employees over the past 12 months	0.2	0.1	0.1	0.1	0.4	0.2

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.18—Loan size and source of loans by income groups: Feed the Future zone

Loan size and source of loans	Per capita expenditure quintile					Total
	1 (lowest)	2	3	4	5 (highest)	
Average loan size (taka per household)	22,716	31,671	39,775	42,048	72,190	41,232
Source of loan	(percentage of total number of loans)					
Relative/friend	25.21	21.96	19.04	18.03	23.88	21.53
Bangladesh Krishi Bank	4.29	6.07	7.40	10.99	11.26	7.94
Other banks	11.02	11.73	9.85	15.60	16.69	12.86
Other financial institutions	0.51	0.33	1.19	1.30	0.79	0.83
NGO	38.26	36.59	43.41	31.76	28.15	35.90
Employer	-	-	0.17	-	0.20	0.08
Trader	5.63	7.35	6.11	7.52	5.25	6.39
Money lender	3.69	4.24	3.98	4.06	3.57	3.92
Shamity (savings society)	6.42	8.92	5.09	3.68	3.07	5.49
Other	4.97	2.81	3.76	7.06	7.15	5.07
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.19—Loan size and source of loans by income groups: Rural Bangladesh

Loan size and source of loans	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
Average loan size (taka per household)	22,010	32,364	39,566	63,045	113,826	52,216
Source of loan	(percentage of total number of loans)					
Relative/friend	25.4	24.2	26.8	24.8	30.1	26.1
Bangladesh Krishi Bank	2.7	4.1	4.7	6.1	10.3	5.4
Rajshashi Krishi bank	0.2	0.5	0.6	0.4	1.1	0.5
Other banks	11.8	10.7	14.6	13.4	14.4	12.9
Other financial institutions	0.3	0.2	0.4	0.3	0.5	0.4
NGO	36.9	39.4	35.9	32.8	22.9	33.9
Employer	0.0	0.0	0.1	0.1	0.3	0.1
Trader	4.3	3.9	4.1	4.6	4.4	4.3
Money lender	9.1	6.9	5.4	4.8	3.9	6.1
Shamity (savings society)	4.2	5.2	2.8	4.8	2.2	3.9
Other	5.0	4.7	4.6	8.0	9.9	6.3
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.20—Use of loans by income groups: Feed the Future zone

Use of loans	1 (lowest)	2	3	4	5 (highest)	All
			Per capita expenditure quintile			
	(percentage of total number of loans)					
Productive use						
Agricultural enterprise	14.89	12.90	17.94	20.27	14.36	15.99
Business enterprise	8.10	12.95	15.79	14.60	21.99	14.63
Purchase of productive assets for purposes other than agriculture	3.31	3.98	4.01	2.46	2.32	3.25
Purchase of cow/goat	6.53	5.03	5.09	4.46	4.00	5.03
Purchase of land	3.02	1.94	4.32	3.98	5.72	3.77
For lease of land used for purposes other than agriculture	0.40	0.70	0.64	0.44	0.14	0.47
Lending at higher interest	0.00	0.37	0.00	0.00	0.34	0.14
Consumption use						
Meet household consumption needs	27.15	27.77	16.16	16.75	16.19	20.82
Medical treatment	9.29	8.41	7.77	6.75	8.47	8.12
Improvement of housing	6.18	5.86	7.09	10.53	8.12	7.52
Marriage expenses	3.23	2.98	2.56	3.14	1.31	2.66
Dowry	1.31	0.79	0.35	0.51	0.00	0.59
Educational expenses	1.06	1.31	2.13	2.90	4.33	2.31
Funeral	0.00	0.10	0.35	0.08	0.00	0.11
To go abroad	0.79	1.70	2.82	3.24	4.41	2.57
Other use						
Repayment of another loan	9.36	7.50	7.62	4.95	2.62	6.48
Other	5.39	5.71	5.37	4.94	6.27	5.53
Total	100.00	100.00	100.00	100.00	100.60	100.00

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.21—Use of loans by income groups: Rural Bangladesh

| Use of loans | Per capita expenditure quintile | | | | | All |
	1 (lowest)	2	3	4	5 (highest)	
	(percentage of total number of loans)					
Productive use						
Agricultural enterprise	10.90	16.99	16.06	17.92	15.79	15.52
Business enterprise	8.01	13.38	16.49	19.25	21.98	15.62
Purchase of productive assets for purposes other than agriculture	1.79	2.17	2.69	1.29	0.83	1.79
Purchase of cow/goat	5.96	3.92	4.64	4.31	2.69	4.35
Purchase of land	1.99	2.00	3.52	2.86	4.83	2.99
For lease of land used for purposes other than agriculture	0.31	0.36	0.74	0.11	0.07	0.33
Lending at higher interest	0.19	0.16	0.28	0.00	0.00	0.13
Consumption use						
Meet household consumption needs	34.39	23.51	19.88	16.59	13.27	21.79
Medical treatment	8.62	7.66	6.31	7.01	7.51	7.41
Improvement of housing	6.68	7.73	6.46	7.80	9.68	7.60
Marriage expenses	2.24	2.09	3.19	3.35	3.72	2.89
Dowry	1.67	1.75	1.33	0.59	0.27	1.15
Educational expenses	0.71	0.58	1.18	2.05	3.03	1.46
Funeral	0.32	0.26	0.12	0.03	0.00	0.15
To go abroad	1.33	2.61	4.05	5.82	6.01	3.89
Other use						
Repayment of another loan	9.67	9.45	7.67	5.25	3.54	7.24
Other	5.15	5.39	5.38	5.75	6.77	5.66
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.22—Interest rates by loan source: Feed the Future zone

| Loan source | Per capita expenditure quintile | | | | | |
	1 (lowest)	2	3	4	5 (highest)	All
	(percent/year)					
Relative/friend/neighbours	9.92	8.31	7.20	10.13	4.11	7.94
Bangladesh Krishi Bank	10.77	11.20	10.50	11.80	10.50	11.00
Other bank	11.90	13.00	13.60	13.00	12.10	12.70
Other financial institutions	14.55	10.00	15.00	10.00	11.46	12.34
NGO	14.08	14.22	14.13	13.89	13.85	14.05
Employer			5.00		7.00	5.99
Shop / dealer / trader	0.00	0.00	0.97	0.00	0.94	0.38
Money lender	39.64	49.69	49.87	62.93	49.22	49.75
Shamity (other than NGO)	14.24	13.52	12.19	15.77	11.16	13.37
Others	8.37	2.68	1.67	4.81	0.81	4.18
Total	12.62	13.15	12.38	12.66	10.83	12.35

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.23—Interest rates by loan source and income groups: Rural Bangladesh

| Loan source | Per capita expenditure quintile | | | | | |
	1 (lowest)	2	3	4	5 (highest)	All
	(percent/year)					
Relative/friend/neighbours	9.25	12.25	8.75	7.27	4.90	8.41
Bangladesh Krishi bank	10.59	12.10	11.50	11.00	11.90	11.20
Rajshahi Krishi bank	10.00	8.69	12.00	12.60	12.01	11.06
Other bank	12.60	13.30	13.20	13.10	13.00	13.10
Other financial institutions	15.83	11.74	12.42	8.44	11.00	12.00
NGO	14.96	14.15	14.61	14.15	14.01	14.41
Employer	-	-	15.00	18.00	11.10	13.77
Shop /dealer /trader	0.02	0.12	0.86	1.09	0.87	0.62
Money lender	71.08	65.78	65.77	56.48	46.60	63.40
Shamity (other than NGO)	16.01	17.99	15.59	22.96	24.02	19.23
Others	9.52	6.39	10.52	8.42	6.01	8.38
Total	17.73	16.67	14.59	13.19	11.38	14.78

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.24—Savings by income groups: Feed the Future zone

	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
Savings indicator						
Total savings (Tk/year)	2,914	9,319	9,820	15,891	32,763	14,109
Percentage of households with any savings	50	61	66	65	65	61
Place of savings by income (percentage of total savings amount)						
At home	2.7	3.0	3.0	6.7	5.8	4.3
NGO	53.1	44.1	45.8	35.2	24.0	39.8
Shamity (other than NGO)	9.2	11.6	8.0	4.4	5.6	7.7
Bank	13.7	14.5	14.7	23.8	32.8	20.2
Shop	0.0	0.0	0.0	0.0	0.4	0.1
Post office / government institution	0.0	0.2	0.5	0.7	2.0	0.7
Employer's provident fund	0.5	0.1	0.7	1.7	1.2	0.9
Insurance company	10.6	15.3	12.3	15.2	17.0	14.2
Relative / friend / neighbor	3.2	2.8	4.4	2.9	2.6	3.2
Savings collector	0.4	0.4	0.0	0.0	0.0	0.2
Other	6.4	8.1	10.6	9.4	8.6	8.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.25—Savings by income groups: Rural Bangladesh

	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
Savings indicator						
Total savings (Tk/year)	3,807	7,110	10,260	17,631	40,218	15,355
Percentage of households with any savings	52	59	62	63	63	59
Place of savings by income (percentage of total savings amount)						
At home	1.8	2.4	2.6	2.5	2.8	2.4
NGO	49.9	45.0	41.5	33.8	21.7	38.2
Shamity (other than NGO)	9.2	7.8	6.8	7.1	4.1	7.0
Bank	16.1	13.2	17.7	23.3	32.3	20.6
Shop	0.1	0.0	0.0	0.1	0.4	0.1
Post office / government institution	0.2	0.3	0.9	0.6	1.3	0.7
Employer's provident fund	0.0	0.3	0.1	0.7	0.5	0.3
Insurance company	7.9	13.7	12.8	12.7	19.8	13.5
Relative / friend / neighbor	3.9	3.8	4.4	4.0	4.2	4.1
Savings collector	0.2	0.4	0.0	0.1	0.2	0.2
Other	10.7	13.2	13.2	15.0	12.7	13.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.26—Planned use of savings by income groups: Feed the Future zone

Use of savings	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
To buy household goods	4.8	5.7	4.5	5.2	2.4	4.5
To buy agricultural implements	2.8	3.1	2.2	2.3	2.8	2.7
To buy productive assets (other than agriculture)	3.7	4.0	1.1	1.8	1.3	2.4
To start / help business	4.1	7.3	4.2	2.0	8.6	5.2
To buy land / house	4.4	3.3	2.6	7.7	2.4	4.1
For education / training	0.8	2.1	1.6	1.5	2.8	1.8
For marriage / dowry	4.4	3.9	3.6	4.0	3.9	4.0
To build / repair house	2.5	3.6	4.4	4.4	2.1	3.4
To get loan	14.2	16.2	13.7	11.7	5.1	12.2
To lend to others	0.8	1.3	0.6	0.8	0.0	0.7
To prepare for difficult times/danger	28.8	19.1	29.6	25.4	28.5	26.3
To send someone abroad for a job	0.6	0.0	0.0	1.0	0.6	0.4
For the future of children	13.7	16.1	14.7	21.1	23.2	17.7
Medical or other emergency	0.4	0.4	0.5	0.4	1.2	0.6
Don't know/no special reason	9.9	8.9	11.5	8.7	12.2	10.2
Others	4.1	5.0	4.8	1.8	2.9	3.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.27—Planned use of savings by income groups: Rural Bangladesh

Use of savings	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
To buy household goods	1.8	1.9	1.0	1.6	1.1	1.5
To buy agricultural implements	2.4	1.9	1.5	2.2	2.7	2.1
To buy productive assets (other than agriculture)	1.5	2.7	1.1	1.3	1.3	1.4
To start / help business	1.8	4.1	3.7	4.2	6.2	4.1
To buy land / house	2.4	3.6	2.9	5.0	2.4	3.3
For education / training	0.4	0.9	0.6	1.4	0.8	0.8
For marriage / dowry	4.0	3.3	2.6	3.5	2.0	3.1
To build / repair house	1.8	2.0	1.8	2.5	1.4	1.9
To get loan	18.2	18.1	15.5	11.5	6.3	13.8
To lend to others	0.3	1.2	0.5	0.5	0.8	0.7
To prepare for difficult times/danger	39.3	33.7	35.8	33.3	34.4	35.3
To send someone abroad for a job	0.3	0.0	0.1	0.7	1.3	0.5
For the future of children	16.9	18.2	21.1	21.6	25.2	20.7
Medical or other emergency	0.2	0.2	0.5	0.8	0.6	0.4
Don't know/no special reason	6.1	6.7	7.8	6.1	8.8	7.1
Other	2.7	2.5	3.3	3.8	4.6	3.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.28—Participation in selected safety net programs by income groups: Feed the Future zone

Form of assistance	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
Primary education stipend program	35.1	29.7	29.9	18.2	9.8	24.6
School feeding program	6.5	5.7	5.0	2.9	1.4	4.3
Stipend for secondary education female students	6.0	5.5	8.6	6.1	5.0	6.3
Stipend for poor boys in secondary school	0.4	0.9	0.7	0.5	0.7	0.7
Old age allowance	8.1	6.3	5.5	3.9	4.8	5.7
Allowances for widowed, deserted and destitute women	3.4	2.2	0.9	1.3	2.2	2.0
Gratuitous Relief (GR)	8.7	5.7	5.6	3.7	1.7	5.1
General relief activities	5.3	3.6	3.3	2.6	2.1	3.4
Open Market Sales (OMS)	8.7	5.5	3.6	3.4	1.4	4.5
Vulnerable Group Development (VGD)	5.8	2.7	1.2	2.5	0.9	2.6
Vulnerable Group Feeding (VGF)	6.8	4.4	3.6	2.6	1.2	3.7
Test Relief (TR)	2.9	2.0	1.8	0.7	0.5	1.6
Employment Generation Program for the Poorest (EGPP)	1.7	1.0	1.0	0.3	0.0	0.8

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.29—Participation in selected safety net programs by income groups: Rural Bangladesh

Form of assistance	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
Primary education stipend program	32.9	27.2	24.5	18.0	9.3	22.7
School feeding program	4.0	2.5	1.7	0.8	0.6	2.0
Stipend for secondary education female students	4.2	4.8	6.7	5.8	4.1	5.1
Stipend for poor boys in secondary school	0.5	0.3	0.4	0.2	0.5	0.4
Old age allowance	5.8	5.5	5.1	4.4	2.0	4.6
Allowances for widowed, deserted and destitute women	2.0	1.7	1.5	1.3	0.6	1.5
Gratuitous Relief (GR)	6.4	5.7	5.6	3.2	0.9	4.4
General relief activities	3.9	2.6	2.6	2.7	0.8	2.6
Open Market Sales (OMS)	3.9	2.6	2.9	1.6	0.4	2.3
Vulnerable Group Development (VGD)	4.0	2.6	1.9	2.3	0.7	2.3
Vulnerable Group Feeding (VGF)	11.1	7.4	5.9	4.8	2.3	6.4
Test Relief (TR)	1.6	1.3	0.8	0.3	0.0	0.8
Employment Generation Program for the Poorest (EGPP)	2.2	1.1	1.0	0.3	0.1	1.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.30—Distribution of total safety net participants by income groups: Rural Bangladesh

| Form of assistance | Per capita expenditure quintile | | | | | All |
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
Primary education stipend program	30.7	24.4	21.6	15.6	7.7	100.0
School feeding program	43.2	25.7	17.5	8.0	5.6	100.0
Stipend for secondary education female students	17.5	19.0	26.2	22.0	15.3	100.0
Stipend for poor boys in secondary school	26.1	17.5	21.2	11.1	24.1	100.0
Old age allowance	26.7	24.4	22.3	18.5	8.0	100.0
Allowances for widowed, deserted and destitute women	29.6	24.4	20.1	17.7	8.2	100.0
Gratuitous Relief (GR)	30.5	26.3	25.0	14.3	3.9	100.0
General relief activities	32.6	20.7	20.0	20.8	5.8	100.0
Open Market Sales (OMS)	35.4	23.1	24.9	13.4	3.2	100.0
Vulnerable Group Development (VGD)	36.5	22.7	15.9	19.5	5.4	100.0
Vulnerable Group Feeding (VGF)	36.7	23.6	18.3	14.5	6.9	100.0
Test Relief (TR)	42.1	32.1	19.5	6.3	0.0	100.0
Employment Generation Program for the Poorest (EGPP)	48.5	22.5	21.2	6.1	1.7	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.31—Incidence of shocks in the last 5 years by income groups: Feed the Future zone

	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent of households)					
Death of main earner	1.0	1.5	1.0	1.3	2.2	1.4
Death of other than main earner in the family	1.4	1.0	0.7	2.2	0.5	1.2
Loss of income due to illness or injury of household member	5.8	5.3	6.3	4.5	6.5	5.7
Medical expenses due to illness or injury	26.1	21.2	27.6	19.9	25.3	24.0
Loss of a regular job of a household member	0.5	0.3	0.5	0.0	1.2	0.5
Lost home due to river erosion	1.2	1.4	0.7	1.4	0.7	1.1
Eviction from previous residence	0.2	0.2	0.2	0.7	0.0	0.3
Divorce or abandonment	1.0	0.5	0.3	0.3	0.3	0.5
Major loss of crops due to floods	3.8	3.0	3.1	6.0	3.4	3.8
Major loss of crops due to other reasons (drought, storms, pests, disease, etc.)	1.8	2.0	4.1	4.5	1.8	2.8
Loss of livestock due to floods	0.5	0.5	0.7	0.5	0.3	0.5
Loss of livestock due to death	3.5	4.7	4.8	4.7	3.9	4.3
Loss of livestock due to theft	0.5	0.2	0.5	0.3	0.8	0.4
Loss of productive assets due to floods	1.6	2.4	2.2	1.6	2.1	2.0
Loss of productive assets due to other reasons (storm/cyclone, river erosion, theft, fire, etc.)	11.3	10.4	11.9	10.1	11.8	11.1
Loss or destruction of other consumption assets due to floods	3.1	3.3	1.8	3.6	2.2	2.8
Loss of consumption assets due to factors other than floods	1.0	0.9	0.8	0.3	0.2	0.6
Dowry payment	1.8	2.0	1.7	0.8	0.5	1.4
Other costs of wedding	2.3	2.3	3.9	2.5	2.3	2.7
Division of father's property	0.7	0.0	0.5	0.0	0.2	0.3
Failure or bankruptcy of business	0.8	1.5	1.2	1.5	1.7	1.3
Extortion by *mastans* (thugs)	1.0	0.5	0.4	0.0	0.5	0.5
Household member arrested by police	0.0	0.0	0.3	0.5	0.3	0.2
Paid a big bribe	0.3	0.7	0.4	0.5	1.0	0.6
Cost of court case	1.0	1.2	3.6	2.7	3.1	2.3
Losses due to court case	0.5	1.8	2.8	3.4	3.6	2.4
Reparations for victim of crime committed by household member	0.3	0.0	0.0	0.5	1.5	0.4
Long duration *hartals*/strikes/political unrest	0.0	0.3	0.0	0.0	0.0	0.1
Cut-off or decrease of regular remittance to household	0.0	0.0	0.3	0.0	0.7	0.2
Increase in food prices	3.6	4.3	5.6	4.2	4.7	4.5
Increase in prices of inputs	0.4	0.0	0.0	0.3	0.0	0.1
Others	4.4	2.4	2.4	5.4	3.9	3.7

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.32—Incidence of shocks in the last 5 years by income groups: Rural Bangladesh

	Per capita expenditure quintile					
	1 (lowest)	2	3	4	5 (highest)	All
	(percent of households)					
Death of main earner	1.9	2.1	1.2	1.4	1.4	1.6
Death of other than main earner in the family	0.9	1.5	0.8	1.0	1.1	1.1
Loss of income due to illness or injury of household member	4.2	3.9	4.4	3.4	3.4	3.8
Medical expenses due to illness or injury	21.9	21.4	21.5	21.7	22.7	21.8
Loss of a regular job of a household member	0.4	0.4	0.6	0.2	0.9	0.5
Lost home due to river erosion	2.0	0.6	0.6	0.0	0.4	0.7
Eviction from previous residence	0.4	0.0	0.0	0.3	0.2	0.2
Divorce or abandonment	0.4	0.3	0.3	0.3	0.6	0.4
Major loss of crops due to floods	2.2	2.0	2.6	2.9	2.8	2.5
Major loss of crops due to other reasons (drought, storms, pests, disease, etc.)	2.5	2.1	4.0	4.1	2.6	3.0
Loss of livestock due to floods	0.5	0.0	0.3	0.3	0.2	0.3
Loss of livestock due to death	5.5	4.7	5.0	4.7	3.7	4.7
Loss of livestock due to theft	0.5	0.9	0.3	0.7	0.4	0.6
Loss of productive assets due to floods	0.4	0.3	0.3	0.4	0.5	0.4
Loss of productive assets due to other reasons (storm/cyclone, river erosion, theft, fire, etc.)	4.7	4.7	5.8	4.4	4.9	4.9
Loss or destruction of other consumption assets due to floods	1.0	1.0	0.8	0.9	0.8	0.9
Loss of consumption assets due to factors other than floods	0.5	0.7	0.4	0.6	0.4	0.5
Dowry payment	3.1	2.3	2.5	1.3	1.8	2.2
Other costs of wedding	2.3	1.8	2.6	2.6	3.0	2.5
Division of father's property	0.1	0.1	0.3	0.1	0.0	0.1
Failure or bankruptcy of business	1.2	1.5	2.2	1.8	2.9	1.9
Extortion by *mastans* (thugs)	0.0	0.3	0.0	0.2	0.7	0.2
Family member put in prison	0.1	0.0	0.0	0.0	0.1	0.1
Household member arrested by police	0.2	0.1	0.1	0.3	0.1	0.2
Paid a big bribe	0.1	0.2	0.1	0.5	0.6	0.3
Cost of court case	0.6	1.2	2.0	2.4	1.8	1.6
Losses due to court case	1.3	1.6	1.9	2.4	2.4	1.9
Reparations for victim of crime committed by household member	0.0	0.0	0.1	0.1	0.3	0.1
Long duration *hartals*/strikes/political unrest	0.2	0.0	0.1	0.1	0.0	0.1
Cut-off or decrease of regular remittances to household	0.0	0.0	0.2	0.1	0.2	0.1
Withdrawal of NGO assistance	0.1	0.1	0.0	0.0	0.1	0.1
Increase in food prices	9.4	7.2	9.0	6.1	6.2	7.6
Increase in prices of inputs	0.1	0.1	0.1	0.3	0.0	0.1
Others	2.2	3.4	2.7	4.2	5.1	3.5

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.33—Coping Mechanism (multiple response): Feed the Future zone

	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent of households experiencing negative shocks)					
None	31.7	41.1	42.0	48.2	49.5	42.5
Sold land	3.4	5.5	3.3	4.0	5.7	4.4
Mortgaged/leased out land	2.5	2.9	4.5	6.0	8.7	4.9
Sold productive asset	5.8	7.7	7.6	5.4	4.6	6.2
Mortgaged productive asset	1.3	0.8	0.4	0.8	1.6	1.0
Sold consumption asset	1.7	3.0	0.8	2.1	3.4	2.2
Mortgaged consumption asset	0.4	0.4	1.5	1.1	0.9	0.9
Took loan from NGO/formal institution	18.6	17.5	19.7	20.1	14.5	18.1
Took loan from non-formal source	18.6	18.8	21.5	16.4	19.3	18.9
Took help from others	28.2	24.3	16.6	18.3	19.1	21.3
Ate less food to reduce expenses	7.1	8.1	6.8	2.5	5.3	6.0
Ate lower quality food to reduce expenses	5.4	8.4	7.4	4.3	2.6	5.6
Took children out of school	0.4	0.8	1.2	0.4	1.2	0.8
Took children from expensive school to low cost school	0.0	0.4	0.0	0.0	0.4	0.2
Sent household member away permanently	0.4	0.0	0.4	0.4	0.0	0.3
Sent children to be fostered other places	0.4	0.0	0.0	0.0	0.8	0.3
Sent children to be fostered in relatives house	0.4	1.2	0.0	0.0	0.0	0.3
Sent children into domestic service	0.0	0.4	0.4	0.4	0.0	0.3
Sent children to be fostered in work	0.9	0.4	0.0	0.9	0.0	0.4
Sent children to her parental home	0.0	0.4	0.4	0.0	0.0	0.2
Emergency receipt of remittance from migrant family member	0.8	0.0	0.4	1.5	3.5	1.2
Forced to change occupation	1.5	1.2	0.0	0.4	1.5	0.9
Moved to less expensive housing	1.6	0.4	0.4	0.0	0.0	0.5
Sent non-working household member to work	0.8	0.9	0.4	0.9	0.8	0.7
Others	4.5	4.9	5.0	7.1	5.7	5.4
Total	136.6	149.6	140.7	141.0	149.2	143.4

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 5.34—Coping Mechanism (multiple response): Rural Bangladesh

	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent of households experiencing negative shocks)					
None	38.2	40.1	46.5	47.0	51.6	44.5
Sold land	2.4	5.0	3.7	4.8	6.1	4.3
Mortgaged/leased out land	2.4	2.3	3.4	7.0	7.4	4.5
Sold productive asset	4.8	5.6	5.3	5.9	5.4	5.4
Mortgaged productive asset	0.6	0.9	1.0	1.1	2.4	1.2
Sold consumption asset	1.5	3.1	3.1	2.6	3.5	2.7
Mortgaged consumption asset	0.7	1.0	1.7	1.5	1.5	1.3
Took loan from NGO/institution	12.9	15.0	15.9	11.2	8.6	12.8
Took loan from non-formal source	23.0	25.0	17.7	19.8	18.7	20.9
Took help from others	26.3	25.4	21.2	16.5	15.3	21.1
Ate less food to reduce expenses	8.3	6.9	5.3	4.2	3.8	5.8
Ate lower quality food to reduce expenses	6.1	7.1	6.5	5.9	3.2	5.8
Took children out of school	0.7	0.3	0.3	0.0	0.0	0.3
Took children from expensive school to low cost school	0.0	0.0	0.2	0.2	0.0	0.1
Sent household member away permanently	2.4	0.9	0.6	0.5	0.4	1.0
Sent children to be fostered other places	0.4	0.5	0.0	0.2	0.0	0.2
Sent children to be fostered in relatives house	0.2	0.3	0.3	0.0	0.2	0.2
Sent children into domestic service	0.2	0.1	0.2	0.0	0.0	0.1
Sent children to be fostered in work (not maid)	1.0	0.8	0.7	0.2	0.2	0.6
Sent children to her parental home	0.0	0.0	0.4	0.0	0.0	0.1
Emergency receipt of remittance from migrant family member	0.2	0.0	0.2	1.3	2.4	0.8
Forced to change occupation	0.7	1.2	2.4	0.4	0.8	1.1
Moved to less expensive housing	0.0	0.2	0.2	0.0	0.0	0.1
Sent non-working household member to work	1.5	1.7	0.3	0.1	0.4	0.8
Others	6.6	4.7	6.0	6.6	8.0	6.4
Total	140.7	147.9	143.0	137.0	139.7	141.7

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

TABLES FOR SECTION 6: FOOD UTILIZATION

Table 6.1—Frequency of consumption of different food groups by income groups: Feed the Future zone

Food group	1 (lowest)	2	3	4	5 (highest)	All
	Per capita expenditure quintile					
	(number of days eaten in last 7 days)					
Rice	7.0	7.0	7.0	7.0	7.0	7.0
Wheat flour (roti, bread, noodles)	0.8	0.9	1.0	1.4	1.9	1.2
Potatoes and other roots/tubers	4.7	4.9	5.1	5.1	5.0	4.9
Cereals (maize, sorghum, millet, barley)	0.0	0.1	0.0	0.0	0.1	0.1
Vegetables	5.0	5.5	5.8	5.9	5.7	5.6
Fruits/fruit juices	0.7	1.0	1.3	1.8	2.2	1.4
Beans, lentils, peas, nuts	0.8	1.1	1.1	1.3	1.6	1.2
Eggs	0.8	1.2	1.6	2.0	2.6	1.7
Dairy products (milk, cheese, yoghurt)	0.6	0.8	1.2	1.7	2.2	1.3
Meat (goat, beef, lamb)	0.1	0.2	0.3	0.4	0.9	0.4
Poultry (chicken, duck, pigeon)	0.1	0.2	0.4	0.5	0.7	0.4
Fish (fresh and dry)	2.9	3.5	3.9	4.3	4.7	3.8
Oil//fats (ghee, butter, veg oil)	6.8	6.9	6.9	6.9	6.9	6.9
Sugar, honey	1.6	2.0	2.6	2.9	3.6	2.5
Condiments (spices)	0.1	0.1	0.1	0.1	0.1	0.1
Nuts and seeds (ground nut, sunflower seeds, etc)	0.0	0.1	0.1	0.1	0.1	0.1
Tobacco	2.9	2.6	2.6	2.5	2.4	2.6

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 6.2—Frequency of consumption of different food groups by income groups: Rural Bangladesh

Food group	| 1 (lowest)	2	3	4	5 (highest)	All
	| (number of days eaten in last 7 days)					
Rice	7.0	7.0	7.0	7.0	7.0	7.0
Wheat flour (roti, bread, noodles)	0.7	1.0	1.2	1.5	2.0	1.2
Potatoes and other roots/tubers	5.3	5.5	5.6	5.6	5.6	5.5
Cereals (maize, sorghum, millet, barley)	0.0	0.1	0.0	0.0	0.1	0.0
Vegetables	5.8	6.0	6.2	6.3	6.4	6.1
Fruits/fruit juices	1.0	1.3	1.6	2.2	2.8	1.7
Beans, lentils, peas, nuts	0.7	1.0	1.1	1.4	1.8	1.2
Eggs	0.7	1.2	1.4	2.0	2.8	1.5
Dairy products (milk, cheese, yoghurt)	0.6	1.2	1.7	2.2	3.2	1.7
Meat (goat, beef, lamb)	0.1	0.1	0.2	0.4	0.7	0.3
Poultry (chicken, duck, pigeon)	0.1	0.3	0.4	0.6	0.9	0.4
Fish (fresh and dry)	2.4	3.3	3.8	4.2	4.7	3.6
Oil//fats (ghee, butter, veg oil)	6.8	6.9	7.0	6.9	7.0	6.9
Sugar, honey	1.6	2.5	2.8	3.5	4.1	2.8
Condiments (spices)	0.1	0.1	0.2	0.2	0.2	0.1
Nuts and seeds (ground nut, sunflower seeds, etc)	0.0	0.1	0.0	0.1	0.1	0.1
Tobacco	3.4	3.4	3.5	3.4	3.1	3.4

The header "Per capita expenditure quintile" spans columns 1 (lowest) through 5 (highest).

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 6.3—Frequency of consumption of different food groups by division: Rural Bangladesh

Food group	Division							Bangladesh
	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	
	(number of days eaten in last 7 days)							
Rice	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Wheat flour (roti, bread, noodles)	1.7	2.2	1.0	0.9	1.3	0.3	1.4	1.2
Potatoes and other roots/tubers	5.1	5.1	5.5	5.9	5.8	5.8	4.9	5.5
Cereals (maize, sorghum, millet, barley)	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.0
Vegetables	5.8	6.0	6.1	6.7	6.4	5.8	5.9	6.1
Fruits/fruit juices	1.9	1.8	1.9	1.6	1.7	1.1	1.8	1.7
Beans, lentils, peas, nuts	2.9	1.4	1.3	0.6	0.8	0.4	1.3	1.2
Eggs	1.7	1.5	1.6	2.0	1.6	1.2	1.1	1.5
Dairy products (milk, cheese, yoghurt)	1.2	2.2	1.8	1.1	1.8	1.4	2.2	1.7
Meat (goat, beef, lamb)	0.1	0.5	0.3	0.2	0.2	0.3	0.2	0.3
Poultry (chicken, duck, pigeon)	0.5	0.5	0.4	0.4	0.5	0.3	0.5	0.4
Fish (fresh and dry)	3.6	3.9	3.9	4.3	3.1	2.1	4.3	3.6
Oil//fats (ghee, butter, veg oil)	7.0	6.9	6.9	7.0	7.0	6.9	6.9	6.9
Sugar, honey	4.5	4.0	2.1	2.2	2.2	1.8	5.0	2.8
Condiments (spices)	0.1	0.3	0.2	0.1	0.1	0.1	0.2	0.1
Nuts and seeds (ground nut, sunflower seeds, etc.)	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1
Tobacco	3.4	3.1	3.7	2.0	3.5	3.5	5.1	3.4

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 6.4—Quantity of food consumed by income groups: Feed the Future zone

Item	1 (lowest)	2	3	4	5 (highest)	All
	(grams/person/day)					
Rice	427.3	483.5	520.3	538.7	565.2	506.8
Atta	13.8	16.1	16.3	25.6	31.6	20.6
Other cereal	2.8	5.5	6.8	11.0	16.3	8.5
Lentil	2.9	4.3	5.3	8.2	10.1	6.1
Chickpeas	0.3	0.2	0.9	1.0	1.2	0.7
Khesari	2.3	1.9	2.9	2.8	0.6	2.1
Other pulses	2.9	4.2	5.0	6.8	6.8	5.1
Soybean oil	11.8	17.6	20.8	26.4	33.1	21.9
Mustard oil	1.5	1.6	2.1	2.4	2.2	2.0
Ghee	0.0	-	-	0.0	0.1	0.0
Other oils	0.1	0.1	0.4	0.3	0.5	0.3
Potatoes	74.0	80.1	88.5	93.8	97.8	86.8
Green leafy vegetables	35.4	40.1	44.9	49.4	58.1	45.5
Eggplants	29.9	32.5	36.1	31.0	31.4	32.2
Sweet gourd	0.1	1.1	1.4	3.8	3.3	1.9
Carrot	0.4	0.4	0.4	0.1	1.0	0.4
Other vegetables	115.4	148.7	159.4	175.9	225.4	164.8
Chicken	2.0	6.1	10.7	9.8	21.9	10.1
Beef	1.4	1.8	2.9	5.2	15.9	5.4
Goat meat	-	0.5	0.3	1.4	2.4	0.9
Other meats	1.5	0.6	2.7	3.0	4.7	2.5
Eggs	2.2	3.8	4.8	8.6	12.6	6.4
Milk	5.5	8.0	12.4	21.3	34.1	16.2
Milk products	0.1	1.6	1.2	3.0	6.7	2.5
Small fish	17.4	24.6	21.5	28.2	32.2	24.8
Big fish	26.4	33.6	50.1	53.2	89.0	50.4
Banana	1.8	2.7	2.4	5.3	4.3	3.3
Orange	0.2	0.1	0.6	1.7	2.1	0.9
Apple	0.3	0.4	1.0	1.3	2.3	1.1
Other fruits	2.9	5.9	6.6	8.8	17.1	8.3
Sugar	2.0	3.5	3.8	5.6	8.4	4.6
Gur	0.7	1.4	2.2	2.8	3.9	2.2
Salt	9.7	10.8	12.1	12.3	13.9	11.7
Spices	4.4	5.4	7.3	7.4	10.4	7.0
Prepared foods	7.0	11.9	16.0	15.1	21.1	14.2

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: Estimated from individual dietary intake data.

Table 6.5—Quantity of food consumed by income groups: Rural Bangladesh

Item	1 (lowest)	2	3	4	5 (highest)	All
			(grams/person/day)			
Rice	442.4	481.9	498.2	513.2	548.6	495.5
Atta	13.3	18.1	20.1	22.9	31.5	21.0
Other cereal	4.5	8.3	10.3	13.1	16.3	10.3
Lentil	2.4	3.4	4.8	5.8	8.0	4.8
Chickpeas	0.1	0.2	0.6	0.3	0.5	0.3
Khesari	1.0	1.1	1.2	1.4	0.6	1.1
Other pulses	2.1	3.6	2.9	3.7	6.6	3.7
Soybean oil	8.8	13.5	16.5	19.6	30.4	17.5
Mustard oil	2.5	3.4	3.7	3.9	4.4	3.6
Ghee	0.0	0.0	0.0	0.0	0.0	0.0
Other oils	0.1	0.1	0.2	0.2	0.3	0.2
Potatoes	107.4	116.4	118.0	119.0	120.3	116.0
Green leafy vegetables	37.6	38.8	32.7	39.6	42.6	38.2
Eggplants	34.2	38.1	36.8	37.3	35.8	36.4
Sweet gourd	0.7	1.1	2.5	1.6	3.0	1.8
Carrot	0.2	0.0	0.3	0.2	0.9	0.3
Other vegetables	111.9	137.3	164.1	181.7	217.5	161.1
Chicken	2.2	4.3	11.8	10.8	22.9	10.1
Beef	1.0	2.2	5.4	7.0	19.3	6.8
Goat meat	0.3	0.4	0.4	2.1	1.5	0.9
Other meats	0.6	0.5	2.7	3.0	3.4	2.0
Eggs	2.0	3.9	3.9	7.6	10.5	5.5
Milk	5.2	8.9	16.2	21.9	39.8	17.9
Milk products	0.4	1.2	1.3	2.3	5.6	2.1
Small fish	12.8	18.5	20.6	24.5	30.2	21.1
Big fish	18.4	31.7	44.5	49.1	76.4	43.3
Banana	0.8	1.4	2.4	2.9	2.7	2.0
Orange	0.2	0.2	0.9	1.6	2.6	1.1
Apple	0.1	0.4	0.5	1.5	2.8	1.0
Other fruits	1.6	4.1	4.1	6.4	12.6	5.6
Sugar	2.0	3.6	3.9	5.3	10.7	5.0
Gur	1.1	1.9	2.7	4.5	7.3	3.4
Salt	9.5	10.5	11.6	12.0	14.0	11.5
Spices	4.2	5.6	7.5	8.0	10.8	7.1
Prepared foods	9.1	12.6	16.4	19.9	25.9	16.6

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: Estimated from individual dietary intake data.

Table 6.6—Quantity of food consumed by division: Rural Bangladesh

Item				Division				
	Barisal	**Chittagong**	**Dhaka**	**Khulna**	**Rajshahi**	**Rangpur**	**Sylhet**	**Bangladesh**
				(grams/person/day)				
Rice	528.0	424.6	511.5	513.9	503.0	512.2	489.6	495.5
Atta	22.6	34.7	18.6	17.7	25.5	4.8	23.6	21.0
Other cereal	6.5	12.5	8.7	9.8	14.1	10.2	8.4	10.3
Lentil	6.0	5.1	7.0	4.9	3.0	1.1	5.1	4.8
Chickpeas	0.5	1.0	0.2	0.2	0.1	0.0	0.4	0.3
Khesari	6.0	0.7	0.7	0.6	0.6	1.7	0.0	1.1
Other pulses	7.7	4.8	2.5	4.5	2.2	2.0	8.2	3.7
Soybean oil	23.8	16.5	17.6	23.3	16.7	11.6	16.6	17.5
Mustard oil	1.0	3.1	4.9	1.7	5.3	2.7	2.3	3.6
Ghee	-	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Other oils	0.0	0.2	0.0	0.7	0.1	0.1	0.1	0.2
Potatoes	89.0	93.0	114.4	100.5	129.0	162.7	112.1	116.0
Green leafy vegetables	38.0	33.7	39.8	38.9	30.4	54.3	25.5	38.2
Eggplants	6.6	27.3	40.9	40.5	51.8	40.6	16.0	36.4
Sweet gourd	0.6	3.1	2.1	1.9	0.9	0.2	2.7	1.8
Carrot	1.1	0.2	0.2	0.4	0.6	-	0.0	0.3
Other vegetables	163.7	157.3	173.6	173.7	147.3	122.9	202.2	161.1
Chicken	10.0	12.4	10.5	12.3	8.9	5.3	11.7	10.1
Beef	3.7	14.1	5.3	5.9	3.6	5.3	9.2	6.8
Goat meat	0.6	0.3	0.5	1.7	1.6	1.6	0.4	0.9
Other meats	3.1	1.3	1.1	3.0	3.9	1.7	1.1	2.0
Eggs	7.0	4.4	6.1	6.4	5.8	4.4	3.0	5.5
Milk	10.1	16.6	27.6	12.0	15.7	13.9	9.7	17.9
Milk products	0.7	1.7	2.2	2.2	3.8	1.3	2.2	2.1
Small fish	27.5	22.8	24.0	20.3	15.5	13.0	29.2	21.1
Big fish	39.3	45.7	52.1	48.1	39.1	20.9	48.6	43.3
Banana	2.5	1.2	2.5	3.0	2.3	0.9	0.8	2.0
Orange	0.5	0.5	1.7	0.6	1.5	0.4	1.1	1.1
Apple	0.7	1.3	0.9	1.5	1.3	0.6	0.6	1.0
Other fruits	7.2	4.9	4.5	10.8	6.9	2.3	4.8	5.6
Sugar	5.8	6.2	4.6	5.0	3.8	3.4	9.7	5.0
Gur	3.1	1.6	4.7	4.3	4.2	1.9	2.1	3.4
Salt	9.6	9.5	12.1	12.1	11.8	11.5	13.7	11.5
Spices	7.5	8.6	8.0	5.3	7.0	5.0	7.6	7.1
Prepared foods	7.9	19.3	12.9	11.3	32.5	11.2	18.9	16.6

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: Estimated from individual dietary intake data.

Table 6.7—Calorie share of food items by income groups: Feed the Future zone

| Item | Per capita expenditure quintile | | | | | All |
	1 (lowest)	2	3	4	5 (highest)	
Daily per capita calorie intake (kcal/person/day)	1,861	2,093	2,200	2,356	2,489	2,167
Calorie share of food items			(percent)			
Rice	77.16	73.95	72.32	68.10	64.08	71.14
Atta	2.41	2.28	2.36	3.45	3.42	2.78
Other cereal	0.47	0.87	0.95	1.35	1.60	1.05
Pulses	1.51	1.54	1.84	2.36	2.09	1.87
Oils	6.16	7.74	8.09	9.29	10.30	8.31
Leafy vegetables	0.54	0.49	0.52	0.52	0.49	0.51
Other vegetables	6.63	6.52	6.61	6.44	6.68	6.58
Meats	0.21	0.33	0.51	0.64	1.14	0.56
Eggs	0.20	0.25	0.29	0.50	0.63	0.38
Milk and milk products	0.19	0.28	0.35	0.62	0.83	0.45
Small fish	1.08	1.30	1.71	1.71	2.35	1.63
Big fish	0.75	0.93	0.70	0.83	0.97	0.84
Fruits	0.35	0.61	0.60	0.77	0.94	0.65
Spices	0.67	0.71	0.77	0.78	0.94	0.78
Sugar and gur	0.53	0.78	0.77	1.03	1.24	0.87
Beverages	0.03	0.09	0.12	0.08	0.09	0.08
Other prepared foods	1.09	1.33	1.49	1.54	2.22	1.53
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 6.8—Calorie share of food items by income groups: Rural Bangladesh

Item	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
Daily per capita calorie intake (kcal/person/day)	1,984	2,202	2,275	2,378	2,483	2,243
Calorie share of food items				(percent)		
Rice	78.0	73.6	71.2	68.5	63.2	71.1
Atta	2.2	2.6	3.0	3.2	3.8	3.0
Other cereal	0.7	1.2	1.4	1.6	1.8	1.4
Pulses	1.0	1.2	1.3	1.5	1.7	1.3
Oils	5.1	6.7	7.5	8.2	10.0	7.4
Leafy vegetables	0.6	0.5	0.4	0.5	0.4	0.5
Other vegetables	7.7	7.7	7.7	7.5	7.2	7.6
Meats	0.2	0.3	0.7	0.8	1.2	0.6
Eggs	0.2	0.3	0.3	0.5	0.6	0.3
Milk and milk products	0.2	0.3	0.5	0.7	1.1	0.6
Small fish	0.8	1.2	1.6	1.6	2.1	1.5
Big fish	0.7	0.9	0.9	1.0	1.0	0.9
Fruits	0.2	0.3	0.3	0.5	0.7	0.4
Spices	0.6	0.7	0.8	0.8	0.9	0.8
Sugar and gur	0.5	0.8	0.9	1.2	1.7	1.0
Beverages	0.1	0.1	0.1	0.1	0.1	0.1
Other prepared foods	1.2	1.5	1.5	1.9	2.4	1.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 6.9—Calorie share of food items by division: Rural Bangladesh

Item	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
				Division				
Daily per capita calorie intake (kcal/person/day)	2,129	2,036	2,370	2,234	2,278	2,227	2,357	2,243
Calorie share of food items				(percent)				
Rice	72.24	66.36	71.10	71.61	70.64	77.03	69.99	71.09
Atta	3.02	5.37	2.62	2.25	3.17	0.79	3.38	2.95
Other cereal	0.87	1.79	1.11	1.16	1.73	1.38	1.16	1.35
Pulses	2.59	1.72	1.30	1.27	0.83	0.69	1.71	1.32
Oils	8.46	7.69	7.63	8.81	7.68	5.15	6.49	7.44
Leafy vegetables	0.46	0.42	0.48	0.43	0.34	0.77	0.30	0.47
Other vegetables	5.61	7.08	7.55	7.38	7.86	8.84	7.64	7.55
Meats	0.50	0.96	0.50	0.67	0.57	0.49	0.65	0.62
Eggs	0.39	0.32	0.39	0.38	0.37	0.29	0.19	0.35
Milk and milk products	0.28	0.75	0.74	0.33	0.46	0.40	0.49	0.56
Small fish	1.24	1.67	1.83	1.41	1.18	0.72	1.59	1.45
Big fish	0.93	1.11	1.05	0.67	0.52	0.59	1.33	0.88
Fruits	0.57	0.37	0.34	0.73	0.38	0.12	0.32	0.38
Spices	0.78	1.01	0.83	0.63	0.66	0.62	0.79	0.78
Sugar and gur	1.01	1.21	1.02	1.01	0.82	0.76	1.60	1.02
Beverages	0.02	0.09	0.06	0.11	0.31	0.07	0.05	0.11
Other prepared foods	1.04	2.09	1.43	1.15	2.49	1.32	2.30	1.68
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 6.10—Cost of calorie by food groups and income groups: Feed the Future zone

Food group	1 (lowest)	2	3	4	5 (highest)	All
			Per capita expenditure quintile			
			(taka/1,000 kcal)			
Rice	8.9	9.0	9.1	9.2	9.7	9.2
Atta	7.7	7.9	8.1	8.0	8.0	7.9
Other cereal	17.4	17.0	17.2	17.4	18.9	17.7
Pulses	20.4	21.2	21.3	23.4	24.3	22.3
Oils	14.0	14.1	14.2	14.3	14.1	14.2
Vegetables	32.0	33.6	33.2	36.5	37.9	34.6
Leafy vegetables	58.9	62.2	59.3	63.9	66.6	62.2
Meats	183.0	202.4	200.0	203.1	210.6	203.7
Eggs	81.5	83.4	80.2	80.5	82.4	81.6
Milk	56.3	58.2	59.9	62.3	61.3	60.3
Small fish	119.6	126.6	130.1	140.8	163.3	137.3
Big Fish	108.1	115.5	124.4	137.1	142.0	126.3
Fruits	77.5	76.5	86.0	94.4	112.0	91.1
Spices	85.0	91.0	94.0	97.1	103.8	94.2
Sugar/gur	27.1	20.4	21.5	18.1	20.0	20.9

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 6.11—Cost of calorie by food groups and income groups: Rural Bangladesh

| Food group | Per capita expenditure quintile | | | | | All |
	1 (lowest)	2	3	4	5 (highest)	
	(taka/1,000 kcal)					
Rice	8.4	8.6	8.8	8.9	9.3	8.8
Atta	8.1	8.2	8.2	8.4	8.5	8.3
Other cereal	16.2	16.2	16.7	16.9	18.2	17.0
Pulses	21.4	22.5	24.1	24.4	25.6	23.9
Oils	15.0	15.1	15.0	14.9	14.8	15.0
Vegetables	26.2	29.4	30.8	33.7	36.8	31.2
Leafy vegetables	57.0	62.0	63.0	67.8	73.9	64.8
Meats	196.4	191.2	198.3	206.3	214.7	204.8
Eggs	84.0	84.2	82.7	84.2	85.2	84.1
Milk	56.7	60.0	62.9	65.1	67.0	63.6
Small fish	117.8	131.0	129.7	139.5	166.8	138.4
Big Fish	100.0	104.6	116.3	122.5	144.6	118.0
Fruits	89.9	103.4	122.4	140.6	160.8	128.6
Spices	83.3	86.7	90.8	93.7	98.5	90.4
Sugar/gur	19.6	18.9	19.9	19.6	18.3	19.2

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 6.12—Cost of calorie by food groups and division: Rural Bangladesh

Food group	Division								Bangladesh
	FTF zone	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	
	(taka/1,000 kcal)								
Rice	9.2	8.9	9.2	9.3	8.6	8.5	7.8	8.8	8.8
Atta	7.9	8.1	8.6	8.5	7.9	8.0	7.8	8.5	8.3
Other cereal	17.7	21.7	16.1	17.6	16.7	16.9	14.8	17.5	17.0
Pulses	22.3	19.0	23.7	27.4	23.5	21.8	20.9	22.3	23.9
Oils	14.2	14.4	15.1	15.0	14.4	15.4	15.4	14.5	15.0
Vegetables	34.6	31.8	38.4	33.3	30.2	25.7	22.0	36.7	31.2
Leafy vegetables	62.2	69.0	82.3	62.9	49.0	55.0	47.8	103.0	64.8
Meats	203.7	164.9	219.3	200.5	199.1	196.8	227.1	197.9	204.8
Eggs	81.6	81.4	89.6	81.3	79.3	82.7	89.1	91.3	84.1
Milk	60.3	70.8	71.7	69.2	54.4	57.0	48.6	76.3	63.6
Small fish	137.3	150.3	160.0	132.0	124.1	128.4	135.5	167.7	138.4
Big Fish	126.3	152.3	120.4	119.7	104.3	127.7	93.8	115.8	118.0
Fruits	91.1	93.0	158.9	133.9	88.4	122.1	126.2	156.0	128.6
Spices	94.2	90.3	87.5	84.8	94.8	100.8	92.3	86.8	90.4
Sugar/gur	20.9	17.2	18.2	20.5	22.4	18.3	17.4	17.9	19.2

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 6.13—Daily per capita calorie intake by income and age groups: Feed the Future zone

| Age group | Per capita expenditure quintile | | | | | All |
	1 (lowest)	2	3	4	5 (highest)	
	(kcal/person/day)					
Preschoolers (aged <5 years)	807	865	906	1,015	995	885
Male	796	952	964	1,128	1,140	942
Female	817	804	850	889	871	834
Primary school age children (aged 5-10 years)	1,347	1,510	1,576	1,693	1,651	1,516
Male	1,369	1,563	1,545	1,687	1,702	1,538
Female	1,327	1,452	1,606	1,699	1,599	1,494
Adolescents (aged >10 to <18 years)	1,834	2,020	2,054	2,235	2,440	2,072
Male	1,918	2,107	2,164	2,341	2,594	2,182
Female	1,753	1,926	1,911	2,125	2,241	1,950
Adults 1 (aged 18 to <40 years)	2,274	2,444	2,547	2,681	2,747	2,524
Male	2,505	2,672	2,797	2,915	2,986	2,771
Female	2,140	2,274	2,354	2,490	2,557	2,343
Adults 2 (aged 40 to <65 years)	2,245	2,441	2,522	2,598	2,680	2,495
Male	2,520	2,634	2,718	2,859	2,965	2,730
Female	1,949	2,228	2,278	2,338	2,434	2,248
Elderly (aged 65 years and more)	2,010	2,057	2,082	2,235	2,432	2,156
Male	2,176	2,217	2,252	2,499	2,711	2,375
Female	1,757	1,880	1,916	1,884	1,895	1,870
All	1,861	2,093	2,200	2,356	2,489	2,167
Male	1,984	2,240	2,349	2,517	2,696	2,325
Female	1,756	1,956	2,051	2,199	2,288	2,018

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Note: Breastfed babies and <1 year kids have been excluded in all calculations.

Table 6.14—Daily per capita calorie intake by income and age groups: Rural Bangladesh

| Age group | Per capita expenditure quintile | | | | | All |
	1 (lowest)	2	3	4	5 (highest)	
	(kcal/person/day)					
Preschoolers (aged <5 years)	990	1,060	1,074	1,126	1,145	1,059
Male	1,024	1,110	1,107	1,172	1,125	1,096
Female	963	1,020	1,043	1,068	1,167	1,025
Primary school age children (aged 5-10 years)	1,407	1,576	1,627	1,660	1,651	1,552
Male	1,398	1,617	1,619	1,675	1,693	1,564
Female	1,415	1,536	1,634	1,645	1,598	1,540
Adolescents (aged >10 to <18 years)	1,941	2,118	2,175	2,311	2,358	2,159
Male	2,002	2,222	2,262	2,407	2,447	2,245
Female	1,880	2,021	2,088	2,204	2,277	2,074
Adults 1 (aged 18 to <40 years)	2,401	2,562	2,625	2,676	2,780	2,599
Male	2,652	2,788	2,885	2,904	3,008	2,843
Female	2,243	2,390	2,440	2,507	2,598	2,422
Adults 2 (aged 40 to <65 years)	2,301	2,469	2,540	2,635	2,679	2,525
Male	2,506	2,690	2,780	2,869	2,888	2,742
Female	2,068	2,242	2,267	2,397	2,499	2,300
Elderly (aged 65 years and more)	2,092	2,149	2,178	2,127	2,394	2,192
Male	2,281	2,353	2,395	2,318	2,603	2,397
Female	1,827	1,891	1,919	1,888	2,063	1,918
All	1,984	2,202	2,275	2,378	2,483	2,243
Male	2,097	2,354	2,432	2,523	2,619	2,385
Female	1,884	2,065	2,132	2,243	2,357	2,114

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Note: Breastfed babies and <1 year kids have been excluded in all calculations.

Table 6.15—Food energy adequacy by income and age groups: Feed the Future zone

| Age group | Per capita expenditure quintile | | | | | All |
	1 (lowest)	2	3	4	5 (highest)	
			(percent)			
Preschoolers (aged <5 years)	71.1	80.5	77.5	86.4	85.6	77.9
Male	66.3	78.7	79.5	93.4	93.4	78.0
Female	75.4	81.8	75.7	78.6	78.9	77.8
Primary school age children (aged 5-10 years)	77.4	84.8	88.4	95.1	92.3	85.6
Male	74.9	84.2	83.9	91.3	90.7	83.3
Female	79.7	85.5	92.8	99.3	93.9	88.0
Adolescents (aged >10 to <18 years)	85.0	90.1	90.0	98.4	105.5	92.2
Male	83.1	86.6	88.7	93.9	103.1	89.8
Female	86.9	93.8	91.7	103.1	108.6	95.0
Adults 1 (aged 18 to <40 years)	74.1	78.4	81.7	88.1	90.4	82.0
Male	75.6	81.1	85.2	92.4	94.2	85.5
Female	73.2	76.5	79.1	84.6	87.4	79.4
Adults 2 (aged 40 to <65 years)	76.2	82.7	84.4	89.1	92.8	84.9
Male	80.2	85.6	87.4	94.5	99.6	89.0
Female	71.8	79.5	80.7	83.6	87.0	80.6
Elderly (aged 65 years and more)	80.3	85.9	87.3	90.7	96.7	88.0
Male	79.6	84.6	88.2	93.3	103.8	90.0
Female	81.3	87.4	86.4	87.4	83.0	85.5
All	77.2	83.2	84.8	91.1	94.0	85.2
Male	77.3	83.9	86.2	93.2	98.0	86.7
Female	77.1	82.6	83.5	89.0	90.0	83.7

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Note: Breastfed babies and <1 year kids have been excluded in all calculations.

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Table 6.16—Food energy adequacy by income and age groups: Rural Bangladesh

Age group	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percent)					
Preschoolers (aged <5 years)	82.3	88.8	89.5	90.8	96.4	87.9
Male	82.7	90.4	89.8	91.9	91.5	88.3
Female	81.9	87.4	89.3	89.5	101.9	87.5
Primary school age children (aged 5-10 years)	80.8	89.0	92.2	92.2	90.2	87.6
Male	77.2	87.2	88.7	88.7	88.0	84.5
Female	84.3	90.7	95.3	95.6	92.9	90.5
Adolescents (aged >10 to <18 years)	90.6	96.7	98.7	103.0	103.5	97.8
Male	87.7	93.3	94.6	98.8	96.9	93.8
Female	93.5	99.9	102.9	107.5	109.5	101.8
Adults 1 (aged 18 to <40 years)	75.7	81.2	84.2	88.8	91.4	83.8
Male	77.8	84.4	88.4	94.0	95.8	87.8
Female	74.4	78.7	81.3	84.9	87.9	80.9
Adults 2 (aged 40 to <65 years)	78.1	84.5	85.8	90.2	92.3	86.2
Male	79.2	87.6	89.6	95.1	97.0	89.5
Female	76.8	81.3	81.5	85.3	88.1	82.7
Elderly (aged 65 years and more)	90.8	92.9	94.2	91.2	97.4	93.4
Male	89.3	94.1	94.1	90.5	98.2	93.5
Female	92.9	91.2	94.4	92.1	96.1	93.2
All	81.1	87.2	89.4	92.5	94.3	88.4
Male	81.0	88.3	90.4	94.3	95.5	89.3
Female	81.3	86.3	88.5	90.8	93.3	87.5

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Note: Breastfed babies and <1 year kids have been excluded in all calculations.

Table 6.17—Daily per capita protein intake by income and age groups: Feed the Future zone

| Age group | Per capita expenditure quintile | | | | | All |
	1 (lowest)	2	3	4	5 (highest)	
	(grams/person/day)					
Preschoolers (aged <5 years)	19.4	20.7	22.3	27.6	28.8	22.3
Male	19.1	21.8	24.2	30.7	34.4	23.8
Female	19.6	20.0	20.5	24.1	24.1	20.9
Primary school age children (aged 5-10 years)	31.3	36.0	38.1	42.9	45.0	36.9
Male	31.9	37.7	37.3	41.1	46.9	37.4
Female	30.7	34.1	38.8	45.0	43.0	36.4
Adolescents (aged >10 to <18 years)	41.3	48.0	48.2	56.5	66.0	50.1
Male	43.7	49.6	49.5	60.0	70.6	52.9
Female	39.0	46.3	46.4	52.8	60.0	47.1
Adults 1 (aged 18 to <40 years)	52.2	58.2	61.4	67.1	75.1	62.0
Male	57.3	64.4	66.9	73.2	83.0	68.5
Female	49.2	53.6	57.2	62.2	68.7	57.2
Adults 2 (aged 40 to <65 years)	51.8	58.3	60.7	65.5	70.9	61.3
Male	58.1	63.1	65.8	71.8	78.4	67.0
Female	44.9	52.9	54.5	59.2	64.4	55.3
Elderly (aged 65 years and more)	45.6	48.4	50.1	57.7	67.4	53.5
Male	49.9	51.9	54.9	63.5	75.2	59.2
Female	39.2	44.5	45.4	50.0	52.5	46.0
All	42.7	49.8	52.8	59.5	67.4	53.1
Male	45.6	53.5	56.1	63.5	73.6	57.1
Female	40.2	46.4	49.5	55.6	61.3	49.3

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Note: Breastfed babies and <1 year kids have been excluded in all calculations.

Table 6.18—Daily per capita protein intake by income and age groups: Rural Bangladesh

Age group	1 (lowest)	2	3	4	5 (highest)	All
				(grams/person/day)		
Preschoolers (aged <5 years)	23.4	25.7	27.1	27.1	32.5	26.7
Male	24.3	27.5	28.8	30.5	32.9	28.0
Female	22.8	24.2	25.6	29.8	32.2	25.5
Primary school age children (aged 5-10 years)	32.1	37.8	40.0	40.0	44.2	37.8
Male	32.3	38.7	40.1	43.1	45.3	38.3
Female	31.9	36.9	39.9	42.4	42.6	37.3
Adolescents (aged >10 to <18 years)	43.7	50.2	52.7	52.7	62.2	52.4
Male	45.2	52.2	54.2	60.4	64.1	54.2
Female	42.1	48.4	51.2	55.8	60.4	50.7
Adults 1 (aged 18 to <40 years)	54.3	59.9	64.1	64.1	73.7	63.3
Male	60.6	65.3	70.5	73.4	79.1	69.5
Female	50.3	55.7	59.6	62.6	69.4	58.8
Adults 2 (aged 40 to <65 years)	52.2	58.2	61.4	61.4	70.8	61.6
Male	56.7	63.8	67.3	71.1	76.3	66.8
Female	47.0	52.5	54.7	60.0	66.1	56.3
Elderly (aged 65 years and more)	48.2	51.1	54.2	54.2	64.7	54.9
Male	53.2	56.2	59.5	60.8	69.5	60.2
Female	41.2	44.7	48.0	47.7	57.3	47.8
All	45.0	51.9	55.5	55.5	65.9	54.8
Male	47.9	55.6	59.3	63.6	69.2	58.3
Female	42.5	48.6	52.0	56.5	62.9	51.6

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Note: Breastfed babies and <1 year kids have been excluded in all calculations.

Table 6.19—Daily per capita vitamin A intake by age and income groups: Feed the Future zone

Age group	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(retinol equivalent micrograms/person/day)					
Preschoolers (aged <5 years)	95	97	101	107	126	101
Male	120	78	93	113	135	107
Female	73	110	109	101	119	96
Primary school age children (aged 5-10 years)	179	170	177	199	175	179
Male	166	189	134	179	180	169
Female	190	149	218	221	171	189
Adolescents (aged >10 to <18 years)	168	236	196	233	227	209
Male	172	217	216	229	210	208
Female	164	256	171	237	249	211
Adults 1 (aged 18 to <40 years)	245	249	235	276	320	262
Male	272	250	270	295	386	290
Female	229	248	209	260	267	241
Adults 2 (aged 40 to <65 years)	230	230	252	292	312	262
Male	232	257	244	316	339	274
Female	229	201	261	268	290	250
Elderly (aged 65 years and more)	175	205	220	187	324	222
Male	178	231	238	193	367	245
Female	170	177	202	181	240	192
All	197	218	216	249	283	228
Male	202	224	223	257	312	238
Female	193	213	209	242	256	219

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Note: Breastfed babies and <1 year kids have been excluded in all calculations.

Table 6.20—Daily per capita vitamin A intake by age and income groups: Rural Bangladesh

| Age group | Per capita expenditure quintile | | | | | All |
	1 (lowest)	2	3	4	5 (highest)	
	(retinol equivalent micrograms/person/day)					
Preschoolers (aged <5 years)	81	77	115	119	145	99
Male	95	87	127	112	122	106
Female	70	69	103	128	171	93
Primary school age children (aged 5-10 years)	131	150	136	171	149	144
Male	128	146	137	170	174	145
Female	134	155	135	172	117	143
Adolescents (aged >10 to <18 years)	188	202	160	184	243	193
Male	175	211	156	176	225	186
Female	201	192	163	193	259	199
Adults 1 (aged 18 to <40 years)	227	219	227	265	271	240
Male	248	230	255	299	294	264
Female	213	212	207	240	254	224
Adults 2 (aged 40 to <65 years)	243	218	223	247	280	242
Male	262	236	235	256	294	256
Female	222	199	210	238	267	228
Elderly (aged 65 years and more)	160	206	192	183	255	201
Male	157	204	197	194	286	211
Female	165	209	186	168	207	188
All	190	197	192	223	251	208
Male	196	205	203	231	260	217
Female	185	189	183	215	242	200

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Note: Breastfed babies and <1 year kids have been excluded in all calculations.

Table 6.21—Daily per capita iron intake by income and age groups: Feed the Future zone

Age group	1 (lowest)	2	3	4	5 (highest)	All
	Per capita expenditure quintile					
	(milligrams/person/day)					
Preschoolers (aged <5 years)	3.6	3.8	4.4	4.9	4.8	4.1
Male	3.6	3.7	4.3	5.4	5.7	4.2
Female	3.5	3.9	4.6	4.3	4.0	3.9
Primary school age children (aged 5-10 years)	6.3	6.7	7.4	8.3	8.5	7.1
Male	6.1	7.0	6.8	8.2	8.7	7.1
Female	6.5	6.3	7.9	8.3	8.3	7.2
Adolescents (aged >10 to <18 years)	7.4	8.9	9.1	10.7	12.0	9.3
Male	7.9	9.1	9.6	11.3	12.6	9.8
Female	7.0	8.7	8.5	10.1	11.2	8.7
Adults 1 (aged 18 to <40 years)	9.9	10.9	12.1	13.1	14.0	11.9
Male	10.6	11.9	13.4	14.2	15.6	13.1
Female	9.5	10.2	11.0	12.3	12.7	11.0
Adults 2 (aged 40 to <65 years)	9.9	10.8	12.0	12.6	13.5	11.7
Male	11.4	11.7	13.1	13.8	14.9	12.9
Female	8.2	9.7	10.7	11.3	12.2	10.5
Elderly (aged 65 years and more)	8.6	9.2	9.7	10.9	12.4	10.1
Male	9.2	9.8	10.7	11.8	13.7	11.0
Female	7.6	8.5	8.7	9.6	9.9	8.8
All	8.1	9.3	10.3	11.4	12.6	10.1
Male	8.6	9.9	11.0	12.2	13.7	10.8
Female	7.7	8.7	9.6	10.7	11.5	9.4

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Note: Breastfed babies and <1 year kids have been excluded in all calculations.

Table 6.22—Daily per capita iron intake by income and age groups: Rural Bangladesh

Age group	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(milligrams/person/day)					
Preschoolers (aged <5 years)	4.2	4.8	4.7	5.4	5.3	4.7
Male	4.4	5.3	4.7	5.6	5.4	5.0
Female	4.1	4.4	4.7	5.2	5.3	4.5
Primary school age children (aged 5-10 years)	5.7	6.8	7.1	7.7	7.4	6.7
Male	5.7	7.0	7.1	7.6	7.6	6.8
Female	5.8	6.6	7.2	7.7	7.1	6.7
Adolescents (aged >10 to <18 years)	7.8	9.1	9.4	10.2	10.9	9.3
Male	8.1	9.4	9.8	10.5	11.3	9.6
Female	7.6	8.8	9.1	9.9	10.5	9.0
Adults 1 (aged 18 to <40 years)	9.7	10.8	11.7	12.2	13.0	11.4
Male	10.8	11.7	12.9	13.3	14.1	12.5
Female	9.0	10.2	10.8	11.4	12.1	10.6
Adults 2 (aged 40 to <65 years)	9.5	10.7	11.4	11.9	12.7	11.2
Male	10.3	11.7	12.4	13.0	13.7	12.2
Female	8.6	9.7	10.2	10.8	11.8	10.2
Elderly (aged 65 years and more)	9.2	10.1	9.9	9.8	11.7	10.2
Male	10.1	11.4	10.8	10.5	12.5	11.2
Female	8.0	8.3	8.8	8.8	10.4	8.8
All	8.1	9.5	10.1	10.8	11.6	9.9
Male	8.6	10.1	10.8	11.4	12.3	10.5
Female	7.7	8.9	9.4	10.2	11.0	9.3

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Note: Breastfed babies and <1 year kids have been excluded in all calculations.

Table 6.23—Daily per capita zinc intake by age and income groups: Feed the Future zone

Age group	1 (lowest)	2	3	4	5 (highest)	All
				(milligrams/person/day)		
Preschoolers (aged <5 years)	2.5	2.7	2.8	3.5	3.5	2.9
Male	2.5	2.8	3.0	3.7	4.2	3.0
Female	2.6	2.6	2.7	3.2	3.0	2.7
Primary school age children (aged 5-10 years)	4.2	4.7	4.9	5.6	5.6	4.8
Male	4.2	5.0	4.7	5.5	5.9	4.9
Female	4.1	4.4	5.1	5.7	5.4	4.7
Adolescents (aged >10 to <18 years)	5.4	6.3	6.3	7.3	8.4	6.5
Male	5.8	6.4	6.6	7.8	9.0	6.9
Female	5.1	6.1	5.9	6.8	7.5	6.1
Adults 1 (aged 18 to <40 years)	6.9	7.6	7.9	8.8	9.5	8.0
Male	7.5	8.4	8.6	9.6	10.4	8.9
Female	6.5	7.0	7.4	8.2	8.7	7.4
Adults 2 (aged 40 to <65 years)	7.0	7.6	8.0	8.7	9.1	8.1
Male	7.9	8.3	8.7	9.6	10.2	8.8
Female	6.0	6.9	7.1	7.8	8.2	7.2
Elderly (aged 65 years and more)	6.3	6.3	6.5	7.6	8.7	7.0
Male	6.8	6.7	7.1	8.3	9.6	7.7
Female	5.5	5.9	5.9	6.6	6.9	6.1
All	5.7	6.5	6.9	7.8	8.6	6.9
Male	6.1	7.0	7.3	8.3	9.4	7.5
Female	5.3	6.1	6.4	7.3	7.8	6.4

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Note: Breastfed babies and <1 year kids have been excluded in all calculations.

Table 6.24—Daily per capita zinc intake by age and income groups: Rural Bangladesh

| Age group | Per capita expenditure quintile | | | | | All |
	1 (lowest)	2	3	4	5 (highest)	
	(milligrams/person/day)					
Preschoolers (aged <5 years)	3.1	3.4	3.4	3.9	4.0	3.4
Male	3.2	3.7	3.5	3.9	3.9	3.6
Female	3.0	3.1	3.3	3.9	4.1	3.3
Primary school age children (aged 5-10 years)	4.2	4.8	5.0	5.4	5.4	4.8
Male	4.1	5.0	5.0	5.4	5.6	4.9
Female	4.2	4.7	5.0	5.3	5.2	4.7
Adolescents (aged >10 to <18 years)	5.7	6.5	6.7	7.3	7.7	6.7
Male	5.9	6.7	7.0	7.6	8.1	6.9
Female	5.5	6.3	6.5	7.0	7.4	6.5
Adults 1 (aged 18 to <40 years)	7.1	7.8	8.2	8.5	9.1	8.1
Male	7.9	8.5	9.1	9.3	9.8	8.9
Female	6.6	7.2	7.5	7.9	8.6	7.5
Adults 2 (aged 40 to <65 years)	6.9	7.6	7.9	8.3	8.8	7.9
Male	7.5	8.4	8.7	9.1	9.6	8.6
Female	6.2	6.9	7.0	7.6	8.2	7.2
Elderly (aged 65 years and more)	6.6	6.8	6.9	6.9	8.1	7.1
Male	7.3	7.5	7.4	7.5	8.7	7.7
Female	5.7	6.0	6.2	6.0	7.1	6.2
All	5.9	6.7	7.1	7.6	8.2	7.0
Male	6.3	7.2	7.6	8.0	8.6	7.5
Female	5.6	6.3	6.6	7.1	7.8	6.6

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: Breastfed babies and <1 year kids have been excluded in all calculations.

Table 6.25—Types of complementary foods fed to infants and young children by age group: Rural Bangladesh

Type of complementary foods	Before 6 months	6-8.9 months	After 9 months
		(percent)	
Water	69.8	29.0	1.2
Other non-breast milk liquids (e.g. sugar/glucose water, tea, fruit juice, etc.)	48.3	49.0	2.8
Cow or goat milk	37.4	49.9	12.7
Sooji, rice gruel, etc.	27.9	65.9	6.3
Semi-solid foods (e.g. soft rice, mashed potato, ripe banana, etc.)	12.5	76.9	10.7
Solid foods (e.g. rice, wheat, puffed or pressed rice, etc.)	7.5	67.5	25.0
Fish	5.9	65.3	28.7
Meat	5.0	60.8	34.2
Eggs	7.2	71.9	20.9
Legumes	6.3	72.5	21.2
Green vegetables	6.0	75.0	19.0
Snack foods (e.g. chips)	3.3	54.2	42.5

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 6.26—Items fed to children aged 6-8 months based upon 24 hour recall: Rural Bangladesh

Item	Feeding practice
	(percent)
Liquids	
Breast milk	98.2
Water	87.5
Prepared baby formula	16.1
Any other kind of milk (e.g. powder, cow, goat, etc.)	31.8
Fruit juice (homemade)	8.0
Fruit juice (purchased)	1.2
Water-based liquids (e.g. teas, sugar water, coffee, etc.)	42.6
Food groups	
Grains, roots, and tubers	70.3
Legumes and nuts	8.3
Dairy (e.g. milk, yogurt, cheese)	42.9
Flesh foods (e.g. meat, fish, poultry, and liver/organ meats)	5.3
Eggs	8.3
Vitamin A-rich fruits and vegetables	16.2
Other fruits and vegetables	10.4

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 6.27—Mean height of household members by age-group and sex: Feed the Future zone

Age-group	Male	SD	Female	SD	All	SD
			(height in meters)			
<5 years	0.824	0.141	0.804	0.134	0.813	0.138
<6 months	0.580	0.063	0.594	0.055	0.587	0.059
6-8 months	0.662	0.035	0.651	0.033	0.656	0.034
9-11 months	0.699	0.062	0.683	0.046	0.689	0.052
12-17 months	0.744	0.033	0.726	0.041	0.734	0.038
18-23 months	0.792	0.051	0.755	0.046	0.774	0.052
24-35 months	0.856	0.057	0.835	0.056	0.844	0.057
36-47 months	0.914	0.055	0.906	0.064	0.910	0.060
48-59 months	0.982	0.069	0.965	0.058	0.973	0.064
5-10 years	1.193	0.121	1.194	0.122	1.193	0.122
>10 to <18 years	1.519	0.126	1.470	0.079	1.495	0.108
18 to <40 years	1.628	0.061	1.511	0.052	1.559	0.080
40 to <65 years	1.613	0.064	1.497	0.054	1.556	0.083
65 years and above	1.591	0.069	1.458	0.063	1.536	0.094

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: SD=Standard deviation

Table 6.28—Mean height of household members by age-group and sex: Rural Bangladesh

Age-group	Male	SD	Female	SD	All	SD
			(height in meters)			
<5 years	0.821	0.135	0.810	0.134	0.816	0.135
<6 months	0.601	0.091	0.581	0.051	0.592	0.076
6-8 months	0.673	0.032	0.653	0.035	0.663	0.035
9-11 months	0.707	0.045	0.681	0.044	0.694	0.046
12-17 months	0.738	0.041	0.726	0.040	0.732	0.041
18-23 months	0.780	0.049	0.768	0.042	0.773	0.046
24-35 months	0.841	0.058	0.828	0.057	0.835	0.058
36-47 months	0.918	0.060	0.901	0.068	0.910	0.065
48-59 months	0.976	0.059	0.970	0.062	0.973	0.061
5-10 years	1.185	0.123	1.183	0.127	1.184	0.125
>10 to <18 years	1.504	0.130	1.464	0.081	1.483	0.109
18 to <40 years	1.626	0.064	1.507	0.058	1.555	0.084
40 to <65 years	1.615	0.063	1.496	0.056	1.557	0.084
65 years and above	1.592	0.064	1.455	0.062	1.535	0.092

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.
Note: SD=Standard deviation

Table 6.29—Mean weight of household members by age-group and sex: Feed the Future zone

Age-group	Male	SD	Female	SD	All	SD
			(weight in kg)			
<5 years	10.439	3.151	9.868	2.910	10.138	3.038
<6 months	5.302	1.683	5.371	1.187	5.337	1.445
6-8 months	7.235	0.981	7.113	0.917	7.169	0.938
9-11 months	7.712	1.328	7.479	1.109	7.557	1.175
12-17 months	8.581	0.982	8.247	1.353	8.401	1.202
18-23 months	9.507	1.014	8.922	1.199	9.214	1.139
24-35 months	11.140	1.706	10.422	1.511	10.743	1.636
36-47 months	12.412	1.543	11.802	1.714	12.108	1.654
48-59 months	13.881	1.585	13.386	1.569	13.632	1.591
5-10 years	20.843	5.383	20.390	5.389	20.621	5.389
>10 to <18 years	39.823	10.332	38.566	7.879	39.203	9.222
18 to <40 years	54.231	8.192	47.821	8.418	50.520	8.904
40 to <65 years	52.905	8.465	46.869	9.092	49.955	9.279
65 years and above	48.900	9.214	41.441	9.230	45.751	9.922

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Notes: Results exclude pregnant women. SD=Standard deviation

Table 6.30—Mean weight of household members by age-group and sex: Rural Bangladesh

Age-group	Male	SD	Female	SD	All	SD
			(weight in kg)			
<5 years	10.487	3.021	9.969	2.939	10.227	2.991
<6 months	5.766	2.045	4.964	1.136	5.413	1.749
6-8 months	7.373	1.113	6.976	0.955	7.169	1.049
9-11 months	8.177	1.222	7.216	1.223	7.697	1.310
12-17 months	8.924	1.277	8.141	1.065	8.514	1.232
18-23 months	9.475	1.138	8.971	1.193	9.196	1.193
24-35 months	10.924	1.523	10.428	1.433	10.674	1.497
36-47 months	12.469	1.542	11.913	1.701	12.201	1.643
48-59 months	13.911	1.684	13.298	1.700	13.592	1.718
5-10 years	20.532	5.279	20.060	5.390	20.294	5.340
>10 to <18 years	38.830	10.288	38.158	8.040	38.482	9.197
18 to <40 years	53.996	8.283	47.188	8.318	50.004	8.954
40 to <65 years	53.207	8.951	46.764	9.386	50.032	9.717
65 years and above	49.183	8.962	40.705	8.500	45.594	9.716

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Notes: Results exclude pregnant women. SD=Standard deviation

Table 6.31—Incidence of illness during 30 days preceding the survey: Feed the Future zone

Age group	1 (lowest)	2	3	4	5 (highest)	All
			Per capita expenditure quintile			
			(percentage of household members)			
0–5 years						
Any illness or injury in the last four weeks	49.5	46.2	52.8	46.3	42.4	48.0
Prolonged fever	39.5	38.4	43.5	36.5	32.3	38.7
Diarrhea	5.3	8.4	5.1	4.3	5.1	5.8
Persistent cough	26.7	28.2	22.9	24.6	25.9	25.9
Skin disease	2.4	2.6	1.5	1.2	1.7	2.0
Throat infection	0.6	1.2	2.2	0.0	0.0	0.9
6–10 years						
Any illness or injury in the last four weeks	29.2	24.6	22.8	32.7	22.2	26.6
Prolonged fever	23.8	19.1	19.6	25.6	20.4	21.7
Diarrhea	1.5	2.2	0.0	2.4	0.8	1.5
Persistent cough	12.3	7.8	7.6	13.6	9.3	10.1
Skin disease	2.5	1.4	0.9	2.2	0.0	1.6
Throat infection	0.3	0.0	0.4	0.0	0.8	0.3
11–17 years						
Any illness or injury in the last four weeks	21.2	22.1	20.8	24.5	32.4	23.7
Prolonged fever	17.7	19.0	16.7	17.1	23.2	18.5
Diarrhea	2.4	0.0	0.4	1.8	1.8	1.2
Persistent cough	9.2	8.5	6.9	9.2	7.3	8.3
Skin disease	1.9	1.2	0.4	1.8	4.2	1.8
Throat infection	0.8	0.4	0.8	0.4	0.0	0.5
18–59 years						
Any illness or injury in the last four weeks	31.6	32.7	33.2	31.5	32.5	32.3
Prolonged fever	23.1	24.2	24.1	23.3	22.3	23.4
Diarrhea	1.3	2.2	1.4	2.8	2.2	2.0
Persistent cough	12.2	12.4	11.2	11.5	12.8	12.0
Skin disease	2.4	1.7	1.0	2.1	3.2	2.0
Throat infection	1.1	0.6	1.3	0.7	1.1	1.0
60 years and over						
Any illness or injury in the last four weeks	42.1	47.1	45.8	42.4	45.8	44.8
Prolonged fever	28.6	34.3	28.0	31.4	30.0	30.5
Diarrhea	1.4	4.1	1.2	1.4	6.8	3.1
Persistent cough	16.8	18.0	17.0	17.7	19.4	17.8
Skin disease	3.5	4.4	0.6	4.4	1.0	2.7
Throat infection	2.9	0.0	1.8	0.7	1.5	1.3

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.

Table 6.32—Incidence of illness during 30 days preceding the survey: Rural Bangladesh

Age group	Per capita expenditure quintile					All
	1 (lowest)	2	3	4	5 (highest)	
	(percentage of household members)					
0–5 years						
Any illness or injury in the last four weeks	39.0	41.5	42.2	42.0	42.6	41.0
Prolonged fever	28.0	30.4	32.4	31.0	29.1	29.9
Diarrhea	7.5	7.4	7.0	6.2	8.9	7.3
Persistent cough	20.2	21.6	21.7	24.6	20.1	21.5
Skin disease	2.7	1.8	0.8	1.6	1.3	1.8
Throat infection	0.8	0.4	1.1	0.0	0.5	0.6
6–10 years						
Any illness or injury in the last four weeks	20.8	20.4	15.1	21.2	19.6	19.5
Prolonged fever	15.6	16.3	11.9	17.6	15.5	15.3
Diarrhea	1.4	1.5	0.7	0.9	0.8	1.2
Persistent cough	6.5	5.8	5.3	8.6	7.6	6.5
Skin disease	2.1	1.3	0.3	0.5	1.2	1.2
Throat infection	0.4	0.5	0.7	0.0	0.4	0.4
11–17 years						
Any illness or injury in the last four weeks	19.9	16.8	18.2	16.5	19.1	18.1
Prolonged fever	13.2	12.6	12.9	12.3	12.1	12.7
Diarrhea	2.5	0.3	1.1	0.5	0.7	1.1
Persistent cough	4.3	4.8	6.2	5.9	5.3	5.3
Skin disease	2.6	1.5	1.4	0.8	1.1	1.5
Throat infection	0.9	0.6	0.5	0.5	0.6	0.6
18–59 years						
Any illness or injury in the last four weeks	26.9	27.8	29.0	30.2	27.3	28.2
Prolonged fever	18.5	18.6	18.5	19.5	16.9	18.4
Diarrhea	2.2	1.8	1.9	1.9	1.9	1.9
Persistent cough	7.2	7.3	8.2	7.6	8.9	7.8
Skin disease	1.5	1.1	1.7	1.6	1.6	1.5
Throat infection	0.6	0.6	0.7	0.6	0.8	0.6
60 years and over						
Any illness or injury in the last four weeks	42.7	47.5	46.0	42.1	42.3	44.2
Prolonged fever	23.2	25.9	26.9	24.3	26.2	25.4
Diarrhea	3.2	2.3	2.4	2.8	2.6	2.6
Persistent cough	15.1	16.8	16.8	13.2	14.8	15.3
Skin disease	1.6	1.1	2.5	2.0	1.0	1.6
Throat infection	0.5	0.3	0.4	0.0	0.6	0.4

Source: IFPRI Bangladesh Integrated Household Survey, 2011-2012. The survey represents rural areas only.