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Bellmon Estimation Studies
for Title II (USAID-BEST)



USAID OFFICE OF FOOD FOR PEACE BANGLADESH USAID-BEST ANALYSIS

MAY 2014

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Front cover: (Left) Rice is produced all over Bangladesh and the country is nearly self-sufficient in this main staple. Bagerhat, Bangladesh, April 2014. (Right) This woman participates in weekly trainings where she learns about health, nutrition, and hygiene and receives a food aid transfer. She now recognizes the importance of three types of foods: "energy foods" such as rice, "growing foods" such as fish and eggs, and "prevention foods" such as vegetables and fruits. Bagerhat, Bangladesh, April 2014.

Back cover: The young daughter of a Feed the Future farmer client smiles as she eavesdrops on an interview about the fish pond and vegetables her father grows for home consumption and sale, and the cold storage unit he helps manage to maintain his community's potato seeds. Barisal, Bangladesh, April 2014.

Photos by Fintrac Inc.

PREFACE

During the months of February-May 2014, the Bellmon Estimation Studies for Title II (USAID-BEST) team undertook a study of the current state of agricultural markets in Bangladesh to inform USAID food assistance programming decisions.

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ACRONYMS AND NOTES

AAPI	Accelerating Agriculture Productivity Improvement
ACF	Accion Contre La Faim
ADB	Asian Development Bank
AFTA	ASEAN (Association of Southeast Asian Nations) Free Trade Area
AIN	Aquaculture for Income and Nutrition
AIP	Agro-Inputs Program
ANC	antenatal care
ASEAN	Association of South East Asian Nations
AVC	Agricultural Value Chains
AVRDC	World Vegetable Center
BBS	Bangladesh Bureau of Statistics
BCC	behavior change communication
BDT	Bangladeshi Taka
BEST	Bellmon Estimation Studies for Title II
BFY	Bangladesh Fiscal Year
BINP	Bangladesh Integrated Nutrition Project
B/L	Bill of Lading
BMI	Body Mass Index
BR	Bangladesh Railways
BRRI	Bangladesh Rice Research Institute
CCT	Conditional Cash Transfers
CDSO	Crude Degummed Soybean Oil
CFS	Complementary Food Supplement
CFSAM	Crop and Food Security Assessment Mission
CFSVA	Comprehensive Food Security and Vulnerability Analysis
CFR	cost and freight
CFT	cash-for-training
CFW	cash-for-work
CHT	Chittagong Hill Tracts
CIA	Central Intelligence Agency
CIF	Cost, Insurance, Freight
CIMMYT	International Maize and Wheat Improvement Center
CIP	International Potato Center
CLP	Chars Livelihoods Programme
CMAM	Community Management of Acute Malnutrition
CN\$	Canadian Dollars
CP	Country Programme
CPA	Chittagong Port Authority
CPI	Consumer Price Index
CSISA	Cereal Systems Initiative for South Asia
CSISA-BD	Cereal Systems Initiative for South Asia in Bangladesh
CSISA-MI	Cereal Systems Initiative for South Asia - Mechanization and Irrigation
COMTRADE	Commodity Trade Statistics Database
CP	Country Programme
CSB	Corn Soy Blend
CSD	Central Storage Depot
CWRS	Canadian Western Red Spring (wheat)
DFID	Department for International Development
DHS	Demographic and Health Survey
DNS	Dark Northern Spring (wheat)
DRR	Disaster Risk Reduction
EFAP	Emergency Food Assistance Project
EGPP	Employment Guarantee Program for the Poorest
EP	Essential Priorities

EPI	Extended Program on Immunizations
ER	Enhancing Resilience to Natural Disasters and the Effects of Climate Change
EU	European Union
FANTA	Food and Nutrition Technical Assistance
FAO	Food and Agriculture Organization
FAS	Foreign Agricultural Service
FCGs	Food Consumption Groups
FCS	Food Consumption Score
FFE	Food For Education
FFP	Food For Peace
FFPr	Food For Progress
FFT	food-for-training
FFW	food-for-work
FLS	Food and Livelihood Security
FOB	Free on Board
FPMU	Food Policy and Monitoring Unit (Ministry of Food)
FTF	Feed the Future
FY	Fiscal Year
GAIN	Global Alliance for Improved Nutrition
GAO	Government Accountability Office (US)
GDP	Gross Domestic Product
GIEWS	Global Information and Early Warning System
GIST	Geographic Information Support Team
GIZ	German Society for International Cooperation
GMO	Genetically Modified Organism
GMP	growth monitoring promotion
GoA	Government of Argentina
GoB	Government of Bangladesh
Gol	Government of India
GR	Gratuitous Relief
ha	hectares
HCA	Host Country Agreement
HDI	Human Development Index
HEB	High Energy Biscuit
HH	household
HIES	Household Income and Expenditure Survey
HKI	Helen Keller International
HRW	Hard Red Winter (wheat)
IADS	Institute of Agribusiness and Development Studies
IAHBI	Integrated Agriculture and Health Based Interventions for Improved Food Security
ICD	Inland Container Depot
icddr,b	International Centre for Diarrheal Disease Research, Bangladesh
IFAD	International Fund for Agricultural Development
IFDC	International Fertilizer Development Center
IFPRI	International Food Policy Research Institute
IGC	International Grains Council
ILO	International Labour Organization
IMCI	Integrated Management of Childhood Illnesses
IMCN	Improving Maternal and Child Nutrition
IMF	International Monetary Fund
IPC	Integrated Food Security and Phase Classification
IPP	Import Parity Price
IRD	International Relief and Development
IRRI	International Rice Research Institute
ISPS	International Ship and Port Security
ITC	International Trade Centre
ITSH	Internal Transport Shipping and Handling

IWT	Inland Water Transport
IYCF	infant and young child feeding
JICA	Japan International Cooperation Agency
kcal	kilocalories
kg	kilograms
kl	kiloliters
km	kilometers
LC	Letter of Credit
LGED	Local Government Engineering Department
LOA	Length Overall
LRP	Local and Regional Procurement
LSD	Local Storage Depot
MAM	moderate acute malnutrition
MCHN	Maternal and Child Health Nutrition
MFU	milling and fortification unit
MLT	multi-location field trial
mm	millimeters
MMT	Million Metric Tons
MNP	Micronutrient Powder
MoDMR	Ministry of Disaster Management and Relief
MoF	Ministry of Food
MoH	Ministry of Health
MoWCA	Ministry of Women and Children Affairs
MPA	Mongla Port Authority
MT	Metric Tons
MUAC	Mid-Upper Arm Circumference
MYAP	Multi-Year Assistance Program
NGO	Non-Governmental Organization
NIH	National Institutes of Health
NIPORT	National Institute of Population Research and Training
NSAPR	National Strategy for Accelerated Poverty Reduction
ODI	Overseas Development Institute
OFDA	Office of US Foreign Disaster Assistance
OMS	Open Market Sales
ORS	Oral Rehydration Salts
PFDS	Public Food Distribution System
PLW	pregnant and lactating women
PM2A	Preventing Malnutrition in Children Under 2 Approach
PPP	Purchasing Power Parity
PRC	People's Republic of China
PROSHAR	Program for Strengthening Household Access to Resources
PRRO	Protracted Relief and Recovery Operation
PRS	Poverty Reduction Strategy
PSC	Phytosanitary Certificate
PVO	Private Voluntary Organization
RERMP	Rural Employment and Road Maintenance Program
RHD	Road and Highway Department
RUCFS	Ready-to-Use Complementary Food Supplement
RUTF	Ready-to-Use Therapeutic Food
RVO	Refined Vegetable Oil
SAARC	South Asian Association for Regional Cooperation
SAM	severe acute malnutrition
SEAF	Small Enterprise Assistance Funds
SHOUHARDO	Strengthening Household Ability to Respond to Development Opportunities
SMS	small- and medium-scale
SO	Strategic Objective
SPRING	Strengthening Partnerships, Research, and Innovations in Nutrition Globally
sq. ft.	square feet

sq. m.	square meters
SW	Soft White (wheat)
TANGO	Technical Assistance to Non-Governmental Organizations
TEU	Twenty-Foot Equivalent Units
TMRI	Transfer Modality Research Initiative
TR	Test Relief
TUP	Targeting the Ultra-Poor
U2s	children under two years of age
U5s	children under five years of age
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNICEF	United Nations Children's Fund
UNIFEM	United Nations Development Fund for Women
US\$	United States Dollar
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
USDC	United States Department of Commerce
USG	United States Government
VAM	Vulnerability Analysis and Mapping
VAT	Value Added Tax
VDC	Village Development Committee
VGD	Vulnerable Group Development
VGf	Vulnerable Group Feeding
VSL	Village Savings and Loan
WASH	Water, Sanitation, and Hygiene
WFP	World Food Programme
WSB	Wheat Soy Blend
WSB+	Wheat Soy Blend +, also referred to as Super Cereal
WSB++	Wheat Soy Blend ++, also referred to as Super Cereal Plus
WTO	World Trade Organization
YSP	yellow split peas

Exchange Rate: US\$1 = BDT 75 as of April 2014



CHAPTER I EXECUTIVE SUMMARY

Various tins of oil sit for sale in Khulna's largest market. Palm and soybean oils are often refined in-country from imported crude products since domestic production of oilseeds is limited. Khulna, Bangladesh, April 2014.

Photo by Fintrac Inc.

I.1. INTRODUCTION

The Bellmon Amendment requires that donations of US food assistance avoid harming local markets in recipient countries and not go to waste because of inadequate logistical capacity. This report provides key research findings so as to better enable US government representatives to make an informed Bellmon determination prior to a potential Title II development food assistance program in Bangladesh. To inform the analysis, USAID-BEST conducted desk research; interviewed key government, commercial, donor, and International/Non-Governmental Organization (I/NGO) stakeholders; and visited local markets across the country during a field visit in April 2014.

This executive summary is a synopsis of the full USAID-BEST Analysis, which provides an overview of local markets, highlights of local food initiatives to improve nutrition and existing food security programs, recommendations for program design, descriptions and considerations of current and future Title II monetization programs, and lastly an analysis of adequacy of ports, transport, and storage. The executive summary is a condensed version of these topics as detailed findings from research and field work are covered in subsequent chapters.

I.2. OVERVIEW OF LOCAL MARKETS

The following summarization of Chapter 2 presents the most salient findings, and mirrors the structure of the chapter in first examining the root causes of food insecurity, and then focusing in on the market dynamics for the foods that form the basis of the Bangladeshi diet since USAID Title II development food assistance programming involving food transfers could potentially affect these markets.

I.2.1 Structural Food Deficits

Local diets. Rice represents the most important staple in Bangladesh; many people equate food security with rice security. Across income and regional strata, rice consumption stands at an estimated 152 kg per person annually, among the highest in the world. Ranked second, but lagging far behind rice consumption, are wheat products, particularly from whole wheat (*atta*) and white (*maida*) flour. Pulses (*dal*) are an important protein source, and regularly complement rice dishes. Palm and soybean oil are widely consumed, while locally processed edible oils, such as mustard oil, are specialty items for holidays and celebratory occasions.

Food availability. From the end of the 1970s to the start of the millennial decade, Bangladesh more than tripled rice production through investment in irrigation, mechanization, and

other modern agricultural practices. Currently, year-round availability of rice around the country and food imports help fill the gap in rice demand and decrease the effects of production seasonality. Stagnation in production of other important food crops, including wheat, pulses, and oilseeds, has meant an increasing reliance on imports to ensure food availability. Certain factors will likely affect production of all food crops and subsequent availability in the future, including limited land for cultivation;¹ natural and climatic disasters;² landlessness among rural households (HH)s;³ marginal farmlands; tenancy agreements; and limited crop diversification.

Food access. Poverty severely constrains access to an adequate amount of food for poor and extremely poor HHs in Bangladesh. Reliance on low-pay activities, marginal farm size and unprofitable tenancy agreements, and income inequality limits food access for a large proportion of the population. Although the proportion of people in poverty countrywide decreased from 40 percent in 2005 to 31.5 percent in 2010,⁴ poverty is still heavily concentrated in rural areas,⁵ where lack of land and labor opportunities in particular create serious access issues for many HHs. Since expenditures on food run 62 percent of the average HH budget, these HHs remain especially vulnerable to the frequent climatic and health shocks that can quickly deplete any savings or assets.

Food utilization. Of all food security indicators in Bangladesh, improvements in food utilization have seen the slowest progress, especially in rural areas. Caloric deficiency; low dietary diversity; cultural norms and gender practices guiding the distribution of food; and poor hygiene and sanitation influence food utilization.

1.2.2 Commodity Markets

Rice. Bangladesh is nearly self-sufficient in rice production. The rice market is dynamic, competitive, and well integrated. An important recent phenomenon is the increasing concentration of milling operations among larger mills.

Annual rice production stands at around 33.27 million metric tons (MMT). Increasingly, Bangladeshi farmers have reallocated land to producing High Yield Variety (HYV) rice,⁶ and subsequently, HYV rice production during *Aman* and *Boro* seasons has consistently increased since 2009. Bangladesh continues to import mostly coarse rice from India (in the absence of an Indian export ban), but total imports have only averaged 688,759 MT from 2009-12 (about 2 percent of



Photo by Fintrac Inc.

Many Bangladeshis equate food security with rice security, and across income and regional strata, rice consumption stands at an estimated 152 kg per person annually. Poor households can only afford the coarsest rice, while those with greater means can purchase medium-quality rice, like that pictured here, or even aromatic rice. Tangail, Bangladesh, April 2014.

production). The Government of Bangladesh (GoB) remains the primary importer of rice (78 percent of total imports) and stocks this rice in its Public Food Distribution System (PFDS) for distribution and subsidized sales in different social safety net programs.

Most GoB policies to support rice production are geared towards increasing adoption of HYV seeds, access to fertilizer, use of pesticides, promotion of irrigation, better coordinated research and extension services, and more efficient market interventions.⁷ In terms of food distributions under the PFDS, the GoB released on average 1.44 MMT of rice per year from 2009-12. During this same time, WFP, the second largest donor of rice, has provided on average 10,164 metric tons ((MT), representing less than 0.1 percent of total production) to address development and emergency needs.

Marketing and performance. Millions of farmers and traders, and thousands of millers participate in the rice value chain. Traders move rice from local surplus areas to limited production regions. An estimated 30 percent of farmers now choose to directly sell to large-scale wholesalers (*aratdars*) and millers.⁸ However, the large number of rice market players prevents wholesalers and automatic rice millers from colluding and concentrating sales in ways that could negatively affect buying and selling prices. Also, as the total capacity of automatic rice mill expands, the greater the availability of medium-quality rice.

Extensive studies of market integration in Bangladesh all conclude that markets around the country and with India are highly integrated.⁹

1 IFPRI, April 2013, *The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey*.

2 World Bank, June 2014, *Bangladesh Poverty Assessment: Assessing a Decade of Progress in Reducing Poverty, 2000-2010*.

3 IPCC, October 2013, *IPCC WGII AR5 Chapter 24. Asia*.

4 GoB, June 2011, *Household Income and Expenditure Survey 2010*.

5 GoB, June 2011, *Household Income and Expenditure Survey 2010*.

6 Minten, B., Murshid, K., et al, 2012, *Food quality changes and implications: Evidence from the rice value chain in Bangladesh*; Reardon, T, Chen, K., et al, 2012, *The Quiet Revolution in Staple Food Value Chains: Enter the Dragon, the Elephant, and the Tiger*.

7 Pullabhotla, Hemant and Ganesh-Kumar, A., July 2012, *Review of input and output policies for cereal production in Bangladesh*; Reardon, T, Chen, K., et al, 2012, *The Quiet Revolution in Staple Food Value Chains: Enter the Dragon, the Elephant, and the Tiger*.

8 Reardon, T, Chen, K., et al, 2012, *The Quiet Revolution in Staple Food Value Chains: Enter the Dragon, the Elephant, and the Tiger*.

9 IADS, Raha, S. K., et al, 2013, *Structure, Conduct and Performance of the Rice Market and the Impact of Technological Changes in Milling*; Chowdhury, Naem,

Wheat. Bangladesh typically produces about 1/4 of its wheat needs, and relies on imports for the remainder. The wheat market is dynamic, competitive, and well integrated. Increasingly, just as in the rice market, larger mills are concentrating their operations.

Bangladesh produces on average 1 MMT of wheat grain per year. Primarily, greater use of HYV seeds drives productivity gains.¹⁰ Lower production costs and favorable weather conditions have led to resurgence in area planted for wheat in recent years.¹¹ However, local wheat production will not expand enough to replace the substantial need for imports. Bangladesh imports approximately 2.8 MMT of wheat grain each year; at present the country mostly sources from India. The private sector imports the majority of the wheat supply (on average 2.3 MMT annually since 2009). However, the GoB also imports an important volume of wheat (an average of 18 percent of commercial imports during 2009-12), which it uses in the PFDS.

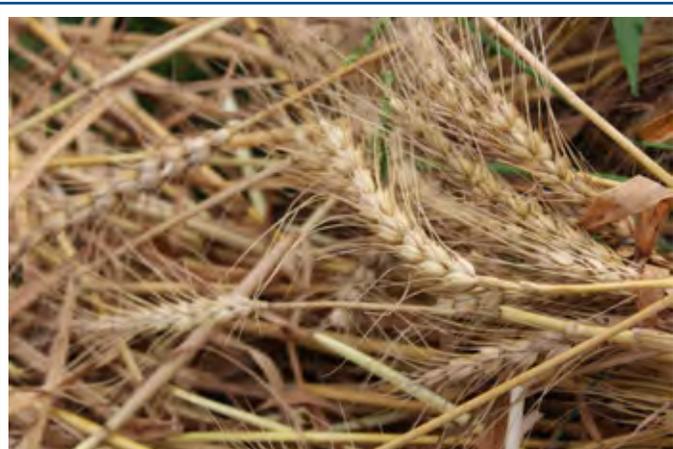


Photo by Fintrac Inc.

Bangladesh produces an average of 1 MMT of wheat each year, and imports nearly 3 MMT to meet demand. Most local wheat is soft with relatively low protein but high gluten content, and production is concentrated in the north and west of the country. Gazipur, Bangladesh, April 2014.

As part of its support policy, the GoB also procures some domestic wheat grain for the PFDS (on average about 13 percent of domestic production). From FY10-14, Title II awardees monetized to the GoB an average of 59,000 MT wheat per year, which the GoB used in the PFDS (see Chapter 6 for details on wheat monetizations).

The GoB is the main distributor of wheat food aid, followed by WFP and USAID Title II. From 2009-12, the GoB distributed on average 664,750 MT of wheat grain. During the same period, WFP distributed on average 49,655 MT of wheat per year, and

USAID provided on average 10,821 MT for direct distribution in Title II development programs.

Marketing and performance. Local and imported wheat grains follow different value chains. Locally produced wheat generally moves from farmers to small-scale traders (*farias*), who then sell to larger traders (*beparis*) experienced in dealing with wholesalers (*aratdars*). These *aratdars* later aggregate, dry, and bag wheat grain for local mills. As for imported wheat, eight-ten companies control about 50 percent of imported wheat market share. These large-scale businesses typically have distributors throughout the country and conveniently deliver to wholesalers and/or retailers. Besides the larger mills and import businesses, hundreds if not thousands of small, diesel-powered *chakki* mills (each with a daily capacity of 300-800 kg) proliferate across the country. As larger, modern mills are now processing the large majority of wheat grain in-country, the small *chakki* mills are rapidly losing market share.

Traders continue to sell the majority of wheat flour (as much as 75 percent in 2012) on the market unbranded and in bulk. However, in high-income markets, consumers increasingly perceive branded and packaged goods as higher quality. Given that local production remains minimal and imports account for the majority of wheat grain supply, wheat retail prices demonstrate small seasonal variation. Overall, in real terms, wheat retail prices have decreased since the 1980s. However, domestic prices remain susceptible to international price fluctuations and strikes (*hartals*).

Edible oils. Of the total edible oil volumes on the market, imports satisfy close to 95 percent of total demand because local extraction of oilseeds produces negligible volumes; moreover, the mustard seed oil from domestic processing that dominates in-country production only sells in small quantities during special occasions and holidays. As demand grows with increasing incomes, reliance on imports will increase. Large-scale processors command 75 percent of the edible oil market, while small- and medium-scale processors (SMS) dominate the production of mustard oil.

Since 2009, imports stand at about 1.37 MMT per year. Palm oil dominates the import market with an average of 968,372 MT per year and soybean oil ranks second at 397,082 MT per year. Bangladesh sources the majority of its palm oil, imported in crude palm olein form, from Malaysia and Indonesia while soybean oil, nearly all of it crude degummed soybean oil (CDSO), come from Argentina and Brazil.

The most important current GoB policy affecting the edible oil sector has been the passage of a 2013 bill mandating vitamin A fortification of all edible oil in-country into law (see Chapter 3 for more information). The GoB does not distribute edible oils under PFDS. USAID Title II programs distributed on average 1,395 MT of refined vegetable oil (RVO) per year from 2009-12, and WFP, the second largest provider of RVO, provided on average 509 MT of RVO annually during the same time.

February 2010, *Price Stabilization, Market Integration and Consumer Welfare in Bangladesh*; Dorosh, P and Rashid, S., September 2012, *Bangladesh Rice Trade and Price Stabilization: Implications of the 2007/08 Experience for Public Stocks*.

10 USDA, 2012, Grain and Feed Annual - 2012. http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Grain%20and%20Feed%20Annual_Dhaka_Bangladesh_2-22-2012.pdf, accessed April 2014.

11 GoB, 2010, *Estimates of Wheat, Bangladesh 2009-2010*.

Marketing and performance. Imported and local edible oil follow different value chains. Numerous SMS processors around production districts in the central and northern regions extract oil (mostly from mustard seed) and use leftover oil cake for animal feed. SMS processors generally sell wholesale and retail, but they face constraints in expanding their business. Fewer large-scale processors, concentrated in and around Dhaka city and Chittagong, import mostly palm and soybean crude oil for processing and then distribute to markets around the country.

Despite the upward price trends for retail soybean and palm oil since 2009, consumers still prefer these types of products. Even if locally produced oils significantly increase, they will still remain less competitive given the increasing acceptability of palm and soybean oils among consumers.

Pulses. Though pulses are a core staple of the Bangladeshi diet, the country is a net importer as it produces only about 30 percent of its needs, and relies on imports to make up the gap. While the import market appears more concentrated, domestic production and trade appear fairly competitive, and markets are integrated.

Bangladeshi HHs strongly prefer small red lentils (*mushur*), but consumers are highly price sensitive and will purchase substitutes, such as grass peas (*keshari*) or cheaper imported red lentils from Nepal and Canada. Also, despite the importance of pulses as a nutritious staple food, planted area has declined by 37 percent over the past 10 years. Competition with more profitable crops (particularly *Boro* rice) for land allocation; high disease and pest infestation levels; and increasing vulnerability to climatic fluctuations constrain yields.¹² Of total production, *grass peas* and *red lentils* dominate production, accounting for 83,000 MT and 73,000 MT, respectively. Every year on average Bangladesh imports more than 600,000 MT of pulses (mostly red lentils, peas, and chickpeas); red lentils imports alone average nearly 150,000 MT.

The most important GoB intervention in the pulse market is support for HYV seed development. The GoB does not distribute pulses for its safety net programs, but it considers pulses an important crop to diversify in the long term and a strategic food for nutrition improvement. From 2009-12, USAID Title II provided on average 1,193 MT and WFP provided 1,075 MT on average per year.

Marketing and performance. Numerous large-scale traders (*aratdars*) collect pulses from farmers in production areas and then store these pulses for some months. Wholesalers later sell to processors or other traders directly or at wholesale market days (*haat*). Millers source mostly from wholesalers, but increasingly bypass wholesalers to directly source from farmers. Private companies that specialize in food imports, such as City and Meghna groups, usually work with import agents to distribute lentils around the country. All lentils imported from Canada, Australia, or other overseas countries arrive through



Photo by Fintrac Inc.

A rainbow of lentils await sale within a semi-wholesaler's storefront. Small red lentils sourced from Nepal are the most commonly sold at this shop. Barisal, Bangladesh, April 2014.

the port of Chittagong, and importers/wholesalers later transport these lentils to Dhaka city or other regions. For regional imports, agents or large-scale traders in Faridpur and Bogra handle and distribute pulses from India and Nepal.

The reliance on imports to close the deficit on pulse production will likely continue in the future given that under the current production structure, farmers cannot supply enough products. Availability of imported products has contributed to keep prices relatively stable since 2012.

1.2.3 Characteristics of Market Sites

All markets visited during field work in April 2014 shared the following characteristics:

- Adequate supply of staple foods, despite that April is considered lean season.
- Traders of all sizes operate in markets, and traders confirmed that road improvements, cell phone availability, and increasing consumer purchasing power have contributed to improved food availability and access.
- Each district generally had three main types of markets: a wholesale weekly market (*haat*), daily wholesale/retail markets (*chawk* or *boro*), and neighborhood (in urban areas) or village (in rural areas) retail markets.
- Most traders indicated having been in the same business for a relatively long period (more than 10 years), and in some instances the shops were family businesses passed along to male members through generations.
- Newcomers usually face high financial barriers (e.g., cash to purchase large volumes) and limited space availability as a consequence of high rents. Although most traders did not directly mention social networks as a barrier or opportunity to enter markets, they all have extensive trading connections and conceded, particularly among those importing products from India, that obtaining supply requires knowing the right people.

¹² Golder, P. C., Sastry, R. K., and Srinivas, K., 2013, "Research priorities in Bangladesh: Analysis of crop production trends," SAARC J. Agri., 11.



Photo by Fintrac Inc.

This mill operator in Sirajganj uses traditional technology to parboil paddy and mill rice for the market. Although there are thousands of rice mills like this one throughout the country, the industry is experiencing increasing consolidation and widening market share by large automatic industrial mills. Sirajganj, Bangladesh, April 2014.

table format short highlights of current and past initiatives. Lastly, this section broadly draws out the most relevant points of the key takeaways.

1.3.1 National Policy Context

The GoB does not have an overarching national fortification policy at present. However, the GoB has passed two individual laws mandating fortification of iodization of salt (1996), and vitamin A fortification of edible oil (2013). As of April 2014, an estimated 50 percent of all salt is now properly iodized,¹⁴ and 40 percent of marketed edible oil is now fortified.¹⁵

Generally, the GoB strategy to develop locally available options for nutrition (from staple grains to complementary foods to ready-to-use therapeutic foods for the treatment of acute malnutrition) relies on working with donors and the private sector.

- Village-level markets are generally set stalls along the main road rather than formal, enclosed buildings. The number of vendors varies depending on the area. In Assassuni *Upazila* of Satkhira District, around 10-20 vendors operated at a roadside retail market, while in Bakergonj *Upazilla*, Barisal District that number was closer to 40 vendors. All these village retail vendors source locally produced rice, potatoes, and vegetables from wholesale markets via their own transportation.
- In all markets visited, traders reported NGO food distributions have minimal effect on their businesses. In fact, in most markets, traders were unaware of food aid distributions. In one instance (in Khulna), a trader confirmed the distribution of RVO in villages but stated that the small volumes compared to his sales meant that he felt little impact from these distributions. Instead, he expressed his interest to work with NGOs sourcing and repacking oils for food aid distribution.

1.3. LOCAL FOOD INITIATIVES TO IMPROVE NUTRITION

A number of initiatives in Bangladesh center on the production and distribution of fortified foods and specialty nutrition products to address the high malnutrition rate in the country. With the additional flexibility given to the USAID Office of Food for Peace after the passage of a new farm bill,¹³ Title II partners can now consider these options for possible inclusion in future rations in the next cycle of programming. This executive summary condenses the details found in Chapter 3 on the national policy context for fortified foods and provides in

¹³ USG, January 2014, *Agricultural Act of 2014*. See, in particular, Section 202(e) in Title II of the Food for Peace Act, as amended by Section 3002 of the Agricultural Act of 2014. USAID, May 2014, Food for Peace Information Bulletin 14-01. On May 9, 2014, FFP/W released for public comment a draft version of the FFP Information Bulletin describing the expanded permissible uses of 202(e), including “domestic or imported therapeutic feeding supplements purchased locally.” (p.3)



Photo by Fintrac Inc.

There are a multitude of initiatives to develop local fortified foods and specialty nutrition products to improve nutrition outcomes in Bangladesh. Shown here is the blending equipment used for one of the four rice fortification initiatives. Kurigram, Bangladesh, April 2014.

¹⁴ ICDDR,B, January 2013, *National Micronutrients Status Survey 2011-12*. While just over 80 percent of all HHs use iodized salt, only 58 percent of all HHs consume salt that is adequately iodized. For more, see http://www.unicef.org/bangladesh/media_6143.htm.

¹⁵ According to field interviews with key informants in the nutrition community, 40 percent of all edible oil has some vitamin A. However, according to unpublished reports, an estimated 20 percent of all edible oil is vitamin A fortified. There has reportedly never been any adequacy check performed in any laboratory, and therefore no public report or documentation of the coverage.

I.3.2 Current and Past Initiatives

Table I. Summary Highlights

Initiative	Food	Target Population	Organizations Involved	Status as of April 2014
Multiple Micronutrient Fortified Rice	Coarse rice varieties that are blended with micronutrients in select private sector mills	VGD beneficiaries	WFP, MoF, MoDMR, MoWCA, BRAC, DSM, private millers, garment factories, Netherlands	<ul style="list-style-type: none"> • Directly distributing to approximately 6,000 VGD and VGF beneficiaries • In process of scaling up to cover 500,000 VGD beneficiaries
Bio-fortified High Zinc Rice	Rice seed varieties, selectively bred to have high zinc content	Entire population, with initial focus on rural rice farming HHS	HarvestPlus, IRRI, BIRRI	<ul style="list-style-type: none"> • First seed variety (Aman season) released to farmers for multiplication in 2013/14 • Second variety (Boro season) due for imminent release to farmers for multiplication
Zinc Fortification at Soak	All rice varieties that are parboiled in medium- and large-scale mills (about 60-70 percent of marketed rice)	Entire population, with initial focus on urban HHs who purchase marketed rice	GAIN, private millers	<ul style="list-style-type: none"> • Initial proof of concept phase complete • Just beginning the Industrial Pilot Phase with four mills on field validation and technical due diligence • Industrial Pilot Phase also includes a bioavailability study, and working with industry and GoB on regulatory environment
Golden Rice	Local rice seed varieties, selectively bred to have high vitamin A content	Entire population, with initial focus on rural rice farming HHS	IRRI, Syngenta, Philippine Rice Research, BIRRI, HKI	<ul style="list-style-type: none"> • Under development and evaluation • Field testing scheduled to occur in Bangladesh
Plant Protein Based Ready-to-Use Complementary Food Supplements	Two locally produced plant protein based RUCFSs: rice and lentil based RUCFS, and chickpea based RUCFS; one plant protein based CFS (imported)	Vulnerable children under five, and PLW at risk of malnutrition	Johns Hopkins University, JiVitA Project, WFP, Olympic, icddr, b, USDA, DSM, Nutriset	<ul style="list-style-type: none"> • Community-based field trials to assess acceptability and efficacy completed in April 2014 and results expected by end of 2014
Animal-Source Foods Targeting 1,000 Days Window	Three animal source foods for prevention of malnutrition in 1,000 days window	Vulnerable children under two and pregnant and lactating women, and their families	WorldFish, IRRI, AVRDC	<ul style="list-style-type: none"> • Early stages of product development and testing
Plant Protein Based RUTF	Two plant protein based RUTFs: rice and lentil based RUTF, and chickpea based RUTF	Children suffering from SAM	icddr, b; UNICEF; Nutriset; DFID	<ul style="list-style-type: none"> • icddr, b is conducting efficacy trials at its Dhaka clinic and expects results end of 2014
Pushtikona 5 Micronutrient Powder	Micronutrient powder food supplement for home fortification of regular HH foods	Vulnerable populations throughout country, especially women and young children in rural areas	GAIN, BRAC, Renata Pharmaceuticals	<ul style="list-style-type: none"> • BRAC marketing Pushtikona 5 MNP to mothers across most of country
Monimix Micronutrient Powder	Micronutrient powder food supplement for home fortification of regular HH foods	Vulnerable populations throughout country, especially women and young children in rural areas	USAID/Bangladesh, Social Marketing Company, Renata	<ul style="list-style-type: none"> • Social Marketing Company supporting marketing of a second MNP through retail medicine shops
Fortified Whole Wheat Flour	Fortified whole wheat flour	VGD beneficiaries	WFP, GoB ministries, local NGOs, DSM	<ul style="list-style-type: none"> • Inactive
Local Wheat Soya Blend	Local wheat soya blend (first generation formulation)	WFP MCHN beneficiaries	WFP, Gonoshasthaya Foods Ltd.	<ul style="list-style-type: none"> • Inactive
Pushti Packet	Local blended food (no added micronutrients)	Vulnerable population, especially PLW and U2s	Bangladesh Integrated Nutrition Project, GoB	<ul style="list-style-type: none"> • Inactive

Source: Personal communication with staff of WFP, GAIN, HarvestPlus, IRRI, BIRRI, HKI, icddr, b, WorldFish, BRAC, and other stakeholders in the nutrition sector, April 2014; and relevant organizations' program documents. See chapter for full set of citations.

1.3.3 Key Takeaways

Each initiative is at a different stage of research and development. Taken together, they have the potential to complement one another because each product attempts to address micronutrient deficiencies from various angles and/or targets different populations.

At the time of writing, the feasibility to locally procure most any of these fortified or specialty nutrition products is limited to local procurement by the donor or NGO due to issues of limited market availability, cost, and/or awareness. However, some products, such as micronutrient powders for home fortification, are widely available and could be programmed now via commodity vouchers.

Importantly, the nutrition community in Bangladesh remains active in testing and developing these initiatives. As time draws nearer to draft country-specific guidance and proposal review, USAID should review the menu of options to assess the status and study the results of trials to determine the possibility and appropriateness of incorporating any of these locally produced nutrition products into a Title II ration.

1.4. OVERVIEW OF FOOD SECURITY PROGRAMS

Donors and the GoB consider food security initiatives integral to the development of the nation and have invested significantly in projects across the country. For the simplicity of classifying an especially large range of programming in Bangladesh, current approaches can broadly fall under four categories: 1) the direct distribution of food via transoceanic shipments or local procurement; 2) cash transfers; 3) nutrition and health training; and 4) agricultural and livelihoods interventions, ranging from direct training and input support to broader market initiatives. Most programs take a multi-sectoral approach to food insecurity and integrate multiple responses within a single project. This section condenses the contents of Chapter 4 to present a general perspective on the food security programming landscape; for greater details of the projects mentioned, please refer to the full chapter.

1.4.1 Programming Trends

Across development stakeholders, the prevailing trends in current food security programming include: the addition of graduation (or promotion) models in poverty programming and social safety nets; coordination and integration with GoB services, including the capacity building of staff and systems; cash transfers and the use of mobile technology to facilitate these transfers; and a focus on disaster preparedness, resilience, and climate change adaptation.

1.4.2 USAID

USAID maintains a large food security portfolio in Bangladesh. The Office of **Food for Peace** currently funds three Title II MYAPs:¹⁶ Strengthening Household's Ability to Respond to Development Opportunities II (SHOUHARDO II), implemented by CARE; Nobo Jibon (New Life), implemented by Save the Children; and the Program for Strengthening Household Access to Resources (PROSHAR), implemented by ACDI/VOCA. As for emergency assistance, Title II has supported WFP/Bangladesh with donated commodities and funding.

In addition, the Office of Economic Growth manages over thirty **Feed the Future** programs¹⁷ in the Feed the Future zone of influence (20 districts of Khulna, Barisal and southern Dhaka divisions¹⁸). The portfolio encompasses a broad spectrum of initiatives targeted at increasing agricultural productivity and reducing malnutrition and poverty.



Photo by Fintrac Inc.

This mother of three young children receives food assistance through a research initiative to assess whether food, cash, or a mix has the greatest impact on nutrition and health outcomes. She reports the relatively large food transfer she receives enables her family to accumulate a bit of savings to better prepare for the natural disasters which frequently affect their village. Bhola, Bangladesh, April 2014.

1.4.3 GoB, Other Donors, NGOs, and Initiatives

The extensive **GoB social safety net** system encompasses a wide scope of programs with goals ranging from disaster relief to poverty reduction. **WFP** currently focuses on maternal and child nutrition; school feeding; disaster risk reduction; support to the GoB on social safety nets; and a Protracted Relief and Recovery Operation in Cox's Bazar. A myriad of other donors and NGOs, including the **UK Department for International**

¹⁶ More recently referred to as development food assistance programs.

¹⁷ Personal communication with USAID/Office of Economic Growth, April 2014.

¹⁸ Location as of April 2014.

Development, the European Union, and BRAC, also actively seek to improve food security through diverse agriculture, nutrition, and poverty graduation projects.

1.5. RECOMMENDATIONS FOR PROGRAM DESIGN

This section summarizes recommendations for future Title II development programs in Bangladesh that consider best practices to mitigate any potential negative impact on local markets from distributed transoceanic and locally procured food aid. For more details, please see Chapter 5.

1.5.1 Activity Type

Title II partners in Bangladesh should continue to follow the preventing malnutrition in children under 2 approach (PM2A), which targets all PLW and children under age 2 (U2s) in the 1,000 day window of opportunity within a geographic area, regardless of wealth or health status, to improve the health and nutrition of mothers and babies. Additionally, to ensure HHs remain prepared for the possibility of natural disasters, Title II partners are expected to rely on labor-based (e.g., food-for-work (FFW) and cash-for-work (CFW)) disaster risk reduction projects. Although FFW and CFW primarily take place in the dry season, some activities could continue under a food-for-training model during monsoon season to further strengthen community resilience without creating negative market impact. With necessary adjustments in ration design, USAID-BEST does not anticipate any of these activities would have a substantial negative effect on markets.

1.5.2 Geographic and Seasonal Targeting

Food assistance will likely have minimal market impact if properly targeted. To inform current geographic targeting, Title II partners rely on a WFP led effort at mapping specific indicators associated with chronic food insecurity.

For a new cycle of Title II programming, USAID-BEST recommends activities increase their geographic concentration so as to strengthen connections to and collaboration with GoB staff because stronger relationships hold the promise of greater sustainability. Title II partners must consider the administrative structure of the GoB and understand the workings of government offices. The coordination and collaboration across all these administrative units become more difficult the greater the number of administrative and technical GoB staff involved. Consequently, awardees could enhance programmatic quality by consolidating future activities in fewer districts, and covering 100 percent of all HHs eligible for Maternal Child Health and Nutrition (MCHN) in the same *upazilas* as other Strategic Objective activities.

Title II partners should schedule labor projects (FFW/CFW) during the non-rainy months (December-May) as the weather is more suitable for outdoor construction projects. As with MCHN activities, to enhance targeting of PLW especially,



Photo by Fintrac Inc.

Though not nearly as common as in the diet of some neighboring coastal countries, fish is the most widely consumed animal protein in the typical Bangladeshi diet. During the Bangladeshi new year, households may splurge for hilsa fish, such as those hawked by a fisherman here. Bhola, Bangladesh, April 2014.

MCHN transfers should be provided throughout the year without seasonal adjustments.

1.5.3 HH and Individual Targeting

The PM2A approach for MCHN activities results in a straightforward targeting process because the program selects beneficiaries off predefined indicators - pregnancy status and age of child. For MCHN activities, a new Title II program should continue to use this indicator-based targeting. A new Title II project should use a self-targeting approach for labor-based projects to attract the most needy. Typically, the design of the compensation and type of labor attract only the most food insecure and discourage participation of other well-off groups.

1.5.4 Recommendations for Commodity Selections

USAID-BEST recommends future Title II partners design rations (type and quantity of food transferred) to better reflect consumption patterns and programmatic objectives. The current Title II programs all distribute the same commodities but the ration sizes differ without apparent justification. Moreover, despite the very distinct objectives of MCHN and FFW (labor) activities, these programs provide the same commodities in the ration.

For the new cycle, awardees should design rations for the MCHN and FFW objectives and activities separately. For MCHN programming, the nutritional content of foods and their ability to meet the special dietary needs of PLWs and U2s should dictate the type of ration selected. Labor activities, conversely, have no specific nutrition objective; instead, awardees should determine commodities and ration size so as to ensure self-targeting of the FFW activity. Chapter 5 provides potential ration composition, including suggested foods and sources of food (a mix of transoceanic in-kind and local procurement options).

I.6. MONETIZED FOOD AID

This synopsis of Chapter 6 summarizes the key highlights of current Title II monetization in Bangladesh and addresses in short USAID inquiries in anticipation of the next programming cycle. The full chapter provides greater detail on the present sales process and performance of Title II monetizations, recommendations for the next cycle, and specifics on alternative options for monetization (e.g., sales of wheat, edible oil, or pulses to the private sector).

I.6.1 Background

The Title II monetization program in Bangladesh is unique in a number of ways: 1) it is the only Title II program that involves monetization to a host government; 2) it is the only Title II program that monetizes a commodity for use in a national safety net program, rather than for sale on the commercial market; 3) it has represented one of the largest monetization programs in the world for Title II food assistance; and 4) Bangladesh remains the only country where USAID expects to continue Title II monetization as a food assistance tool following passage of the 2014 Farm Bill.

To determine whether monetization remains an appropriate tool of assistance in Bangladesh, USAID required in-depth and independent market analysis to answer the following three questions:

Does the current Title II monetization of wheat to the GoB have a negative impact on any actors in the local market, such as farmers, millers, or traders?

Would it be feasible and more appropriate to sell wheat to the private sector so as to support market development or improve cost recovery?¹⁹

Would it be feasible and appropriate to monetize any commodities other than wheat to either the GoB or the private sector so as to support market development or improve cost recovery?

I.6.2 Summary of Findings and Recommendations

In March-April 2014, the USAID-BEST project analyzed local markets and the current Title II monetization program and determined the following:

There is no evidence of negative market impact from the current Title II monetization of wheat to the GoB. These findings are consistent with findings in previous independent assessments conducted in 2009 and 2012.

It would be feasible to sell wheat to the private sector instead

¹⁹ Cost recovery represents a simple rate of return on the sale, and here, equals the cost to the USG of buying wheat in the US and shipping the wheat to Bangladesh minus the sales proceeds Title II partners receive from the GoB for the wheat.

of the GoB, but sales would not necessarily support market development and Title II partners would likely achieve lower cost recovery than sales to the GoB.

As for alternative options, it would not be feasible to monetize edible oil to either the GoB or the private sector. It may be feasible to monetize pulses, but Title II partners would likely experience logistical and administrative obstacles.

Based on these findings, USAID-BEST recommends that, if USAID continues a monetization program in Bangladesh, Title II partners should continue selling soft white wheat to the GoB at volumes up to 200,000 MT per year based on government indication that it would be willing to purchase this quantity. Although this volume is higher than current levels, a USAID-BEST analysis of the wheat market shows that a monetization of this volume would not have a substantial negative effect.

I.6.3 Adequacy of Ports, Inland Transport, and Storage

This section provides a shortened summary of the logistics around moving food aid later detailed in Chapter 6, particularly focusing on ports, inland transport, and storage options for the next Title II cycle.

I.6.4 Ports

The Port of Chittagong in the southeast tip of Bangladesh remains the primary trading hub for transoceanic shipments as this port accounts for 92 percent of total maritime goods coming into the country. Historically, Title II partners have relied on this port as the entrance into Bangladesh because of the adequate equipment to handle container cargo and so as to better manage commodities via a single port. In the next programming cycle, awardees should continue to use the Port of Chittagong. However, if projects concentrate in western



Photo by Fintrac Inc.

Vehicles and products are transported across the Jamuna River on a packed ferry. Due to the limited number of bridges in the country, ferries are common throughout Bangladesh. Dhaka, Bangladesh, April 2014.

Bangladesh then awardees should monitor the development of other ports, specifically the Port of Mongla, for distributed food aid in the southwest corner of the country. This port has received a renewal of interest from the GoB in recent years and therefore may soon have enough funding for a series of projects intended to modernize facilities and maximize the permissible draft.

1.6.5 Inland Transport

A diverse network of roads, rail, and inland water transport (IWT) routes, along with various vehicle modalities, provide a multitude of options for moving goods around Bangladesh year round and in all weather conditions. Current Title II awardees contract the movement of commodities to a third-party logistics company, and the next round of partners should continue this arrangement in future programming. Transporting food from port to primary commodity warehouses and then onwards to the final distribution point mostly occurs by road. Despite a dependency on trucks as the primary transport modality, the availability and capacity of these vehicles remains limited. Therefore, rates can fluctuate from BDT 1,800-100,000 per MT based on the supply of trucks.²⁰ Title II awardees in the next cycle should negotiate with the logistics company a graduated scale for trucking costs taking into account the possibility for price spikes depending on season, weather, and the political environment. Without contingency funding, the logistics company cannot adequately prepare any potential disruptions to distribution because of fluctuating trucking costs.

The network of waterways provides an option to reach beneficiaries residing in areas not well-connected to roads. Already some awardees utilize boats to distribute food rations even though IWT can lead to greater loss in the transference of goods. Until IWT becomes a more regulated and supervised system, awardees should continue to rely on road transportation as the primary modality for distribution if at all possible. None of the current partners reported using rail.

1.6.6 Storage

Bangladesh possesses a variety of adequate government-owned and commercial storage spaces. The GoB maintains 13 Central Storage Depots (CSDs) and 609 Local Supply Depots (LSDs) to store rice and wheat for the PFDS.²¹ Additionally, the GoB possesses five silos dedicated to wheat, which collectively have a capacity of 225,000 MT. Title II partners rent a combination of government and private storage depending on rent prices and availability in program areas; none agreed unanimously on a single preference - some stated difficulty working with the GoB due to the complex and non-standardized leasing procedures while others reported an inclination towards GoB storage, especially those used for the PFDS, because of their better facilities geared specifically at long-term containment of food rations. All partners reported the necessity of some renovations

to the rented spaces no matter commercial or public in order to maintain the required standard for storing Title II commodities, though the level of repairs varied significantly.

So as to avoid the problem of scrambling at the last minute to find a structure that can house the large quantities of Title II transoceanic shipments as they wait for loading onto trucks, which can take days depending on availability and capacity of vehicles, partners should consider the costs of maintaining a storage structure at the port (or nearby). Moreover, if commodity selection and timing of calls forward coincide, then partners could consider the possibility of jointly renting storage.

20 Personal communication with a key informant in the logistics industry, Chittagong, April 2014.

21 Personal communication with the Ministry of Food, Dhaka, April 2014.



CHAPTER 2 OVERVIEW OF LOCAL MARKETS

Sample bowls of rice showcase the varieties available to consumers. Poorer consumers tend to purchase very coarse rice, known in Bengali as *mota chaal*. Dhaka, Bangladesh, April 2014.

Photo by Fintrac Inc.

2.1. INTRODUCTION

As the Bellmon Amendment requires that US food assistance avoid harming local markets in recipient countries, this chapter examines in detail the workings of the primary staple food markets in Bangladesh. A careful study of local markets will better enable US government representatives to make an informed Bellmon determination prior to a potential Title II program in Bangladesh.

To inform the analysis, USAID-BEST conducted desk research; interviewed key government, commercial, donor, and International/Non-Governmental Organization (I/NGO) stakeholders; and visited local markets across the country during an April 2014 field visit.

The chapter begins by discussing the factors underlying the structural food deficit in Bangladesh before focusing specifically on local market conditions. Understanding the norms and trends in consumption, production, processing, and marketing of staple foods is particularly important for future Title II awardees because these patterns have implications for potential programming, including direct food aid distribution, local donor procurement, and certain market-based interventions involving cash and/or vouchers. Consequently, the discussion of local markets in this chapter contains important implications for the programmatic recommendations presented in Chapter 5.

2.2. STRUCTURAL FOOD DEFICITS

2.2.1 Local Diets

Rice is the most important staple food in Bangladesh. The current daily per capita consumption of 416 grams (g), or around 152 kilograms (kg) annually, ranks among the highest in the world. This number is expected to increase by 2020.²²

Both urban and rural households (HHs) consume rice on a daily basis, generally boiled (*bhaat*) and served with lentils, vegetables, potatoes, and fish. Additionally, a variety of other foods utilize rice, such as rice flakes (*chira*) generally given to children in their morning meals; fried rice (*polau*) made from fine and aromatic rice (e.g., *kalijira* and *chinigura*) popular among high income HHs; flat breads (rice *chapati*) from rice flour; sweet cake-like preparations (*phita*); and pop rice snacks (*muri*) common in urban areas.²³

Some HHs in Bangladesh also consume wheat products, generally in the form of **wheat flour**. Although certain specialty dishes incorporate wheat grain, typically HHs prefer milled grain processed into a whole wheat flour using the germ and the endosperm, locally known as *atta* (around 75 percent of milled wheat). A more finely refined wheat flour with the endosperm only (*maida*) accounts for approximately 20-25 percent of milled

²² OECD/FAO, 2011, *OECD-FAO Agricultural Outlook 2011-2020*.

²³ USAID-BEST field visit interviews, April 2014.

wheat grain and remains the preferred flour for bakeries in preparing cakes, breads, biscuits, and traditional flat-bread products (e.g., *naan* and *paratha*). The least common wheat flour, known as *sooji*, is similar to semolina and HHs use it most commonly for dessert porridges.

From 2005-10 per capita consumption of wheat flour increased from 8 to 23 grams daily.²⁴ Increasing incomes in urban and rural areas have propelled this significant growth. Additionally, the past perception of wheat as a poor man's food has started to change and now HHs see wheat as a healthy alternative to rice that is lower in carbohydrates and more nutritious, especially with the increase in diabetes among the population in urban areas.²⁵

Another important component of the Bangladeshi diet, **edible oil**, has also seen an upward trend in consumption in rural and urban areas since 2005. Current per capita consumption of about 20.5 g per day, or 7.5 kg per person per year, ranks relatively low compared to the World Health Organization (WHO) recommended consumption of 19-21 kg per person per year. Although HHs across income strata have increased their use of edible oil, urban areas still consume 45 percent more oil than rural areas.²⁶ Palm oil consumption dominates the market for edible oil with an estimated market share of 64 percent, followed by soybean oil with 28 percent market share. Mustard and other edible oils command about 8 percent of market share.²⁷

Lentils regularly complement rice dishes. Known as *dal* when stripped of their husk, lentils contain fiber, antioxidants, and proteins valuable for nutrition. However, lentils and pulses comprise an estimated 2.2 percent of total calories consumed and approximately 5.2 percent of overall protein consumption. Among urban and high income consumers, lentil consumption is increasing, while rural consumption has remained relatively stagnant since 2005.²⁸ HHs mostly prefer local red lentils (*mushur dal*), but given the high price, will either buy imported varieties of *mushur dal* or other accepted lentils: black or white gram (*mashkalai dal*), whole chickpeas out of the shell (*boter dal*), split chickpeas (*chola dal*), whole field peas (*motor*), grass peas (*keshari*), and mung beans (*moong or mugh dal*).²⁹ The Government of Bangladesh (GoB) estimates that per capita consumption is 5.2 kg per year (14.3 g per person per day).³⁰

Most HHs do not change their diets based on seasons primarily because markets sell ample quantities of rice and imported products year round, and/or HHs possess some storage capacity to adequately save grains for lean periods. Some rural areas in the north and west do adjust diets depending on crop production months, but generally HHs consistently manage to

24 GoB, June 2011, *Household Income and Expenditure Survey 2010*.

25 Personal communication with USDA July 9, 2012

26 GoB, June 2011, *Household Income and Expenditure Survey 2010*.

27 Alam, Fakhru, August 31, 2013, Palm oil dominates in Bangladesh market

28 GoB, June 2011, *Household Income and Expenditure Survey 2010*.

29 USAID-BEST field visit interviews, April 2014.

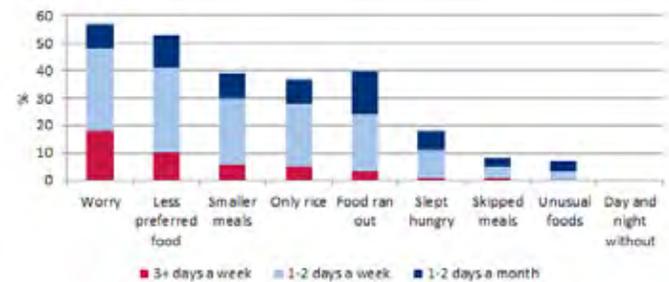
30 GoB, June 2011, *Household Income and Expenditure Survey 2010*.

eat the same foods. However, poor storage practices (e.g., buckets, open mud rooms) can lead to food wastage. In urban areas, although larger HHs may store food, this practice has started to diminish due to ample availability of supply in local markets.³¹

In general, HHs do not substitute rice with other staples. Rather, if forced to reduce rice consumption, HHs either turn to less preferred and more affordable varieties of rice or other carbohydrates, such as *chapati* or potatoes. However, rice prices generally remain steady enough that observations of this substitution remain minimal. However, HHs are price sensitive when purchasing lentils or edible oils. For example, rural HHs in particular substitute less preferred pulses (*keshari*) if they cannot afford small red lentils (*mushur dal*), or swap mustard or other local oils with a less preferred oil, such as palm.

If faced with a food shortage, HHs commonly worry about where to source food, purchase less preferred foods, reduce their meal sizes, and/or only consume rice as coping strategies. No HHs reported going without food for an entire day and night, though some reported skipping meals or going to sleep hungry. The following figure illustrates the commonality of various HH behaviors in dealing with food insecurity.

Figure 1. Behavioral Response to Food Insecurity (% of HHs), 2012



Source: BRAC Institute of Global Health and Helen Keller International, 2014, *The State of Food Security and Nutrition in Bangladesh: 2012*.

Despite the progress made over the years to improve the overall food security situation in Bangladesh, a host of issues, including natural disasters and scarce crop land, could likely restrain availability of food in coming years. Moreover, low incomes, particularly in rural areas, continue to present a challenge to improved food access for a large segment of the population. Finally, despite ongoing nutrition messaging and efforts around food utilization, cultural norms and practices still heavily influence HH diets. The following sections elaborate on these availability, access, and utilization problems and describe the effect on consumption.

2.2.2 Food Availability

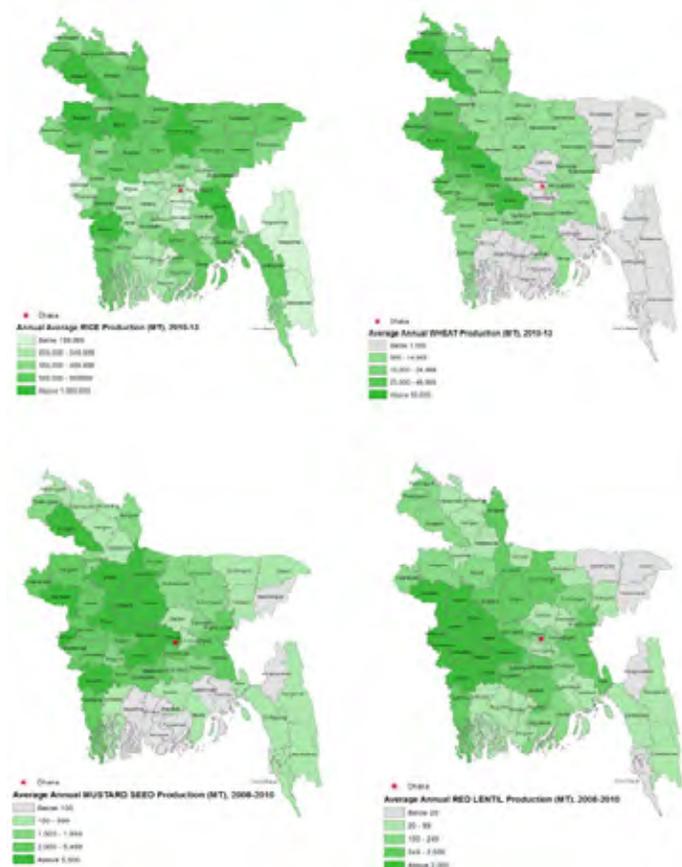
When Bangladesh gained independence in 1971, rain-fed production and ancient technology dominated the agricultural economy. Just a few years later in 1974, more than one million

31 USAID-BEST field visit interviews, April 2014.

rural poor died of famine when heavy rainfall and flooding exacerbated already high spikes in rice prices.³² Since then, by the start of the millennial decade, GoB investment in irrigation, mechanization, and modern agricultural practices had helped more than triple rice production. While rural poverty remains an issue, wages of rural laborers have consistently increased since 2010 and overall poverty has decreased to 32 percent of the population.³³

Although rice receives high priority because of its link to food security, Bangladesh has also moved to increase yields of other important staple crops (see Section 2.3 for details). In terms of production areas, the following maps show the geographic distribution for rice, wheat, lentils, and mustard seed. Traditionally, rice production has concentrated in the north and north central districts, but as the GoB has sought to increase its self-sufficiency, surplus production areas have shifted to include Mymensingh and Jessore. The north and central continue to remain the primary regions for wheat while lentils mostly grow in the south and central regions.

Figure 2. Annual Average Production (MT) of Select Staple Crops, 2010-13



Source: Created by USAID-BEST using data from BBS.

32 World Bank, June 2014, *Bangladesh Poverty Assessment: Assessing a Decade of Progress in Reducing Poverty, 2000-2010*.

33 World Bank, June 2014, *Bangladesh Poverty Assessment: Assessing a Decade of Progress in Reducing Poverty, 2000-2010*.

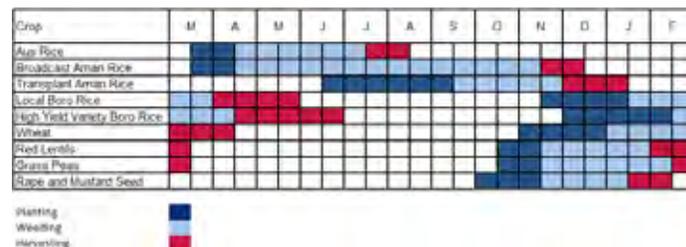


Photo by Fintrac Inc.

Bangladeshi farmers grow rice in three distinct rice-producing seasons (*Boro*, *Aman*, and *Aus*), but annual production of around 33 MMT is increasingly concentrated in the *Boro* season. A field in northwest Bangladesh is nearly ready for harvesting of *Boro* rice. Rangpur, Bangladesh, April 2014.

Production of all crops follows two main seasons: *kharif* and *rabi*. Farmers sow and grow *kharif* crops during the wet season and start harvesting at the end of September and October; for *rabi* crops (pulses, wheat, potatoes, and most vegetables) farmers harvest from January until the end of May or June. Additionally, rice production occurs in three different seasons (*Boro*, *Aman*, and *Aus*). *Boro* rice falls under *rabi* crops while *Aman* and *Aus* are considered *kharif* crops. The figure below displays the crop calendar for major staples.

Figure 3. Seasonality of Staple Crops



Source: BRAC Institute of Global Health and Helen Keller International, 2014, *The State of Food Security and Nutrition in Bangladesh: 2012*.

Despite all the gains in staple foods production and subsequent increased availability, several other factors described below, in no particular order, hinder growth in food production.

Limited land for cultivation. Limited land represents a serious constraint³⁴ that disproportionately affects the poor and extreme poor who are often the most food insecure.³⁵ In 2000-01, total crop land area (i.e., cultivated land, cultivable waste land, and fallow land) totaled 21,751 acres; by 2010-11, this

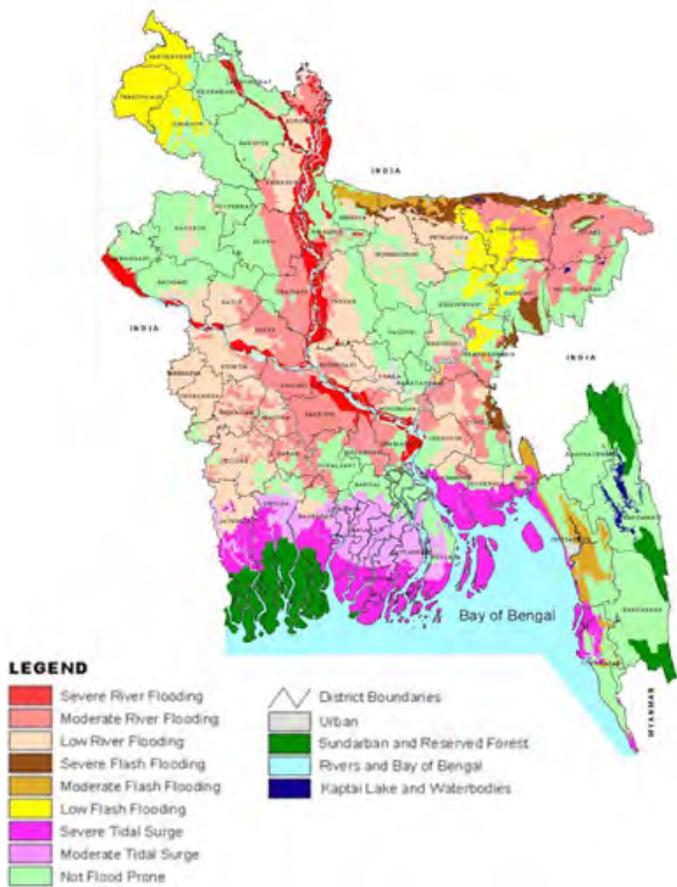
34 IFPRI, April 2013, *The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey*.

35 World Bank, June 2014, *Bangladesh Poverty Assessment: Assessing a Decade of Progress in Reducing Poverty, 2000-2010*.

estimated available crop land totaled 21,063 acres.³⁶ According to the GoB, crop land area has decreased by 10.3 percent since 1976 (a rate of 0.304 percent per year), which, though small, seriously limits future expansion of agricultural production.³⁷

Natural and climatic disasters. Approximately 30 percent of total crop land area becomes inundated every year due to heavy rainfall.³⁸ The areas around the Jamuna and Padma rivers in Rangpur, Rajshahi, and Dhaka divisions as well as the lowland area in Sylhet are especially prone to flooding in monsoon season. Tidal surges affect mostly Khulna, Barisal, and Chittagong. For a geographic and spatial perspective, the following map highlights the areas of the country most susceptible to flooding.

Figure 4. Bangladesh Flood Prone Areas



Source: BARC, July 2000.

Besides the risk of flooding, the UN Intergovernmental Panel on Climate Change predicts that rising temperatures will directly affect rice plant development and reduce growth duration in coming years. In Bangladesh, heat waves already cause temperatures to approach critical levels, particularly during March-June, that affect rice plant growth. These climatic changes

36 GoB and BBS, June 2013, *Statistical Pocketbook Bangladesh 2012*.

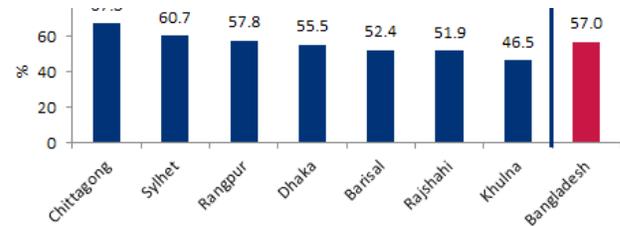
37 GoB and SDRI, August 2013, *Trends in the Availability of Agricultural Land in Bangladesh*.

38 World Bank, June 2014, *Bangladesh Poverty Assessment: Assessing a Decade of Progress in Reducing Poverty, 2000-2010*.

alone could lead to a 15 percent increase in poverty levels by 2030.³⁹

Landlessness. About 57 percent of rural HHs in Bangladesh do not own land. This population represents the most food insecure.⁴⁰ For this segment of the population, earned income and food prices are key determinants of HH food security. Although some differences exist in the percentage of rural landless HHs by division, the rates remain high in all divisions (see figure below).

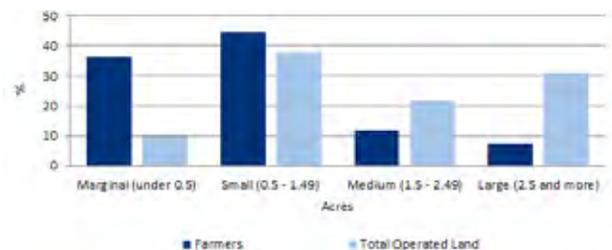
Figure 5. Rural Landlessness (% HHs) by Regions, 2011-12



Source: IFPRI, April 2013, *The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey*.

Marginal farm size. Those who have access to land operate such small plots that most cannot diversify or increase production. Around 36 percent of all farmers operate on 0.5 acres or less, and 46 percent work on 0.5-1.49 acres (see figure below). Given that only about 7 percent of farmers operate farms larger than 2.5 acres, farmers can only increase production if they can access and adopt more improved inputs (e.g., fertilizers and seed).⁴¹

Figure 6. Operated Land by Farm Size (Acres) and Farmers (%), 2011-12



Source: IFPRI, *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*, April 2013.

Tenancy agreements. Sharecropping diminishes total available HH production and income,⁴² but such contracts remain

39 IPCC, October 2013, *IPCC WGII AR5 Chapter 24. Asia*.

40 IFPRI, April 2013, *The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey*.

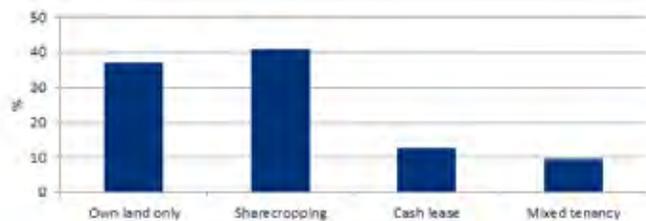
41 IFPRI, April 2013, *The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey*; Hossain, M., Naher, F., and Shahabuddin, Q., 2005, "Food Security and Nutrition in Bangladesh: Progress and Determinants", *Electronic Journal of Agricultural and Development Economics*, 2.

42 IFPRI, April 2013, *The Status of Food Security in the Feed the Future Zones*

prominent in Bangladesh as 40 percent of farmers engage in this practice (see following figure).⁴³ This tenancy trend becomes more common as marginal farmers are displaced in an overcrowded market for limited rental land that increasingly pushes up rents.⁴⁴

Limited crop diversity. Rice production occupies around 77

Figure 7. Forms of Tenancy (% of Farms) in Rural Bangladesh, 2011-12



Source: IFPRI, 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, April 2013.

percent of total cultivated area in the country, but in some regions that number climbs even higher (e.g., more than 90 percent in Sylhet).⁴⁵ As the GoB strives for self-sufficiency in rice production (especially *Boro* rice), other staple crops have come to occupy an increasingly small percentage of total cultivated



Photo by Fintrac Inc.

This Feed the Future client proudly describes the vegetable garden that he has planted around his improved fish pond. Crop diversification helps increase the resilience of Bangladeshi farmers and especially so in flood prone areas. Barisal, Bangladesh, April 2014.

area: potatoes (1.7 percent), wheat (1.5 percent), and lentils (0.8 percent). The table below summarizes the share of crops by administrative divisions.

Besides the attention on rice, space allotted for other food

Table 2. Share of Crops (%) in Total Cultivated Area by Division, 2010-11

	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet	Bangladesh
Staple crops								
Rice	79.4	75.3	76.2	73	71.6	82.3	94.3	76.8
Potato	0.7	4	0.6	0.4	3.2	2.2	1.8	1.7
Wheat	0.2	0.5	0.7	1.5	3.7	2.2		1.5
Lentils	0.1	0.2	1.5	1.5	0.7	0		0.8
Other pulses	10.5	1.4	1.6	2.9	2.5	0	0.3	2.1
Mustard		1.3	2.1	0.8	1.5	0.5	0.2	1.3
Onion		0.2	1.2	0.9	1.9	0.8		1.0
Chili	0.6	2.1	1.3	1.7	0.2	0.5	0.3	1.0
Eggplant	0.8	0.8	0.9	1.5	0.6	0.2	0.2	0.8
Other vegetables	3.9	5.1	3.8	1.6	2	0.4	2.2	2.7
Other crops								
Jute	0.4	1.7	7.1	6.1	4.4	3.5	0.3	4.7
Sugarcane		0.4	0.3	0.2	2.7	0.5		0.8
All other crops	3.3	6.8	2.9	7.9	5	7	0.5	5

Source: IFPRI, April 2013, The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey.

and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey.

43 The farmer/cultivator and the owner of the land agree prior to cultivation to share produce or profits from production.

44 Reardon, T, Chen, K., et al, 2012, *The Quiet Revolution in Staple Food Value Chains: Enter the Dragon, the Elephant, and the Tiger.*

45 IFPRI, April 2013, *The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey.*

crops, such as wheat and lentils, has decreased due to competition from much more profitable maize. Since the introduction of hybrid maize in the late 1990s, planted area has increased significantly from just under 5,000 ha in 2000 to 197,000 ha in 2012 - an annualized growth rate in planted area of 30 percent.⁴⁶ Predominantly, this maize goes into livestock feed for poultry. Mustard seed production, though profitable, faces the challenge of limited processing capacity and strong competition from palm and soybean oil imports.⁴⁷ The table below summarizes production profitability of main staple crops.

Table 3. Indicative Costs and Returns for Select Crops, 2013

	Yield (MT/ha)	Sale Price (BDT/MT)	Gross Return (BDT/ha)	Total Cost (BDT/ha)	Net Return (BDT/ha)	Benefit-Cost Ratio
Mustard	1.48	47,846	74,017	55,160	18,857	1.34
Boro Rice	6.04	16,895	109,544	87,310	22,233	1.25
Maize	6.23	15,793	101,773	84,394	17,378	1.21
Wheat	3.89	18,677	75,105	63,108	11,998	1.19
Lentil	1.16	49,344	60,082	50,731	9,351	1.18

Source: Sher-e-Bangla Agricultural University, June 2013, Financial and Economic Profitability of Selected Agricultural Crops in Bangladesh.
Note: Lentils includes red and other lentils.

Dependency on imported food. Despite the heavy emphasis from the GoB on rice self-sufficiency, Bangladesh still relies on food imports to meet its domestic consumption.⁴⁸ However, volumes of rice imports remain small and primarily consist of coarse rice. For other commodities, especially oil, wheat, and pulses, the country requires imports to satisfy demand even during high production years. On average from 2009-12, Bangladesh imported more than 2.84 million metric tons (MMT) of wheat grain, 1.4 MMT of edible oil, and 148,687 MT of lentils to cover deficits. Although trade liberalization has helped stabilize the availability of imported products,⁴⁹ reliance on imports does increase vulnerability to sudden international price variations.⁵⁰

2.2.3 Food Access

The proportion of people living in poverty countrywide decreased from 40 percent in 2005 to 31.5 percent in 2010,⁵¹ and the World Bank projects that Bangladesh will reduce this

46 Sher-e-Bangla Agricultural University, June 2013, *Financial and Economic Profitability of Selected Agricultural Crops in Bangladesh*.

47 Sher-e-Bangla Agricultural University, June 2013, *Financial and Economic Profitability of Selected Agricultural Crops in Bangladesh*.

48 World Bank, June 2014, *Bangladesh Poverty Assessment: Assessing a Decade of Progress in Reducing Poverty, 2000-2010*.

49 Alam, Mohammad Jahangir, Bhuiyan, N., et al, May 2012, *Tracing the Poverty Impact of Market Reforms in Bangladesh*.

50 World Bank, June 2014, *Bangladesh Poverty Assessment: Assessing a Decade of Progress in Reducing Poverty, 2000-2010*.

51 GoB, June 2011, *Household Income and Expenditure Survey 2010*.



Photo by Fintrac Inc.

At the largest market in Khulna, this wholesaler sells a variety of goods, including lentils and edible oils. Across Bangladesh, nearly all households rely on the market for certain foods where local production cannot meet demand. Khulna, Bangladesh, April 2014.

number to 28.5 percent by 2015.⁵² Thus, even with drastic improvements, nearly 1/3 of HHs still struggle to earn enough income to afford sufficient food.

Poverty in rural areas. The absolute number of poor people tends to concentrate around Dhaka city and seasonal food insecure areas, but the proportion (Poverty Head Count (PHC)) remains higher in rural areas.⁵³ As the table details, in 2010, the percentage of people considered poor and extreme poor in rural areas exceeded the equivalent in urban areas.⁵⁴

Table 4. PHC Rate (%), 2005-10

	Poor		Extreme poor	
	2005	2010	2005	2010
National	40	31.5	25.1	17.6
Rural	43.8	35.2	28.6	21.1
Urban	28.4	21.3	14.6	7.7

Source: GoB, June 2011, *Household Income and Expenditure Survey 2010*.

At the divisional level, differences in poverty become more pronounced. The following figure shows that Rangpur division in the northwest of Bangladesh recorded the highest poverty rate in 2010, followed by Barisal and Khulna in the south. To further underscore the income situation, the figure below charts the purchasing power parity (PPP)⁵⁵ looking at the percentage of

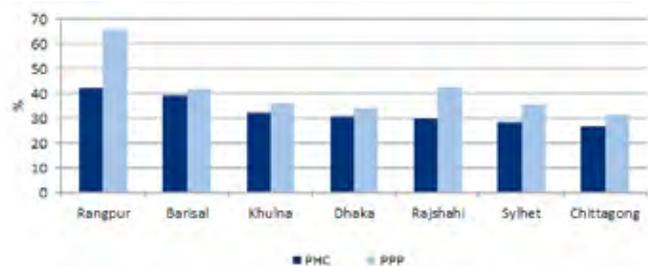
52 According to the World Bank, Bangladesh has attained the Millennium Development Goal of reducing the depth of poverty by 8 percent five years in advance of the 2015 deadline and poverty headcount will reach 28.5 percent by 2020. World Bank, June 2014, *Bangladesh Poverty Assessment: Assessing a Decade of Progress in Reducing Poverty, 2000-2010*.

53 World Bank, 2009, *Updating Poverty Maps of Bangladesh Key Findings*.

54 GoB, June 2011, *Household Income and Expenditure Survey 2010*.

55 This welfare indicator provides the proportion of people who live below US\$1.25 per day converted to the local currency. This indicator is based on

Figure 8. PHC (%) and PPP (%) by Division, 2010-11



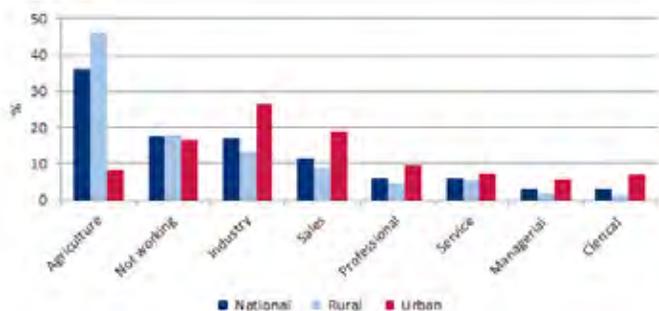
Source: Created by USAID-BEST using data from GoB, June 2011, Household Income and Expenditure Survey 2010 and IFPRI, The Status of Food Security in the Feed the Future Zone and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey, April 2013.

Note: In January 2010, the GoB divided the Rajshahi division to create the Rangpur division. This figure reflects the new divisions.

people living on less than US\$1.25 per day.⁵⁶

Reliance on low-pay activities. Countrywide, as the figure below shows, 36 percent of the population still derive incomes from agriculture, ranching, and fishing activities.⁵⁷ Though agricultural wages are currently higher than previous years, they remain among the lowest in the country.⁵⁸ For example, in June 2013, a construction worker earned on average BDT 448 per day whereas a male agricultural worker earned BDT 283 per day (58 percent lower).⁵⁹ In rural areas, almost half of the population receive income from agriculture and related activities while in urban areas a greater proportion of people work in industry, sales, professional, service, managerial, and clerical

Figure 9. Head of HH Occupation (%) Nationally and by Strata, 2010



Source: GoB, June 2011, Household Income and Expenditure Survey 2010.

Note: HIES reported "Not working" and did not specify if this category means unemployed.

the value of average daily consumption per person and adjusted for inflation and exchange rate. IFPRI, April 2013, *The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey*.

⁵⁶ IFPRI, April 2013, *The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey*.

⁵⁷ GoB, June 2011, *Household Income and Expenditure Survey 2010*.

⁵⁸ IFPRI, April 2013, *The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey*.

⁵⁹ BBS and MoP, June 2013, *Monthly Statistical Bulletin June 2013*; GoB and BBS, June 2013, *Statistical Pocketbook Bangladesh 2012*.

occupations. The percentage of heads of HHs who reportedly do not work remains around 17 percent nationally across income strata.⁶⁰

Marginal farm size. Small landholdings and tenancy agreements adversely affects HH income. Landless HHs, and often those engaged in sharecropping, receive around 3 percent of total incomes, while marginal farmers owning between 0.01-0.04 acres earn little more at 14 percent.

Income inequality. In this area, Bangladesh has seen little improvement as the gap between the poor and rich remains wide. There is a pronounced difference in income distribution among the poorest groups (1st to 4th deciles) who earn less than five percent of all income, the middle groups (5th to 9th deciles) who receive 5 to 15 percent of incomes, and the richest group (10th decile) who receive almost 40 percent of income.

High expenditure on food. HHs across income strata continue to allocate a high percentage (62 percent)⁶¹ of their budget to food purchases. According to the World Bank,⁶² 77 percent of rural HHs are net buyers of rice. In general, 80 percent of poor and extreme poor HHs are net buyers of rice, which indicates a greater variance than simply looking at wealth groups alone.

Over the years, GoB market interventions have helped the poor and extreme poor gain more access to food by stabilizing retail prices. Additionally, trade liberalization policies have benefited net food buyers because they have also contributed to increased food availability and stable food prices.⁶³



Photo by Fintrac Inc.

These men are a part of the large labor force required in moving food grains around the country. Throughout the day, these laborers help to maintain stocks for market vendors. Khulna, Bangladesh, April 2014.

⁶⁰ GoB, June 2011, *Household Income and Expenditure Survey 2010*.

⁶¹ WFP, 2009, *Bangladesh Household Food Security and Nutrition Assessment Report 2009*.

⁶² World Bank, June 2014, *Bangladesh Poverty Assessment: Assessing a Decade of Progress in Reducing Poverty, 2000-2010*.

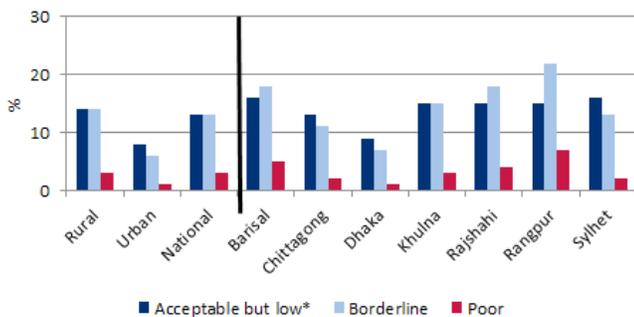
⁶³ Alam, Mohammad Jahangir, Bhuiyan, N., et al, May 2012, *Tracing the Poverty Impact of Market Reforms in Bangladesh*. Alam, Mohammad Jahangir, Bhuiyan, N., et al, May 2012, *Tracing the Poverty Impact of Market Reforms in Bangladesh*.

2.2.4 Food Utilization

Of all food security indicators in Bangladesh, improvements in food utilization have seen the slowest progress, particularly in rural areas. Caloric deficiency, low dietary diversity, cultural norms and gender practices guiding the distribution of food, and poor hygiene and sanitation are among the most pervasive factors influencing current food insecurity in Bangladesh.

Caloric deficiency. An estimated 38 percent of the population still suffers from moderate caloric deficiency as they consume less than the recommended minimum of 2,122 kilocalories (kcal) per day.⁶⁴ A greater proportion of rural HHs suffers from poor and borderline food consumption compared to urban consumers. If looking at Divisions, as in the figure below, more than 15 percent of HHs in Rangpur, Rajshahi, Khulna, and Barisal fell into the borderline food consumption score group.⁶⁵

Figure 10. Food Consumption Score (% of HHs) by Strata and Division, 2011



Source: James P Grant School of Public Health and Helen Keller International, 2011, *The State of Food Security and Nutrition in Bangladesh: 2011*.
 Note: The 2009 Bangladesh Household Food Security and Nutrition Assessment created four consumption groups: Poor (=28), Borderline (>28 and =42), Acceptable but low (43-52), and Acceptable high (>52). Households with poor or borderline consumption, below 42, are considered food insecure. HKI follows this standard for FSNSP surveillance. (WFP, 2009, Bangladesh Household Food Security and Nutrition Assessment Report 2009.)

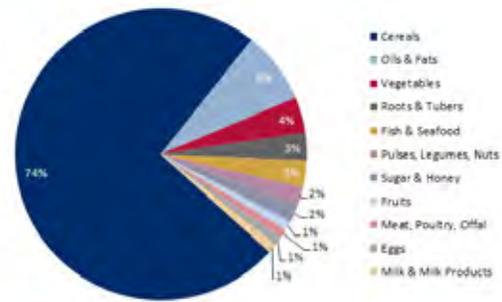
Dietary diversity. Bangladeshis also suffer from micronutrient malnutrition⁶⁶ due to low dietary diversity. Rice, low in fat and other essential micronutrients, represents more than 70 percent of food energy consumption while foods rich in protein and other amino acids, such as pulses and animal meat, each account for less than three percent of total energy intake. The following figure illustrates average consumption of different foods regularly consumed in Bangladesh.

64 World Bank, June 2014, *Bangladesh Poverty Assessment: Assessing a Decade of Progress in Reducing Poverty, 2000-2010*. World Bank, June 2014, *Bangladesh Poverty Assessment: Assessing a Decade of Progress in Reducing Poverty, 2000-2010*.

65 James P Grant School of Public Health and Helen Keller International, 2011, *The State of Food Security and Nutrition in Bangladesh: 2011*. James P Grant School of Public Health and Helen Keller International, 2011, *The State of Food Security and Nutrition in Bangladesh: 2011*.

66 James P Grant School of Public Health and Helen Keller International, 2011, *The State of Food Security and Nutrition in Bangladesh: 2011*. Page 64.

Figure 11. Caloric Consumption (%) by Food Group, 2012



Source: Created by USAID-BEST using data from World Bank, June 2014, Bangladesh Poverty Assessment: Assessing a Decade of Progress in Reducing Poverty, 2000-2010.

The type of food consumed varies considerably among poor and non-poor HHs. For example, egg consumption for non-poor groups represents about 20 percent of their diet while that proportion goes down to 8 percent for the extreme poor. Moreover, although fish remains the most widely consumed animal protein, extremely poor HHs consume 15 percent less compared to non-poor HHs.⁶⁷ However, increasing incomes and more prevalent nutrition messaging around diverse food intake have contributed to rising consumption of products other than rice. Furthermore, greater affordability of fish, vegetables, wheat-based products, and edible oils (palm and soybean) has boosted demand of these foods.⁶⁸



Photo by Fintrac Inc.

A Nobo Jibon staff member stands with the tools she uses to record children's nutritional status and counsel mothers: a growth chart, mobile phone, and education materials. Although Bangladesh has made significant progress, it still has some of the highest stunting rates in the world. Barguna, Bangladesh, April 2014.

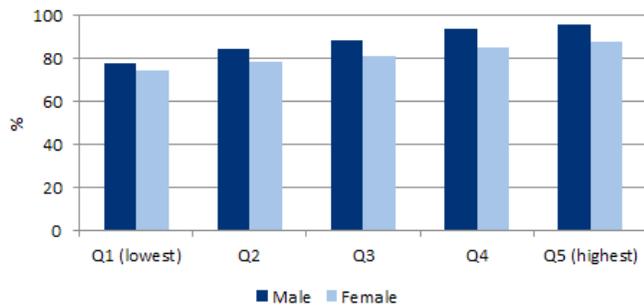
67 World Bank, June 2014, *Bangladesh Poverty Assessment: Assessing a Decade of Progress in Reducing Poverty, 2000-2010*.

68 GoB, June 2011, *Household Income and Expenditure Survey 2010*.

Cultural practices. Certain cultural factors and feeding practices influencing proper food utilization remain relatively unchanged, particularly in rural areas. For example, traditional roles around *purchasing food* in the market delegate this task to the male head of HH. Although gender roles attached to this activity are changing and more women now go to markets, this practice still remains uncommon in rural areas.

Intra-household allocation of food. Especially in rural areas, the male head of HH receives the most desirable food, usually in the largest quantity, before others in the family. Afterward, the woman, typically a young mother, serves other males, in-laws, and children before finally eating the leftovers herself.⁶⁹

Figure 12. Daily Per Capita Calorie Adequacy (% of adult* HH members) in Rural Areas by Gender and Expenditure Quintile, 2012

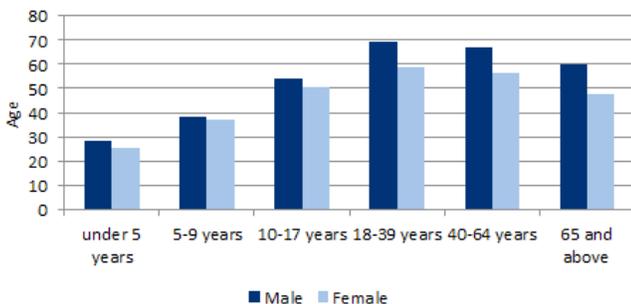


Source: IFPRI, The Status of Food Security in the Feed the Future Zone and Other Regions of Bangladesh: Results from the 2011–2012 Bangladesh Integrated Household Survey, April 2013.

Note: Data displayed only for adults ages 18-39.

Although female adolescents and primary school age girls currently receive on average slightly more food, young adult women 18-39 years continue to rank fairly low in the family hierarchy and thus consume the least amount during meals. These gender differences persist in rural areas even across wealth groups. The following figure showcases data that young women (18-40 years) receive about 10 percentage points less

Figure 13. Daily Per Capita Protein Intake (grams/person/day) in Rural Areas by Gender, 2012



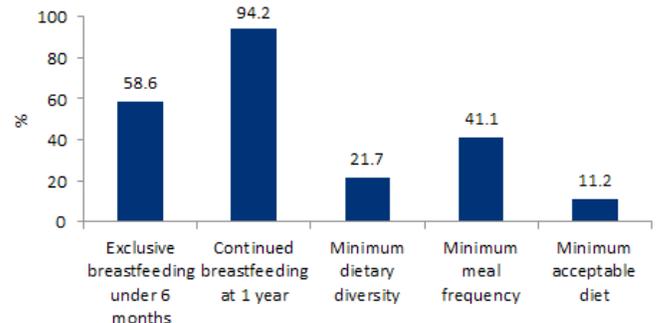
Source: IFPRI, The Status of Food Security in the Feed the Future Zone and Other Regions of Bangladesh: Results from the 2011–2012 Bangladesh Integrated Household Survey, April 2013.

69 In urban areas, greater food availability, access, and female empowerment have led to changes in this hierarchical model of distribution. Personal communication with key informants during the USAID-BEST field visit, April 2014.

protein per day compared to men in this same age group and this gap becomes more pronounced (12 percentage point) with the 65 and older category.

Infant and Young Children Feeding (IYCF). In rural areas only 11 percent of children under the age of five (U5s) receive a minimum acceptable diet and only 22 percent have a diverse diet.

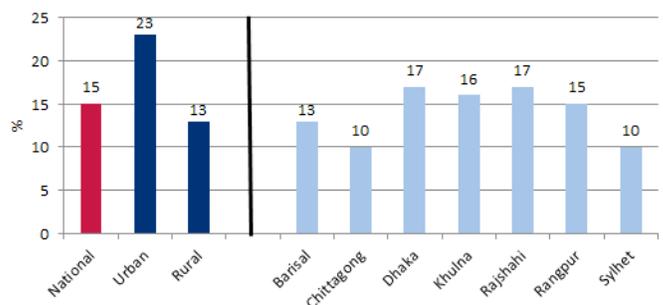
Figure 14. IYCF Practices (% of U5s) in Rural HHs, 2012



Source: IFPRI, 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, April 2013.

Water, sanitation, and hygiene (WASH). More than 90 percent of rural HHs do not treat water. Despite access to improved water sources (e.g., tubewell or borehole),⁷⁰ more than 50 percent continue to use non-improved sanitary facilities.⁷¹ Across the country, and particularly in rural areas, hygiene practices, such as handwashing after defecation, before food preparation, and prior to meals, remain uncommon. Annex 2 provides detailed information on WASH indicators.

Figure 15. Caregivers in HHs with young children* (% of HHs) with Appropriate Handwashing Behavior by Division and Strata, 2012**



Source: BRAC Institute of Global Health and Helen Keller International, 2014, The State of Food Security and Nutrition in Bangladesh: 2012.

* HHs with children 0 to 59 months old

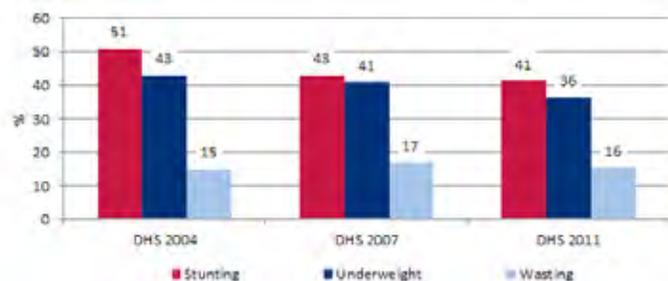
** Appropriate handwashing behavior is measured using a knowledge practices and coverage indicator - "the proportion of caregivers in HHs who used soap for handwashing at least two critical times in the past 24 hours. These two critical times include after own defecation and at least one of the following: after cleaning a young child, before preparing food, before eating, and/or before feeding a child." (BRAC Institute of Global Health and Helen Keller International, 2014, The State of Food Security and Nutrition in Bangladesh: 2012.)

70 GoB, June 2011, *Household Income and Expenditure Survey 2010 Key Findings and Results*.

71 NIPORT, Mitra Associates, et al, January 2013, *Bangladesh Demographic and Health Survey 2011*.

Malnutrition indicators. Given all the factors constraining proper food utilization, and despite the impressive reduction in stunting prevalence from 51 percent in 2004 to 41 percent in 2010, improvements in underweight and wasting have lagged behind (see figure below).⁷² Annex 2 presents a map of stunting indicators by division.

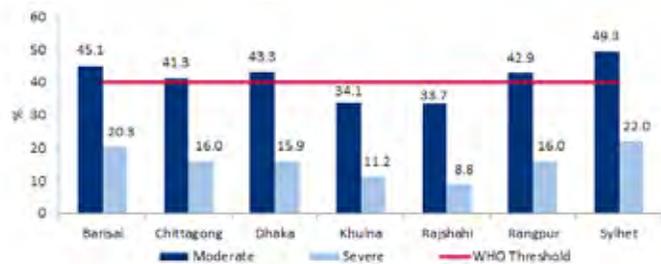
Figure 16. Prevalence of Child Undernutrition (% of Children 0-59 Months) by Survey Year, 2004-11



Source: Created by USAID-BEST using data from Bangladesh Demographic and Health Survey 2011.

Despite the impressive reduction in stunting prevalence, an examination of the numbers at the divisional level reveals that the picture of national progress masks the nuances when data becomes further disaggregated. Importantly, Bangladesh does not report district-level stunting rates. Therefore, the moderate stunting above the WHO threshold of 40 percent in all divisions but Khulna and Rajshahi shown in the figure below does not accurately convey the situation in districts or sub-districts.⁷³

Figure 17. Prevalence of Childhood Stunting (% of U5s) by Severity and Division, 2010



Source: Created by USAID-BEST using data from Bangladesh Demographic and Health Survey 2011.

2.3. COMMODITY MARKETS

Although rice remains the primary staple consumed across Bangladesh, wheat, edible oils, and pulses represent important foods as well for HH diets. The following review of the consumption, production, government policy, existing food assistance, and marketing of these commodities provides the necessary background and details to inform successive chapters in this report.

⁷² NIPORT, Mitra Associates, et al, January 2013, *Bangladesh Demographic and Health Survey 2011*.

⁷³ NIPORT, Mitra Associates, et al, January 2013, *Bangladesh Demographic and Health Survey 2011*.

2.3.1 Rice

HH consumption. Although Bangladeshi HHs demand different quality rice depending on their income level and dietary preferences, people across wealth groups and geographic regions consider rice the most basic and necessary food grain. A multitude of different quality rice varieties exist on the market, but consumers and traders generally place rice into three categories based on the shape, size, and color of the grain: coarse, medium, and fine. Low-income HHs can typically only afford coarse rice, while middle- and high-income HHs tend to buy medium quality for daily use and fine aromatic rice for specialty dishes. Consumers who can purchase medium and fine quality rice prefer to do so because these types of rice reportedly yield more than coarse rice when cooked (i.e., grains puff easily)

Production. Farmers grow coarse and medium rice in three rice-producing seasons (Boro, Aman, and Aus). The production of fine rice only occurs during Aman season.⁷⁴ Typically, consumers categorize coarse rice into varying levels with wider, shorter, and darker rice grains considered more coarse. On the other hand, consumers rank rice as medium or high quality depending on the criteria of long, fine, and white.⁷⁵ All coarse and medium-quality rice sold on the market are parboiled. Fine rice, although long or short, is slim, exceptionally white, and never parboiled. Since consumers consider fine rice a specialty product, farmers only allocate 5-10 percent of total area for producing this rice.⁷⁶ The following table summarizes the main qualities of these three rice types and provides examples of common names correlating to each kind found in the market.

Table 5. Main Rice Quality Characteristics

Type	Dimension (mm)	Parboiled	Common Seed Varieties	Common Name
Coarse	> 2	Yes	IRRI-11 and CM-25	Shorna
Medium	1.7-2	Yes	BRRI-28 and BRRI-29	Miniket, Pajjom
Fine	<1.7	No		Kalijira, Chinigura

Source: Minten, B., Murshid, K., et al, 2012, *Food quality changes and implications: Evidence from the rice value chain in Bangladesh*. Observations based on field visit to Bangladesh, April 2014.

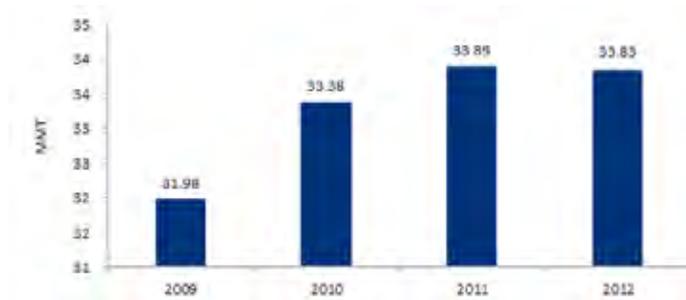
Currently, annual rice production stands at around 33.27 MMT. Since a spike in yield from 2009-10, this volume has remained fairly steady.

⁷⁴ Personal communication with a rice trader, Dinajpur, April 2014.

⁷⁵ Minten, B., Murshid, K., et al, 2012, *Food quality changes and implications: Evidence from the rice value chain in Bangladesh*.

⁷⁶ Minten, B., Murshid, K., et al, 2012, *Food quality changes and implications: Evidence from the rice value chain in Bangladesh*.

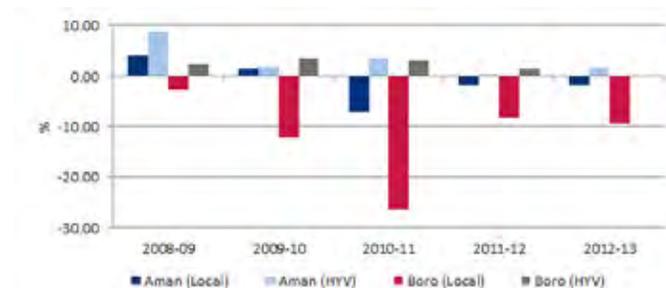
Figure 18. Total Rice Production (MMT), 2009-12



Source: Created by USAID-BEST using data from BBS.

Increasingly, as the figure below illustrates, Bangladeshi farmers have reallocated land to producing High Yield Variety (HYV) rice.⁷⁷ Transitioning to HYV rice has helped Bangladesh attain the current level of reported self-sufficient production. From 2008-13, total land devoted to local varieties has continued to decline. In particular, area devoted to local Boro production has decreased the most and dropped significantly (-26.4 percent) in 2010-11. Better access to inputs and improved irrigation for Boro rice production, contribute to the decreasing popularity of local seed varieties.⁷⁸ Though not as drastic, the area planted for local Aman rice has also slowly diminished over the years.

Figure 19. Year-on-Year Rice Area Planted Variation (%) by Season and Variety, 2008-13



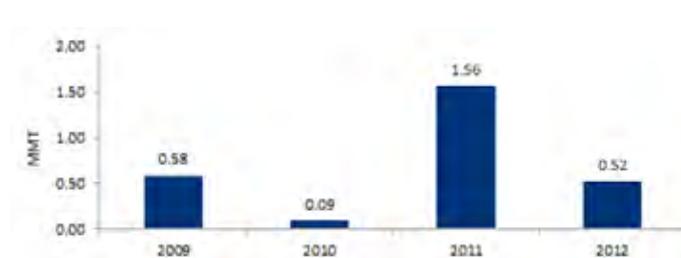
Source: Created by USAID-BEST using data from BBS.

Imports and exports. Bangladesh exports on average about 1,670 MT of mostly fine aromatic rice. Since 2009, total imports have averaged 688,759 MT (around two percent of total production). Until 2010, imports were below 0.6 MMT, but in 2011 total imports reached 1.56 MMT largely because of GoB purchases to maintain its rice reserves and absorb the sudden price increases in local markets. By 2012, total imports were back below the million MT mark.

77 Minten, B., Murshid, K., et al, 2012, *Food quality changes and implications: Evidence from the rice value chain in Bangladesh.*; Reardon, T, Chen, K., et al, 2012, *The Quiet Revolution in Staple Food Value Chains: Enter the Dragon, the Elephant, and the Tiger.*

78 The use of irrigation, fertilizers and HYV seed has drastically increased in recent years. Since 2006, total irrigated area using traditional modes of irrigation has decreased by 17 percent. Use of urea, a very important fertilizer, now reaches over 10 million ha. Annex 1 presents more details on other inputs used for agricultural production in Bangladesh.

Figure 20. Total Rice Imports (MMT), 2009-12



Source: Created by USAID-BEST using data from FPMU, Comtrade, ITC, FAOSTAT, May 2014.

Although local production accounts for the majority of supply, Bangladesh continues to import coarse rice, mainly from India. According to traders interviewed during market visits, the self-sufficiency in medium-quality rice production shifts the focus away from the coarse rice popularly demanded for its low cost. As the figure below shows, imports and sources of imports vary considerably from one year to the next. In 2010-11, Thailand and Vietnam provided the bulk of imports, but by 2012, imports from these countries decreased to almost nothing. The wide fluctuations in imports from India reflect intermittent export bans.

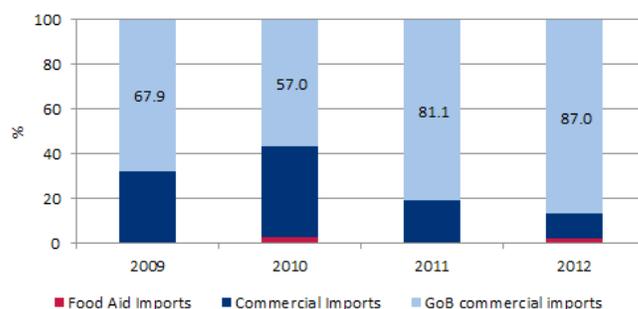
Table 6. Rice Imports (MT) by Country of Origin, 2009-12

	2009	2010	2011	2012	Average
Thailand	47	139,713	718,385	97	214,561
Vietnam	5,000	359,241	339,600		175,960
Pakistan	1,499	255,239	96,152	1,341	88,558
India	474	2,035	137,150	23,755	40,853
Myanmar		97,171			24,293
Others	4,438	3,912	4,820	1,798	3,742

Source: Comtrade.

The GoB is the largest importer of rice as it purchases 78 percent of total rice imports; private imports represent about 21 percent and food aid imports (discussed in the following sections) account for about 1 percent of total commercial imports.

Figure 21. Rice Imports (%) by Main Import Sectors, 2009-12



Source: Created by USAID-BEST using data from FPMU, Comtrade, ITC, FAOSTAT, WFP/ Bangladesh, and AMEX, May 2014.



Photo by Fintrac Inc.

Two merchants display aromatic rice destined for export to the US. Currently, Bangladesh exclusively exports aromatic varieties of this popular commodity. Dhaka, Bangladesh, April 2014.

Food aid.⁷⁹ The GoB is the largest provider of food aid and distributes rice to the poor via different safety net programs (detailed in Chapter 4). From 2009-12, government distributions averaged 1.44 MMT per year (about 4 percent of average annual production). From 2009-March 2014, the GoB distributed in total 6.54 MMT of rice. The government locally procures more than 80 percent of the rice for the Public Food Distribution System (PFDS) and imports the remainder.

WFP is the second largest provider of rice as food aid. From 2009-13, WFP provided on average 10,164 MT (representing around 0.03 percent of average production per year) of rice to different beneficiaries. During the same period, WFP provided in total 50,820 MT, of which 70 percent WFP sourced locally; WFP received the rest through imported donations. Although the US does not directly distribute rice to beneficiaries in Bangladesh, in 2011-12 USAID Title II donated 3,000 MT to WFP for emergency programming.

Traders reported food aid distributions minimally affect local markets on the whole or their own businesses in particular. Some traders stated previous experience working with NGOs by supplying rice and other commodities during emergency responses and expressed their interest in local purchase programs. Retailers in markets where government Open Market Sales (OMS) actively occur did not report any significant competition; moreover, research also found that the OMS typically do not take place in rural villages.⁸⁰

79 Chapter 5 describes in detail different GoB, WFP, USAID, and USDA programs.

80 Reardon, T, Chen, K., et al, 2012, *The Quiet Revolution in Staple Food Value Chains: Enter the Dragon, the Elephant, and the Tiger*.

Government policy.⁸¹ Given the importance of rice production to food security, the GoB has enacted a variety of programs to increase supply and attain self-sufficiency. Since the 1980s, the majority of these initiatives have centered around adoption of HYV seeds, increased access to fertilizer, use of pesticides, promotion of irrigation, better coordinated research and extension services, and more efficient market interventions.⁸²

Seed. The Bangladesh Agricultural Development Corporation (BADC), an autonomous institution of the Ministry of Agriculture, supplies the majority of seed. The exact percentage of seed distributed through BADC varies; some research indicates around 25 percent of farmers purchase from BADC while other sources suggest 40 percent.⁸³ Since the late 1990s, the BADC has primarily focused on developing HYV seeds and coordinating with the private sector for distribution of their seeds. In addition to BADC, registered⁸⁴ small farmer entrepreneurs, wholesale importers, international seed companies, and NGOs (particularly BRAC) distribute improved seed to farmers. Quite significantly, informal and unregulated exchange among farmers commands more than 60 percent of local seeds, especially unimproved varieties, and 75 percent of Indian-origin seeds.⁸⁵ To convince farmers to adopt more HYVs, breeders are focusing on varieties with shorter maturation and higher yields, which farmers often cite as the most important seed traits.⁸⁶ In addition, to lower the cost on imported seed, the GoB exempts imported seed from duties and taxes.⁸⁷

Fertilizer. The GoB heavily supports use of fertilizer to increase rice production.⁸⁸ Bangladesh produces urea, triple super phosphate, and single super phosphate. The GoB uses the urea derived from natural gas and then sells it to fertilizer companies

81 Annex I presents more detailed information on different policies affecting rice production and marketing.

82 Pullabhotla, Hemant and Ganesh-Kumar, A., July 2012, *Review of input and output policies for cereal production in Bangladesh*; Reardon, T, Chen, K., et al, 2012, *The Quiet Revolution in Staple Food Value Chains: Enter the Dragon, the Elephant, and the Tiger*.

83 Reardon, T, Chen, K., et al, 2012, *The Quiet Revolution in Staple Food Value Chains: Enter the Dragon, the Elephant, and the Tiger*; Pullabhotla, Hemant and Ganesh-Kumar, A., July 2012, *Review of input and output policies for cereal production in Bangladesh*; GoB and BBS, June 2013, *Statistical Pocketbook Bangladesh 2012*.

84 These companies and NGOs are registered with the National Seed Board and can legally distribute Certified and Truthfully Labeled seeds.

85 Pullabhotla, Hemant and Ganesh-Kumar, A., July 2012, *Review of input and output policies for cereal production in Bangladesh*; Reardon, T, Chen, K., et al, 2012, *The Quiet Revolution in Staple Food Value Chains: Enter the Dragon, the Elephant, and the Tiger*.

86 Personal communication with rice researchers at Bangladesh Agricultural University (BAU), Mymensingh, April 2014.

87 FPMU, 2008, *The National Food Policy: Plan of Action (2008-2015)*.

88 Although the GoB started moving towards deregulation of the fertilizer industry starting in the mid-1980s (and even ceased all subsidies by the mid-90s), the price spikes on the international fertilizer market in the second half of the millennial decade caused the GoB to reverse this policy. Consequently, since 2007, while the private sector still manages procurement and distribution, the GoB provides price subsidies for importers and local fertilizer companies. FPMU, 2008, *The National Food Policy: Plan of Action (2008-2015)*.

at a subsidized price. However, because domestic production of urea cannot meet demand, the GoB subsidizes imported urea so that its cost stays consistent with local prices. In addition, the GoB subsidizes all non-urea imported fertilizers by determining a fixed percentage of the import cost and exempts fertilizers from import duties and taxes.⁸⁹ This program has come under criticism for mostly helping import companies since it is estimated that less than five percent of farmers buy imported fertilizer.⁹⁰

Pesticides. At present the Department of Agricultural Extension (DAE), an office in the Ministry of Agriculture, leads the implementation of pesticide regulations and partnerships with farmers to adopt better practices.⁹¹ Shortly after independence in 1971, the GoB established its first ordinance regulating pesticides, and when this sector became the first one deregulated in 1980, the GoB amended its policies to allow for more private sector involvement. Additionally, in 1985, the Pesticide Rules were established to facilitate the enforcement of regulations.

Irrigation. The GoB subsidizes diesel and electricity used in irrigation.⁹² With GoB support, farmers have rapidly adopted deep and shallow tubewells for irrigation because of low investment and easy technology to install, maintain, and share with others. Although a government institution controlled all aspects of this sector in the early 1970s, the privatization process that started in 1979 gradually transformed the irrigation sector into a more market oriented one. Currently, the National Water Policy and the Ministry of Water Resources regulate irrigation planning and management.⁹³

Research and extension. The National Agricultural Research System in Bangladesh comprises ten public research institutions under the Bangladesh Agricultural Research Council that collectively have contributed to increasing rice and other crop production. In addition, other local research institutions (e.g. the Bangladesh Rice Research Institute) have collaborated with the International Rice Research Institute to release over 20 varieties of rice that are currently used around the country.⁹⁴

DAE has worked with farmers since the 1970s using a training and visit model. Later, the Food and Agriculture Organization and other donors extensively supported the farmer field

89 Asaduzzaman, M, Shahabuddin, Q., Deb, U. K., and Jones, S., 2009, "Input prices, subsidies and farmers' incentives", BIDS Policy Brief

90 Pullabhotla, Hemant and Ganesh-Kumar, A., July 2012, *Review of input and output policies for cereal production in Bangladesh.*; Reardon, T, Chen, K., et al, 2012, *The Quiet Revolution in Staple Food Value Chains: Enter the Dragon, the Elephant, and the Tiger.*

91 Pullabhotla, Hemant and Ganesh-Kumar, A., July 2012, *Review of input and output policies for cereal production in Bangladesh.*

92 FPMU, 2008, *The National Food Policy: Plan of Action (2008-2015).*; Pullabhotla, Hemant and Ganesh-Kumar, A., July 2012, *Review of input and output policies for cereal production in Bangladesh.*

93 Pullabhotla, Hemant and Ganesh-Kumar, A., July 2012, *Review of input and output policies for cereal production in Bangladesh.*

94 Pullabhotla, Hemant and Ganesh-Kumar, A., July 2012, *Review of input and output policies for cereal production in Bangladesh.*

schools that replaced this scheme; the new program employs extension workers to provide training particularly on integrated crop management, pesticide use and application, and other production related activities.⁹⁵ Currently, NGOs and some private agribusinesses also provide extension support.

Market interventions. The GoB intervenes in rice marketing mostly by procuring rice for its emergency food reserves and distributing and selling to low-income consumers through the PFDS. Since 2009, the GoB has procured from local production on average 1.16 MMT per year and imported on average 541,700 MT.⁹⁶ The GoB keeps its total rice public stock at around 1 MMT per year. However, in 2014, stocks are reportedly lower than previous years and the GoB will likely need to increase its local and international procurement in the next months. The figure below compares total rice stock by Bangladesh fiscal years.

To improve GoB procurement, handling, and storage of rice, the 2008-15 National Food Policy suggests reducing the role of the government in the procurement of local and/or imported rice and instead supporting private sector efforts to provide this

Figure 22. GoB Total Rice Public Stocks, July 2011 to December 2013.



Source: Created by USAID-BEST using data from FPMU.
Note: Fiscal years reported in this chart are Bangladesh fiscal years.

service.⁹⁷ In addition, in 2013, the World Bank provided US\$210 million to the Food Planning Monitoring Unit (FPMU) to study and improve the efficiency and performance of food storage and the strategic grain reserve.⁹⁸

Overall, traders at markets visited all endorsed the government purchase and sale of rice as having a positive effect because it prevents high price variations and supports low income

95 Pullabhotla, Hemant and Ganesh-Kumar, A., July 2012, *Review of input and output policies for cereal production in Bangladesh.*

96 The year 2010-11 was an exception because the GoB only purchased 392,000 MT from local production and imported the largest volume (1.3 MMT) mostly to increase its rice stocks, which were depleted to contain high domestic prices. Domestic prices were increasing as a result of international prices skyrocketing. USDA, February 2010, *Grain and Feed Annual - 2010.*

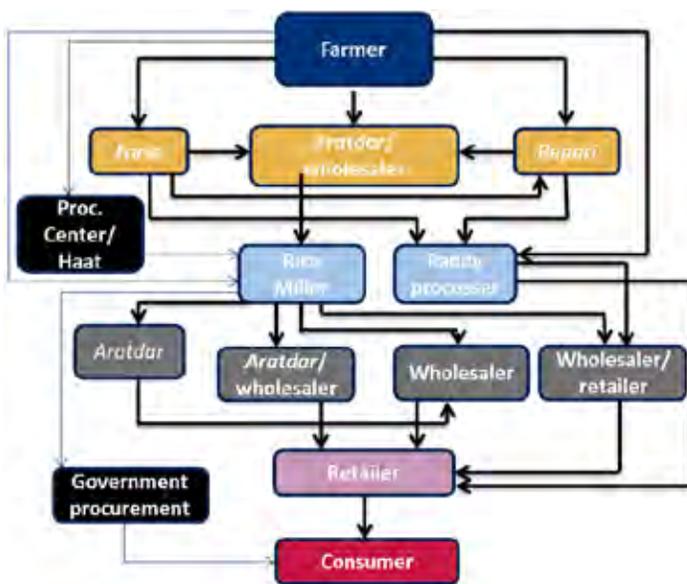
97 FPMU, 2008, *The National Food Policy: Plan of Action (2008-2015).*

98 World Bank, 2013, Bangladesh Modern Food Storage Facilities Project. <http://www.worldbank.org/projects/P120583/bangladesh-modern-food-storage-facilities-project?lang=en>, accessed January 2014.

consumers. Additionally, traders agreed that Bangladesh continues to require food imports because it cannot sufficiently meet demand and the memory of the 2007-08 spike in food prices especially sensitizes the GoB to maintaining a buffer stock to offset any sudden price variations because of external policies. A common criticism among traders, however, was that the GoB purchased directly from millers, giving these market actors more support than directly helping farmers or small-scale traders.

Marketing. A large number of traders participate in the rice value chain and move rice from local surplus areas to deficit or limited production regions. As production and marketing have changed over the years, so have the main participants. The figure depicts the current flow of this value chain.

Figure 23. Rice Value Chain in Bangladesh



Source: Created by USAID-BEST using information from IADS, Raha, S. K., et al, 2013, Structure, Conduct and Performance of the Rice Market and the Impact of Technological Changes in Milling.

Ten years ago, most farmers sold paddy to *farias* - small village traders who travel to farms and source paddy around local production areas - and then these *farias* would later sell to village traders called *beparis* who handle larger volumes (though *beparis* also purchase rice directly from farmers).⁹⁹ According to traders, *farias* buy around 150-200 50-kg bags of paddy per day while *beparis* handle around 300 50-kg bags daily. Although *farias* and *beparis* continue to exist in the rice value chain, and still represent the main buyers of paddy for some farmers, only about seven percent of all farmers continue to sell to these traders. With improving road conditions, greater availability of transportation, and increased access to cell phones, an estimated 30 percent of farmers now choose to sell directly to wholesalers (*aratdars*) and millers.¹⁰⁰

99 IADS, Raha, S. K., et al, 2013, Structure, Conduct and Performance of the Rice Market and the Impact of Technological Changes in Milling.

100 Reardon, T, Chen, K., et al, 2012, The Quiet Revolution in Staple Food Value Chains: Enter the Dragon, the Elephant, and the Tiger.



Photo by Fintrac Inc.

This merchant sells 30 50kg bags of Miniket rice per week. Miniket is the most popular medium-quality rice in the country. Dhaka, Bangladesh, April 2014.

Well-established and licensed wholesalers (*aratdars*) own storage and act as agents for some automatic millers. Farmers sell more than 2/3 of their paddy production to wholesalers (*aratdars*) and these wholesalers in turn employ workers to dry, sort, bag, weigh, and load trucks with paddy rice destined for the mills.¹⁰¹ Wholesalers are currently essential in most production areas.¹⁰² Despite their numbers and the seemingly competitive structure, certain traders interviewed complained about the power of wholesalers; about 75 percent of paddy trade is controlled by four wholesalers in important production areas around Dinajpur, Naogaon, Bogra, and Dhaka.¹⁰³ Especially in areas where rice stocks are low and fewer traders operate, *aratdars* hold sway because they can store paddy when prices are low and then sell during offseason.

Although *wholesalers* still command an important share of the market, the milling sector is rapidly gaining ground. For example, in Rajshahi, a trader expressed that becoming a *wholesaler* requires an extensive network to sell product, and owning a storage facility necessitates a large investment. In addition, some traders indicated that before the 2000s, *wholesalers* from Dhaka and other urban areas transport rice all over Bangladesh, but now since local wholesalers can coordinate directly with millers to distribute rice, local traders can also bypass wholesalers.

Next in the supply chain are semi-automatic millers, which are small-scale operations with storage capacity of less than 100 MT.¹⁰⁴ Generally these facilities only automate parboiling and milling with outdated machinery because millers face difficulties upgrading equipment due to issues accessing credit.

Larger automatic millers, those with estimated storage capacity

101 IADS, Raha, S. K., et al, 2013, Structure, Conduct and Performance of the Rice Market and the Impact of Technological Changes in Milling.

102 Reardon, T, Chen, K., et al, 2012, The Quiet Revolution in Staple Food Value Chains: Enter the Dragon, the Elephant, and the Tiger.

103 IADS, Raha, S. K., et al, 2013, Structure, Conduct and Performance of the Rice Market and the Impact of Technological Changes in Milling.

104 Reardon, T, Chen, K., et al, 2012, The Quiet Revolution in Staple Food Value Chains: Enter the Dragon, the Elephant, and the Tiger.

of 2,000-3,000 MT,¹⁰⁵ sell directly to urban markets but have become important suppliers of rice for rural markets. These millers have mechanized all the processes of rice sorting, milling, and bagging. Although they primarily focus on high-value rice products, such as medium and fine quality rice, they can as easily produce coarse rice.

The ability of automatic millers to sort grains, label, and bag them separately not only attracts wholesalers, but has also led to increased demand from consumers who now recognize the branding and packaging.¹⁰⁶ However, automatic millers reported running into some production problems due to lack of knowledgeable labor to operate the technology (e.g., computerized sorting machines). A large automatic miller in Naogaon indicated that they need to hire Indian technicians to work certain machinery because Bangladeshis could not adequately operate this technology.

Most traders agreed that they prefer to work with large-scale mills rather than semi-automatic mills because of convenience and profitability. Wholesalers in areas such as Dhaka, Mymensingh, and even further south in Khulna reported that they could always call automatic millers and products would reach their shops often in less than 24 hours; semi-automatic millers cannot deliver in such a timely manner. Wholesalers also particularly prefer the financial support from larger automatic millers who can offer sales on consignment or commission. Overall, the capacity of these operators appeals to wholesalers (e.g., availability of transportation services and technology for product differentiation).

Based on market visits, rice wholesalers and wholesalers/retailers in areas with excess rice supply (e.g., Mymensingh, Dinajpur, Rangpur, Naogaon, and Rajshahi) handle 15-18 MT daily of different rice types. In these larger markets where on average 50 large and medium scale wholesalers operate, some of them also distribute to different areas of the country. In Dhaka city and other urban markets, most wholesalers are commissioners working for specific millers and charge a percentage (around 25 percent per kg sold) for their fee. A few small-scale retailers buy in bulk and then repack in smaller bags. Only a small proportion of rice goes toward supermarkets, and primarily in Dhaka city.

Performance. From 1960-90, the percentage of paddy marketed increased from 15 percent to almost 50 percent. Currently, more than 70 percent of small farmers are net rice sellers,¹⁰⁷ and in many cases, farmers sell their high value rice to buy lower quality varieties.

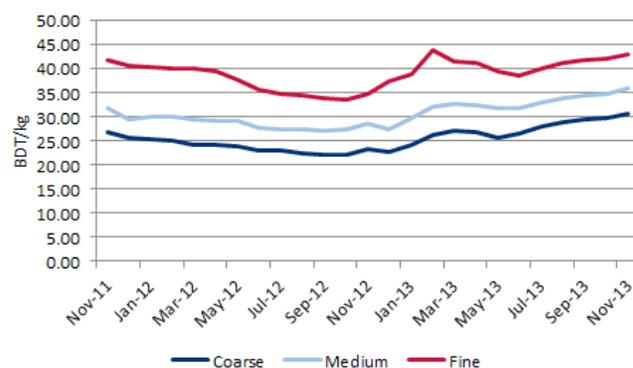
The marketing of coarse rice compared to medium and high quality rice has declined over the years because a greater proportion of production now concentrates on medium and

high quality rice. Since 1999 production of coarse rice has decreased by 15 percent and farmers' sales of coarse rice have dropped to 17 percent of total rice sales.¹⁰⁸ While improving quality production can provide benefits, such as increased farmer income and better available varieties for consumers, poor and extreme poor people cannot access medium-quality rice at current price levels. Subsequently, imports of cheap coarse rice, mostly from India, must close the coarse rice gap in markets around the country. However, if the government of India decides to impose trade barriers, such as they did in 2007, then that action could lead to negative implications for food security in Bangladesh.¹⁰⁹

As the total capacity of automatic rice millers improves, availability of lower cost medium-quality rice will increase. If the market for this medium-quality rice becomes larger and automatic rice millers gain a greater share, then they could potentially collude and concentrate their sales, which ultimately would negatively affect overall prices in the rice market. Currently, a competitive environment with numerous players prevents one large-scale miller from dictating prices. A trader in Mymensingh explained that if a large-scale miller tries to take advantage of low prices then wholesalers like himself could always buy paddy from *other wholesalers* and take it to semi-automatic millers, thereby decreasing the market power of large-scale millers.

Rice retail prices also reflect a competitive market environment. Although, generally, coarse, medium, and fine rice show price differences due to varying quality characteristics, year-round production and availability of coarse and medium-quality rice decrease the margins between these different types. In addition, and as the figure below tracks, price seasonality has averaged 13-15 percent.¹¹⁰

Figure 24. Rice Retail Price Variation (BDT/kg), 2011-13



Source: Created by USAID-BEST using data from DAM.

¹⁰⁵ Reardon, T, Chen, K., et al, 2012, *The Quiet Revolution in Staple Food Value Chains: Enter the Dragon, the Elephant, and the Tiger*.

¹⁰⁶ Minten, B., Murshid, K., et al, 2012, *Food quality changes and implications: Evidence from the rice value chain in Bangladesh*.

¹⁰⁷ Reardon, T, Chen, K., et al, 2012, *The Quiet Revolution in Staple Food Value Chains: Enter the Dragon, the Elephant, and the Tiger*.

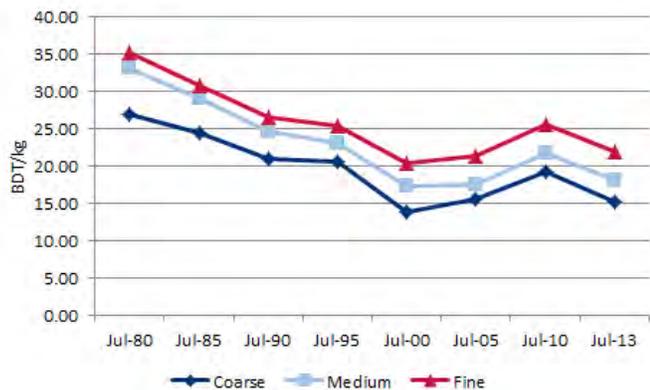
¹⁰⁸ Minten, B., Murshid, K., et al, 2012, *Food quality changes and implications: Evidence from the rice value chain in Bangladesh*; Reardon, T, Chen, K., et al, 2012, *The Quiet Revolution in Staple Food Value Chains: Enter the Dragon, the Elephant, and the Tiger*.

¹⁰⁹ Dorosh, P and Rashid, S., September 2012, *Bangladesh Rice Trade and Price Stabilization: Implications of the 2007/08 Experience for Public Stocks*.

¹¹⁰ Reardon, T, Chen, K., et al, 2012, *The Quiet Revolution in Staple Food Value Chains: Enter the Dragon, the Elephant, and the Tiger*.

Additionally, the real price variation reflects a continued decline in retail prices and margins among different quality rice from the 1980s until the 2000s. After 2000, real prices increased due largely to international price influences (see following figure), but have declined again in part due to increasing availability in local markets.

Figure 25. Annual Real Rice Retail Prices (BDT/kg) by Quality Type, July 1980-July 2013



Source: Created by USAID-BEST using data from DAM and the World Bank.

Extensive studies of market integration in Bangladesh all conclude that markets around the country are highly integrated with each other and with Indian markets.¹¹¹ Investments in infrastructure, particularly highways and rural roads, and the availability of cell phones primarily drive this increasing market integration.¹¹²

2.3.2 Wheat

HH consumption. Location and income dictate consumption patterns. In urban areas, all people regardless of their wealth regularly consume flat breads (*chapati*). Higher income HHs also eat pan-fry bread (*paratha*), white bread (e.g., hamburger bun or sandwich bread), cakes, sweet breads, and biscuits. As urban incomes increase some people demand different quality flours, mostly for specialty desserts. Urban poor, usually slum dwellers, consume some form of pop wheat, but in general have limited access to wheat-based products. Similarly, rural HHs, who are often the poor and very poor, do not typically have the means to consume a variety of bread products and usually limit themselves to flat breads prepared from local *atta*. Across income strata, people prefer *atta* flour, mostly because of minimal price differences between the processed flour and taking the grain to mills.

Demand for sweets, breads, cakes, biscuits, and cookies (i.e., fast food products) account for an estimated 5-10 percent of the

111 IADS, Raha, S. K., et al, 2013, *Structure, Conduct and Performance of the Rice Market and the Impact of Technological Changes in Milling*; Chowdhury, Naeem, February 2010, *Price Stabilization, Market Integration and Consumer Welfare in Bangladesh*; Dorosh, P and Rashid, S., September 2012, *Bangladesh Rice Trade and Price Stabilization: Implications of the 2007/08 Experience for Public Stocks*.

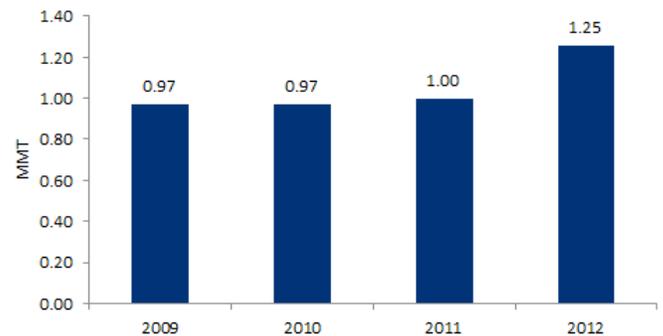
112 Reardon, T, Chen, K., et al, 2012, *The Quiet Revolution in Staple Food Value Chains: Enter the Dragon, the Elephant, and the Tiger*.

wheat market but this demand is growing as these foods increase in popularity, particularly among the poor.¹¹³ In some cases, people purchase these products because of the perceived cleanliness (thus, higher quality) due to the sealed packaging.¹¹⁴

The practice of purchasing wheat grain and taking it to be milled still appeals to certain HHs because they can keep the bran for later use as animal feed. Additionally, in other well-off markets, some consumers believe that wheat flour obtained from local varieties benefits their health because it contains a greater proportion of bran compared to imported wheat grain. Moreover, some consumers select to buy wheat grain alone for certain specialty dishes and/or because of familiarity eating this product.

Production. Bangladesh produces on average 1 MMT of wheat grain per year. In 2012, total production increased to 1.25 MMT (see figure below). Increasing use of HYV seeds primarily drive productivity gains since farmers generally grow wheat without use of fertilizer.¹¹⁵

Figure 26. Total Wheat Production (MMT), 2008-12



Source: Created by USAID-BEST using data from BBS.

Wheat production strongly competes with other crops for already limited cropland. Farmers allocate land depending on profits and other incentives. From 2005-11, total area for wheat production fluctuated year-on-year, but on average during this time farmers dedicated about 1.5 percent of their entire plots to wheat, mostly due to low profitability of this crop.¹¹⁶ As the figure below shows, the largest loss in total area planted occurred in 2005-06. Recently, a reduction in cost of production and favorable weather conditions has led to a resurgence in area planted for wheat.¹¹⁷

113 Personal Communication with key informants in baking and confectionary sector, Dhaka, April, 2012.

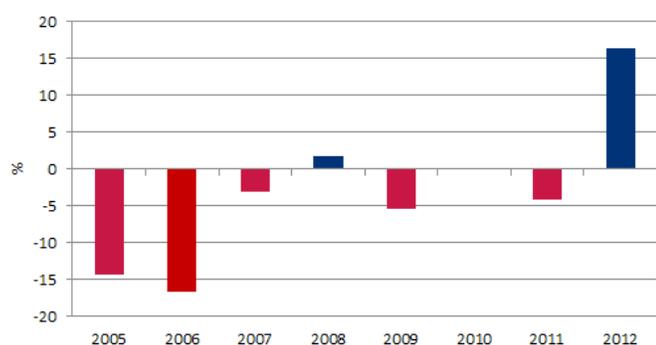
114 Personal Communication with key informant in baking and confectionary sector, Dhaka, 2012.

115 USDA, 2012, *Grain and Feed Annual - 2012*. http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Grain%20and%20Feed%20Annual_Dhaka_Bangladesh_2-22-2012.pdf, accessed April 2014.

116 IFPRI, April 2013, *The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey*.

117 GoB, 2010, *Estimates of Wheat, Bangladesh 2009-2010*.

Figure 27. Year-on-Year Wheat Area Planted (%), 2005-12



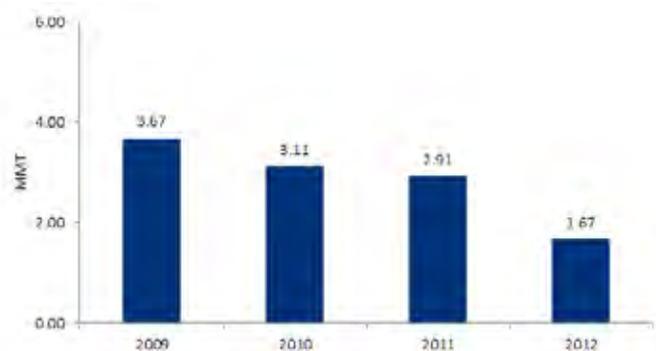
Source: Created by USAID-BEST using data from BBS.

Approximately 80 percent of total wheat grown in Bangladesh occurs in the north and west of the country. Farmers generally grow soft wheat containing relatively low protein values (approximately 10.5 percent) but a high gluten content. The planting season starts November-December and then harvesting takes place March-April.

Even with widespread use of HYV seeds, local wheat production will not replace the need for imports in the short or medium term. Additionally, lack of adequate storage at the farm gate level forces farmers to sell production immediately following harvest, and traders reported stock tends to run out after three months.¹¹⁸ Only *aratdars* or large-scale millers with storage capacity can maintain some local wheat production throughout the year.

Imports and exports. The GoB considers wheat an essential food commodity and therefore bans all wheat exports.¹¹⁹ Bangladesh imports approximately 2.8 MMT of wheat grain each year. From 2009, imports have slightly decreased from 3.67 to 1.67 MMT. According to millers, an excess of stock caused a decrease in imports in 2012.

Figure 28. Total Wheat Imports (MMT), 2009-12



Source: Created by USAID-BEST using data from FPMU, Comtrade, ITC, FAOSTAT, WFP/ Bangladesh, AMEX, and USDA, May 2014.

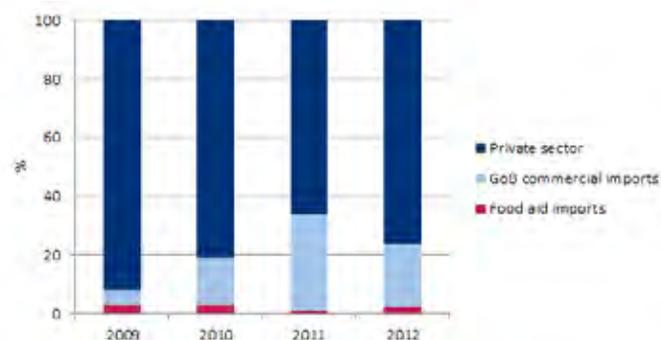
118 Interviews with traders in Rajshahi and Dinajpur, April 2014.

119 GoB, 2012, Export Policy Order 2012-2015. <http://www.mincom.gov.bd/doc/Copy%20of%20Export%20Policy%2012-15%20-Final%20Draft-.pdf>, accessed May 2014. Language is vague regarding any distinction between wheat grain and flour.

Bangladesh primarily sources wheat grain from India, but in years when India imposes an export ban, such as from 2007-11, then Bangladesh relies heavily on Canada and the Black Sea region. Increasingly, millers prefer blending with Canadian wheat due to its high gluten content compared to other imported varieties. Before the Indian export ban, Canadian imports only accounted for 4-9 percent of total international wheat grain entering the country, but since in the resumption of Indian wheat imports in 2011, Canadian imports have averaged about 27 percent of all wheat imported.

Illustrated by the following figure, the private sector imports the majority of the wheat supply as they have, since 2009, brought in on average 2.3 MMT of wheat annually. Comparatively, the GoB imports on average 501,880 MT; out of that volume, imports of Title II monetized wheat represents about 12 percent and directly distributed wheat 2.4 percent.¹²⁰

Figure 29. Wheat Imports (%) by Main Import Channel, 2009-12



Source: Created by USAID-BEST using data from FPMU, Comtrade, ITC, FAOSTAT, WFP/ Bangladesh, AMEX, and USDA, May 2014.

Food aid.¹²¹ As the largest provider of wheat for food assistance, the GoB distributed on average 664,750 MT of wheat grain (around 63 percent of average yearly production) under its different safety net programs from 2009-12 (see Chapter 4 for specific tonnage details). In total, from 2009-March 2014, the GoB has distributed 3.35 MMT, out of which locally produced wheat grain accounts for 13 percent of total purchases.

USAID Title II represents the second largest donor for wheat grain. From FY10-14, total contributions for direct distribution averaged 10,821 MT; of overall annual production, this volume accounts for 1 percent. During this period, the collective total wheat grain imported for Title II distributions reached 54,104 MT. Additionally, USAID Title II also monetized wheat grain to the GoB in this time frame (see Chapter 6 for more information). The average monetized volume from 2009-12 only

120 The GoB also occasionally engages in government-to-government purchases. For example in two different occasions (September 2011 and January 2012), the GoB purchased directly from the government of Ukraine, for a total of 160,000 MT Business Recorder, 2012, Bangladesh to buy wheat from Ukraine at \$280 per ton. <http://www.brecorder.com/markets/commodities/18-markets-commodities/40865-bangladesh-to-buy-wheat-from-ukraine-at-280-per-ton.html>, accessed May 2014.

121 Chapter 5 describes in detailed the GoB, WFP and US government programs. Chapter 6 describes details relevant for monetization.



Photo by Fintrac Inc.

In urban areas, everyone regularly consumes flat breads (*chapati*) though higher income HHs also eat pan-fry bread (*paratha*), white bread, cakes, sweet breads, and biscuits. At this busy urban market, a vendor bakes and fries snacks for shoppers in the market. Khulna, Bangladesh, April 2014.

accounted for an average of 6 percent of wheat production in Bangladesh.

Additionally, from 2009-13, WFP contributed on average 49,655 MT of wheat (representing 5 percent of production per year) for its Country Programme and Protracted Relief and Recovery Operation. In total during this four-year time period, WFP provided 248,274 MT of imported wheat grain.

Government policy. A variety of regulations detailed below affect the wheat value chain.

Tariff and non-tariff regulations. To encourage imports, the GoB refrains from setting an import duty on wheat grain and flour, and, as mentioned, an export ban exists on local wheat.

Market intervention. GoB purchases wheat grain on the domestic and international markets for the PFDS and provides price support for local producers and the domestic food supply. In-country procurement remains minimal compared to imported wheat. According to the Ministry of Food, the GoB buys a maximum of about 15 percent of local wheat production.¹²² In general, the GoB intends to buffer sharp price increases via these market interventions.¹²³

Social Safety Net. Rations of wheat distributed or sold for the various programs under the GoB safety net vary (see Chapter 44 for details), but in general, key informants stated that they doubt these quantities influence market prices for wheat.¹²⁴

Research and extension. Since 1974, the Wheat Research Center in collaboration with the Bangladesh Agriculture Research

Institute (BARI) and the International Center for Wheat and Maize Improvement (CIMMYT) has released 28 improved wheat varieties and four HYVs.¹²⁵ Private traders dominate the provision of seed to local producers as they account for approximately 60-80 percent of purchases while the Bangladesh Agricultural Development Corporation (BADC) only supplies 7-8 percent.¹²⁶ Though the GoB does not currently have a fortification law and mills do not fortify flour, BARI and CIMMYT are conducting research on possible fortification methods based on consumer and farmer preferences.¹²⁷

Marketing. *Farias* (small-scale traders) sell to larger traders (*beparis*) and then wholesalers (*aratdars*) later aggregate, dry, and bag wheat grain for local mills.

Eight-ten companies have about 50 percent of imported wheat market share.¹²⁸ Among some of the major import businesses, S Alam and Masood Brothers act solely as traders; Citygroup and TK Group mill and sell wheat grain; Meghna purchases wheat solely for their own milling needs; Bashundara has opened the largest in-country mill of 1,000 MT capacity per day and has stated its intention to resell approximately 700,000 MT per year of unprocessed grain to other companies; and Nurjahan, the food processing conglomerate, intends to open a mill with a refining capacity of 500 MT per day.¹²⁹ The following table details the brands of these large mills and provides an estimated daily capacity.

Table 7. Capacity and Description of Major Wheat Mills in Bangladesh

Mill	Brands	Estimated Capacity/Day
Bashundara	Bashundara	1,000
Citygroup (aka Hasan & Shampa Flour Mills)	Teer	800
Nurjahan	Nurjahan	500
Meghna	Fresh	400
TK	Pusti	300
ACI Pure	Pure	230
Fauji Flour Mills		180
IFAD	IFAD	160
Bogra Bhandar	Tayfa	140
Mabco	Mabco	120

Source: USAID-BEST and USDA, 2013, Wheat Milling in Bangladesh. http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Wheat%20Milling%20in%20Bangladesh_Dhaka_Bangladesh_3-22-2013.pdf, accessed March 2014.

¹²⁵ The main varieties currently planted in Bangladesh are Bari ghom-21, Bari ghom-24 and Bari ghom-26. Personal communication with key informant at BARI Wheat Research Center, Dinajpur, April 2014.

¹²⁶ Personal communication with key informant at NFPCSP, July 10, 2012 and at the Wheat Research Center, April 2014.

¹²⁷ Personal communication with key informant at BARI Wheat Research Center, Dinajpur, April 2014.

¹²⁸ Personal communication with key industry leaders, Dhaka and Chittagong, April 2014.

¹²⁹ Personal communication with key informants in wheat market, May 2014.

¹²² Personal communication with Directorate General of Food, Ministry of Food, April 2014.

¹²³ Personal communication with key informant at National Food Policy Capacity Strengthening Programme (NFPCSP), July 2012.

¹²⁴ Personal communication with key informant at NFPCSP, July 10, 2012; personal communication with key informants in wheat sector, July 2012.



Photo by Fintrac Inc.

While wheat grain is not typically seen in markets, it is more commonplace during harvest season. Increasingly, households purchase bags of wheat flour instead of grain due to convenience and rising incomes. Khulna, Bangladesh, April 2014.

Large-scale millers typically have distributors throughout the country and conveniently deliver to wholesalers and/or retailers in less than 24 hours. Traders in local markets also have the option to come directly to these mills and take delivery of the goods at their own expense. Most large-scale millers do not offer credit to their customers. Besides the larger mills and import businesses, hundreds, if not thousands of small, diesel-powered *chakki* mills proliferate across the country with capacity of 300-800 kg per day.

Table 8. Estimation for Structure of Milling Sector

Mill Size	Approximate No. of Mills	Approximate Milling Capacity (MT Wheat Grain per Day)	Average Production (MT Wheat Flour per Day)
Large	20	100-500	150
Medium	120	40-100	60
Small	200	10-40	15
Chakki	2,000	<1	0.5

Source: USDA, 2013, Wheat Milling in Bangladesh. http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Wheat%20Milling%20in%20Bangladesh_Dhaka_Bangladesh_3-22-2013.pdf, accessed March 2014.

An estimated 60 percent of the wheat flour produced in Bangladesh goes to the baking sector.¹³⁰ The baking sector usually requires *maida* flour, a type of product that requires high gluten wheat. All the importers cited above typically blend Canadian wheat (30-50 percent)¹³¹ with local and imported wheat (50-70 percent).¹³² Bakeries usually buy flour in 50-kg bags from wholesalers in markets. Larger operations order directly from millers in bulk.

130 Electronic communication with key informant in wheat milling sector, May 2014.

131 According to millers interviewed during this research, Canadian wheat has high gluten ratio (approximately 35 percent) and protein content (13-14 percent).

132 *Maida* for the confectionary sector requires a very low percentage of gluten.

At markets across the country, vendors sell *atta* and *maida*. Most is sold in bulk, but packaged and branded flour products are also available especially in urban areas. At every market visited during field research, numerous small shops and street vendors also sold bread products (e.g., hamburger buns) in plastic bags.

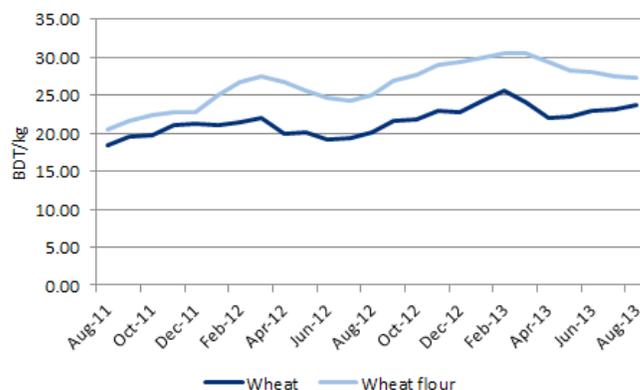
Performance. As larger, modern mills are now processing the large majority of wheat grain in-country, the small *chakki* mills are rapidly losing market share.¹³³ Increasingly, *chakki* mills cannot compete with larger millers who offer lower prices and services, such as free delivery.

Despite the growing market share of large-scale millers, traders sell the majority of wheat flour (as much as 75 percent in 2012)¹³⁴ on the market unbranded and in bulk. However, in high-income markets, consumers tend to purchase the branded and packaged goods, which all consumers perceive as higher quality.

International prices for wheat largely determine the domestic price for wheat and flour. The price of crude oil on the international market also affects wheat prices in-country because of transportation costs. Additionally, strikes (*hartals*) can significantly influence prices as they dictate availability of trucks and labor.¹³⁵

However, given that local production remains minimal (1/4) and imports account for the majority (3/4) of wheat grain supply, wheat retail prices demonstrate small seasonal variation. As expected, a margin exists between flour and grain, but this difference on average has been roughly 20 percent since August 2011 (see figure below on price seasonality).

Figure 30. Wheat and Wheat Flour Retail Prices, August 2011 to August 2013



Source: Created by USAID-BEST using data from DAM.

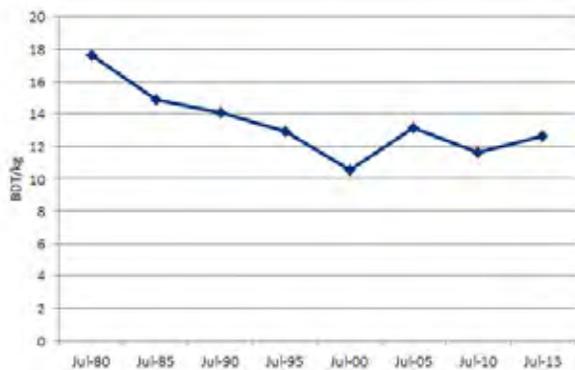
133 One key stakeholder went so far as to declare “The days of the small mill are numbered.” Personal communication with key informant in wheat milling sector, April, 2014.

134 Personal Communication with a key informant from USDA, Dhaka, July, 2012.

135 USDA, 2014, Grain and Feed Update, January 2014. http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Grain%20and%20Feed%20Update_Dhaka_Bangladesh_1-28-2014.pdf, accessed March 2014.

In real terms, wheat retail prices have decreased since the 1980s. Accounting for inflation, wheat prices decreased from around BDT 18 per kg in 1980 to BDT 10 per kg in July 2000. However, as the following figure shows, between 2000-13, prices increased by about 20 percent.

Figure 31. Annual Real Wheat Retail Prices (BDT/kg), July 1980-July 2013



Source: Created by USAID-BEST using data from DAM.

2.3.3 Edible oils

HH consumption. Preferences and patterns around edible oil consumption depend on income group.¹³⁶ Approximately 20 percent of consumers (high income group), generally buy branded soybean oil in 5 liter bottles for daily use, and mustard seed oil for special occasions. This income bracket pays special attention to labels and light color because of its belief that these characteristics contribute to the quality of the product.¹³⁷ In addition to soybean, these consumers demand olive, sunflower, and rice bran oil.¹³⁸ Low-income consumers (around 80 percent of consumers) are more price sensitive, and generally purchase palm oil in small sachets (about 100 g) primarily to marinate food. Some farmers who produce mustard or other local oils use these oils regularly. The table below summarizes the ranking for specific oil type and the frequency of consumption.

Table 9. Most Preferred and Consumed Edible Oils in Bangladesh, April 2014

Rank	Oil type	Preference	Consumption
1	Soybean	High	Medium-high
2	Mustard	Medium-high	Medium-low
3	Other (rapeseed, rice bran)	Medium-low	Low
4	Palm	Low	High

Source: Personal communication with key informants during the April 2014 field visit.

¹³⁶ Personal communication with key informants in edible oil sector and baking and confectionary sector, April 2014.

¹³⁷ In general and across income strata, consumers prefer oils lighter in color. As an example of this favoritism, when refined palm oil becomes cloudier and more solid in winter from the cooler weather, the supply falls 10 percent because of decreased demand. Personal communication with key industry leaders, Dhaka and Chittagong, April 2014.

¹³⁸ Bangladesh Soybean Oil Association, 2012, Soybean Oil in Bangladesh. <http://www.bdssoybean.org/bsof.htm>, accessed May 2014.



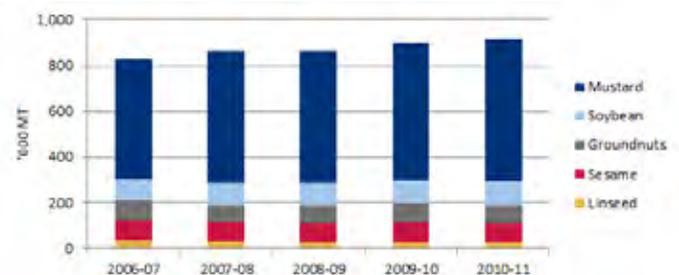
Photo by Fintrac Inc.

Mustard oil, seen here in tins, is the most expensive type of oil in Bangladesh. Although mustard seed dominates domestic oilseed production, in-country production cannot compete price-wise with the large influx of imported crude palm and soybean oil. Dhaka, Bangladesh, April 2014.

Locally produced oils have become specialty products due to their limited production and subsequent relatively higher prices. Among domestic oilseeds, mustard ranks as the most produced and consumed. This highly concentrated oil serves mostly to marinate fish and other foods during special occasions, which means that demand for mustard oil increases during holidays. In rural areas and among farmers who produce and keep some production for their own consumption, mustard seed oil remains an important source of fat and protein.¹³⁹ Domestic processors also extract oil from local rapeseeds, rice, sesame seed, sunflower, and coconuts. Coconut oil serves cosmetic purposes exclusively. Oil cakes from seed crushing go to animal feed.

Production. On average total area planted to oilseeds has remained relatively constant at 877,000 acres since 2006. Of the different oilseeds reportedly grown in Bangladesh for food consumption (mustard and rape, soybean, groundnuts, sesame, linseed, and others), mustard seed accounts for over 60 percent of the total area planted.¹⁴⁰

Figure 32. Area Planted ('000 acres) to Main Oilseeds, 2006-11



Source: Created by USAID-BEST using data from BBS.

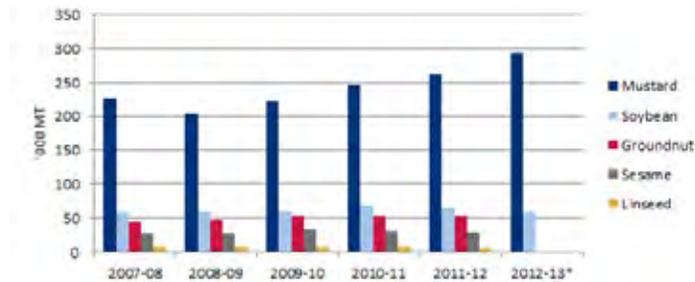
Note: BBS groups mustard and rapeseed (canola) together in reporting. Data after 2010-11 was not available.

¹³⁹ "Mustard seed contains about 40 to 45 percent oil and 20 to 25 percent protein." Huq, Anwarul, Mohamed Arshad, Fatimah, and Alam, Ferdous, 2012, "Supply response of mustard in Bangladesh: A cointegration analysis", Scientific Research and Essays, 7. Page 3262.

¹⁴⁰ Coconut is also used to produce oil, but it is not included here because it is used almost exclusively for cosmetic purposes.

Productivity has improved since 2000 because farmers increasingly use HYV, and especially from 2008 onward rape and mustard seed production have yielded greater gains (see figure below).¹⁴¹ However, total domestic oilseed production remains a small fraction of the oilseed demand in Bangladesh.

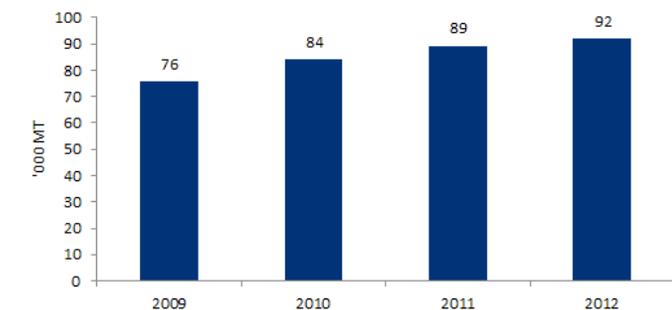
Figure 33. Oilseed Production ('000 MT), 2007-13



Source: Created by USAID-BEST using data from BBS and BBS Agricultural Wing, April 2014.
Note: Mustard includes canola (rapeseed).
*Data for 2012-13 were not available for groundnuts, sesame and linseed.

Farmers generally plant mustard seed from October-November and harvest starting late January-February.¹⁴² Wholesalers and some large-scale processors can store production for a year. From these mustard seeds, Bangladesh produces on average around 53,705 MT of refined mustard seed oil annually.¹⁴³ Total production of refined oils from domestically grown seeds stands at approximately 85,000 MT per year on average. As the figure below captures, yearly production of edible oil has steadily increased 2009.

Figure 34. Total Edible Oil Production ('000 MT) from Domestic Oilseed Production, 2009-12



Source: Created by USAID-BEST using data from BBS.

Currently, despite favorable conditions to produce more oilseeds, the total volume produced in Bangladesh remains low, especially relative to growing demand. In addition, although the

¹⁴¹ Golder, P. C., Sastry, R. K., and Srinivas, K., 2013, "Research priorities in Bangladesh: Analysis of crop production trends," SAARC J. Agri., 11.

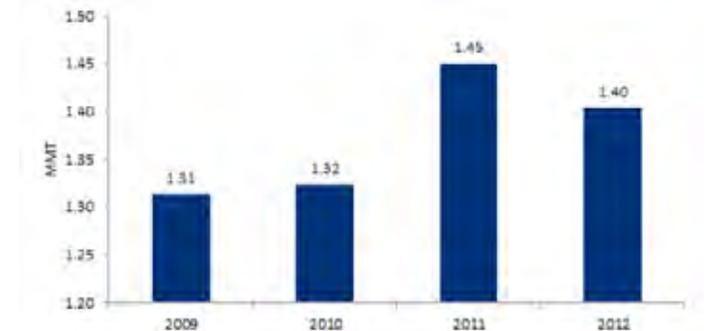
¹⁴² GoB and BBS, June 2013, *Statistical Pocketbook Bangladesh 2012*. Sher-e-Bangla Agricultural University, June 2013, *Financial and Economic Profitability of Selected Agricultural Crops in Bangladesh*.

¹⁴³ Total production of mustard seed was converted using a rate of 0.23 to edible oil. This conversion rate is from the Economist Desk Resource.

GoB included in the NFP the goal of diversification to increase oilseed production, it is unlikely that local production would substitute palm and soybean oil imports. Despite limited land availability and strong competition from other crops, particularly rice, area planted to oilseed since 2000 has grown from 860,000 acres in 2004-05 to 972,000 acres in 2011-12. In addition, profitability of mustard seed production remains among the highest for farmers.

Imports and exports. Imports currently account for close to 95 percent of total supply and have expanded significantly over the last 10-15 years to nearly 1.4 million MT in 2012. On average, Bangladesh has required 1.37 MMT of edible oils each year since 2009 (see figure below). From 2009-12, Bangladesh exported on average 7,598 MT of edible oils.

Figure 35. Total Edible Oil Imports (MMT), 2009-12



Source: Created by USAID-BEST using Comtrade, ITC, FAOSTAT, WFP/Bangladesh, USDA, AMEX, May 2014.

Palm oil dominates the import market with an average of 968,372 MT per year and soybean oil ranks second at 397,082 MT per year. Bangladesh sources the majority of its palm oil, imported in crude palm olein form, from Malaysia and Indonesia while soybean oil, nearly all of it crude degummed soybean oil (CDSO),¹⁴⁴ comes from Argentina and Brazil. The table below summarizes the imported volumes since 2009.

Table 10. Palm and Soybean Oil Imports (MT) by Country, 2009-12

Type	2009	2010	2011	2012	Avg 2009-12
Palm oil	930,843	957,091	986,889	998,667	968,372
Indonesia	811,772	782,848	825,472	746,685	791,694
Malaysia	113,456	172,491	150,939	251,107	171,998
Others	5,615	1,752	10,477	874	4,679
Soybean oil	390,486	330,925	493,270	373,648	397,082
Argentina	261,974	236,609	351,228	262,481	278,073
Brazil	123,526	37,500	106,700	94,484	90,552
Others	4,987	56,815	35,342	16,684	28,457

Source: Comtrade.

¹⁴⁴ According to Comtrade data, imports of refined soybean oil occupied from 0.04 - 1.1 percent of soybean oil imports over the 2008-2012 period, averaging little more than 0.5 percent over the period. All of the rest is imported in CDSO form.

Although some large-scale processors (e.g., Meghna Group) use oilseeds for locally produced oils, oilseeds are primarily used to produce the by-products (cakes) which serve the growing animal feed sector. Imports of oilseeds remain relatively minor compared to edible oil. Bangladesh imports the majority of rapeseeds from Canada, soybeans from Brazil,¹⁴⁵ copra from India, and mustard seed from Ukraine. The table below provides details on volumes imported.

Table 11. Oilseed Imports (MT) by Type, 2009-12

Type	2009	2010	2011	2012	Avg
Rape-seeds	191,711	205,783	169,320	205,057	192,968
Soybeans	136,493	102,802	100,725	268,491	152,128
Copra	19,134	32,280	22,568	25,377	24,840
Mustard seeds	20,942	13,343	7,219	2,822	11,082
Others	12	522	425	561	380
Total	368,293	354,732	300,258	502,308	381,398

Source: Comtrade.

Food aid. The GoB does not distribute edible oils under its safety net programs. USAID represents the most important donor as Title II programming imports refined vegetable oil (RVO) for its beneficiaries. From 2009-April 2014, USAID Title II donations averaged 1,395 MT of RVO (representing around 1.6 percent of average edible oil production from local oilseeds per year).¹⁴⁶ USAID Title II has provided in total 6,977 MT of imported RVO since FY10.

WFP, the second largest provider of RVO, accounted on average for 509 MT of RVO (around 0.6 percent of average edible oil production from local oilseeds per year) of RVO per year during 2009-12. In total since 2009, WFP has provided 2,543 MT, out of which more than 98 percent has been imported.¹⁴⁷

Government policy. Nutrition. Most recently in 2013 the GoB approved the Fortification in Edible Oil with Vitamin A Bill which mandates vitamin A fortification of all imported oils (see Chapter 3 for details).¹⁴⁸

Oilseed production. Oilseed production is an important component of the National Food Policy objective of

¹⁴⁵ During visits to large-scale processors no one indicated processing soybean. Similarly, in rural markets, local processors did not use soybeans for oil production.

¹⁴⁶ In 2014, Land O' Lakes attempted to monetize CDSO but USDA cancelled this effort because of concerns around the strict GMO regulations in Bangladesh (see Chapter 5 for details).

¹⁴⁷ During FY12 and FY13, USAID Title II donated to WFP 200 MT of RVO for emergency programs distributions. This volume is included under WFP total volume. Chapter 5 presents more detailed information on different USAID and WFP programs.

¹⁴⁸ GAIN, 2014, GAIN Edible Oil Fortification Law Presentation (PowerPoint presentation).

diversification from rice production.¹⁴⁹ Given the rapid decrease in cultivated land, the GoB has provided support to continue developing HYV oilseeds and to ensure farmers can adequately access these seeds. According to the 2013-14 Financial Year Annual Development Program (ADP), the Ministry of Agriculture has committed additional funding until June 2014 for BADC to work on seed improvement. Additionally, the Integrated Agriculture and Productivity project planned to run until June 2016 incorporates a concentration on improved oilseed production. In recent years, NGOs and agribusiness enterprises have also started providing services to farmers, although the DAE continues to be the most important institution supporting oilseed dissemination among farmers.

Processing. Although the GoB states that it values the processing sector as an important engine for development,¹⁵⁰ small- and medium-scale (SMS) processing plants receive limited direct support. Instead, these businesses reported continuing to face difficulties accessing investment loans and credit to adequately handle electrical and other operational costs.

Trade. Bangladesh bans soybean and palm oil exports. For imports, GoB authorities require a certification from the country of origin confirming that the product is "fit for human consumption." The GoB through its Trading Corporation of Bangladesh (TCB) imports small volumes of oil to later sell in the open market; thus, preventing sudden price fluctuations due to limited supply.¹⁵¹

Marketing. Imported and local edible oil follow different value chains. Mustard seed oil production and trade dominate the *domestic market*. Numerous SMS processors around production districts in the central and northern regions extract at a rate of 30-35 percent and use the leftover oil cake for animal feed.¹⁵² According to processors in Mymensingh (where more than 100 SMS processors concentrate) medium-scale factories could produce around 1,800-2,000 kg per day if operating at full capacity. City and Meghna groups represent the two largest processing companies as together they market the majority of branded mustard oil in Bangladesh.

SMS processors generally sell wholesale and retail. Some businesses prefer to locate their factories close to main markets so as to reach low- and high-income consumers. However, others rely on traders to bring their mustard seed and oil to weekly wholesale markets (*haat*). In general, vendors sell mustard oil by the kilo in rural areas and in branded bottles in urban areas. During market visits, the USAID-BEST team only came across one SMS in Mymensingh branding its production.

¹⁴⁹ FPMU, 2008, *The National Food Policy: Plan of Action (2008-2015)*.

¹⁵⁰ GoB, March 2013, *Bangladesh Poverty Reduction Strategy Paper: Sixth Five Year Plan FY2011 - FY2015*; Rahman, L. and Chowdhury, A. Z., 2010, *Agricultural Research Priority: Vision 2030 and Beyond. Sub-sector: Pulses and Oil Crops*.

¹⁵¹ GoB, 2014, Trading Corporation of Bangladesh (TCB).

¹⁵² Huq, Anwarul, Mohamed Arshad, Fatimah, and Alam, Ferdous, 2012, "Supply response of mustard in Bangladesh: A cointegration analysis", Scientific Research and Essays, 7. Personal communication with SMS processors in Mymensingh and Bogra, April 2014.

The local edible oil industry faces several constraints to expansion. First, Bangladesh does not have a comparative advantage in oilseed/edible oil production.¹⁵³ SMS processors who dominate local production face financial difficulties to purchase more mustard seed since limited production means higher costs for the raw input. A processor in Bogra explained that in 2013 buyers with financial capacity purchased large quantities of mustard seed right after harvest and thus inflated local prices. Although this practice only occurred once, it reflects the impact of large-scale purchases on local markets and suggests that competition with large-scale processing will likely intensify in the future.

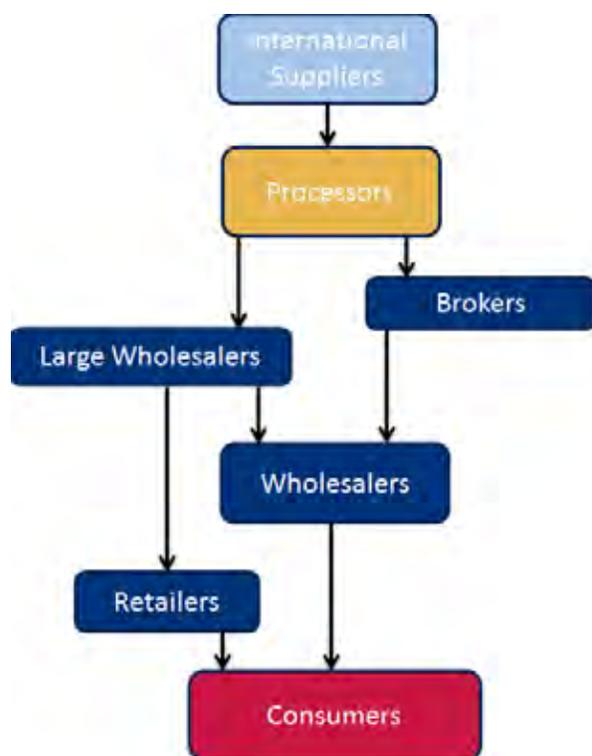
In addition, SMS processors generally cannot access credit to improve production technology and efficiency. Frequent electricity outages limit the number of operating hours and cause significant losses in productivity. Moreover, the quality and safety of SMS products remain questionable. Most SMS only produce unbranded mustard oil products, but higher income consumers, as mentioned previously, prefer packaged and labeled items due to their perceived cleanliness.

Large-scale processors, generally congregated in Dhaka city and Chittagong, command the *imported oilseed and oil market, and these businesses* purchase mostly crude palm and soybean oil for refining and then distribute to markets around the country.¹⁵⁴ Domestic capacity for refining palm oil improved starting from the mid-1990s and market share of imported edible oils (mostly palm) is now about 75 percent. Processors produce palm (commonly labeled vegetable oil) and soybean oil separately as the GoB prohibits blends.

Currently, processors primarily sell palm oil in bulk, but as margins for bulk oil are small, refiners are trying to move toward marketing bottled oil as a way to increase profit. Branded and bottled packages varying in sizes from 0.25-8 liters, typically referred to as consumer packs, account for about 15-20 percent of market supply. Goods sold in this format have a small premium of about BDT 5-10 per kg over bulk oil. Supermarkets in major urban areas generally stock these packaged bottles of palm and soybean oil alongside other, more expensive varieties, such as sunflower and olive oils.

Processors typically purchase their oil from large international trading companies (e.g., Bungee, Louis Dreyfus, NIDARA, Noble Group), and then brokers/distributors sell the bulk oil via contracts known locally as delivery orders, which ensure availability of product on a given date at a specific price. Brokers generally sell to wholesalers because they can only supply large quantities, and often small scale wholesalers and retailers do not have financial and/or storage capacity to buy directly from brokers. The number of wholesalers and retailers varies depending on the market. The following figure depicts the flow of bulk oil distribution.

Figure 36. Bulk Oil Value Chain



Source: Personal communication with a key informant in the edible oil sector, April 2014.

Performance. Land allocated for oilseed production has remained almost stagnant, mainly due to increasing irrigated rice production.¹⁵⁵ As the table shows, this competition for arable land has resulted in a greater, and ever widening, deficit in oilseed requirements, especially given the growing population. At present, total domestic oilseed production only covers about 30 percent of the demand for oilseeds.¹⁵⁶ In addition, even if oilseed production could somehow increase, consumer acceptability of palm and soybean oils will make it harder for locally produced oils to compete for a share of the increasing demand.

Given that production is limited and domestic oils are more of a specialty product, mustard oil prices are often higher than palm and soybean. Despite some variability across markets in mustard oil retail prices, in general prices ranged from BDT 180 in Rangpur to BDT 100 in Bogra. As the following figure charts, soybean and palm oil retail prices have maintained a relatively stable but upward trend since 2009 despite a small decrease in 2013. Although in 2008-09 both retail prices were relatively similar, the spread has widened since that year. Currently, soybean oil retail prices are about 50 percent higher than palm oil.

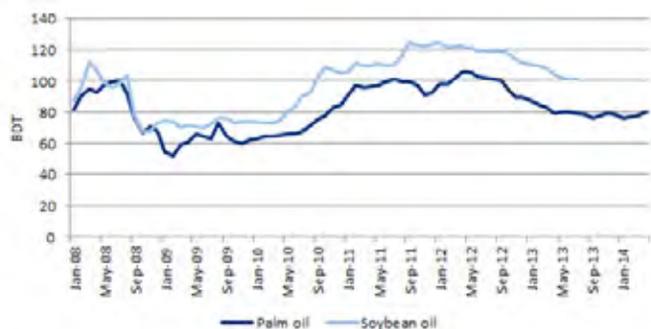
155 Golder, P. C., Sastry, R. K., and Srinivas, K., 2013, "Research priorities in Bangladesh: Analysis of crop production trends.", SAARC J. Agri., 11.

156 Huq, Anwarul, Mohamed Arshad, Fatimah, and Alam, Ferdous, 2012, "Supply response of mustard in Bangladesh: A cointegration analysis", Scientific Research and Essays, 7.

153 Sher-e-Bangla Agricultural University, June 2013, *Financial and Economic Profitability of Selected Agricultural Crops in Bangladesh*.

154 Chapter 6 covers the import edible oil sector in more detail.

Figure 37. Trend in Retail Palm and Soybean Oil Prices (BDT/ liter) in Dhaka District, 2008-14



Source: Created by USAID-BEST using data from DAM.

2.3.4 Pulses

HH consumption. Families consider pulses integral to their diet and mostly prefer red lentils, grass peas, chickpeas, and grams. For the poor, pulses represent the cheapest and most important source of protein.¹⁵⁷ HHs typically boil pulses with spices for a liquid curry that accompanies rice. Although consumers view the locally grown small red lentils (*mushur*) as the most desirable pulse, the high price of this commodity leads many to substitutes, such as cheaper imported *mushur* from Nepal and Canada or grass peas (*keshari*). In addition to price, consumers also care about boiling time and prefer fresher pulses as they cook faster. In some rural areas, roasted bean seeds also serve as popular snacks. Across strata, desserts and cakes from lentils (mostly gram) remain popular and HHs often consume these specialty foods around holidays.



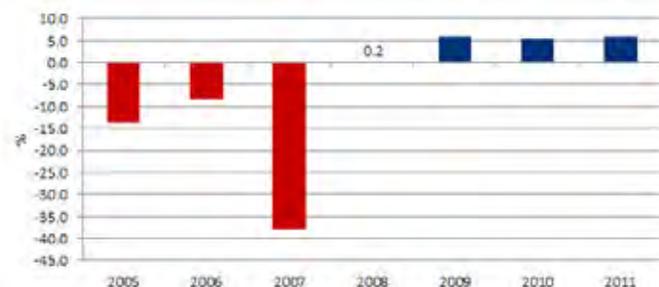
Photo by Fintrac Inc.

Despite widespread domestic production, Bangladesh is a net importer of pulses and relies heavily on imports from Nepal to meet demand for the strongly preferred small red lentils (*mushur dal*). As illustrated here, the Nepali variety (left) is nearly indistinguishable from the local variety (right). Tangail, Bangladesh, April 2014.

¹⁵⁷ FPMU, 2008, *The National Food Policy: Plan of Action (2008-2015)*.

Production. Pulse crops (e.g., grass peas, red lentils, mung beans, black grams, and others) comprise approximately 2.45 percent of planted land area in Bangladesh.¹⁵⁸ Despite the importance of pulses as a nutritious staple food, harvested area has declined over the past 10 years. In 2004, total area dedicated to pulses was 947,000 acres but by 2009 this number dropped by about 37 percent. Since then, the total acreage allotted to pulses has only increased slightly, as the figure below demonstrates.

Figure 38. Year-on-Year Pulse Total Planted Area Variation (%), 2005-11



Source: Created by USAID-BEST using BBS data.

Competition with more profitable crops (particularly *Boro* rice) for land allocation; high disease and pest infestation levels; and increasing vulnerability to climatic fluctuations constrain higher pulse yields.¹⁵⁹ The table below shows that of total production, grass peas (*keshari*) and red lentils (*mushur*) dominate as they account on average for 83,000 MT and 73,000 MT, respectively. Other important pulses are mung beans and black or white grams.

Table 12. Main Pulse Production ('000 MT), 2008-12

English Name	Bangla name	2008 -09	2009 -10	2010 -11	2011 -12	Avg 2008-12
Grass peas	Keshari	76	82	83	89	83
Red lentils	Mushur	61	71	80	80	73
Mung bean	Mugh	18	20	19	26	21
Black or white gram	Mashkalai	22	28	29	24	26
Others		21	20	15	21	19
Total		198	221	226	240	221

Source: BBS data.

Harvesting generally occurs during the dry season from February to about mid-April. In general, main production areas are in the central and southern part of the country. Faridpur (Dhaka division) and Bogra (Rajshahi division) are important distribution centers from which traders transport pulses all over the country.

¹⁵⁸ Rahman, L. and Chowdhury, A. Z., 2010, *Agricultural Research Priority: Vision 2030 and Beyond. Sub-sector: Pulses and Oil Crops*.

¹⁵⁹ Golder, P. C., Sastry, R. K., and Srinivas, K., 2013, "Research priorities in Bangladesh: Analysis of crop production trends.", SAARC J. Agri., 11.

Table 13. Pulse Imports (MT) by Country, 2009-12

	2009	2010	2011	2012	Average
Red lentils	177,673	166,737	74,674	171,419	147,626
Canada	126,333	67,363	15,311	59,779	67,197
Australia	9,989	32,273	36,230	97,394	43,971
Nepal	34,801	45,132	22,001	n.r.	33,978
Other	6,550	21,969	1,132	14,246	10,974
Peas	487,893	449,717	211,784	177,819	331,803
Canada	475,113	432,646	178,742	170,428	314,232
Australia	3,489	12,647	29,922	719	11,694
USA	5,437	4,424	2,152	1,359	3,343
Other	3,855	-	968	5,313	2,534
Chickpeas	157,627	180,872	105,238	136,719	145,114
Australia	157,186	180,871	97,869	136,677	143,151
Other	442	1	22,064	42	5,637

Source: Comtrade.
Note: n.r. = Not reported.

Imports and exports. Bangladesh is a net importer of pulses and most commonly imports dry peas (similar to *keshari*), chickpeas, and red lentils (*mushur*).¹⁶⁰ Given the popularity and preference for red lentils, imports of this type average nearly 150,000 MT annually. Traders coordinate with importers and dealers and primarily source from Canada, but increasingly they have started reaching out to Nepal because the size and color of Nepalese lentils more greatly resembles local varieties.

All red lentils imported from Canada, Australia, or other overseas countries arrive through the port of Chittagong, and importers/wholesalers later transport these lentils to Dhaka city or other regions. Imports of red lentils from Nepal usually enter the country through the Banglabandha land port in Panchagarh district and the Hili land port in Dinajpur district. The table above presents different pulse import volumes by country of origin from 2009-12.

Food aid. The GoB does not distribute pulses for its safety net programs. From 2009-12, USAID Title II provided on average 1,193 MT (around 2 percent of average production per year). In total since 2009, USAID Title II has provided 4,770 MT of mostly yellow split peas (80 percent of all pulse donations). During the same period, WFP provided 1,075 MT (around 1.5 percent of average production per year) on average per year. In total since 2009, WFP has provided 4,302 MT of different pulses, sourcing 51 percent locally in Bangladesh.

Traders in different markets reported that distribution of lentils has not hurt their business. In Faridpur, Sirajgang, Mymensingh, and Khulna different pulse processors indicated having worked with NGOs and/or WFP packing lentils for different food aid programs (e.g. food-for-work and/or emergency programs during floods).

¹⁶⁰ GoB, March 2013, *Bangladesh Poverty Reduction Strategy Paper: Sixth Five Year Plan FY2011 - FY2015*.

Government policy. Production. The NFP includes pulses as an important crop to diversify in the long term.¹⁶¹ Thus far, the GoB has promoted general HYV seed development and extension, and adoption by farmers of this practice has led to some headway with increased production. In addition, the GoB Poverty Reduction Strategy stresses the value of additional research around post-harvest handling, storage, and processing of pulses.

Nutrition. The NFP considers pulses as strategic for nutrition improvement and acknowledges the challenges facing increased consumption. Although different agricultural policy agendas and visions address pulse production and development,¹⁶² the GoB has not developed a specific pulse strategy with clear goals.

Trade. The GoB bans exports of all pulses (with the exception of processed pulses).¹⁶³ Importation of pulses is duty free. The GoB generally does not import pulses, but in January 2014, the GoB through the TCB announced the purchase of 1,500 MT of lentils to secure food availability during Ramadan.¹⁶⁴

Marketing. Local and imported pulses fall into distinctive value chains. The *domestic market includes* numerous large-scale traders (*aratdars*) who collect pulses from farmers in production areas, mostly around Kushtia and in the west central part of the country, and then store these pulses for some months. Large-

¹⁶¹ FPMU, 2008, *The National Food Policy: Plan of Action (2008-2015)*.

¹⁶² FPMU, 2008, *The National Food Policy: Plan of Action (2008-2015)*; GoB, March 2013, *Bangladesh Poverty Reduction Strategy Paper: Sixth Five Year Plan FY2011 - FY2015*.

¹⁶³ GoB, 2012, Export Policy Order 2012-2015. <http://www.mincom.gov.bd/doc/Copy%20of%20Export%20Policy%2012-15%20-Final%20Draft-.pdf>, accessed May 2014.

¹⁶⁴ TCB procured 1,500 of gram from Tanzania to later sell the product in the open market; thus, preventing a price spike. Reuters, 2014, Bangladesh to import 1,500 tonnes of lentils. <http://bdnews24.com/business/2014/01/24/bangladesh-to-import-1500-tonnes-of-lentils>, accessed May 2014.; The Financial Express and Habib, Talha Bin, April 25, 2014, TCB to import gram, date for Ramadan

scale traders later sell to processors or other traders directly or at wholesale market days (*haat*). Large-scale traders in Khulna reported buying and selling around 1,000 bags of lentils per day during peak harvest season, whereas small-scale traders handle around 40-50 bags daily. Surplus production typically goes to Faridpur and Bogra for redistribution across the country.

In addition to traders, numerous millers, who generally source from *aratdars*, dry pulses and process them in SMS facilities to obtain *dal*. These millers keep the by-products from processing (e.g., husks, and broken, smaller grains) for animal feed and lower-priced grain for human consumption. In Faridpur and surrounding areas alone, 60 millers with varying capacities process lentils. In areas of limited production, such as Rangpur or Mymensingh, traders reported only one relatively large-scale processor in operation. However, a single large-scale processing unit in these two districts can produce more than 5 MT of *dal* daily.¹⁶⁵

Local millers reported great risk in the needed investments to set up processing facilities. Banks usually do not provide loans and charge high rates (several processors reported paying as much as 17 percent interest rate); thus, those interested in the processing business must bear all costs. In Faridpur, a processor explained that just to set up his factory he needed BDT 50-60 million. Despite the high investment cost to set up a processing facility, the value chain remains fairly competitive.

The value chain for *imported pulse* has two different source markets: overseas and regional. Pulses sourced from overseas are mostly from Canada and Australia. Private companies who specialize in food imports, such as City and Meghna groups, typically work with import agents to distribute pulses around the country. India and Nepal provide a regional source for lentils. Import agents and large-scale traders, generally located in Faridpur and Bogra, handle most shipments of lentils from India and also distribute Nepalese lentils throughout the country. Regional import traders have extensive connections in India and Nepal, which greatly facilitates the supply of products.

Performance. Currently, Bangladesh must rely on imports to close the deficit on pulse production and, this situation will likely remain in the future given that under the current production structure farmers cannot supply enough pulses. Low profitability of pulses competes with other crops for already limited land availability for production. For example, profitability of red lentils is lower than mustard seed, maize, or *Boro* rice, which are all planted at the same time. Most traders interviewed during field visits confirmed that locally produced red lentils lead to reduced earnings (mostly because of the short window of production) and lower-priced imports offer heavy competition. Despite higher prices of local red lentils (*mushur*), traders still noted that the profit margin discourages greater trade.

Availability of different pulses and imported products have contributed to keep prices relatively stable. Local red lentil retail prices (for which price data are available) maintained a steady

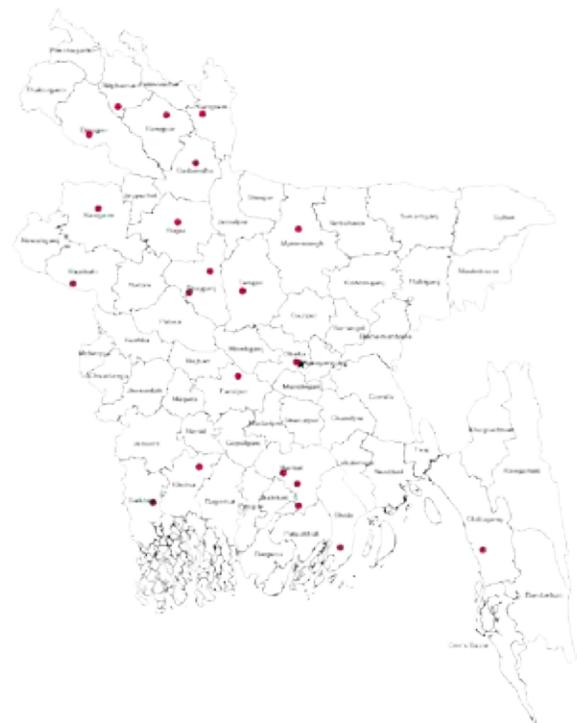
trend from 2011-March 2012. By the second quarter of 2012, retail prices increased until January 2014. Currently, and also according to traders, local red lentils are back to their 2012 levels.

Bangladesh will likely remain a net pulse importer because prices of locally produced pulses (particularly red lentils) are often higher than similar imported products. In northern markets such as Mymensingh and Sirajganj, traders sold local red lentils at BDT 98-110 per kg, Nepalese lentils BDT 90-98 per kg, and Australian and Canadian lentils BDT 78 per kg (more than 30 percent cheaper); broken red lentils from Canada were priced at BDT 75 per kg. In the south, in Barisal and Khulna, traders agreed that local prices were BDT 20-25 higher than imported varieties.

2.4. CHARACTERISTICS OF MARKET SITES

USAID-BEST interviewed stakeholders at urban and rural markets across the country in April 2014. The following map highlights in red dots the location of all markets visited during field work.

Figure 39. USAID-BEST Markets Visited, April 2014



Source: Created by USAID-BEST.

All markets visited stocked an adequate supply of food during field work in April 2014, despite this month being considered a lean season. Traders of all sizes operate in markets and agreed that road improvements, cell phone availability, and increasing consumer purchasing power, have contributed to improved food availability and access.

165 Personal communication with traders at markets, Faridpur, April 2014.

Each district generally had three main types of markets: a wholesale weekly market (*haat*), daily wholesale/retail markets (*chawk* or *boro*) and neighborhood (in urban areas) or village (in rural areas) retail markets. City authorities manage main wholesale markets, and traders must pay a fee to sell their products. In the layout of these markets, wholesalers of similar commodities typically group together. Retail markets in urban areas often dot main neighborhoods (e.g., Mohammadpur Krishi in Dhaka city) or villages (e.g., Dorgapur in Satkhira district). Consumers usually buy first from their nearest neighborhood or village market. Although the city administration runs some retail markets, others (e.g., markets along roads and village markets) operate independently.

In most wholesale markets visited, traders indicated having been in the same business for a relatively long period (more than 10 years), and in some instances the shops were family business passed along male members through generations. Traders agreed that while anyone could sell products in any given market, newcomers usually face high financial barriers (e.g., cash to purchase large volumes) and limited space availability as a consequence of high rents. Although most traders did not directly mention social networks as a barrier or opportunity to enter markets, they all have extensive trading connections and conferred, particularly among those importing products from India, that obtaining supply requires knowing the right people.

Village-level markets are generally set stalls along the main road rather than formal, enclosed buildings. The number of vendors varies depending on the area. In Assassuni Upazila of Satkhira District, around 10-20 vendors operated at a roadside retail market, while in Bakergonj Upazila, Barisal District, that number was closer to 40 vendors. All these village retail vendors source locally produced rice, potatoes, and vegetables from wholesale markets via their own transportation.

In all markets visited, traders report NGO food distributions have minimal effect on their businesses. In fact, in most markets, traders were unaware of food aid distributions. In one instance (in Khulna), a trader confirmed the distribution of RVO in villages but stated that the small volumes compared to his sales meant that he felt little impact from these distributions. Instead, he expressed his interest to work with NGOs sourcing and repacking oils for food aid distribution.



CHAPTER 3

LOCAL FOOD INITIATIVES TO IMPROVE NUTRITION

One of the four independent projects focused on enriching rice in Bangladesh is WFP's *pushti chaal*. Given the importance of rice in the diet of this populous nation, fortification of this staple could represent a valuable source of nutrition. Kurigram, Bangladesh, April 2014.

Photo by Fintrac Inc.

3.1. INTRODUCTION

A number of initiatives in Bangladesh center around the production and distribution of fortified foods and specialty nutrition products to address the high malnutrition rate in the country. With the additional flexibility given to USAID Office of Food for Peace after the US government (USG) passed the 2014 Farm Bill,¹⁶⁶ Title II partners can now consider these options for possible inclusion in future rations in the next cycle of programming. Additionally, the USG Global Health Initiative and Feed the Future may also find these research efforts of interest and relevance to their programming.

So as to provide USAID the requisite informational background for decision making, this chapter describes the national policy context, details current initiatives and catalogues select past initiatives of relevance for Title II programming, and then summarizes key takeaways.

¹⁶⁶ USG, January 2014, *Agricultural Act of 2014*. See, in particular, Section 202(e) in Title II of the Food for Peace Act, as amended by Section 3002 of the Agricultural Act of 2014. USAID, May 2014, Food for Peace Information Bulletin 14-01. On May 9, 2014, FFP/W released for public comment a draft version of the FFP Information Bulletin describing the expanded permissible uses of 202(e), including “domestic or imported therapeutic feeding supplements purchased locally.” (p.3)

3.2. NATIONAL POLICY CONTEXT

3.2.1 National Food Policy

The Government of Bangladesh (GoB) recognizes the value of specific evidence-based research and policies to address widespread micronutrient malnutrition, especially of vulnerable groups.¹⁶⁷ The GoB actively engages with donor and research institutes piloting different approaches to fortifying staple foods and developing new specialty nutrition products. The National Food Policy Plan of Action (2008-15) calls for “comprehensive, result-oriented long term planning” toward the goal of finding solutions to improved nutrition.¹⁶⁸

Currently, the Food Policy Management Unit (FPMU), a project under the Ministry of Food (MoF), monitors the progress of a 2006 National Food Policy as part of the National Food Policy Plan of Action (2008-15) created to identify the procedures needed to ensure the successful implementation of the food policy regulation. The Country Investment Plan from the MoF, partner ministries, and the Food and Agricultural Organization (FAO) also seeks to assist the follow-through of the Plan of Action by identifying the required level and focus of investment.

¹⁶⁷ FPMU, 2008, *The National Food Policy: Plan of Action (2008-2015)*.

¹⁶⁸ FPMU, 2008, *The National Food Policy: Plan of Action (2008-2015)*, p. 50-51.

According to stakeholders, the GoB has no plan at present to prepare a new national food policy. At present, the MoF is developing a project called Meeting the Under-nutritional Challenges in Bangladesh with technical assistance from FAO that may replace the present FPMU, if all goes well, starting October 2014. Only after this new project gets underway might the GoB then consider a revised national food policy and the subsequent Plan of Action and Country Investment Plan. Current FPMU staff strongly feels the need for a new food policy and believe that a future rendition will more comprehensively tackle food fortification and bio-fortification. However, stakeholders in nutrition policy circles report any major shifts in GoB policy could take another four-five years.

3.2.2 Fortification Policy

Despite the lack of a comprehensive national fortification policy,¹⁶⁹ the GoB has passed two separate laws mandating the iodization of salt and the vitamin A fortification of edible oil (detailed below).

Iodized salt.¹⁷⁰ Since the GoB mandated universal salt iodization in 1989, salt factories now properly iodize an estimated 50 percent of production.¹⁷¹ Key stakeholders interviewed during the April 2014 field visit cite this progress as a relative success that has hinged on strict enforcement. However, despite compulsory inspections and regulated import bans, consistent quality control remains a serious issue even with a monitoring system put in place in 1999.¹⁷²

Although the GoB has vowed a strong political commitment to this effort, donors and the private sector have also offered significant support. The United Nations Children's Fund (UNICEF) financed the requisite equipment at factories in just over a dozen districts as part of an initiative testing prototypes of cost-effective and sustainable mechanisms for salt iodization plants. This donor support for technology transfer along with the low cost of this technology to factory operations¹⁷³ have all contributed to an effective policy.

Fortified edible oil.¹⁷⁴ Recently written into law in 2013, the

universal vitamin A fortification¹⁷⁵ of all edible oil in Bangladesh has since, as of April 2014, led to the fortification of an estimated 40 percent¹⁷⁶ of marketed edible oil. Bangladesh is the first South Asian country to pass such a law around vitamin A fortification of refined edible oil.¹⁷⁷ The GoB, especially the Ministry of Industry, UNICEF, and the Global Alliance for Improved Nutrition (GAIN) all contributed efforts over the course of a decade to ensuring the passage of this law and actual implementation. According to stakeholders, the consolidated nature of the edible oil market under a small number of family-owned companies has helped the GoB target enforcement and messaging so that processors actually comply.¹⁷⁸ The ability to market a product as fortified may also incentivize compliance.¹⁷⁹

Specifically, the mandate requires fortification of all crude and refined edible oil marketed in Bangladesh, including soybean and palm or palm olein oils, and bans the import of non-fortified oils.¹⁸⁰ The law excludes certain edible oils that account for a small share of the market, such as domestically processed mustard and coconut oils and imported olive oil.¹⁸¹ Additionally, refiners must label all containers and bottles with a standardized logo.¹⁸² (For more information about the edible oil industry in Bangladesh, please see Chapters 2 and 6.)

Enforcement and compliance with this fortification mandate may become more complex in the future as some large processing companies¹⁸³ oppose the increased frequency of Bangladesh Standards and Testing Institute inspections associated with enforcement. Moreover, while GAIN currently subsidizes the

Supplemental information was drawn from: 1) GAIN, 2014, GAIN Edible Oil Fortification Law Presentation (PowerPoint presentation); and 2) GAIN, April 2014, Nutritious Rice Value Chain: Improving the Nutritional Density of Zinc in Rice (PowerPoint presentation).

175 Known as "Fortification in Edible Oil with Vitamin A Bill, 2013." Edible oil must also be fortified with vitamin D, as a preservative for vitamin A.

176 According to field interviews with key informants in the nutrition community, 40 percent of all edible oil has some vitamin A. However, according to unpublished reports, an estimated 20 percent of all edible oil is vitamin A fortified. There has reportedly never been any adequacy check performed in any laboratory, and therefore no public report or documentation of the coverage.

177 GAIN, 2014, GAIN Edible Oil Fortification Law Presentation (PowerPoint presentation).

178 GAIN and icddr,b both reported that there are only five-seven major oil processors. In contrast, there are reportedly "too many actors" in the wheat milling sector for the GoB to effectively control.

179 During the USAID-BEST April 2014 field visit, interviews with market actors across the country indicated that consumers have greater confidence in packaged and labeled products; this preference likely influences processors' interest in labeling their edible oil as fortified.

180 The law requires each one gram of edible oil contain a minimum of 0.015 mg and a maximum of 0.030 mg Vitamin A (15-30 ppm). (GAIN, 2014, GAIN Edible Oil Fortification Law Presentation (PowerPoint presentation)).

181 GAIN, 2014, GAIN Edible Oil Fortification Law Presentation (PowerPoint presentation).

182 The logo was developed by GAIN and UNICEF, according to a GAIN press release upon passage of the law: <http://www.gainhealth.org/press-releases/fortification-edible-oil-vitamin-bill-2013>.

183 The owners of City Group, the company that produces the popular Teer brand of edible oil.

169 In an April 2014 interview with USAID-BEST, GAIN reported that the GoB requested the organization's assistance to draft a national fortification law. GAIN also reported the organization is in the early stages of working with the Ministry of Primary Education and BRAC to draft a national school feeding policy, which would include ensuring proper nutrition in school meals.

170 Personal communication with GAIN and BRAC staff, April 2014. Also, see http://www.unicef.org/bangladesh/health_nutrition_409.htm.

171 ICDDR,B, January 2013, *National Micronutrients Status Survey 2011-12*. While just over 80 percent of all HHs use iodized salt, only 58 percent of all HHs consume salt that is adequately iodized. For more, see http://www.unicef.org/bangladesh/media_6143.htm.

172 Personal communication with stakeholders working on issues related to fortification and nutrition in Bangladesh, April 2014.

173 Adding potassium iodate increases production cost by approximately BDT 40 per kg, according to key informants involved in food fortification initiatives in Bangladesh, April 2014.

174 Information on this initiative was drawn from personal interviews with stakeholders working on issues related to fortification and nutrition in Bangladesh (GAIN, icddr,b, BRAC, and WFP, among others), April 2014.

cost of the vitamin A premix, by January 2016, oil processors will have to bear the full cost of the fortificants.¹⁸⁴ Companies are prohibited from passing along any additional cost to consumers, although it remains unclear who will enforce this aspect of the fortification law.

3.3. FORTIFIED RICE

Given the importance of rice in Bangladeshi diets, fortification of this staple could represent a valuable source of nutrition. Currently, four independent projects concentrate on possible enrichment methods: two involve increasing the zinc density of rice prior to milling, one involves enriching rice with Vitamin A, and the fourth initiative involves multiple micronutrient fortification of milled rice. This section summarizes those efforts.

3.3.1 Multiple Micronutrient Fortified Rice

HIGHLIGHTS:

MULTIPLE MICRONUTRIENT FORTIFIED RICE ("PUSHTI CHAAL") INITIATIVE

Food. Milled coarse rice, varieties, blended with micronutrients in select private sector mills

Intervention location in value chain. Industrial blending, post milling

Target population. VGD beneficiaries

Organizations involved. WFP, MoF, MoDMR, MoWCA, BRAC, DSM, private millers, garment factories, Netherlands (donor)

Status as of April 2014. Directly distributing to approximately 6,000 VGD and VGF beneficiaries; in process of scaling up to cover 500,000 VGD beneficiaries

Source: Personal communication with staff of WFP, April 2014.

WFP, in a joint initiative with the Ministry of Disaster Management and Relief and the Ministry of Women and Children Affairs, is piloting production and distribution of multiple micronutrient fortified rice, known locally as *pushti chaal* (nutritious rice in Bangla).

Background on initiative. Developed by PATH and known

¹⁸⁴ GAIN signed an agreement with the Ministry of Industries to supply, on a sliding scale, vitamin A premix to the edible oil mills. From July-December 2014, GAIN will supply the premix to the mills free of charge; from January-June 2015, GAIN will bear 50 percent of the premix costs and the mills will bear the other 50 percent; from July-December 2015, GAIN will bear 25 percent of the premix costs and the mills will bear the remaining 75 percent; after that period, the mills will bear the full costs of the premix. Personal communication with GAIN/Dhaka staff, April 2014; and personal communication with MI/Dhaka staff, May 2014.

elsewhere as "Ultra Rice,"¹⁸⁵ WFP's *pushti chaal* is a regular milled white rice blended in a ratio of 1:100 with a kernel made from rice flour containing vitamin A, B1, and B12; folic acid; iron; and zinc. Millers can color the kernel to resemble a number of white or parboiled rice varieties so that it becomes nearly indistinguishable from regular milled rice. Families can store, wash, and cook the resulting blended rice according to their normal practices.¹⁸⁶

WFP took on this initiative in 2012 and selected Ultra Rice technology for its simplicity and speed in providing multiple micronutrients via use of existing machinery. Not only did this option prove alluring because of cost-effectiveness, but also WFP had already adapted a micronutrient pre-mix¹⁸⁷ for its whole wheat flour (*atta*) fortification initiative that had been altered for the Bangladesh nutrition deficiency context.¹⁸⁸

The International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b) conducted the bioavailability trial in 2012, BRAC completed the acceptability trial that same year. Among the key takeaways from BRAC survey on acceptability of Ultra Rice (*pushti rice*):¹⁸⁹

- All urban and rural HHs found the *pushti* rice acceptable in terms of texture, smell, and taste;
- HH size and occupation of HH head are not important determinants of willingness to pay for *pushti* rice;
- Marketing *pushti* rice to rural HHs would not be cost effective because they are unlikely to buy it; and
- Marketing to urban HHs would be worthwhile, especially if campaigns target food insecure HHs in these areas.

¹⁸⁵ According to Chakraborty et al., "Ultra rice is a manufactured grain made from rice flour, selected micronutrients and stabilizers that resembles milled rice in size and shape. When eaten mixed with normal rice at a ratio of 1:100 before cooking, it was found efficacious in improving the micronutrient status of population including children, adolescents, and pregnant and nursing women in several studies" (Chakraborty, Barnali et al., March 2012, A pilot study on the Consumer Acceptance of Micronutrient Fortified Ultra Rice in Bangladesh.). Of note, PATH is not currently involved in WFP's *pushti chaal* initiative. However, PATH developed the first Ultra Rice and so is often associated with Ultra Rice. For background on Ultra Rice, and PATH's initiative, please see http://www.path.org/projects/ultra_rice.php.

¹⁸⁶ Personal communication with WFP/Dhaka staff. Also, see Mustafa, Hisham Bin, July 26, 2013, Government introduces nutrient-enriched rice. As with non-fortified rice, health and nutrition messaging often includes encouragement to Bangladeshi HHs not to pour off excess water after cooking rice because this water holds some of the nutrients from the rice.

¹⁸⁷ Personal communication with WFP staff in Kurigram, April 2014.

¹⁸⁸ WFP reports that the micronutrient needs had been established specifically for Bangladesh when WFP first engaged in *atta* fortification. The micronutrient pre-mix formulation for *atta* was a powder form. For *pushti chaal*, WFP was able to give DSM that formulation, which was then converted into a pellet and manufactured at the factory in China. The pellets are then blended by private contracted Bangladeshi mills with milled coarse rice donated by the GoB. Although a much longer term goal, WFP believes domestic production of kernels will be key to ensuring a steady supply.

¹⁸⁹ Chakraborty, Barnali et al., March 2012, A Pilot Study on the Consumer Acceptance of Micronutrient Fortified Ultra Rice in Bangladesh. For background on Ultra Rice, and PATH's initiative, please see http://www.path.org/projects/ultra_rice.php.



Photo by Fintrac Inc.

Micronutrient kernels made from rice flour and packed with 6 vitamins and minerals are blended in a ratio of 1:100 with regular milled white rice in WFP's *pushti chaal*. The kernels can be manufactured to resemble a number of white or parboiled rice varieties so that it becomes nearly indistinguishable from regular milled rice. Kurigram, Bangladesh, April 2014.

Previous research on PATH's Ultra Rice concluded the efficacy of this product in improving the nutritional status of children, adolescents, and pregnant and lactating women. However, PATH is not currently involved in WFP's *pushti chaal* initiative.

Process. After issuing a tender to mills for the pilot,¹⁹⁰ WFP selected Chairman Mini Auto Rice Mill in Kurigram and M/S Al-Hera Rice Mill in Satkhira to blend the imported kernels (from DSM) with regular milled rice. Although this procedure requires that millers bear the additional equipment investment of about US\$10,000,¹⁹¹ these businesses amortize the capital cost of such machinery through the service fee WFP pays for blending.¹⁹² WFP reports that since a staff food technologist conducts training for workers at mills, these businesses do not have to pay for training.

At present, the two mills providing the blending service only do so for WFP. However, discussions with mill operators and WFP staff suggest that millers hope they can better position themselves in the fortified rice market from working with WFP as early participants. Both mills currently can produce approximately 2 MT per hour, and normally operate 16 hours per day (two shifts). In Kurigram, with distribution at 84 MT per month, this volume accounts for 15 percent of business; the mill in Satkhira turns over about 120 MT per month, and *pushti chaal* represents about 20 percent of operations.¹⁹³

Production and distribution. WFP, the GoB, and private mills collaborate in a number of ways to produce and distribute

¹⁹⁰ In order to qualify as potential participants in the fortification initiative, mills must be among the approximately 18,000 mills eligible for government procurement programs.

¹⁹¹ Investment for local blending equipment cost US\$10,000 (Kurigram) and US\$12-13,000 (Satkhira).

¹⁹² Electronic communication with WFP/Dhaka staff, May 2014.

¹⁹³ Personal communication with Chairman Mini Auto Rice Mill owner ("Dolal"), and WFP food fortification staff, April 2014. According to WFP staff, distributions have reportedly been relatively higher in Satkhira because the area is more prone to natural disaster, e.g., Satkhira suffered from storm Aila two years ago.

pushti chaal. First, the GoB Public Food Distribution System (PFDS) provides the requisite coarse parboiled milled rice, and WFP pays for the delivery of rice to the mill from the Local Storage Depot. Then, after millers blend the kernel with polished white rice and bag the rice, WFP absorbs the delivery cost for moving the rice to distribution points at *Union Parishad* offices. Local government staff¹⁹⁴ oversees the distribution of rations to Vulnerable Group Feeding (VGF) and Vulnerable Group Development (VGD) beneficiaries in the GoB safety net programs.

Currently, in Kurigram, WFP provides *pushti chaal* to 2,794 VGD beneficiaries in eight unions of Kurigram Sadar upazila. The two-year VGD cycle began in January 2013, and WFP began providing the fortified rice in June 2013.¹⁹⁵ In Satkhira, 6,000 families¹⁹⁶ per month receive VGF rations for three month periods.

Funding. A donation from DSM assisted the first year of activities, and the Netherlands is currently funding the three-year scaling up phase (2013-16).

As stated previously, WFP currently pays for all transportation. However, the GoB has stated their intention to use fortified rice within the PFDS, which could mean potentially in the future the government will bear some more of the costs.

Status as of April 2014. Now in a three-year scaling up phase (2013-16), WFP expects to focus efforts on distributing *pushti chaal* in the VGD program only because participating HHs need to eat micronutrient-rich rice more consistently to reap nutrition benefits.¹⁹⁷ WFP has installed blending equipment at two more mills in Bogra and Sirajganj so as to reach more VGD HHs. Focusing on expansion of distribution, WFP expects the funding from the Netherlands will help reach 500,000 VGD beneficiaries. Moreover, WFP is engaging Aarong (a BRAC enterprise and fair trade organization) to undertake a social marketing campaign to build consumer demand, and is working with garment factories to incorporate *pushti chaal* into their canteens as a corporate social responsibility initiative. Success of the current initiative will require donor or GoB investment in blending equipment, transport costs, and social marketing.

Implications for Title II. USAID and implementing partners should seriously consider procurement of this fortified rice for programming in all activities that call for cereals because the prevalence of micronutrient deficiencies warrants inclusion of such a food in any transfer.

¹⁹⁴ The chairman of the selection committee is the head of the *Union Parishad*.

¹⁹⁵ A USAID-BEST team visited one of the *pushti chaal* VGD distributions at the *Union Parishad* for Kurigram Sadar upazila at which there were 280 beneficiaries. The team interviewed about a dozen beneficiaries, all of whom reported they had never before been VGD beneficiaries, but that the *Union Parishad* officials choose who should be on the VGD list.

¹⁹⁶ Or 30,000 beneficiaries, assuming five members per HH. Electronic communication with WFP, May 2014.

¹⁹⁷ Since VGF beneficiaries receive assistance on a short-term and intermittent basis in response to emergencies, they would be less likely to benefit from as much from *pushti chaal*.

Should Title II programming choose to include this product then USAID and its partners need to consider the current scale of production and distribution and whether it would be beneficial to provide support to this initiative so as to ensure adequate volume for its ration needs.

3.3.2 Bio-fortified High Zinc Rice

HIGHLIGHTS:

BIO-FORTIFIED HIGH ZINC RICE INITIATIVE

Food. Rice seed varieties, selectively bred to have high zinc content

Intervention location in value chain. Seed

Target population. Entire population, with initial focus on rural rice farming HHs

Organizations involved. HarvestPlus, IRRI, BRRI

Status as of April 2014. First seed variety (*Aman* season) released to farmers for multiplication in 2013/14; second variety (*Boro* season) due for imminent release to farmers for multiplication

Source: Personal communication with staff of HarvestPlus and IRRI, April 2014.

Process. Over the last decade, HarvestPlus and the International Rice Research Institute (IRRI), in collaboration with the Bangladesh Rice Research Institute (BRRI, a GoB organization), have been working to develop bio-fortified high zinc rice through selective breeding. These organizations aim to find selectively bred varieties that grow well in the agro-ecological conditions found across Bangladesh and have adequate zinc bioavailability once consumed.¹⁹⁸

Thus far, rice plant breeders have developed one variety, referred to as BRRI Dhan 62, suitable for wet season (*Aman*) and one for dry season (*Boro*) production.¹⁹⁹ The Bangladesh National Seed Board approved the release to farmers in August 2013. HarvestPlus reports that breeders are now in the process of multiplying this *Aman* variety so that farmers can receive the seed next monsoon season.²⁰⁰

Importantly, HarvestPlus reports that its approach to farmer adoption of these high-zinc rice varieties is not based on encouraging farmer and consumer demand of more nutritious varieties; instead, breeders are striving to develop high-zinc rice

198 Personal communication with HarvestPlus/Dhaka staff, April 2014; and <http://www.irinnews.org/report/92132/bangladesh-bio-fortification-finding-nature-s-power-foods>.

199 Personal communication with HarvestPlus/Dhaka and DC staff, April 2014.

200 According to HarvestPlus, BRRI *Dhan 62* initially will be distributed to 1000 households across the country through 250 partner seed networks including 12 NGOs. Personal communication with HarvestPlus/Dhaka and DC staff, April 2014.

that also has other qualities that farmers would find most attractive, e.g., earlier maturing or higher yielding varieties.²⁰¹ As an example, the first high zinc variety approved for release matures in 100-105 days; this number represents the shortest duration variety available suitable for cultivation during the *Aman* (monsoon) season.²⁰² Notably, this seed is not a hybrid so farmers may retain seed year to year, which Bangladeshi farmers greatly appreciate. In the future, HarvestPlus will look at high iron and vitamin A content, and multiple stress tolerance (e.g., disease resistance, salinity tolerance, and cold tolerance) as desired traits in breeding select varieties.

Local government agricultural officers facilitate selection of a small number of farmers to multiply and demonstrate the quality of the new seed varieties. Through demonstration plots and field days, HarvestPlus hopes to attract a greater number of farmers to these new varieties.

Funding. A consortium of donors fund HarvestPlus activities, the largest of which is the Bill and Melinda Gates Foundation; USAID, the UK Department for International Development (DFID), the World Bank, and the Canadian International Development Agency provide additional support.

Status as of April 2014. Seed multiplication occurs on 250 demonstration farms in Bangladesh, and this variety will go in farmers' fields for cultivation in the next *Aman* season (July-August 2014). Harvest Plus expects to release one high zinc *Boro* rice variety this year.

With ongoing breeding research, IRRI expects to release one more high zinc *Aman* rice variety and one-two more high zinc *Boro* rice varieties in 2015. Stakeholders estimate that it will take five years before bio-fortified high zinc varieties reach farmers on a mass scale.²⁰³

Implications for Title II. Although it remains unclear at the time of writing whether this high zinc rice will become available in large enough quantities during the next Title II cycle, Title II awardees should monitor progress to assess local procurement of the bio-fortified rice from farmers for inclusion in a Title II direct distribution ration.

USAID-funded agricultural activities could consider promoting among farmers the use of available and appropriate bio-fortified high-zinc seed varieties in their intervention areas. These projects, including Title II livelihood and agricultural programs, could spearhead widespread adoption of these rice seed varieties.

201 Personal communication with HarvestPlus/DC staff, April 2014.

202 <http://www.dhakatribune.com/development/2013/sep/01/bri-releases-world%E2%80%99s-first-high-zinc-rice> and <http://archive.thedailystar.net/beta2/news/high-zinc-rice-released/>.

203 Personal communication with key informants in Bangladesh rice sector, April 2014.

3.3.3 Zinc Fortification at Soak²⁰⁴

HIGHLIGHTS:

ZINC FORTIFICATION AT SOAK INITIATIVE

Food. All rice varieties that are parboiled in medium- and large-scale mills (about 60-70 percent of marketed rice)

Intervention location in value chain. Post-harvest, parboiling during milling process

Target population. Entire population, with initial focus on urban HHs who purchase marketed rice

Organizations involved. GAIN, private millers

Status as of April 2014. Initial proof of concept phase complete; just beginning Industrial Pilot Phase working with four mills on field validation and technical due diligence; a bioavailability assessment; and engaging with industry and GoB on regulatory environment

Source: Personal communication with GAIN staff, April 2014.

Background on initiative. Over the course of 2012-13, GAIN conducted a series of feasibility studies to assess which of four approaches would be most appropriate to address zinc deficiencies in Bangladesh: use of zinc fertilizer to enrich rice, zinc fortification at soak, nutrition-sensitive rice parboiling, and reduced rice milling. This research led to the conclusion that zinc fortification at soak holds the greatest promise because of minimal cost, continuation of traditional parboiling or milling practice, the potential to increase zinc density of many rice varieties, and greater reach through normal marketing channels.

Process. During the normal soaking stage of milled rice, just prior to parboiling, a miller would add a zinc sulfate premix and then process the rice using the mill's regular milling practices. The first phase of GAIN research revealed the soaking and milling process produced a zinc concentration on average 92 percent higher in cooked rice than regular milled rice.²⁰⁵

Since roughly 75 percent of Bangladeshi consumers prefer parboiled rice, this soaking approach seems an appropriate method for higher zinc concentration.²⁰⁶

Status as of April 2014. GAIN just completed the proof of concept phase that involved desk research and lab tests to assess which option holds the most promise to increase the nutritional density of zinc at scale. GAIN has just begun Phase II,

the Industrial Pilot, which will involve approximately two years of work around field validation, bioavailability assessment, technical due diligence, and working with industry and the GoB Coalition in Support of Nutritious Rice on regulatory environment issues.²⁰⁷

For the field validation, GAIN will work with two automatic rice mills and two semi-automatic rice mills to refine the parameters for soaking in zinc sulfate at industrial scale, develop quality assurance and control standards, test the safety of handling zinc, and conduct an environmental impact assessment. At the same time, GAIN will examine the zinc premix supply chain to ensure a smooth pipeline if the initiative is taken to scale.²⁰⁸

Additional trials will center around testing the bioavailability of zinc in processed and cooked rice, and whether consumers will find the characteristics of this cooked high-zinc rice acceptable in color and taste.

Given the current testing stage of this method, it remains unknown when these zinc packets will become widely available. There are reportedly 1,500 semi-automatic and 500 automatic mills across the country,²⁰⁹ all (or almost all) of which will require widespread dissemination of packets – possibly



Photo by Fintrac Inc.

GAIN's zinc "fortification at soak" initiative will target the parboiling stage of rice processing. Although that initiative will target larger automatic and semi-automatic mills, in principle, thousands of smaller mills' operations like the one pictured here could also take up the simple technology with appropriate support. Sirajganj, Bangladesh, April 2014.

204 The Guardian, 2014, Rice fortification - in pictures.

205 Personal communication with GAIN staff in Dhaka, April 2014; GAIN, April 2014, Nutritious Rice Value Chain: Improving the Nutritional Density of Zinc in Rice (PowerPoint presentation).

206 GAIN, April 2014, Nutritious Rice Value Chain: Improving the Nutritional Density of Zinc in Rice (PowerPoint presentation).

207 Personal communication with GAIN staff in Washington, DC, April 2014.

208 GAIN, April 2014, Nutritious Rice Value Chain: Improving the Nutritional Density of Zinc in Rice (PowerPoint presentation).

209 GAIN, April 2014, Nutritious Rice Value Chain: Improving the Nutritional Density of Zinc in Rice (PowerPoint presentation).

subsidized – to ensure population coverage.

Funding. The Feed the Future initiative and USAID/Washington provide support to the activities under this GAIN research.²¹⁰

Implications for Title II. USAID and Title II awardees should stay updated on the developments around this research and monitor the potential availability of this type of fortified rice for local procurement and inclusion in a Title II direct distribution ration.

3.3.4 Beta Carotene Enriched Rice

HIGHLIGHTS: BETA CAROTENE ENRICHED RICE (GOLDEN RICE) INITIATIVE

Food. Local rice seed varieties selectively bred to have high vitamin A content

Intervention location in value chain. Seed

Target population. Entire population, with initial focus on rural rice farming HHs

Organizations involved. IRRI, Syngenta, Philippine Rice Research, BRRI, HKI

Status as of April 2014. Under development and evaluation with field testing recently occurring in the Philippines and scheduled to occur in Bangladesh

Source: IRRI, 2014, What is the status of the Golden Rice project coordinated by IRRI? <http://irri.org/golden-rice/faqs/what-is-the-status-of-the-golden-rice-project-coordinated-by-irri>, accessed May 2014.

Background on initiative. Plant breeders in Europe first genetically engineered Golden Rice in 1999 to fight vitamin A deficiency. The initial concentration of beta carotene increased six-fold with the release of an improved type in 2004 (GR2) from Syngenta and the original inventors. Since then, Syngenta has conducted field research to test the technology, and international and national research institutions have introduced Golden Rice into publicly-owned rice varieties.²¹¹

At present, IRRI is the lead developer of Golden Rice, and is collaborating with PhilRice, BRRI, and HKI on further research and development in breeding, capacity development, and safety of Golden Rice in the Philippines, Indonesia, and Bangladesh. Suspicion of this technology, primarily due to concerns about genetically modified organism (GMO)s and existing national regulations on their uses, hinders widespread adoption in rice-consuming countries.

210 Personal communication with GAIN/Dhaka, April 2014.

211 Syngenta, 2014, Golden Rice. <http://www.syngenta.com/global/corporate/en/news-center/Pages/what-syngenta-thinks-about-full.aspx>, accessed May 2014.



Photo by Fintrac Inc.

Four independent fortification initiatives target rice, the country's dominant staple food. Each initiative attempts to address micronutrient deficiencies from a different angle and/or targets different populations and therefore, should be viewed as complementary, or potentially so. Kurigram, Bangladesh, April 2014.

Process. With the approval of relevant GoB regulatory and safety authorities, IRRI and BRRI will work together to test the varieties in Bangladesh soil.

Status as of April 2014. At the time of writing, the GoB has decided to breed and test Golden Rice in Bangladesh.²¹² IRRI has scheduled multi-location field trials (MLT)s in Bangladesh. Previously, IRRI conducted MLTs in the Philippines. IRRI reported that the results of the first MLTs in the Philippines reached the targeted level of beta carotene, but yielded comparably less on average than local varieties. IRRI intends to make Golden Rice more broadly available after further trials and research so as to develop rice varieties that retain the same yield; resist pests; possess agronomic and taste traits acceptable to farmers and consumers; adhere to national safety regulations; and boost vitamin A intake.²¹³

Funding. USAID, the Syngenta Foundation, HarvestPlus, the Bill & Melinda Gates Foundation, the Rockefeller Foundation, and the Swiss Federal Institute of Technology contribute to the development of Golden Rice.²¹⁴

Implications for Title II. As of April 2014, field testing had not started so it seems unlikely this beta carotene enriched rice will become widely enough available for Title II awardees to procure in the next cycle in the requisite volumes for a Title II ration, but USAID and implementing partners should track the research and field trials.

212 Personal communication with key informants in the rice sector, May 2014.

213 IRRI, 2014, What is the status of the Golden Rice project coordinated by IRRI? <http://irri.org/golden-rice/faqs/what-is-the-status-of-the-golden-rice-project-coordinated-by-irri>, accessed May 2014.

214 Golden Rice Humanitarian Board, 2014, Golden Rice Project. <http://www.goldenrice.org/>, accessed May 2014.

3.3.5 Other Fortified Food Initiatives

Several other initiatives focus on fortified staples, and among them, one research project focuses on concentrating high rates of iron into red lentil seed. Staff at The International Crops Research Institute for the Semi-Arid Tropics in India are working with the Bangladesh Agriculture Research Institute to investigate the potential use of these iron rich red lentil seeds in Bangladesh. HarvestPlus reports that it expects to import these seeds from India. As of April 2014, the initiative may be ready to work with farmers to rapidly multiply the seed in Bangladesh.²¹⁵

3.4. COMPLEMENTARY FOOD SUPPLEMENT (CFS)

TERMINOLOGY

Food Supplement. As a supplement to foods already consumed at the HH level, food supplements typically have specific nutrient content (e.g., micronutrients, protein, or fat) to address the nutrition needs of especially vulnerable groups (e.g., U2s or PLWs).

Complementary Food. A weaning food intended to complement breast milk for children 6+months. Complementary foods should have specific nutrient contents (micronutrients, protein, fat, etc.) to ensure adequate growth during the critical phase of growth.

Ready-to-Use Complementary Food Supplements (RUCFS)s. A pre-packaged complementary food that requires no preparation or cooking.

Two independent projects underway focus on developing plant and animal protein based complementary foods, one of which involves ready-to-use products. Johns Hopkins University is completing a community-based efficacy trial of two Ready-to-Use Complementary Foods (RUCFS)s based on locally available ingredients (rice and lentils, and chickpeas) to prevent malnutrition. Concurrently, WorldFish is in the early stages of developing and testing a set of three animal source foods targeting beneficiaries in the 1,000 days window.

²¹⁵ Personal communication with Bangladesh Agriculture Research Institute staff, April 2014.

HIGHLIGHTS: LOCAL PLANT PROTEIN BASED RUCFS INITIATIVE

Food. Two locally produced plant protein based RUCFSs: rice and lentil based RUCFS, and chickpea based RUCFS; one plant protein based CFS (imported)

Intervention location in value chain. Post-harvest industrial food production

Target population. Vulnerable children under five, and PLW at risk of malnutrition

Organizations involved. Johns Hopkins University, JiVitA Project, WFP, Olympic, icddr,b, USDA, DSM, Nutriset

Status as of April 2014. Community-based field trials to assess acceptability and efficacy completed in April 2014; results expected by end of 2014

Source: Personal communication with staff of WFP and icddr,b, April and May 2014.

3.4.1 Plant Protein Based Ready-to-Use CFSs²¹⁶

Johns Hopkins University, through its JiVitA project²¹⁷ in northwest Bangladesh, is currently testing the acceptability and efficacy of three CFSs to determine how well they improve nutrition outcomes compared to the standard food product used for prevention of MAM: the imported peanut based Plumpy'Doz. Two of the CFSs are locally produced RUCFSs made from ingredients widely available in local markets²¹⁸ (rice and lentil RUCFS, and a chickpea based RUCFS) while the third is WSB++ (Super Cereal Plus),²¹⁹ a fortified blended food often used in MCHN programming.

Background on initiative. DSM provided in-kind support and knowledge transfer to assist icddr,b in formulating the two plant protein based RUCFS recipes. At present, a commercial processor in Dhaka, Olympic Industries Limited,²²⁰ produces these RUCFSs. The first recipe contains rice, lentils, milk, oil, sugar, and a micronutrient premix; the second contains

²¹⁶ Details drawn from interviews with WFP staff in April 2014, and from several key project documents including JiVitA Journal, 2013, *Evaluating Complementary Food Supplements to Improve Child Growth and Reduce Stunting in Rural Bangladesh*.

²¹⁷ The 11-year JiVitA Project, now in its third phase, examines the survival of infants if pregnant mothers receive a daily multi-micronutrient supplement.

²¹⁸ While the ingredients are not necessarily locally grown -- some, like chick peas, are usually imported -- they are all ingredients that are widely available on local markets. Personal communication with WFP/Dhaka staff, April 2014.

²¹⁹ WSB++ (Super Cereal Plus) is a fortified blended food made from wheat flour, soy flour, milk powder, sugar, edible oil, and multiple vitamins and minerals.

²²⁰ A small part of their business is dedicated to producing specialty products for WFP, icddr,b, and other organizations. These products also include the High Energy Biscuits for the school feeding program and the local RUTFs under icddr,b testing.



Photo by WFP

Johns Hopkins University is leading research to test the acceptability and efficacy of two locally produced RUCFSs based on ingredients widely available in local markets: rice and lentils, and chickpeas. Finding local alternatives to address Bangladesh's high malnutrition burden is a GoB priority.

chickpeas, milk, oil, sugar, and a micronutrient premix.²²¹ The production trial of two CFS recipes started in June 2012 and regular production followed a month later. Production ended October 2013. Over the course of two years, the total production volume was 24-27 MT for the two recipes.

Initially, the batch size started at approximately 300 kilograms (kg). From September 2012, once production stabilized, Olympic gradually met the full production capacity of 400-450 kg per batch (based on maximum capacity of the mixing machine). Additionally, the lot size grew (from one to four batches) as Olympic increased the number of days over which production occurred. Thus, while production started from 550-640 kg, this volume eventually rose to 1,600-2,000 kg. Despite this growth in production, WFP reported that making significant strides required investment and training in complex technology, which, along with packaging, represented the two biggest hindrances to production.²²²

Process. Olympic produces the two recipes from local ingredients in Dhaka and then provides for the transportation of the CFS sachets to Gaibandha (WFP covers transportation costs) for JiVitA staff to distribute as part of the efficacy trials.²²³

221 WFP reports that it has no current plans to further develop the recipe to treat MAM. However, WFP reports that if the preventive RUCFS is effective, the recipe could further be developed from this original recipe specifically for MAM treatment.

222 WFP provided the design for production and packaging. Olympic purchased the packaging equipment and was required to buy the materials.

223 WFP pays for the commodity and its transport to Gaibandha.

The trials are investigating which of five interventions has the greatest impact on nutrition outcomes, including wasting, stunting, micronutrient status, and cognitive outcomes. There are approximately 5,319 children ages 6-18 months across 596 village clusters enrolled in the trial, with numbers assigned to each research arm as indicated below:

1. Rice and lentil based RUCFS plus BCC (831 children)
2. Chickpea-based RUCFS plus BCC (831 children)
3. WSB++ plus BCC (831 children)
4. Plumpy'Doz plus BCC (1,413 children)
5. BCC only (1,413 children)

The five research arms include three test groups (the two RUCFS and WSB++) and two control groups (Plumpy'Doz and behavior change communication (BCC) only). The trial is taking place in Gaibandha District of Rangpur Division due to the pre-existing location of JiVitA research.

Children are enrolled at 6 months old, and participate for 12 months so researchers can chart seasonal and annual growth effects.²²⁴ Every child's mother receives nutrition counseling, and JiVitA staff deliver the appropriate CFS to the child's home on a weekly basis over the course of the year-long enrollment.²²⁵ JiVitA staff distribute one of four in-kind RUCFSs to children enrolled in trial: the rice/lentil-based CFS, the chickpea-based CFS, WSB++, or Plumpy'Doz.

To track progress, project researchers record information on portion size twice a week and assess every three months histories of infection, measurements (weight, length, head, chest, mid-arm circumference), and diets. A randomized subset of 750 children (150 per each of the five groups) receive periodic testing on body composition throughout the trial, and then at the end undergo cognitive function and micronutrient status assessment. Researchers also monitor the mothers of children in this same sub-set and changes in knowledge, attitude, and child feeding practices.²²⁶

Funding. USDA funds this initiative through a Food and Nutrition Enhancement Program grant.

Status as of April 2014. Distribution of these RUCFSs ended April 17, 2014.²²⁷ WFP reported that it expects results from Johns Hopkins' study by the end of 2014.²²⁸ If the trials demonstrate the effectiveness and acceptability of local RUCFSs to children and mothers, WFP plans to incorporate one or both into its prevention of malnutrition programs.

224 JiVita Journal, 2013, *Evaluating Complementary Food Supplements to Improve Child Growth and Reduce Stunting in Rural Bangladesh*.

225 Personal communication with WFP/Dhaka staff, April 2014.

226 JiVita Journal, 2013, *Evaluating Complementary Food Supplements to Improve Child Growth and Reduce Stunting in Rural Bangladesh*.

227 Personal communication with WFP/Dhaka, April 2014; and follow up electronic communication with WFP/Dhaka, May 2014.

228 Personal communication with WFP/Dhaka, April 2014.

Implications for Title II. Although research results will come out before potential Title II partners respond to a Request for Application, future awardees should stay updated on the outcomes of the study. Assuming the trials find that one or both of the locally produced RUCFSs do effectively prevent malnutrition in children under two, USAID and Title II awardees could strongly consider incorporating these RUCFSs.

As it will take time for the current processor to scale up and for other processors to come on line to meet demand, Title II awardees may need to work with the private sector to support scaling up if they desire to include these products in program rations.

3.4.2 Animal-Source Foods Targeting 1,000 Days Window

**HIGHLIGHTS:
ANIMAL-SOURCE FOODS TARGETING 1,000
DAYS WINDOW INITIATIVE**

Food. Three animal-source foods for prevention of malnutrition in 1,000 days window, one of which is a CFS.

Intervention location in value chain. Post-harvest industrial and community-based food production

Target population. Vulnerable U2s, PLW, and their families

Organizations involved. WorldFish, IRRI, AVRDC

Status as of April 2014. Early stages of product development of testing

Source: Personal communication with WorldFish staff, April 2014; and electronic communication with WorldFish staff, May 2014.

WorldFish is leading an effort to develop complementary foods based on animal-protein sources produced entirely from purely indigenous sources. Part of the initiative involves the development of a CFS for prevention of malnutrition in children 6-24 months.

Background on initiative. As the lead on this collaborative project with IRRI and The World Vegetable Center (AVRDC), WorldFish has developed prototypes of three animal-based products, all targeting the 1,000 days window:²²⁹

1. Fish chutney composed of dried fish, oil, chili, onion, and garlic for pregnant and lactating women (PLW). One teaspoon of the chutney will go into the PLW's main meal.
2. Complementary food composed of rice, orange flesh sweet potato flour, dried fish, and oil designed for initiation of complementary feeding at 6-9 months of age before the

²²⁹ Founded in 1971 as the Asian Vegetable Research and Development Center (AVRDC), the organization is now known as AVRDC - The World Vegetable Center. Please see <http://avrdc.org/> for more details.



Photo by Fintrac Inc.

Fish is the most widely consumed animal source protein in Bangladesh. World Fish is spearheading an initiative to develop local fish-based foods to target the 1,000 days window. Bholra, Bangladesh, April 2014.

child begins eating regular family meals.

3. Fish powder from roasted fish with spices that families can mix into foods such as rice or *kichuri* (a rice and lentil chutney/porridge) and is especially intended for children who have advanced to eating regular family foods.

The initiative intends for the local production of fish chutney and powder to become an income generating activity for women. As for the complementary food targeting children 6-9 months, a private company will manufacture this product, and WorldFish may distribute it as ready-to-use individual sachets, but the organization has not yet determined the desired packaging.²³⁰ None of the recipes include additional micronutrients.

Funding. A multitude of sources support the initiative, including Feed the Future, WorldFish, the CGIAR Research Program on Aquatic Agricultural Systems, the CGIAR Research Program on Agriculture for Nutrition and Health (led by IFPRI), and DFID.

Status as of April 2014. This initiative is in the early stages of product development and testing. With the development of the prototypes just completed, WorldFish has reportedly received clearance from the GoB for the fish chutney and powder; the status of the complementary food targeting 6-9 month olds is unclear.

AVRDC will provide the orange flesh sweet potato flour for the complementary food, WorldFish will procure soybean oil, and IRRI (HarvestPlus) will supply 4 MT of high zinc rice flour. If the initiative goes to scale, WorldFish plans to source ingredients from numerous smallholder farmers.

To advance the initiative, the organization is currently seeking

²³⁰ WorldFish reports that one of the findings from the Alive and Thrive Project was that time poses a major constraint to food preparation. Therefore, WorldFish believes that packaging these complementary foods in ready-to-use, single-portion sachets can help address this important barrier to improved nutrition.

assistance from multiple partners, including bilateral donors, CGIAR centers, and the GoB. WorldFish has identified four channels through which they could make available the three foods:

- Donor-funded food assistance programs, such as WFP and/or Title II programming
- Sales by BRAC community health workers (similar to BRAC's multinutrient powder sales (see below))
- Commercial market, with a boost from social marketing
- Specialized use, such as in a GoB school feeding program

WorldFish expects to test the acceptability of the three prototypes in 2014/15.²³¹

Implications for Title II. Given the lack of specificity around the current status and proposed movement forward on the production of these RUCFSs, USAID-BEST cannot offer concrete recommendations on how awardees could proceed in terms of integrating these foods into future rations for direct distribution. However, depending on the stage of development and GoB approval for the three products, Title II partners could assist in piloting the initiative at the community level if WorldFish elects to make it available to external donor-funded food assistance programming.

3.5. READY-TO-USE THERAPEUTIC FOOD (RUTF)

TERMINOLOGY

Ready-to-Use Therapeutic Food (RUTF). A food specially formulated to treat severe acute malnutrition, most commonly targeted to children 6-59 months. RUTFs do not require water, preparation, or cooking.

3.5.1 Plant Protein Based RUTF²³²

Spearheaded by icddr,b, this decades-long effort to develop RUTFs from locally available ingredients²³³ represents a joint collaboration with UNICEF and Nutriset.²³⁴

231 Electronic communication with WorldFish/Dhaka staff, May 2014.

232 Personal communication with icddr,b staff, Dhaka, April 2014. NIH, 2013, <http://clinicaltrialsfeeds.org/clinical-trials/show/NCT01889329>, accessed April 2014.

233 Personal communication with Dr. Tahmeed Ahmed, Senior Scientist and Director of the Centre for Food Security and Nutrition, and Professor of Public Health Nutrition at the James P. Grant School of Public Health, BRAC University. Dr. Tahmeed is overseeing the clinical trials.

234 Nutriset is the French manufacturer of Plumpy'Nut for treatment of SAM, Plumpy'Doz for treatment of MAM and prevention, and other speciality nutrition products. See <http://www.nutriset.fr/en/product-range/nutriset-product-range.html> for more details.

HIGHLIGHTS: PLANT PROTEIN BASED RUTF

Food. Two plant protein based RUTFs: rice and lentil based RUTF, and chickpea based RUTF

Intervention location in value chain. Post-harvest industrial food production

Target population. Children suffering from SAM

Organizations involved. icddr,b; UNICEF; Nutriset; DFID

Status as of April 2014. icddr,b is conducting efficacy trial at its Dhaka clinic; results expected by end of 2014

Source: Personal communication with icddr,b staff, April 2014.

Background on initiative. The imported, peanut-based Plumpy'Nut, and similar renditions, currently represent the landscape for available RUTFs to treat Severe Acute Malnutrition (SAM) in children. However, the GoB, despite highlighting SAM as a priority in its 2013 National Nutrition Policy, does not consider Plumpy'Nut a sustainable approach because it requires importation, and costs for a full treatment run high.²³⁵

In looking for an alternative to expensive imported products, icddr,b has developed one recipe based on rice and lentils and a second using chickpeas. Notably, these products source from locally available ingredients that are not necessarily grown in-country, but are readily available on the market through a combination of local production and imports.

A randomized control trial involving approximately 5,000 SAM children 6-59 months at icddr,b's Dhaka clinic tests the three RUTF recipes (rice/lentil-based, chickpea-based, and Plumpy'Nut) against weight gain by assigning groups of children to each food.

Process. The same processor involved with RUCFSs, Olympic, also produces RUTFs. While both CFSs and RUTFs use rice, lentils, and chickpeas, the micronutrient formulations are different. The icddr,b reports that it has identified two additional private processors who may also be able to produce the local RUTFs in the future.²³⁶

Assuming one of the local RUTFs proves efficacious, icddr,b plans to support production of local RUTFs in hygienic sachets, similar to Plumpy'Nut packaging, that require no refrigeration or other preparation, and have a stable shelf life under typical storage conditions in Bangladesh.²³⁷

235 One report suggests a full course of treatment with RUTFs costs over BDT 14,000, or about US\$182 - Pankaj Karmakar and Rizanuzzaman Laskar, 2011, Combined effort needed to combat child malnutrition. http://archive.thedailystar.net/suppliments/2011/child_rights/cityinframe.htm, accessed April 2014.

236 Personal communication with icddr,b staff, April 2014.

237 Naimul Haq, 2013, Treating malnutrition moves from the hospital to the home. <http://www.ipsnews.net/2013/03/treating-malnutrition-moves-from->

Status as of April 2014. Scheduled to conclude April 2015, this research is in clinical trials, but icddr,b expects to complete testing and release results within one year.²³⁸

Funding. UNICEF and DFID support the development and testing of the local RUTFs.

Implications for Title II. Current Title II partners, Save the Children and ACDI/VOCA, have imported a peanut-based RUTF called eeZee Paste from India (see Chapter 4 and 5 for details). Other donors and NGOs with SAM treatment programs have also sourced RUTFs from imports (primarily Plumpy'Nut from France). Although the GoB does not endorse these imports, as mentioned previously, icddr,b stated that the government permits entrance of these products because of the small quantity imported and the use in specific and focused regional areas.

Assuming the results of current ongoing trials indicate that one or both of the locally produced RUTFs can effectively treat SAM, Title II partners should work with these processors to supply RUTFs if they integrate the treatment of acute malnutrition into their programming.

3.6. MICRONUTRIENT POWDER (MNP)²³⁹

HIGHLIGHTS: PUSHTIKONA 5 INITIATIVE

Food. Micronutrient powder food supplement for home fortification of regular HH foods

Intervention location in value chain. Home fortification

Target population. Vulnerable populations throughout country, especially women and young children in rural areas

Organizations involved. GAIN, BRAC, Renata

Status as of April 2014. BRAC marketing MNP to mothers across most of country

Source: Personal communication with GAIN staff, April 2014.

HIGHLIGHTS: MONIMIX INITIATIVE

Food. Micronutrient powder food supplement for home fortification of regular HH foods

Intervention location in value chain. Home fortification

Target population. Vulnerable populations throughout country, especially women and young children in rural areas

Organizations involved. USAID/Bangladesh, Social Marketing Company, Renata

Status as of April 2014. Social Marketing Company supporting marketing of MNP through retail medicine shops

Source: Personal communication with GAIN and BRAC staff, April 2014.

Background on Initiatives. Two separate donor initiatives support the distribution of MNPs (also sometimes referred to as Sprinkles). These products are tasteless powders composed of five vitamins and minerals²⁴⁰ mixed into family meals in ready-to-use 1 gram (g) sachets that have a shelf-life of two years.²⁴¹ GAIN funds marketing of a variety called *Pushtikona 5* while USAID/Bangladesh supports the Social Marketing Company (SMC) and its version called Monimix. The local pharmaceutical company Renata Limited produces both of these MNPs using the same formulation.

GAIN. In partnership with Sprinkles Global Health Initiative, Renata Limited, and BRAC, GAIN current supports distribution of *Pushtikona 5* for home fortification of daily family meals. The Sprinkles Global Health Initiative first tested the efficacy and acceptability of MNPs in general between 2001-04 and started working with BRAC on the social marketing of Sprinkles in 2004. When BRAC collaborated with GAIN in 2010, the current *Pushtikona 5*, a micronutrient powder containing five²⁴² micronutrients for children 6-59 months, came to the market.

BRAC stated in April 2014 that it distributes *pushtikona* to about 80,000 BRAC community health workers (CHW)s, who then go door-to-door to sell these sachets to mothers in villages and at community clinics across the country. Together, GAIN and BRAC cover 61 districts (nearly the entire country). Ultra-poor

²⁴⁰ The MNPs have the same nutrients and same specifications: a one gram sachet contains 0.3 mg of vitamin A, 30 mg of vitamin C, 0.16 mg of folic acid, 12.5 mg of iron and 5 mg of zinc.

²⁴¹ According to *pushtikona* informational material, available via <http://www.pushtikona.com/>.

²⁴² Interestingly, *pushtikona* was originally developed by the Sprinkles Global Health Initiative as a powder containing five micronutrients, *pushtikona* was later reformulated to contain 15 vitamins and minerals but the formulation apparently failed to receive GoB support, and so the product reverted to the original formulation of five vitamins and minerals.

the-hospital-to-the-home/, accessed April 2014.

²³⁸ Personal communication with icddr,b staff, April 2014.

²³⁹ Personal communication with GAIN/Dhaka staff, April 2014. For more details, see: <http://www.gainhealth.org/project/bangladesh-sprinkles-project> and <http://www.pushtikona.com/>.

HHs may receive these sachets for free if eligible,²⁴³ but typically, CHWs sell each sachet for BDT 2.5 (US\$0.03)²⁴⁴ or BDT 75 per month (US\$0.90).²⁴⁵

BRAC CHWs instruct mothers to give their children 60 sachets over a two-month period (i.e., one sachet daily), take a four month break, and then repeat the 60-day dose every six months until their children reach five years of age. However, BRAC monitoring has revealed that many mothers, including those receiving advice on infant and young child feeding, only buy six-eight sachets per month (thus consuming *pushtikona* one-two times per week). One stakeholder opined that confusion about proper dosage, insufficient BCC, and lack of purchasing power contribute to under use. BRAC and GAIN reported that they are considering changing the guidance for intake of *pushtikona* to address this lower than intended level of consumption, but did not comment on specifics since nothing is official.²⁴⁶

SMC. In July 2012 USAID/Bangladesh awarded SMC a four year cooperative agreement to implement the Marketing Innovation for Health (MIH) program to improve HH access to quality family planning, health, and nutrition services provided by the private sector.²⁴⁷ SMC partners with BRAC, Concerned Women for Family Development, Population Services and Training Centre, and Shimantik. As part of the initiative, SMC markets Monimix through retail medicine shops with the intent to address high rates of iron deficiency anemia.²⁴⁸

Based on visits to local market shops in Dhaka, there is at least one more MNP²⁴⁹ with the same formulation as *pushtikona* and Monimix, but other MNPs may be available throughout the country.

Funding. GAIN funds the current phase of the BRAC Bangladesh Sprinkles Program, which runs June 2010-February 2014. USAID funds SMC's program (2012-16).

Status as of April 2014. Recently, icddr,b received funds from GAIN to monitor the *pushtikona* distribution, but at the time of writing in May 2014, it remains unclear the objectives of this planned monitoring.

Implications for Title II. Due to the ease of incorporating *pushtikona* and Monimix into existing daily meals, MNPs provide a more sustainable approach to increasing micronutrient intake than other more expensive and/or imported fortified food. Any Title II MCHN program could offer nutrition messaging and/or

support of mothers purchasing MNPs (whether *pushtikona*, Monimix, or other MNPs available on the market). Furthermore, the availability of MNPs on the market means that Title II programming could include commodity vouchers for this product into any program with a nutrition objective. Perhaps, if HHS can redeem vouchers for the proper dosage of one sachet per day for 60 days, then families would more closely follow the recommended regimen.

3.7. PAST INITIATIVES

3.7.1 Fortified Whole Wheat Flour (*Pushti Atta*)

HIGHLIGHTS: FORTIFIED WHOLE WHEAT FLOUR INITIATIVE

Food. Fortified whole wheat flour

Intervention location in value chain. Industrial blending, post milling

Target population. VGD beneficiaries

Organizations involved. WFP, GoB ministries, local NGOs, DSM

Status as of April 2014. Inactive

Source: Personal communication with WFP, April 2014.

Beginning in 2002, WFP supported an initiative to fortify in-country the whole wheat flour (*atta*) distributed to VGD beneficiaries in Bangladesh. WFP worked primarily with four local NGOs²⁵⁰ to establish milling and fortification units (MFUs) and train staff on operations. In total, WFP helped establish 29 MFUs,²⁵¹ which collectively produced approximately 5,800 MT of fortified whole wheat flour each month. WFP handed over responsibility for the VGD program to the GoB in 2010 and relinquished responsibility of the MFUs to the four local NGOs.

Similar to the *pushti chaal* initiative, DSM provided a pellet containing multiple micronutrients for the fortified *atta*. However, instead of marketing to a general paying public, WFP solely intended for this fortified *atta* to reach VGD beneficiaries.

At the time of the 2009 USAID-BEST Analysis, WFP was distributing 25 kg of fortified *atta* monthly to just under a quarter of a million VGD beneficiaries.²⁵² Aside from the micronutrients, distribution of the fortified *atta* saved the VGD beneficiary the expense of milling the grain. An assessment from the International Food Policy Research Institute concluded the *pushti atta* transfer also reduced potential and actual leakage

250 BRAC, ESDO, Jagorani Chakra Foundation, and RDRS.

251 Three MFUs were established under the pilot. Beginning in 2004, the program scaled up until 29 MFUs were installed and operating.

252 USAID-BEST, August 2009, Bangladesh USAID-BEST Analysis.

243 GAIN, 2014, Bangladesh Pushtikona Project. <http://www.gainhealth.org/project/bangladesh-sprinkles-project>, accessed May 2014.

244 At the exchange rate of US\$1:BDT 83 as of April 2014.

245 Personal communication with BRAC/Dhaka staff, April 2014.

246 Personal communication with BRAC/Dhaka staff, April 2014.

247 SMC, 2014, Social Marketing Company Programs. <http://www.smc-bd.org/index.php/page/view/96>, accessed May 2014.

248 SMC, 2014, Social Marketing Company Products. http://smc-bd.org/index.php/products/category_banner/33, accessed May 2014.

249 Mymix, manufactured by Square Pharmaceuticals Limited and marketed by the company through the retail medicine shops.

because of the prepackaging.²⁵³ Moreover, this same study found that transfers of *pushti atta* improved the nutrition outcomes of mothers better than transfers of rice; study authors speculated that a higher preference for rice allowed women to consume more *atta*.²⁵⁴

Despite these successes, stakeholders surmise that the *pushti atta* initiative ultimately failed because: 1) the GoB channeled insufficient wheat grain to the VGD after donors ceased providing this raw material; 2) other sectors, such as rice and edible oil, offered a more appealing alternative for GoB efforts;²⁵⁵ and 3) the private sector did not view flour fortification as a viable business model.

At the HH level, the entrenched practice of sifting flour due to its general dirtiness from rural mills also hindered proper use of fortified *atta* since the traditional manner of cleaning the flour removed the added micronutrients. WFP reported that a recognition of this issue early on in implementation led to education efforts with beneficiaries that they felt sufficiently addressed the problem. Instead, WFP cited a lack of raw materials as the primary driver behind the cessation of the program. The initial easy flow of wheat via bilateral agreements with the EU, Canada, and Australia sufficiently supplied the required 250,000 MT, but the GoB stopped funneling the necessary quantities after it took over the program; moreover, the government had insufficient funding for other input costs, including the micronutrient premix, transportation, and other necessary operation costs. Currently, although mills still have installed capacity for producing fortified *atta*, they have halted all operations.

3.7.2 Wheat Soy Blends

Gonoshasthaya Foods Ltd, a project of the local NGO Gonoshasthaya Kendra, produced the first generation WSB from its production unit in Cox's Bazar. The project has since ceased production, according to WFP, both because of cost concerns and because the project lacked capability to produce newer generation WSBs (WSB+ and WSB++) that would require more sophisticated equipment, knowledge, and quality controls.²⁵⁶ Therefore, as WFP shifted to the newer generations of WSB, WFP discontinued purchasing from this local source.

WFP currently procures imported WSB+ (Super Cereal) and WSB++ (Super Cereal Plus) from international vendors in Italy, Belgium, and Turkey. WFP distributes these two fortified blended foods as supplementary feeding under its IMCN program.

253 Ahmed, A, Quisumbing, A., et al, October 2007, *The Relative Efficacy of Food and Cash Transfers in Improving Food Security and Livelihoods of the Ultra-Poor in Bangladesh*.

254 Ahmed, A, Quisumbing, A., et al, October 2007, *The Relative Efficacy of Food and Cash Transfers in Improving Food Security and Livelihoods of the Ultra-Poor in Bangladesh*.

255 Personal communication with multiple stakeholders across GoB, donors, and research institutes, April 2014.

256 Personal communication with WFP/Dhaka, April 2014; and personal communication with WFP/Dhaka, April 2014.



Photo by WFP

WFP/Bangladesh has more than a decade of experience working with the local private sector to develop fortified foods for distribution to vulnerable populations. One of the large biscuit manufacturers WFP has long worked with, whose facilities are pictured here, produces the two local RUCFSs for the Johns Hopkins research as well as High Energy Biscuits for the country's national school feeding program.

3.7.3 Nutrition Packet (*Pushti Packet*)

The Bangladesh Integrated Nutrition Project (BINP), initiated in 1995 and later incorporated into the National Nutrition Programme, distributed a local food supplement, called a *pushti packet*, to PLW and children under two years of age (U2s); this food contained 20 g roasted rice, 20 g roasted lentils, 3 g unfortified soybean oil, and 5 g sugar cane molasses. These packets did not have additional micronutrients,²⁵⁷ and local women produced these items as an income-generating activity.²⁵⁸

BINP distributed these packets through daily on-site supplementary feeding of PLW identified as suffering from chronic energy deficiency (BMI < 18.5 percent) and U2s considered growth-faltering or suffering from SAM. Ultimately, BINP intended for the distribution of *pushti packets* to provide an opportunity to educate the community about nutrition rather than provide a source of therapeutic feeding.²⁵⁹

The distribution of *pushti packets* ceased because it lacked necessary added micronutrients.²⁶⁰ According to NIH records, icddr, b later conducted an acceptability trial among children 6-18 months at its clinics in Dhaka to test rice and chickpea based RUCFS against the *pushti packets*. The trial began in January 2012 and ended in May 2012.²⁶¹

257 Karim, Rezaul et al., 2005, "Seeking optimal means to address micronutrient deficiencies in food supplements: A case study from The Bangladesh Integrated Nutrition Project", *The Journal of Health, Population, and Nutrition*, 23.

258 Karim, Rezaul et al., 2005, "Seeking optimal means to address micronutrient deficiencies in food supplements: A case study from The Bangladesh Integrated Nutrition Project", *The Journal of Health, Population, and Nutrition*, 23.

259 Karim, Rezaul et al., 2005, "Seeking optimal means to address micronutrient deficiencies in food supplements: A case study from The Bangladesh Integrated Nutrition Project", *The Journal of Health, Population, and Nutrition*, 23.

260 Personal communication with key informants in the nutrition sector in Bangladesh, April 2014.

261 NIH, 2013, *Development and Acceptability Testing of Ready-to-use Complementary Food Supplement (RUCFS) for Children in Bangladesh*.

3.8. ADDITIONAL CONSIDERATIONS FOR TITLE II PROGRAMMING

The increased flexibility afforded through recent US legislation demands USAID and its partners carefully consider the feasibility and appropriateness of local foods that can sustainably address nutrition objectives. At the time of writing in May 2014, issues around market availability, cost, and/or awareness constrains local procurement. However, some products, such as MNPs for home fortification, are widely available and Title II partners should consider including these foods through commodity vouchers (see Chapter 5 for further details on transfer modalities and specific rations).

Each of the large number of initiatives to locally produce fortified foods and specialty nutrition products to address Bangladesh's high rates of malnutrition are at a different stage of research and development. Importantly, many of these initiatives are complementary, or potentially complementary. For example, the four rice initiatives should not be seen as competing but complementary because each one attempts to address micronutrient deficiencies from a different angle and/or targets different populations. The major challenge for all of these initiatives is selecting scalable interventions that take into account the operational context, particularly the opportunities and constraints faced by the private sector.²⁶² However, within the next five-year Title II cycle, and more likely within only one to two years, there will very likely be several viable alternatives among this suite of initiatives.

The Food Security Country Framework from FANTA and other future assessments should further investigate these initiatives to assess their status. Importantly, as the GoB continues to work with the private sector and donors to develop the locally available options for nutrition discussed in this chapter, USAID support of one or more of these initiatives could positively enhance these projects. Additionally, as time draws nearer to draft country-specific guidance and proposal review, USAID should consider the progress of the development and testing of these fortified foods and nutrition products so as to determine if a Title II ration could appropriately include some of these options.



Photo by Fintrac Inc.

These women shared that their husbands do all the food shopping and inevitably have much control over household food consumption and nutrition. Improving the nutrient content of the rice and other foods their husbands purchase from the market may ensure better nutrition outcomes for all household members, especially the more vulnerable ones. Sirajganj, Bangladesh, April 2014.

262 USAID may want to consider some of the critiques of micronutrient supplementation efforts outlined in Habicht, Jean-Pierre and Gretel H. Pelto, 2011, "Multiple micronutrient interventions are efficacious, but research on adequacy, plausibility, and implementation needs attention", *The Journal of Nutrition*, 142.



CHAPTER 4 OVERVIEW OF FOOD SECURITY PROGRAMS

Women wait in line for payment from a WFP labor and training project focused on disaster risk reduction and resilience. Programs such as this one, which exchanges labor for cash and/or food, are common throughout Bangladesh. Satkhira, Bangladesh, April 2014.

Photo by Fintrac Inc.

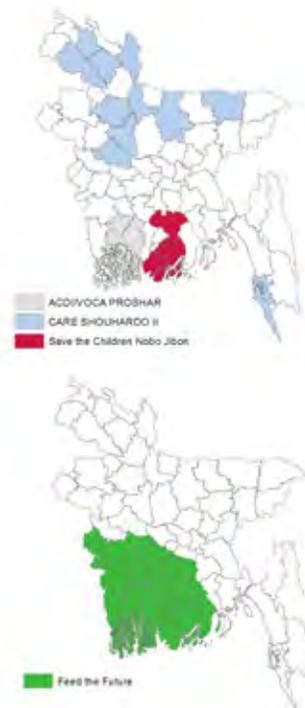
4.1. INTRODUCTION

Donors and the Government of Bangladesh (GoB) consider food security initiatives integral to the development of the nation and have invested significantly in projects across the country. For the simplicity of classifying an especially large range of programming in Bangladesh, current approaches can broadly fall under four categories: 1) the direct distribution of food either via transoceanic shipments or local procurement; 2) cash transfers; 3) nutrition and health training; and 4) agricultural and livelihoods interventions, ranging from direct training and input support to broader market initiatives. Most programs take a multi-sectoral approach to food insecurity, integrating multiple responses within a single project. This chapter presents an overview of programmatic trends across donor initiatives relevant to food security and agricultural markets in Bangladesh and then highlights in greater detail those projects of particular relevance for Title II food assistance programming.

4.2. MAP OF PROGRAMS

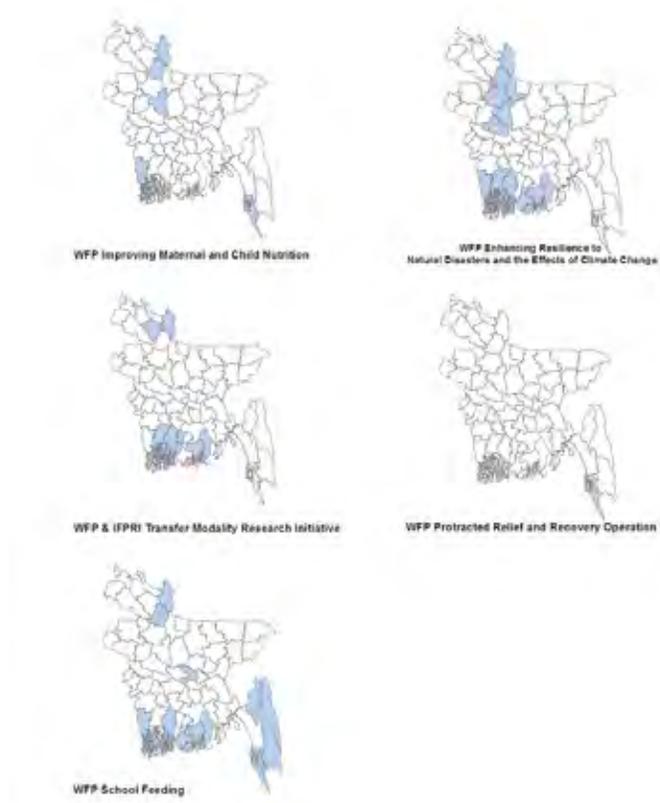
The first two maps present Title II programming districts and the Feed the Future zone as of April 2014. This is followed by a series of maps that indicate the implementation districts for various WFP programs.

Figure 40. Maps of Title II and Feed the Future Programming Areas, April 2014



Source: Created by USAID-BEST using information from USAID, April 2014.

Figure 4I. Maps of WFP Programming Areas, April 2014



Source: Created by USAID-BEST using information from WFP/Bangladesh, April 2014.

4.3. PROGRAMMATIC TRENDS

Across development stakeholders there are several prevailing trends in current food security programming:

- **Graduation (or promotion) models in poverty programming and social safety nets.** Programming focused on the poorest and social safety nets have traditionally operated under a social protection model, in which the goal is to prevent or mitigate negative outcomes. In Bangladesh there is now an increasing focus on the inclusion of graduation goals and interventions, especially in work with the extreme poor. These graduation efforts seek not only to prevent harm but also to actively move beneficiaries to better economic or social conditions.
- **Coordination and integration with GoB services, including capacity building of staff and systems.** Though it varies by donor and program, there is a significant degree of integration and coordination with the GoB in the implementation of programs. Integrating with GoB systems boosts demand for services and builds GoB capacity to deliver them.
- **Cash transfers.** The use of cash transfers in both GoB and donor programs is increasingly common. Cash is primarily used to pay wages for work in labor programs, offer assistance for the purchase of an asset or establishment of a business, or as a stipend during program participation.

- **Use of mobile technology to facilitate cash transfers.** As mobile technology becomes more prevalent across Bangladesh in financial and commercial transactions for its transparency and speed, an increasing number of projects have embraced mobile money as a platform to make transfers. A variety of donors and NGOs are utilizing mobile money as a means to transfer cash in both rural and urban areas in a secure and efficient matter.²⁶³
- **Focus on disaster preparedness, resilience, and climate change adaptation.** Bangladesh is a disaster prone country and as a low-lying delta area it is among the most vulnerable to the impacts of climate change. With the risk of cyclones, flooding, and river erosion a daily reality, program implementers often include interventions centered on disaster preparedness, risk reduction, and building resilience.²⁶⁴

4.4. USAID

The Office of Food for Peace currently funds three MYAPs²⁶⁵ and an emergency assistance program. In addition, the Office of Economic Growth is managing several Feed the Future programs in the southwest region of the country known as the Feed the Future zone of influence.²⁶⁶ This section provides an overview of Title II programming as well as brief descriptions of the Feed the Future programs most relevant to Title II food assistance.



Photo by Fintrac Inc.

Young mothers wait in line for their food rations. In the PROSHAR program each mother brings her own empty bottle to receive her portion of vegetable oil at the distribution site. Khulna, Bangladesh, April 2014.

²⁶³ Personal communication with FHI360, Dhaka, April 2014.

²⁶⁴ Resilience refers to the beneficiaries' ability to prepare for, mitigate, and recover from shocks.

²⁶⁵ More recently referred to as development food assistance programs.

²⁶⁶ Location as of April 2014.

4.4.1 Title II Development Programs

The three programs operating in Bangladesh are:

- Strengthening Household's Ability to Respond to Development Opportunities II (SHOUHARDO II), implemented by CARE;
- Nobo Jibon (New Life), implemented by Save the Children; and
- Program for Strengthening Household Access to Resources (PROSHAR), implemented by ACDI/VOCA.

The programs started in May/June 2010 and are scheduled to end in July 2015.

Table 14. Current Title II Programs Overview

Program	Awardee	Award Level	Partners*	Geographic Coverage (Districts)	Direct Beneficiary HHs
SHOUHARDO II	CARE	US\$130 million	16 Implementing, 4 Technical	Kurigram, Nilphamari, Rangpur, Dinajpur, Bogra, Sirajganj, Pabna, Mymensingh, Jamalpur, Sunamganj, Cox's Bazar	370,000
Nobo Jibon	Save the Children	US\$55 million	4 Implementing, 4 Technical	Barisal, Patuakhali, Barguna	225,000
PROSHAR	ACDI/VOCA	US\$45 million	4 Implementing, 3 technical	Khulna, Bagerhat	70,868

Source: CARE, Save the Children, and ACDI/VOCA, April 2014.

*Implementing partners = local NGOs responsible for direct implementation with beneficiaries. Technical partners = local and international NGOs that provide specific technical expertise to the grant holder and the implementing partners.

SHOUHARDO II. The largest of the Title II programs, SHOUHARDO II targets 370,000 poor and extreme poor households (HHs) in 11 of the most marginalized districts across four regions: North Char, Mid Char, Haor, and Coastal. CARE leads and coordinates a team of 16 implementing partners and four technical partners.²⁶⁷

²⁶⁷ Implementing partners for SHOUHARDO II: Resources Integration Centre, Bangladesh Development Service Center; Samaj Kallayan Sangstha, Mahideb Jubo Samaj Kallayan Somity, SOLIDARITY, Jhanjira Samaj Kallayan Sangstha, Unnayan Sangha, Social Association for Rural Advancement, Assistance for Slum Dwellers, Dhaka Ahsania Mission, People's Oriented Program Implementation, Sabalambay Unnayan Samity, Eco Social Development Organization, Gram Bikash Sangstha, National Development Programme, Society for Health Extension and Development. (Electronic communication with CARE, April 2014.)

Table 15. SHOUHARDO II Technical Partners

Technical Partners	Technical Area
International Rice Research Institute (IRRI) & the Cereal Systems Initiative for South Asia (CSISA)	Improved seeds and agricultural practices
Regional Integrated Multi-Hazard Early Warning System (RIMES)	Early warning
International Union for Conservation of Nature	Floating gardens
WorldFish	Aquaculture

Source: Created by USAID-BEST with information from CARE/Bangladesh, April 2014.

SHOUHARDO II has five Strategic Objective (SO)s:

- **SO 1:** Agriculture and Livelihoods
- **SO 2:** Health, Hygiene, and Nutrition
- **SO 3:** Girls' and Women's Empowerment
- **SO 4:** Good Governance
- **SO 5:** Disaster Risk Management and Climate Change Adaptations

Activities under the five SOs include: community based growth monitoring and promotion; the distribution of food rations; courtyard sessions on nutrition and health messages; asset transfers and training in agriculture, fisheries, comprehensive homestead development (vegetables, goats, and poultry), or income generation; Women's Empowerment, Knowledge and Transformative Action groups; linkages and referrals to existing government services and programs; savings groups; cash-for-work (CFW); and disaster preparedness training.



Photo by Fintrac Inc.

The women pictured here discussed their participation in SHOUHARDO II and expressed appreciation for the training sessions. They noted that all mothers (regardless of their wealth status) benefit from such health and nutrition trainings. Sirajganj, Bangladesh, April 2014.

SHOUHARDO II staff identify HHs through a participatory social mapping process held in each community. SHOUHARDO II classifies their Maternal and Child Health and Nutrition (MCHN) model as working with pregnant and lactating women (PLW) and children under two years of age (U2s) from poor and extreme poor HHs only. This accounts for 85 percent of their HHs reached. The remaining 15 percent of HHs are reached under the PM2A umbrella, which covers PLW or and U2s, regardless of socioeconomic status.

As part of SO2, SHOUHARDO II distributes Soft White (SW) wheat, yellow split peas, and refined vegetable oil (RVO) to PLW and U2s. SHOUHARDO II also includes a small cash-for-work (CFW) component under SO5.²⁶⁸ See Chapter 5 for further details on all transfers.

Nobo Jibon. Nobo Jibon aims to reduce food insecurity and vulnerability for 191,000 HHs in ten sub-districts (*upazilas*) across three districts: Barisal, Barguna, and Patuakhali.²⁶⁹ This target has since been revised up to 225,000 HHs to accurately reflect the rate of enrollment.²⁷⁰ Save the Children leads a team of four technical partners and four implementing partners.²⁷¹



Photo by Fintrac Inc.

A lead farmer proudly displays her crops' growth. Training in improved agricultural practices is crucial to increasing productivity to provide crops for both consumption and sale. Barguna, Bangladesh, April 2014.

Table 16. Nobo Jibon Technical Partners

Technical Partners	Technical Area
Helen Keller International	Nutrition and gender
iDE	Livelihoods
WorldFish	Aquaculture
RIMES	Early warning

Source: Created by USAID-BEST with information from Save the Children/Bangladesh, April 2014.

Nobo Jibon conducts activities under three SOs:

- **SO1:** Maternal and Child Health and Nutrition (MCHN)
- **SO2:** Market-based Production and Income Generation
- **SO3:** Disaster Risk Reduction (DRR)

Nobo Jibon carries out several key interventions under each SO including: community based growth promotion; courtyard sessions on nutrition and water, sanitation, and hygiene (WASH); provision of a food ration; Integrated Management of Childhood Illnesses (IMCI); Community Management of Acute Malnutrition (CMAM); distribution of ready-to-use therapeutic foods (RUTF) s; village savings and loans (VSL) groups; gender leaders groups; training and input provision or asset transfer in either homestead food production, value chain production, or income

268 Personal communication with CARE, April 2014.

269 TANGO, March 2013, Save the Children Bangladesh Mid-term Review of Nobo Jibon Multi-Year Assistance Program.

270 Personal communication with Save the Children, Dhaka, April 2014.

271 The implementing partners for Nobo Jibon are: Community Development Center (CODEC), Gono Unnayan Prochesta (GUP), South Asian Partnership (SAP), and Speed Trust. (Personal communication with Save the Children, Dhaka, April 2014.)

generation; HH DRR training; and food-for-work (FFW) activities. Nobo Jibon uses a PM2A targeting approach throughout all program areas, including all PLW or mothers of U2s in SO1 programming.

The food ration distributed under SO1 includes a ration of Hard Red Winter (HRW) wheat, yellow split peas, and RVO focused on the 1,000 days window of opportunity for PLW and U2s. In 2011-12, PM2A beneficiaries received a lean season HH ration during the months of April, May, October, and November, however this component was discontinued in 2013.²⁷² CMAM activities fall under this first objective and include the distribution of a RUTF, which began in mid-2013. FFW projects, as part of SO3, distribute HRW wheat, yellow split peas, and RVO as compensation for labor in the construction of community assets (see Chapter 5 for further details on the food aid transfers).

Nobo Jibon also distributes vouchers that can be exchanged for inputs under SO2. Local participating vendors accept these vouchers for designated agricultural products such as seeds and fish fingerlings. The use of vouchers is meant to increase market linkages and promote the use of improved agricultural inputs.²⁷³

PROSHAR. PROSHAR operates in Batiaghata, Lohagara, and Sarankhola *upazilas* of Khulna and Bagerhat districts, and reaches 70,868 beneficiaries.²⁷⁴ This ACDI/VOCA project coordinates a team of three technical partners and four implementing partners.²⁷⁵

272 The Nobo Jibon HH ration was discontinued in 2013 due to funding restraints. Personal communication with Nobo Jibon/Dhaka, April 2014.

273 Personal communication with Save the Children, Dhaka, April 2014.

274 Moneval Solutions, March 2013, *Mid-term Review for the PROSHAR Program in Bangladesh*.

275 The implementing partners for PROSHAR: Project Concern International,

Table 17. PROSHAR Technical Partners

Technical Partners	Technical Area
Department of Community Integrated Management of Childhood Illness, Ministry of Health	IMCI training
Centre for Environmental and Geographic Information Services	Disaster risk mapping
Cyclone Preparedness Program	Disaster volunteer training and simulations

Source: Created by USAID-BEST with information from ACDI/VOCA Bangladesh 2014.

PROSHAR focuses on three SOs:

- **SO1:** Income and Access to Food
- **SO2:** MCHN
- **SO3:** DRR

PROSHAR uses a PM2A targeting approach throughout its MCHN program area and reaches all PLW and U2s for SO2 activities. Moreover, PROSHAR is implementing the Care Group model²⁷⁶ for health and nutrition behavior change communication. This is the first time this methodology is being used in Bangladesh and PROSHAR has adapted it to include training of fathers and grandmothers, who then subsequently train peers in their communities.



Photo by Fintrac Inc.

A man distributing food to PROSHAR beneficiaries weighs a bag of wheat to ensure accuracy. Most families that receive this ration will likely use it to make flat breads such as *chapati* or *roti*. Khulna, Bangladesh, April 2014.

CODEC, Shushilan, and MuslimAid. (Personal communication with ACDI/VOCA, Dhaka April 2014.)

276 The Care Group model is a methodology that employs multiple levels of volunteers to reach a large number of HHs.

In addition to Care Groups, there are several key interventions across its three SOs: agricultural productivity and diversification; market linkages; expansion of non-agriculture income generating activities; the distribution of food rations to mothers and children; coordination with GoB health clinics; IMCI; CMAM and the distribution of RUTFs; early warning, disaster mapping; and CFW/FFW.

MCHN activities provide mothers and U2s a ration as well as a HH ration of HRW wheat, lentils, and RVO. During the lean season the size of the HH ration typically increases. The specific time period for the distribution of these lean season HH rations varies depending on *upazila*. PROSHAR previously distributed a RUTF as part of its CMAM intervention. The labor-based activities under SO3 build community assets for DRR and beneficiaries earn a mix of cash and food based on total number of days worked (see Chapter 5 for more information on the food and cash transfers).²⁷⁷

The following table provides a summary of the commodities distributed under SHOUHARDO II, Nobo Jibon, and PROSHAR while the subsequent table quantifies the volume of SW wheat monetized under each awardee.

Table 18. USAID Title II Development Distributed Food Aid (MT), FY10-14

Fiscal Year	Lentils	Peas	Vegetable Oil	Wheat	Grand Total
FY10	130		120	1,600	1,850
ACDI/VOCA	130		20	560	710
Save the Children			100	1,040	1,140
FY11	190	1,850	2,930	21,590	26,560
ACDI/VOCA	190		80	910	1,180
CARE		1,090	2,180	14,950	18,220
Save the Children		760	670	5,730	7,160
FY12	610	1,200	1,650	14,740	18,200
ACDI/VOCA	610		230	1,500	2,340
CARE		260	630	7,590	8,480
Save the Children		940	790	5,650	7,380
FY13	460	1,040	1,700	13,590	16,790
ACDI/VOCA	460		270	1,800	2,530
CARE		200	870	6,880	7,950
Save the Children		840	560	4,910	6,310
FY14	131	576	577	2,587	3,871
ACDI/VOCA	131		71	508	710
CARE		40	80	880	1,000
Save the Children		536	426	1,199	2,161
Grand Total	1,521	4,666	6,977	54,107	67,271

Source: FY10-14 data from AMEX.

277 Personal communication with ACDI/VOCA, Khulna, April 2014.

Table 19. USAID Title II Monetized Wheat (MT), FY10-14

FY	Commodity	ACDI/VOCA	CARE	Save the Children	Total
FY10	SW Wheat	18,560	57,010	16,810	92,380
FY11	SW Wheat	13,220	10,470	7,010	30,700
FY12	SW Wheat	14,950	37,000	9,600	61,550
FY13	SW Wheat	11,740	30,270	9,620	51,630
FY14	SW Wheat	13,900	34,640	9,510	58,050

Source: FY10-14 data from AMEX.

Previous Title II Development Projects. SHOUHARDO, implemented by CARE, operated from 2004-10 in Kishoreganj, Rangpur, Tangail, and Chittagong.²⁷⁸ Save the Children implemented Jibon o Jibika during that same period in Barisal division: Barisal, Bhola, and Patuakhali districts.²⁷⁹

4.4.2 Title II Emergency Programs

USAID donated peas, rice, and RVO to WFP for emergency operations in Bangladesh from FY11-12; the following table details the tonnages. The food aid was used for WFP's Protracted Relief and Recovery Operation (PRRO) in Cox's Bazaar.²⁸⁰

Table 20. USAID Title II Emergency Distributed Food Aid (MT) to WFP/Bangladesh, FY11-12

FY	Peas	Rice	Vegetable Oil	Total
FY11	140	1,560	120	1,820
FY12	80	1,440	80	1,600
Total	220	3,000	200	3,420

Source: FY10-14 data from AMEX.

Emergency Food Security Program (EFSP). In September 2013, WFP received US\$1.5 million from USAID for emergency operations. As of April 2014, WFP had programmed US\$1.25 million to purchase the commodities detailed in the table below.

Table 21. Commodities Purchased (MT) by WFP with USAID EFSP Award

Commodity	Tonnage (MT)
Rice	1,840
High Energy Biscuits	41
Salt	32
RVO	73

Source: WFP/Bangladesh, April 2014.

278 Personal communication with CARE, Dhaka, April 2014. TANGO, December 2009, *SHOUHARDO a Title II Program of USAID: Final Evaluation Report*.

279 Personal communication with Save the Children, Dhaka, April 2014. TANGO, September 2009, *Endline Survey Report: Jibon o Jibika Program*.

280 WFP/Bangladesh food aid data, received May 2014.

WFP has proposed using the remaining US\$250,455 for general food distributions through a new voucher modality by transferring the funds to their PRRO.²⁸¹

4.4.3 Feed the Future

With over thirty programs, President Obama's Feed the Future initiative has a large presence in Bangladesh.²⁸² The zone of operation includes 20 districts in Khulna, Barisal, and the southern portion of Dhaka division because these areas remain disaster prone, vulnerable to the impacts of climate change, and have high rates of poverty.²⁸³ Given the breadth of Feed the Future projects, the following section highlights only those particularly relevant to Title II food assistance programming. Unless otherwise noted, all programs operate in the current Feed the Future zone.

Accelerating Agricultural Productivity Improvement (AAPI). This initiative (2010-2015) is focused on sustainably increasing agricultural productivity and operates in all Feed the Future districts and two other districts in the north (Mymensingh and Sherpur).²⁸⁴ The International Fertilizer Development Center manages the activities under this project, which include a focus on access to and use of Fertilizer Deep Placement (FDP)²⁸⁵ technology primarily in rice production, as well as the Alternate Wetting and Drying²⁸⁶ irrigation system for efficient water use. The program expects to benefit 3.5 million farmers and establish 1,800 private entrepreneur FDP supply points.²⁸⁷

Agricultural Value Chains (AVC). This project (2013-18) will focus on a market systems approach to target and develop agricultural value chains.²⁸⁸ Currently, DAI, the implementing partner, is assessing value chains for selection and field work is scheduled to start in August 2014. Interventions will include

281 Electronic communication with WFP/Bangladesh April 2014. Personal communication with WFP, Dhaka, March 2014.

282 Personal communication with USAID/Bangladesh Office of Economic Growth, April 2014.

283 USAID, October 2011, *Feed the Future Bangladesh: Country Fact Sheet*. USAID, February 2011, *Feed the Future Bangladesh Multi Year Strategy 2011-2015*.

284 IFDC, 2014, AAPI Profile. <http://www.aapi-ifdc.org/AAPI%20Profile.html>, accessed May 2014.

285 FDP is a technology developed by IFDC that involves the direct placement of large fertilizer briquettes near a plant's root as opposed to traditional surface fertilization. The system aims to increase yields and decrease fertilizer waste. (IFDC, 2014, *About FDP*. <http://www.ifdc.org/Technologies/Fertilizer-Deep-Placement-%28FDP%29/About-FDP/>, accessed May 2014.)

286 Alternate wetting and drying is an irrigation system developed by IIRI and BIRI that involves alternating the days a rice field is flooded in order to save water and increase yields. (IFDC, 2014, *AWD - Water-Saving Technology for Bangladesh*. http://www.ifdc.org/Projects/Current2/Eurasia_Division/Accelerating_Agriculture_Productivity_Improvement/AAPI_Stories/AWD_Water-Saving_Technology_for_Bangladesh/, accessed May 2014.)

287 IFDC, May 2012, *AAPI Revised English Brochure 2012*; IFDC, 2014, AAPI Profile. <http://www.aapi-ifdc.org/AAPI%20Profile.html>, accessed May 2014.

288 DAI, January 2014. *AVC Project Overview*. Received from DAI April 2014

both food and cash crops.²⁸⁹ AVC aims to increase incomes, export sales, and employment by reaching 300,000 smallholder farmers, generating 80,000 full-time equivalent jobs, and creating US\$400 million in new sales.²⁹⁰

Agro-Inputs Program (AIP). CNFA began implementation of AIP in 2012 and expects to conclude operations in 2017.²⁹¹ To improve the supply of quality agricultural inputs, AIP is developing a sustainable Agro Input Retailers Network of 3,000 GoB-registered retailers, 300 of which will be women-owned, for certification in the provision of high quality inputs to over one million farmers in the Feed the Future zone.²⁹² AIP will also work with the GoB and industry associations to improve quality control standards and regulations as well as publish and distribute an Ag-Inputs Monthly Price bulletin.

Aquaculture for Income and Nutrition (AIN). Focusing on development and dissemination of improved fish and shrimp seed, HH aquaculture for income and nutrition, commercial aquaculture activities, and policy reform and institutional capacity,²⁹³ WorldFish leads this project (2011-16) in 75 *upazilas* across the Feed the Future zone. AIN seeks to benefit 1,236,000 HHs by expanding the supply of fish 124,300 MT by 2016 through improved seed and farming systems, train 249,500 poor and vulnerable HHs on aquaculture and horticulture, and offer technical support to 80,500 shrimp and prawn farmers.²⁹⁴

Cereal Systems Initiative for South Asia in Bangladesh (CSISA-BD). Focusing on the testing, dissemination, and adoption of improved varieties and production technologies, CSISA-BD (2010-15) aims to increase HH incomes by at least US\$350 for 60,000 mostly marginal and poor farming families.²⁹⁵ Moreover, the program expects to reach an additional 300,000 farmers through participation in field days or through farmer-to-farmer information transfer. Although the project focuses on rice-based farming systems, this model often incorporates wheat and maize as dry season crops in addition to some fish production.²⁹⁶

Operationally, IRRI, the International Maize and Wheat Improvement Center (CIMMYT), and WorldFish collaborate to carry out programming through CSISA-BD's hubs in the implementation areas. Four of these hubs are in the current Feed the Future zone: Jessore, Khulna, Barisal, and Faridpur;

289 DAI, January 2014. *AVC Project Overview*. Received from DAI April 2014.

290 Electronic communication with DAI, April 2014.

291 Agro Inputs Key Project Details. Received CNFA April 2014.

292 Agro Inputs Key Project Details. Received CNFA April 2014.

293 Aquaculture for Income Programme Narrative. Received from WorldFish, April 2014.

294 Aquaculture for Income Programme Narrative. Received from WorldFish, April 2014.

295 IRRI, April 2014. CSISA BD Program Summary. Received from IRRI April 2014. IRRI, January 2014. CSISA USAID Mission Director Briefing Note. Received from IRRI April 2014.

296 Electronic communication with IRRI, April 2014. CSISA-BD November 2013. Cereal Systems Initiative for South Asia in Bangladesh Annual Report for Financial Year 2013 Bangladesh.

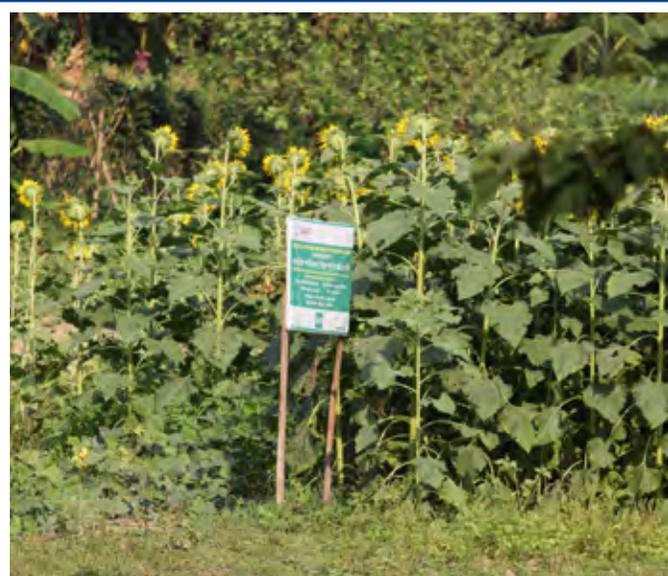


Photo by Fintrac Inc.

Feed the Future supports many large-scale projects in Bangladesh designed to enhance agricultural production and productivity, and increase the resiliency of smallholder farmers. CSISA-BD, for example, is supporting farmers in southern Bangladesh to grow sunflower to enable households to increase access to healthy cooking oils and reduce their dependence on markets for this basic staple. Barisal, Bangladesh, April 2014.

while two other hubs, Rangpur and Mymensingh, are in the north.²⁹⁷

Cereal Systems Initiative for South Asia: Mechanization and Irrigation (CSISA-MI). Beginning in 2013 as an offshoot of CSISA-BD to scale up promising technologies and lessons, this five-year initiative seeks to increase surface water irrigation, adoption of agricultural machinery, and support local service providers in an effort to stimulate agricultural productivity in the dry season.²⁹⁸ CIMMYT and iDE work together to lead the project. Ultimately, CSISA-MI hopes to benefit over 450,000 HHs through the supply of machinery from 11,000 local service providers that would altogether provide agricultural technologies on 90,000 hectares of land.²⁹⁹

Horticulture Project. The International Potato Center and the World Vegetable Center focus on production of crops rich in vitamins and minerals with market demand potential (to date: potato, sweet potato, tomato, bottle gourd, okra, yard long beans, bitter gourd, pepper, eggplant, and other seasonal high value vegetables).³⁰⁰ Targeting 100,000 HHs in 13 *upazilas* located in Barisal, Chittagong, Faridpur, Jessore, and Patuakhali districts, the Horticulture Project (2011-15) includes activities that strengthen the vegetable breeding network, introduce new

297 CSISA-BD November 2013. Cereal Systems Initiative for South Asia in Bangladesh Annual Report for Financial Year 2013 Bangladesh.

298 CIMMYT, 2014, CSISA Mechanization and Irrigation. <http://csisa.org/where-we-work/csisa-bangladesh/csisa-mechanization-and-irrigation/>, accessed May 2014.

299 CIMMYT, 2014, CSISA Mechanization and Irrigation. <http://csisa.org/where-we-work/csisa-bangladesh/csisa-mechanization-and-irrigation/>, accessed May 2014.

300 USAID Horticulture Project - CIP/AVRDC Bangladesh: A Brief. Received from CIP April 2014.

technologies, fortify the supply of clean planting material, encourage home gardens, and provide nutritional messaging.³⁰¹

mStar. This project supports and promotes the adoption of mobile money by USAID implementing partners in Bangladesh, specifically those working on health and agriculture programs.³⁰² To realize this goal, mSTAR promotes mobile technologies via workshops, documents, and knowledge sharing between financial service providers, on-demand technical support, and monetary grants to encourage mobile money pilots. FHI 360 manages the two-year project (2013-15).³⁰³

Integrated Agriculture and Health Based Interventions for Improved Food Security (IAHBI). As the implementing partners, the Food and Agriculture Organization (FAO) and the United Nations Children's Fund (UNICEF) target 50,000 HHs in the districts of Satkhira, Khulna, and Barisal for IAHBI nutrition activities.³⁰⁴ IAHBI (2013-16) focuses on strengthening GoB systems by working closely with the Ministry of Health and Family Welfare (MoHFW) and the Ministry of Fisheries and Livestock to integrate nutrition interventions into existing structures and services. Some of the program activities include: farmer field schools for women, scaling up a community nutrition program, and improving district and *upazila* level coordination of food security, nutrition, and health activities.³⁰⁵

SHIKHA. FHI 360 partners with BRAC³⁰⁶ in this three-year project (2013-16) that aims to improve infant and young child feeding (IYCF) and reduce undernutrition among U2s through interventions focused on beneficiaries in the 1,000 day window of opportunity at the community level in 26 *upazilas* of Barisal and Khulna divisions.³⁰⁷ Five core activities characterize this program: home visits by frontline health workers focused on nutrition and IYCF counseling; antenatal and postnatal care sessions; courtyard meetings on nutrition, IYCF, and WASH; the engagement of influential community members; and media campaigns.³⁰⁸

Strengthening Partnerships, Research, and Innovations in Nutrition Globally (SPRING). A partnership team of John

Snow Inc., Helen Keller International (HKI), Save the Children, the Manoff Group, and the International Food Policy Research Institute (IFPRI) manage this global award funded jointly through Feed the Future and the US Global Health Initiative. In Bangladesh, SPRING (2011-16) operates in Barisal and Khulna divisions and is implemented by HKI and Save the Children. The project targets PLW and U2s, seeking to improve their nutritional status by providing training on essential nutrition and hygiene actions and focusing on the consumption of nutritious and diverse diets.³⁰⁹ Activities include trainings for frontline and supervisory health and agriculture workers with the Ministry of Health and Family Welfare and the Ministry of Agriculture, respectively, as well as the establishment of farmer field schools that target women and incorporate strong nutrition messaging. SPRING has trained over 6,300 GoB workers, established 3,861 farmer field schools, and directly worked with 77,564 PLW with U2s.³¹⁰

Although Nobo Jibon and PROSHAR also work in Barisal and Khulna divisions, the three Feed the Future nutrition initiatives (IAHBI, SHIKHA, and SPRING) avoid duplicative programming by targeting areas not currently included in Title II programming.³¹¹

4.5. USDA

USDA is funding two Food for Progress awards and a McGovern-Dole International Food for Education and Child Nutrition award in Bangladesh.

4.5.1 Food for Progress

Winrock International manages Rural Enterprise for Alleviating Poverty II in Mymensingh, Khulna, Satkhira, and Jessore districts. Started in 2011 and expected to conclude in 2014, this project targets 12,000 poor, small, and marginal farmers as well as input suppliers, traders, and other relevant value chain actors.³¹² Major activities include: training in aquaculture, horticulture, and livestock to increase productivity; the creation of producer groups and cooperatives, health and nutrition training; and capacity building for public sector and NGO extension agents.³¹³

The other Food for Progress award (2011-14) is implemented by Small Enterprise Assistance Funds (SEAF) and operates in Rangpur, Rajshahi, Chittagong, Dhaka, and Khulna divisions. The focus is on agro-based small and medium entrepreneurship. SEAF targets small farmers for access to credit for agricultural equipment and machinery training; connects small to medium entrepreneurs to a venture capital institution for financing to scale up their operations; and provides technical support to

301 USAID Horticulture Project - CIP/AVRDC Bangladesh: A Brief received from CIP April 2014.

302 Personal communication with FHI 360, Dhaka, April 2014. FHI360, 2014, *Mobile Solutions Technical Assistance Research Activity Profile*.

303 Personal communication with FHI 360/Dhaka, April 2014.

304 IAHBI Feed the Future Project Information received from FAO April 2014.

305 IAHBI Feed the Future Project Information. Received from FAO April 2014.

306 Additionally, Asiatic Marketing & Communication Limited provides interactive video events in hard to reach villages and the Centre for Injury Prevention and Research, Bangladesh conducts the monitoring and evaluation for this project.

307 IAHBI Feed the Future Project Information. Received from FAO April 2014.

308 Media campaign interventions include national television and radio campaigns as well as special shows in media dark villages with no electricity or reduced access to media channels. (SHIKHA Project Brief. Received from FHI360, April 2014.)

309 SPRING Program Brief. Received from HKI April 2014.

310 Personal communication with SPRING, Dhaka, April 2014. Electronic communication with SPRING, April 2014.

311 Personal communication with SPRING, Dhaka, April 2014.

312 Winrock, December 2012. Rural Enterprise for Alleviating Poverty II (REAP II): Program Brief. Received from Winrock May 2014.

313 Winrock, December 2012. Rural Enterprise for Alleviating Poverty II (REAP II): Program Brief. Received from Winrock May 2014.

increase productivity. Additionally SEAF is developing an animal feed processing unit in Rajshahi and cold storage warehousing in Mymensingh.³¹⁴

Table 22. USDA Food for Progress Monetization (MT), 2012

Awardee	Commodity	Sale Year	MT
SEAF	HRW wheat	2012	35,000
Winrock	CDSO	*	2,520

Source: USDA Washington DC office, February 2014.

*USAID-BEST was unable to obtain this information.

4.5.2 McGovern-Dole International Food for Education and Child Nutrition Program

For the WFP school feeding program, USDA donates wheat that WFP turns over to local processors to produce the High Energy Biscuit (HEB)s that are distributed in schools. Although the current program ends in 2014, USDA recently announced a new award to continue the program until 2016.³¹⁵

Table 23. USDA McGovern-Dole Food for Education Wheat Donations to WFP (MT), 2008-11

Date	MT	Commodity
June 2008	11,500	SRW wheat
June 2010	15,710	SW wheat
July 2011	26,320	HRW wheat
July 2011	10,440	SW wheat
Total	63,970	

Source: USDA, February 2014.

4.6. WFP

WFP's current Country Programme (CP) (2012-16) includes four major components: Improving Maternal and Child Nutrition (IMCN), School Feeding, Enhancing Resilience to Natural Disasters and the Effects of Climate Change (ER), and Engagement on National Social Safety Net Programs. As part of the last component, WFP pilots projects to generate evidence for social protection, including the Transfer Modality Research Initiative (TMRI) with IFPRI (detailed below), and production and distribution of fortified rice and complementary food supplements³¹⁶ (detailed in Chapter 3). In addition to the CP, WFP runs a PRRO in Cox's Bazar.³¹⁷

314 SEAF (Small Enterprise Assistance Funds) Bangladesh: Program Overview. Received from SEAF May 2014.

315 Electronic communication with FAS/USDA Bangladesh, April 2014.

316 Personal communication with IFPRI/Washington DC, IFPRI/Bangladesh, and WFP/Bangladesh, March and April 2014.

317 Personal communication with WFP/Bangladesh, March 2014.

4.6.1 CP

IMCN. In this CMAM project, community nutrition workers identify malnourished PLW and children under the age of five (U5s) for an enrollment period no longer than four months. As part of this program, targeted women and U5s receive, via the GoB health system, fortified supplementary foods (Super Cereal, Super Cereal Plus,³¹⁸ and RVO), behavior change communication (BCC) sessions, and referrals to stabilization centers for severe acute malnutrition cases with complications.³¹⁹ IMCN operates in Satkhira, Gaibandha, Kurigram, Sirajganj, and Cox's Bazar and partners with BRAC, Shushilan, the Terres des Hommes Foundation, the National Development Programme, the Society for Environment and Human Development, and RDRS-Bangladesh.³²⁰ For more information on the food rations see Chapter 5.

School Feeding. As a means of incentivizing enrollment and attendance in schools and fighting widespread micronutrient deficiency,³²¹ WFP works with the Ministry of Primary and Mass Education to provide locally produced micronutrient fortified biscuits as a mid-morning snack to students up to Class 5 (approximately 5-11 years of age).³²² As of March 2013, WFP was reaching one million children³²³ in Kurigram, Gaibandha, Satkhira, Bagerhat, Barguna, Patuakhali, Bhola, Cox's Bazar, Bandarban, Rangamati, Khagrachari, and Dhaka.³²⁴ Students and parents also receive a learning package focused on topics such as health, nutrition, and home gardening. WFP is also working to build the school feeding operational capacity of the GoB. As of 2013 the GoB was reaching 1.7 million children through their school feeding program.³²⁵

Additionally, in 2013 WFP began a hot school meals pilot program in Jamalpur and Barguna. Meals include fortified rice, lentils, and RVO. Local women provide the vegetables, spices, and fruit (when available), while in some areas vegetables are sourced from beneficiaries of a previous FAO/UNICEF garden program.³²⁶ This pilot will serve as a learning initiative for the GoB as they consider expansion of hot school meals.

ER. This project targets the ultra-poor in areas of high poverty and vulnerability to natural disasters.³²⁷ Over a period of two

318 Both Super Cereal and Super Cereal Plus are wheat soy blends, and also referred to as WSB+ and WSB++, respectively.

319 Personal communication with WFP/Khulna office, April 2014.

320 WFP: Improving Maternal & Child Nutrition: Program Brief. Received from WFP/Bangladesh July 2012. Electronic communication with WFP/Bangladesh, April 2014.

321 WFP Bangladesh School Feeding Program Brief. Received from WFP/Bangladesh April 2014.

322 Personal communication with WFP/Khulna office, April 2014.

323 WFP, 2013, *WFP Bangladesh Annual Report 2012*.

324 WFP Bangladesh School Feeding Program Brief. Received from WFP/Bangladesh April 2014.

325 WFP, 2013, *WFP Bangladesh Annual Report 2012*.

326 Personal communication with WFP/Bangladesh, Dhaka March 2014. School Meals Program Brief. Received from WFP/Bangladesh April 2014.

327 Personal communication with WFP/Bangladesh, March 2014.

years, beneficiaries engage in FFW/CFW labor activities to create community resilience building assets such as embankments, flood and cyclone shelters, and irrigation canals during the dry season. In monsoon months, these beneficiaries receive training on disaster preparedness, women's empowerment, livelihoods, and health and nutrition. WFP's partners on ER are Manab Mukti Sangstha, Shushilan, Padakhep Manabik Unnayan Kendra, Eco-Social Development Organisation, Gram Unnayan Karma, Muslim Aid-UK, Uttaran, and Good Neighbors Bangladesh.³²⁸ ER operates in Kurigram, Gaibandha, Jamalpur, Bogra, Sirajganj, Pabna, Satkhira, Khulna, Bagerhat, Barguna, Patuakhali, and Bhola.³²⁹ See Chapter 5 for more information on the food rations and cash transfers.

Engagement on National Social Safety Net Programs.

This component of the CP coordinates WFP efforts to help the GoB continually improve its social safety net programming. WFP provides capacity and policy support on school feeding through a unit embedded in the Ministry of Primary and Mass Education. Despite handing over the Vulnerable Group Development (VGD) program to the GoB in 2010/11, WFP continues to maintain involvement in capacity building and reform initiatives with the Department of Women's Affairs. Additionally, WFP pilots projects to generate evidence for social protection, including the current TMRI (see below), develop and distribute fortified rice and complementary food supplements (see Chapter 5). WFP is also collaborating with the GoB on the development of the first-ever government social safety net strategy.³³⁰

TMRI. TMRI is a partnership initiative that aims to evaluate the impacts of five safety net transfer modalities on income, food security, and child nutrition. WFP manages implementation, procurement, and delivery. As the organization that conceptualized and designed the study, IFPRI manages the evaluation of results. DATA works with IFPRI on field-level data collection while Eco-Social Development Organization is responsible for direct implementation.³³¹ Ultimately, WFP, IFPRI, and the other partners on the research project hope that evidence from these trials will help streamline the social safety net system and increase cost-effectiveness, by helping determine which modalities have the greatest impacts on outcomes of interest.³³² The trial is testing five transfer modalities: 1) food rations only; 2) cash payments only; 3) food and cash payments; 4) food rations and BCC; and 5) cash payments and BCC.

Participants in this study include 4,000 ultra-poor women (and their HHs) and a control group of 1,000 HHs. Beneficiaries in

the BCC component meet with a community nutrition worker once a week for sessions that include information on IYCF, MCHN, and overall health; in return for their involvement, beneficiaries receive cash and/or food transfers once a month over a period of two years.³³³ For those HHs receiving food, TMRI distributes local coarse rice, red lentils, and fortified RVO.³³⁴ Distributions began in May 2012 and were completed in April 2014. For additional details on the food ration see Chapter 5.

TMRI operates in Rangpur and Kurigram in the north and in Patuakhali, Bhola, Khulna, Bagerhat, and Pirojpur in the south. TMRI excludes those *upazilas* or villages with existing community nutrition programs (e.g., Title II, BRAC, or WFP).

4.6.2 PRRO

WFP continues to assist the state-less Rohingya populations living in two camps in Cox's Bazar. Given GoB restrictions on income-earning for the approximately 33,000 people³³⁵ residing in the camps, this group must completely rely on humanitarian aid. WFP currently provides a standard food ration that includes rice, yellow split peas, RVO, salt, and sugar; HEBs for school feeding; and WSB+, RVO, and sugar³³⁶ for supplementary feeding.³³⁷

In July 2014, WFP plans to switch the general food distribution in the camps to a food voucher program. To provide the HH benefit cards required for the voucher system, WFP will build on efforts from the UN High Commission for Refugees to update beneficiary numbers and family groupings by collecting biometric data (fingerprints) and photographs of HH heads. WFP will issue HHs one smart card with two-three authorized users, one of which must be a woman. The amount of the voucher will take into account a basic food basket and monthly per person micronutrient and energy requirements. Vouchers will be redeemable at newly established shops within each camp that will carry a selection of food items from which beneficiaries can choose (the food basket is still being determined but is likely to include basics such as rice, dried fish, onion, spices, spinach, and eggs). Along with the rollout of this voucher program, WFP plans to initiate nutrition training.³³⁸

328 Electronic communication with WFP/Bangladesh, April 2014.

329 Enhancing Resilience to Natural Disasters and the Effects of Climate Change: Program Brief. Received from WFP/Bangladesh April 2014.

330 Personal communication with WFP/Bangladesh, Dhaka March 2014.

331 IFPRI, November 2013, *Safety Nets in Bangladesh: Which Form of Transfer is Most Beneficial?: Operational Performance of the Transfer Modality Research Initiative*.

332 IFPRI, November 2013, *Safety Nets in Bangladesh: Which Form of Transfer is Most Beneficial?: Operational Performance of the Transfer Modality Research Initiative*.

333 Personal communication with IFPRI, Washington DC, March 2014, WFP Khulna office, April 2014, and IFPRI, Dhaka April 2014.

334 Personal communication with IFPRI, Washington DC, March 2014, WFP Khulna office, April 2014, and IFPRI, Dhaka April 2014.

335 Electronic communication with WFP/Bangladesh, May 2014.

336 The UN High Commission for Refugees provides dried skim milk and Plumpy'Nut for supplementary feeding. (WFP, 2011, WFP PRRO Operations Document.)

337 WFP, 2011, *WFP PRRO Operations Document*.

338 Personal communication with WFP/Bangladesh, April 2014.

4.6.3 WFP Food Aid Volumes

Table 24. WFP CP Distributed Food Assistance (MT) by Type of Contribution from Donors (Cash or In-Kind), 2009-14

Commodity and Contribution Type	2009	2010	2011	2012	2013
Cash	49,665	51,085	17,440	11,834	21,578
Canned Fish				134	89
HEB	862	4,905	7,292	2,269	3,772
Pulses	349	566	959	1,059	775
Rice	3,355	3,849	6,360	4,814	5,674
Vegetable Oil		211	399	571	393
Wheat	44,539	39,511		753	9,249
WSB	560	2,043	2,430	2,234	1,626
In kind	49,000	46,638	16,886	35,988	14,120
Dried Fruits					515
Rice				7,000	895
Wheat	49,000	46,638	16,886	28,988	12,710
Total	98,665	97,723	34,326	47,822	35,698

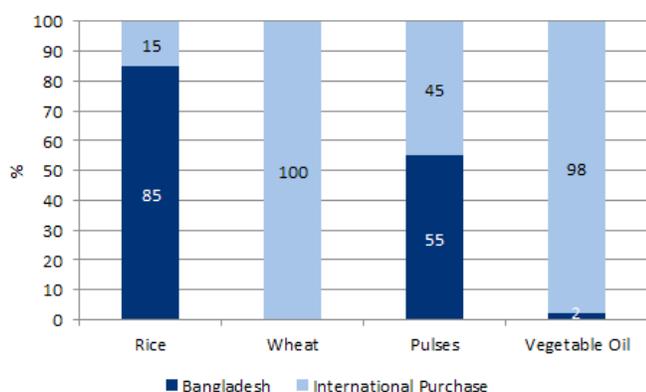
Source: WFP/ Bangladesh, received May 2014.

Table 25. WFP CP Distributed Food Assistance by Source (MT), 2009-14

Commodity	Bangladesh	International Purchase	Total
Rice	20,503	3,550	24,052
Wheat	-	94,052	94,052
Pulses	2,030	1,678	3,708
Vegetable Oil	28	1,528	1,556
HEB	17,121	879	18,000
WSB	-	8,893	8,893
Canned Fish	-	223	223
Total	39,682	110,803	150,484

Source: WFP/ Bangladesh, received May 2014.

Figure 42. WFP CP, Procurement by Local or International Purchase (%), 2009-14



Source: Created by USAID-BEST using data 2009-14 data from WFP Bangladesh.



Photo by Fintrac Inc.

WFP distributes high energy biscuits to school children around Bangladesh to improve nutrition and encourage attendance. The children in this school bring their own plastic containers to store and transport their biscuits. Satkhira, Bangladesh, April 2014.

Table 26. WFP PRRO Distributed Food Assistance (MT) by Type of Contribution from Donors (Cash or In-Kind), 2009-14

Commodity and Contribution Type	2009	2010	2011	2012	2013
Cash	4,169	5,694	3,793	3,043	5,615
HEB	82	66	102	41	70
Pulses	362	308	306	173	403
Rice	2,917	4,574	2,185	2,256	3,941
Salt	67	93	99	87	82
Sugar	95	90	167	71	143
Vegetable Oil	169	168	159	72	201
WSB	477	395	775	343	775
In kind			1,820	1,600	
Pulses			140	80	
Rice			1,560	1,440	
Vegetable Oil			120	80	
Grand Total	4,169	5,694	5,613	4,643	5,615

Source: WFP/ Bangladesh, received April 2014.

Table 27. WFP CP Distributed Food Assistance by Source (MT), 2009-14

Commodity	Bangladesh	International
Rice	10,592	9,020
Pulses	800	973
Vegetable Oil	12	957
HEB	346	15
WSB	340	2,425
Salt	391	37
Sugar	250	316
Total	12,731	10,323

Source: WFP/ Bangladesh, received April 2014.

Table 28. Highlights of Select GoB Safety Net Programs

Program	Ministry	Targeted Beneficiaries	Transfer Type	Transfer Details
Employment Guarantee Program for the Poorest (EGPP)	Disaster Management and Relief	extreme poor HHs	Cash	BDT 200/day worked; 100 days employment in one year
Food and Cash for Work (FFW/CFW)	Disaster Management and Relief	extreme poor HHs	wheat, rice, cash	8 kg/day worked, BDT 240-400; project duration varies
Food Assistance in the Chittagong Hill Tracts	Chittagong Affairs	Chittagong Hill Tracts	rice, wheat	3.5 kg/person for 30 days
Gratuitous Relief (GR)	Disaster Management and Relief	disaster affected HHs	rice, wheat, cash, other items	20 kg (program guidelines)
Rural Employment and Road Maintenance Program (RERMP)	Local Government	extreme poor, female headed HHs	Cash	BDT 150/day worked; 48 months of employment; training; savings
School Feeding	Primary and Mass Education	school children	high energy biscuits	75 grams of biscuit per student per day
Test Relief (TR)	Disaster Management and Relief	poor HHs	rice, wheat, cash	5-6 kg/day worked
Vulnerable Group Development (VGD)	Women and Children's Affairs	poor, female head of HH	wheat, rice	30 kg/month
Vulnerable Group Feeding (VGF)	Disaster Management and Relief	disaster affected HHs, poor women	wheat, rice	ranges from 10-20 kg
Essential Priorities (EP)	Food	public employees, army, police	rice, wheat	
Open Market Sales (OMS)	Food	mainly urban centers	rice, wheat	can buy up to 5 kg person/day

Sources: **EGPP:** Personal communication with Ministry of Disaster Management and Relief (MoDMR), April 2014; World Bank, April 2013, Bangladesh Safety Net Systems for the Poorest Project: Project Information Document, Appraisal Stage.

FFW/CFW: World Bank, April 2013, Bangladesh Safety Net Systems for the Poorest Project: Project Information Document, Appraisal Stage. Personal communication with MoDMR, April 2014.

Food Assistance in the CHT: UNDP, April 2011, Social Safety Nets in Bangladesh, Volume 1: A Review of Issues and Analytical Inventory.; GoB Ministry of Food safety net data, received April 2014.

GR: World Bank, April 2013, Bangladesh Safety Net Systems for the Poorest Project: Project Information Document, Appraisal Stage.; and GoB Ministry of Food safety net data, received April 2014.

RERMP: Personal communication with EU, Dhaka April 2014; EU, February 2014, Food Security 2012: Ujjibito Project Description.

School Feeding: Personal communication with WFP/Khulna, April 2014; WFP School Feeding Program Brief, 2013.

TR: Personal communication with MoDMR, May 2014; IFPRI, April 2013, The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey.; World Bank, April 2013, Bangladesh Safety Net Systems for the Poorest Project: Project Information Document, Appraisal Stage.

VGD: UNDP, April 2011, Social Safety Nets in Bangladesh, Volume 1: A Review of Issues and Analytical Inventory.; IFPRI, April 2013, The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey.

VGF: UNDP, April 2011, Social Safety Nets in Bangladesh, Volume 1: A Review of Issues and Analytical Inventory.; World Bank, April 2013, Bangladesh Safety Net Systems for the Poorest Project: Project Information Document, Appraisal Stage.

EP: GoB Ministry of Food safety net data, received April 2014; Personal communication with MoDMR, April 2014.

OMS: Personal communication with MoDMR, April 2014; World Bank, April 2013, Bangladesh Safety Net Systems for the Poorest Project: Project Information Document, Appraisal Stage. UNDP, April 2011, Social Safety Nets in Bangladesh, Volume 1: A Review of Issues and Analytical Inventory. GoB Ministry of Food safety net data, received April 2014.

4.7. GOVERNMENT SOCIAL SAFETY NET PROGRAMS

Bangladesh's well-established and extensive system of social safety net programs is principally driven and funded by the GoB. The scale and breadth of programming, however, has often made it a prominent research subject and a focus for key partnerships with international donors. The total number of programs varies depending on the year and categorization of projects. For example, in 2011 UNDP released an inventory exercise that identified a total of 42 safety net programs under five classifications: 1) allowances to vulnerable groups and persons with special needs; 2) food security and disaster assistance; 3) public works and employment generation; 4) human development and social empowerment; and 5) urban poverty.³³⁹

Yet, IFPRI's 2011-12 Bangladesh Integrated Household Survey listed 90 safety net programs based on five types: 1) public works; 2) training; 3) education; 4) relief; and 5) programs for disadvantaged groups.³⁴⁰ Though the exact number of total projects may vary, the table above provides a synopsis of the programs especially pertinent for Title II food security programming.

The GoB moves approximately 2 million MT of food through the Public Food Distribution System (PFDS) each year for its safety net programs. In Open Market Sales (OMS), Essential Priorities (EP), and some smaller public employee and business

Issues and Analytical Inventory.

340 IFPRI, April 2013, *The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey.*

339 UNDP, April 2011, *Social Safety Nets in Bangladesh, Volume 1: A Review of*

support programs the GoB sells food at reduced prices and subsequently classifies this transaction as monetized food. Food transfers considered non-monetized include those quantities distributed through FFW, Vulnerable Group Development (VGD), Test Relief (TR), Gratuitous Relief (GR), Vulnerable Group Feeding (VGF), Chittagong Hill Tracts Relief, and School Feeding either as relief or in return for labor or participation. The following tables and figures provide a breakdown of the amounts distributed through the PFDS based on commodity (rice and wheat).

Table 29. Rice Distributed Through the PFDS (MT), 2008-14

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14*
Monetized	354,901	486,995	1,209,604	513,503	230,829	223,895
EP	133,341	151,946	155,597	157,501	159,711	122,309
OMS	194,454	259,429	861,476	276,395	52,985	85,316
Other Programs	27,106	75,620	192,531	79,607	18,133	16,270
Non-Monetized	1,402,359	817,473	360,268	898,275	1,256,477	540,139
FFW	362,281	263,356	8,321	262,069	364,559	1,928
VGD	136,900	66,761	141,607	114,834	202,620	53,093
TR	257,806	163,316	1,309	261,692	317,258	195,128
GR	46,546	36,991	33,472	49,824	48,653	33,271
VGF	507,169	248,286	114,207	158,652	253,450	209,307
Hill Tracts/ Others	91,657	38,763	61,352	51,204	69,937	47,412
Rice Total	1,757,260	1,304,468	1,569,872	1,411,778	1,487,306	764,034

Source: GoB Ministry of Food, April 2014.

Note: "Monetized" channels provide rice or wheat at only partially subsidized prices. "Non-monetized" channels provide transfers completely subsidized (i.e., free).

*2013-14 numbers are as of March 2014.

Table 30. Wheat Distributed Through the PFDS (MT), 2008-14

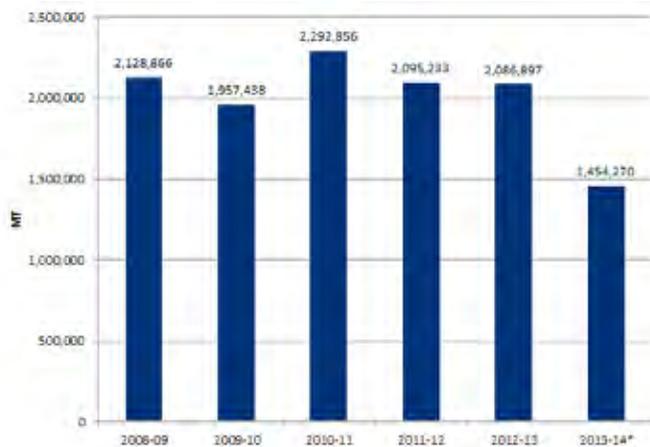
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14*
Monetized	90,412	103,551	267,634	344,594	411,195	237,404
EP	85,805	93,697	98,943	103,146	101,178	79,534
OMS	0	0	25,815	219,961	287,836	144,050
Other Programs	4,607	9,854	142,876	21,487	22,181	13,820
Non-Monetized	281,194	549,419	455,350	338,861	188,396	452,832
FFW	32,596	110,209	120,315	63,705	28,719	135,606
VGD	138,066	205,665	121,928	149,321	43,288	132,345
TR	110,184	203,429	175,573	64,283	62,649	145,924
GR	22	38	10	0	0	0
VGF	290	0	156	891	2,401	0
Hill Tracts/ Others	36	30,078	37,368	41,642	37,454	24,393
School Feeding	0	0	0	19,019	13,885	14,564
Wheat Total	371,606	652,970	722,984	683,455	599,591	690,236

Source: GoB Ministry of Food, April 2014.

Note: "Monetized" channels provide rice or wheat at only partially subsidized prices. "Non-monetized" channels provide transfers completely subsidized (i.e., free).

*2013-14 numbers are as of March 2014.

Figure 43. Total Food (Rice and Wheat) Distributed Through the PFDS (MT), 2008-14



Source: Created by USAID-BEST using 2008-14 data from GoB Ministry of Food.
*2013-14 numbers are as of March 2014.

4.8. OTHER DONORS, NGOS, AND INITIATIVES

4.8.1 BRAC

Targeting the Ultra Poor (TUP). As a follow on to the decade-long ultra-poor³⁴¹ graduation project, TUP targets 400,000 ultra-poor HHs over ten years (2011-21).³⁴² BRAC selects beneficiaries for this program using Participatory Rural Appraisal exercises to find the poorest in Bangladesh based on the following criteria: lack of productive assets; absence of working males in HHs; dependency on intermittent day labor, begging, or the employment of school-aged children.³⁴³ TUP intends to sustainably graduate these HHs out of extreme poverty through a combination of cash transfers and support services. Beneficiaries receive a monthly cash stipend for subsistence needs as well as either a one-time cash transfer or a soft loan for asset purchase. The suite of support services includes: skill development training for income generation, health care support, community mobilization, and empowerment training.³⁴⁴

4.8.2 Department for International Development (DFID)

Chars Livelihoods Programme (CLP). DFID and the Australian Agency for International Development currently fund Phase 2 of the CLP which operates along the Jamuna River in Kurigram, Gaibandha, Jamalpur, Lalmonirhat, Nilphamari, Rangpur,

341 References to extreme poor or ultra poor in this section are direct terminology from program documents.

342 UNDP, April 2011, *Social Safety Nets in Bangladesh, Volume 1: A Review of Issues and Analytical Inventory*.

343 BRAC, Targeting the Ultra Poor: Programme Approaches. <http://tup.brac.net/programme-approaches>, accessed May 2014.

344 BRAC, Targeting the Ultra Poor: Programme Approaches. <http://tup.brac.net/programme-approaches>, accessed May 2014

Pabna, and Tangail districts.³⁴⁵ Given their extreme vulnerability to fluctuations in the water level, char³⁴⁶ dwellers are among the poorest and most vulnerable populations in Bangladesh. CLP seeks to raise 67,000 char HHs out of extreme poverty³⁴⁷ through CFW to build community assets; monthly stipend transfers through mobile phones; health and nutrition education sessions; VSL groups; training on home gardening, livestock, and poultry rearing; and asset transfers. Maxwell Stamp began implementing CLP in coordination with the Ministry of Local Government in 2010, and the program will run until 2016.³⁴⁸

4.8.3 European Union (EU)

Ujjibito. In 1,370 unions of Rajshahi, Khulna, Barisal, and Chittagong divisions, the EU is funding the CFW component of the Rural Employment and Road Maintenance Programme-2, implemented by the Local Government Engineering Department. Beneficiaries receive a total of 48 months of employment, earning BDT 150 per day, with a portion of their wages going to a savings account that they can only withdraw at the end of the program cycle.³⁴⁹ Additionally, in these unions the EU funds a capacity development component, implemented by the Palli Karma-Sahayak Foundation, that provides access to microfinance and training on nutrition, income generation, homestead vegetable production, and health. *Ujjibito* directly targets nearly 325,000 vulnerable women-headed HHs for graduation from ultra-poverty, while the public works more broadly affect rural communities by maintaining physical access to markets and service providers.³⁵⁰ Implementation began in October 2013 and will conclude in May 2019.³⁵¹

Food and Livelihood Security (FLS). Started in 2012 and expected to end this year, FLS targets 50,000 ultra-poor female-headed HHs and 30,000 ultra-poor marginal sharecropper HHs.³⁵² The Ministry of Women's Affairs partners with four non-governmental organizations³⁵³ in the northwestern districts of Rajshahi division (Natore, Naogaon, and Capai Nawabganj³⁵⁴) to

345 Maxwell Stamp, January 2014, *The Chars Livelihood Programme Phase 2: Quarterly Report 2 October - December 2013*.

346 The chars are low-lying temporary islands formed by the natural shifting sands and erosion of the river.

347 DFID, 2014, CLP Overview. <http://www.clp-bangladesh.org/>, accessed April 2014.

348 Maxwell Stamp, January 2014, *The Chars Livelihood Programme Phase 2: Quarterly Report 2 October - December 2013*.

349 Ujjibito Project Description, February 2014. Received from EU April 2014.

350 Ujjibito Project Description, February 2014. Received from EU April 2014.

351 Personal communication with EU/Dhaka, April 2014. Ujjibito Project Description, February 2014. Received from EU April 2014.

352 Personal communication with EU/Dhaka, April 2014. Personal communication with EU/ Dhaka, April 2014. Food and Livelihood Security: FLS Programme Description, July 2013. Received from EU April 2014.

353 The partner NGOs for FLS are: Village Education Resource, Assistance for Social Organization and Development, Eco-Social Development Organization, and Resource Integration Center. (Personal communication with EU, Dhaka, April 2014.)

354 Food and Livelihood Security: FLS Programme Description, July 2013. Received from EU April 2014.

train small groups of beneficiaries on income generating activities such as poultry rearing, crop production, vegetable cultivation, and petty trade. In addition to this training, beneficiaries learn about nutrition, hygiene and health. As an incentive to attend these sessions, beneficiaries receive a monthly subsistence allowance for twenty months and a one-time cash transfer for inputs and productive assets.³⁵⁵

4.8.4 Global Alliance for Improved Nutrition (GAIN)

GAIN is involved in many initiatives in Bangladesh relevant to food and nutrition security, including national nutrition policy and advocacy, and fortification research trials. As detailed in Chapter 3, GAIN is working on food fortification efforts (salt iodization, vitamin A fortified RVO, and zinc fortified rice). Additionally, GAIN works in collaboration with BRAC and Renata Ltd., on the distribution of micronutrient powders (*pushtikona*).

Bangladesh Community Grown School Nutrition Pilot.

To increase school attendance and improve the nutrition of children 5 to 11 years of age,³⁵⁶ GAIN launched this pilot program in June 2012 with the Ministry of Primary Education, BRAC, and Banchte Shekha to deliver hot school meals made from locally grown foods.³⁵⁷ The initiative is integrated with other school-based programs such as de-worming, safe drinking water, sanitation, and hygiene, and includes the development of mother's clubs to train mothers on nutrition, food preparation safety, and hygiene. The program operates in Mymensingh and Trishal districts as well as Dhaka's urban slums and as of March 2014 had fed approximately 18,000 vulnerable children.³⁵⁸ The pilot is scheduled to conclude in September 2014.

355 Personal communication with EU, Dhaka, April 2014.

356 GAIN Bangladesh Activity Profile. Received from GAIN April 2014.

357 Personal communication with GAIN, Dhaka, April 2014. GAIN, 2014, International School Meals Day - 6 March 2014. <http://www.gainhealth.org/editorials/international-school-meals-day-6-march-2014>, accessed April 2014.

358 GAIN, 2014, International School Meals Day - 6 March 2014. <http://www.gainhealth.org/editorials/international-school-meals-day-6-march-2014>, accessed April 2014.



CHAPTER 5

RECOMMENDATIONS FOR PROGRAM DESIGN

The design of WFP-funded Enhancing Resilience community labor projects ensures self-targeting. Under the guidance of WFP's implementing partner, Muslim Aid, community members from a nearby village participate in digging a lengthy irrigation canal that will make many nearby fields more productive. Char Fasson, Bangladesh, April 2014.

Photo by Fintrac Inc.

5.1. INTRODUCTION

This chapter provides recommendations for future Title II food assistance programs in Bangladesh that consider best practices to mitigate any negative impact on local markets from distributed transoceanic and locally procured food aid. The recommendations stem from the well-documented fact that food assistance is most likely to have minimal market impact when it is effectively targeted. Targeting concerns the who, when, where, what, and how questions surrounding food assistance interventions; projects properly targeted reach people that need it most, in the form, and at the time the food is most needed.³⁵⁹

Importantly, USAID-BEST provides recommendations to ensure a proposed food assistance program will not result in a substantial disincentive to, or interference with, domestic production or marketing in a specified country (i.e., will comply with the Bellmon Amendment). The extent to which distributed food aid might have such a disruptive effect on production and markets rests fundamentally on whether the proposed food aid represents additional consumption for beneficiaries (i.e., food consumption that would not have occurred in the absence of the food aid distribution program). If food aid transfers exceed a household (HH)'s perceived needs, the beneficiary is more likely to sell the food aid, reduce market purchases of food, and/or increase HH farm sales. Such a response could lower market

prices and thereby reduce local incentives for production and marketing.³⁶⁰

To arrive at the following set of recommendations, the analysis relied on a combination of desk research, including review of food security assessments and program documents; market visits around the country; discussions with donors and Non-Governmental Organizations (NGOs); and interviews with field staff and beneficiaries of food security projects, primarily those with a food or cash transfer component.

5.2. HH FOOD SECURITY

Food availability, access, utilization, and stability form the pillars of food security. In Bangladesh, poverty and utilization are the major constraints to food security.

Lack of access limits HH ability to produce and purchase sufficient food to ensure HH food security. Although numerous reasons account for poverty in the country, the root causes remain underemployment, small and decreasing landholdings for food production, and unpredictable and increasingly frequent environmental disasters, which deplete savings and assets.

359 Barrett, Christopher, 2002, *Food Aid Effectiveness: "It's The Targeting, Stupid"*.

360 The complete distribution methodology for determining the potential impact of distributed food aid is available on the USAID-BEST website: <http://usaidbest.org/other-best-products.aspx>.

SELECT FOOD ASSISTANCE TERMINOLOGY

Local and regional procurement (LRP), cash, and voucher programs are procurement approaches that aim to support local markets by stimulating production and/or marketing of basic goods. In the context of food assistance, LRP typically refers to donor/NGOs purchasing sizeable food tonnages from relatively large market actors; cash and voucher programs generally refer to donor/NGO provision of cash transfers or vouchers to beneficiaries, who then procure small amounts of food and non-food items from vendors in local markets.

Terminology*

Local procurement (LP): Local procurement refers to the in-country purchase of food to reach targeted beneficiaries via direct distribution, cash, or vouchers.

Regional procurement (RP): Regional procurement refers to the purchase of food by donors in a third country for distribution in the recipient country. WFP refers to this term as a triangular purchase.

Conditional cash transfer: Beneficiaries receive cash to purchase items themselves, but on a conditional basis. The conditionality associated with the transfer requires the beneficiary to carry out a certain livelihood activity, or engage in some behavior, such as visiting a health center or attending a training.

Unconditional cash transfer: Beneficiaries receive cash to purchase items themselves. Unconditional cash transfers allow beneficiaries to spend the money according to their own perceived need, with no restrictions on behavior or use of money.

Cash voucher: Beneficiaries receive a voucher that has a cash value. The cash voucher can be redeemed at pre-identified shops, through pre-identified traders, and/or at pre-identified markets. The cash voucher can be exchanged for a range of commodities up to the specific cash value. This mechanism is also referred to as an open voucher because end purchases are not restricted.

In-kind/commodity voucher: Beneficiaries receive a voucher which can be redeemed at pre-identified shops, through pre-identified traders, and/or at pre-identified markets for a range of pre-determined commodities. Commodity vouchers can be exchanged for a fixed value or quantity of selected commodities. This mechanism is also referred to as a closed voucher because the program pre-determines the range of possible purchases. Closed vouchers can also be used for non-food items, such as livestock or agricultural inputs.

Food-for-work/cash-for-work/voucher-for-work (FFW/CFW/VFW): Food/cash/vouchers are provided to workers as wages. The projects are generally community-wide public works.

Food-for-asset/cash-for-asset/voucher-for-asset (FFA/CFA/VFA): Food/cash/vouchers are provided to workers as wages for community-based public works projects that create community assets.

Food-for-training/cash-for-training/voucher-for-training (FFT/CFT/VFT): Food/cash/voucher are provided to beneficiaries as compensation for participating in skills-based and capacity building trainings.

* Cornell University, 2010, *LRP Market Monitoring Training, Introduction to LRP and CaLP*, 2012, *Cash Transfer Programming*.

Most Title II development food assistance programs include transfers for maternal and child nutrition activities and FFW/CFW activities, on a conditional basis.

To cope with food insecurity, HHs employ a myriad of coping mechanisms (for details see Annex 2), which often include decreasing the quantity of food consumed and selling off assets.

Poor utilization of HH food resources greatly exacerbates food insecurity, especially for the most vulnerable Bangladeshis, including women of reproductive age and young children. Poor HHs lack a regularly diverse diet and rarely consume protein-rich and vitamin and micronutrient-rich foods.³⁶¹ Rice is the main staple and accounts for, on average, 71 percent of total dietary energy intake.³⁶² Many people remain deficient in vitamin A, iron, zinc, and iodine.³⁶³

Moreover, unhygienic multiuse of water and infrequent hand washing lead to high rates of diarrheal disease, and other health

and nutrition issues.³⁶⁴ According to the 2011 Demographic and Health Survey (DHS) only 34.4 percent of the population has access to improved sanitation.³⁶⁵ The traditional hierarchy associated with food consumption means that husbands, in-laws, brothers, and children all eat and receive access to healthy foods before young wives and mothers. This practice, though slowly changing, means that child-bearing women often do not receive adequate nutrients. Early marriage and pregnancy, illiteracy, and minimal knowledge of nutrition perpetuate food habits that are especially detrimental to breaking the vicious cycle of small mothers giving birth to small babies. The 2011 DHS reports 41 percent of children under age 5 (U5s) are stunted and 36 percent are underweight.³⁶⁶

Chapter 2 outlines in greater depth the food availability, access, and utilization issues, with particular emphasis on Bangladesh

361 IFPRI, April 2013, *The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey*.

362 IFPRI, April 2013, *The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey*.

363 ICDDR,B, January 2013, *National Micronutrients Status Survey 2011-12*.

364 Personal communication with community health workers, April 2014.

365 NIPORT, Mitra Associates, et al, January 2013, *Bangladesh Demographic and Health Survey 2011*. Improved sanitation technologies include flush toilet, ventilated improved pit latrine, traditional pit latrine with a slab, or composting toilet.

366 NIPORT, Mitra Associates, et al, January 2013, *Bangladesh Demographic and Health Survey 2011*.

food production, consumption, and marketing patterns. In short, Bangladesh enjoys dynamic well-prepared food markets which are capable of responding to consumer demand for staple foods. As noted above, poverty and utilization are the main hindrances to increased food consumption and improved dietary diversity for vulnerable populations.

5.3. ACTIVITY TYPE

This section covers anticipated activities and modalities for a new Title II program in Bangladesh and especially focuses on those components that include a food or cash transfer. Activity type can affect the market since activities relate to the targeted beneficiaries, and subsequently the appropriate choice of commodity for any food assistance transfer.

USAID-BEST anticipates a new Title II program will continue to focus and improve on objectives related to: 1) MCHN; 2) disaster risk reduction (DRR) and resilience; and 3) livelihoods. Despite significant strides in these objectives from donors and NGOs, the next round of Title II programming should further support these types of activities for more focused management and implementation. Additionally, the design of all activities should include a thorough analysis of gender considerations and, where appropriate, women empowerment and gender interventions.

5.3.1 MCHN

Title II partners in Bangladesh should continue to follow the preventing malnutrition in children under 2 approach (PM2A), which targets all PLW and children under age 2 (U2s) in the 1,000 day window of opportunity within a geographic area, regardless of wealth or health status, to improve the health and nutrition of mothers and babies. The USAID-BEST team heard across the board that all mothers regardless of their HH income



Photo by Fintrac Inc.

This mother signs a registration form that the NGO maintains to track food aid distributions. To receive a monthly food aid ration, mothers in this program must attend at least one training and take their children under 2 to growth monitoring sessions. Khulna, Bangladesh, April 2014.

status need additional training and education in health and nutrition-related topics.³⁶⁷

USAID-BEST also suggests MCHN activities should contain a strong health and nutrition behavior change and communication (BCC) training component to ensure any transfers do in fact increase consumption in mothers and U2s. Awardees should review the final results from the WFP/International Food Policy Research Institute (IFPRI) Transfer Modality Research Initiative (TMRI), which should be released in late 2014. Relative to typical Title II MCHN programs, the TMRI intervention involves much more intensive BCC training (weekly, rather than monthly or every other month), and much larger food transfers.

Growth monitoring promotion (GMP). Since Title II geographic targeting is based heavily on stunting rates, awardees should incorporate regular, mandatory weight and height monitoring into their MCHN activities to better align with their criteria and objectives in the next cycle. Title II programs should mandate monthly weight monitoring, and regular height monitoring (e.g., monthly or quarterly depending on age) as such an emphasis on these growth indicators teaches mothers the value of measuring these numbers for their child's development.

Awardees should consistently chart these growth indicators and not just at a baseline or end line for program impact purposes. The GoB strategy is to conduct growth monitoring at EPI (Extended Program on Immunizations) sites or at the community health clinic, but the GoB does not have sufficient trained staff and does not always prioritize growth monitoring.³⁶⁸ Title II could collaborate with the Ministry of Health (MoH) to improve government capacity by procuring equipment³⁶⁹ and conducting GMP trainings. Additionally, Title II partners should work with the MoH to streamline national growth monitoring cards. At present, each Title II partner uses their own card with their own logo which is not only inefficient but a lost opportunity for MoH capacity building. For tracking attendance and rations, Title II partners could have a separate and independent document with their own program specific information and logos.

Family Involvement. Cultural norms prohibit many women from traveling to public places unless accompanied by a male family member;³⁷⁰ and therefore the task of food shopping in the majority of HHs falls to men. Title II MCHN programming should strive to incorporate men into BCC trainings and HH visits because ensuring the involvement of men will more likely lead to effective adaptation of the BCC messaging at the HH and community level. In addition, certain HH chores and

367 Personal communication with Title II beneficiaries, WFP beneficiaries, NGO staff, and health professionals, April 2014.

368 Personal communication with Title II MCHN staff and health professionals, April 2014.

369 BRAC is involved in the local construction of wooden height scales for BDT 250 each (about US\$3.34 per scale, as of April 2014).

370 While the observation of these cultural norms varies by village and family, in general female mobility is constrained in Bangladesh.



Photo by Fintrac Inc.

Regular growth monitoring is essential to track infants' development. In this village, weight monitoring promoted by the Title II partners is conducted at the health center for children under age 2. Barguna, Bangladesh, April 2014.

decision-making power that may affect food consumption decisions fall to other family members (e.g., mothers-in-law) and therefore awardees should consider also including these family members in program activities.

5.3.2 DRR and Resilience

Cyclones and floods consistently wreak havoc on rural communities and poor HHs. To ensure HHs remain prepared for the possibility of these natural disasters, Title II partners use some combination of preparedness and response training and labor-based projects (e.g., food-for-work (FFW) and cash-for-work (CFW)) to construct cyclone shelters, livestock shelters, ground raising, embankments, and other defenses. Although such projects primarily take place in the dry season, the activities could very likely continue under a food-for-training model to further strengthen community resilience to climatic shocks without creating negative market impact.

5.3.3 Livelihoods

In the next Title II cycle potential activities under the livelihood component could include NGO oversight to establish village savings and loan (VSL) groups. These village level informal banks assist HHs to increase assets, create income generating activities, and sustain livelihoods. Moreover, in the absence of formal financial institutions, VSL groups encourage savings and loans and often act as a vehicle for basic financial literacy training which arms HHs with the ability to make more informed decisions. Vouchers-for-inputs (e.g., seeds, tools, feed)

offer another opportunity to improve livelihoods by connecting HHs to vendors who sell quality seeds.³⁷¹

5.4. GEOGRAPHIC TARGETING

Current practices in Bangladesh. Title II development programs generally target geographic areas based off specific indicators associated with chronic food insecurity (e.g., poverty incidence and stunting prevalence) and the presence of existing donor-funded food security projects. In Bangladesh, the majority of donors and NGOs rely on a mapping exercise jointly produced by the Bangladesh Bureau of Statistics, World Bank, and WFP³⁷² to inform their geographic targeting. To produce the maps, researchers utilized 2005 sub-district (*upazila*) level poverty data derived from applying the small area estimation technique. These *upazila* poverty data³⁷³ use the 2005 Household Income Expenditure Survey (HIES, 2005); the 2001 Population Census; and the 2004 Sample Census.

To inform its geographic targeting, WFP then overlays other relevant indicator data (e.g., DHS malnutrition data) on the poverty data map to highlight priority areas. USAID Food for Peace projects rely on this same mapping exercise to inform their district and *upazila* selection. Researchers are currently updating this mapping with new data from the 2010 HIES and 2011 Population Census.³⁷⁴

Recommendations for new Title II cycle in Bangladesh.

For a new cycle of Title II programming, USAID-BEST recommends the projects increase their geographic concentration so as to strengthen connections to and collaboration with GoB staff because stronger relationships hold the promise of greater sustainability of impacts. Title II partners must consider the administrative structure of divisions, districts, *upazilas*, unions, wards, and villages; and appreciate that government ministries have operations spread among different districts and *upazilas*, and often limited staff coverage, which makes coordination and collaboration more difficult the greater the number of administrative and technical GoB staff involved. Programmatic quality could be enhanced by consolidating future activities within each project into fewer districts, and covering 100 percent of all HHs eligible for Maternal Child Health and Nutrition (MCHN) in the same *upazilas* as other program activities.

In selecting target districts and *upazilas*, Title II awardees should consider the Food For Peace mandate to “build resilience to mitigate and prevent food crises and reduce the future need for emergency food aid.”³⁷⁵ Title II should therefore consider targeting *upazilas* with high rates of poverty and malnutrition

371 Merchants in the Nobo Jibon program reported an increase in sales and a new client base while the beneficiaries reported increased yields, awareness of the value of good seeds, and established relation with merchants during the April 2014 field visit.

372 World Bank, 2009, *Updating Poverty Maps of Bangladesh: Key Findings*.

373 Personal communication with WFP/Dhaka, April 2014.

374 Personal communication with WFP/Dhaka, April 2014.

375 USG, January 2014, *Agricultural Act of 2014*.

but not excluding those with moderate poverty or moderate malnutrition, especially those living in areas especially vulnerable to climatic shocks, so as to prevent HHs in those areas from falling into extreme poverty.

Overlap of Title II in the Feed the Future Zone. Despite the need in the southern region where Feed the Future operates, Title II MCHN activities combined with Feed the Future MCHN projects could potentially overburden beneficiaries if the activities are not well-coordinated. Since the two initiatives both target pregnant and lactating women (PLW) and children under two years of age (U2s), future Title II awardees need to consider how to effectively combine Title II MCHN efforts with Feed the Future MCHN programming. At present, Feed the Future MCHN projects do not incorporate food transfers but they do target the same beneficiary population groups and these projects are located in areas where Title II does not currently operate. Should a new Title II program cycle target different geographic locations increased coordination between Feed the Future and Title II will be required to consider geographic targeting and beneficiary overlap.

Chittagong Hill Tracts (CHT) Region. Based off conversations in April 2014 with CARE, Save the Children, UNDP, and WFP, the USAID-BEST team consolidated takeaways and lessons learned on programming in the CHT region. The USAID-BEST team was not able to visit the CHT region. At present, UNDP manages most development operations in this area. Given the bureaucratic hurdles of working with numerous ministries, cultural and linguistic barriers, unrest and insecurity for staff, malaria, remoteness, and perhaps most importantly, the uniqueness of the region as compared to the rest of the country, operations in the CHT face special challenges. Moreover, due to the different political and cultural structures, program design and modalities that fit well in the rest of Bangladesh would need to be adapted to accommodate the CHT operational environment.³⁷⁶

Despite the complexity of working in this region, the area does represent one of great need. According to a 2013 HKI assessment in select unions of the CHT, 77 percent of HHs had poor or borderline food consumption and the number of HHs suffering from food deficits is twice as high compared to the nation as a whole. Stunting rates in the HKI assessment unions of the CHT are well above the WHO threshold for very high prevalence.³⁷⁷ Moreover, when looking at education levels, 64 percent of individuals over 15 years of age in assessed unions had no schooling compared to just 31 percent nationally.³⁷⁸

Given these conditions, Title II assistance, or similar programming, could greatly help improve the well-being of those

376 Personal communication with UNDP, WFP, Save the Children, and CARE, April 2014.

377 The HKI assessment does not provide a numerical estimate for prevalence of stunting in the CHT.

378 HKI, September 2014, *Food Security and Nutrition Assessment in Selected Unions of the CHT*.

living in the CHT region. If future awardees operate in this region, partners would need to address the challenge of working with local NGOs that may not be accustomed to the large-scale programming of Title II. However, Title II should consider in their geographic determination that a single five-year programming cycle might not allow sufficient time to fully understand the operational environment and the political and cultural context specific to CHT; without this knowledge, awardees may struggle to establish systems for long-term impact. The USAID-BEST team suggests potential awardees considering programming in the CHT region review dietary patterns and marketing channels early in the program design phase to better understand the role of food aid in relation to local diets and local markets.

5.5. HH AND INDIVIDUAL TARGETING

This section discusses current Title II targeting practices for activities with a food transfer component, and then provides recommendations on beneficiary selection in future programming.

Targeting the right person with the right resources to meet program objectives minimizes any potential market distortions or negative impact on livelihoods. Providing food aid to a significant number of people who do not need it is a waste of limited time, money, and food resources.

Improper targeting that adversely affects the market is unlikely in the case of Bangladesh because of small food aid tonnages relative to the size of the wheat, pulse, and edible oil markets. Furthermore, markets are well integrated and numerous to accommodate the large population so any price effect, which could result from poor targeting, will dissipate. Still the awardees should target in a transparent and responsible manner.

No official standard exists for targeting HHs or individuals in Bangladesh. For many interventions, especially donor-funded GoB projects, the Chairman of the *Union Parishad*³⁷⁹ and its members apply a list of criteria to HH and individual targeting. According to many stakeholders, the *Union Parishad* often selects beneficiaries based a promise of votes or on personal relationships rather than the defined criteria.³⁸⁰ To offset any GoB arbitrary decision making, NGOs try to incorporate their own criteria for corroboration. Each Title II awardee has selected their own criteria for reaching and involving beneficiaries into the programs.

5.5.1 Current Targeting Practices for MCHN Activities

All three Title II partners use a straightforward PM2A approach that selects beneficiaries off predefined indicators: pregnancy status and infant age. However, SHOUHARDO II employs community based targeting (called a well-being analysis) for selecting the poor and extreme poor who participate in their

379 The Union Parishad is the smallest government unit in rural Bangladesh.

380 Personal communication with key stakeholders including staff of GoB, UN agencies, donor agencies, as well as current GoB safety net beneficiaries and non-beneficiaries, April 2014.



Photo by Fintrac Inc.

This community health facilitator counsels mothers on their children's health and nutrition. For children who are severely acutely malnourished, this health facilitator conducts home visits. Barguna, Bangladesh, April 2014.

MCHN (non-PM2A) component.

Once partners select beneficiaries, some projects impose a conditionality for the food transfer.

Nobo Jibon. Those receiving the food ration must attend growth monitoring of U2s at the EPI site and at least one antenatal care (ANC) services. Nobo Jibon encourages participation in the courtyard health/nutrition (BCC) training sessions held every other month but does not require attendance.³⁸¹

PROSHAR. Mothers must receive three ANC services throughout the course of her pregnancy, attend monthly growth monitoring of U2s, and participate in at least one of the two monthly BCC meetings.³⁸²

SHOUHARDO II. SHOUHARDO II does not tie any conditionality to the food transfer. Regardless of behavior or participation in trainings or clinic visits, all beneficiary mothers receive the monthly food ration as an incentive.³⁸³

5.5.2 Current Targeting Practices for FFW/CFW

Nobo Jibon. The village development committee (VDC), field facilitator, and *Union Parishad* members prepare an initial list of beneficiaries based off the following criteria: Cyclone Mahasen affected individuals, interested poor people, female-headed HHs, and individuals age 18-60 not in HHs receiving PM2A rations. Nobo Jibon does not require the beneficiary to have a national ID card. Moreover, women must comprise at least 50 percent of the final targeted group. A DRR technical officer and field

381 Personal communication with Nobo Jibon, April 2014.

382 Personal communication with PROSHAR, April 2014.

383 Personal communication with SHOUHARDO II, April 2014

facilitator confirms the list with field visits before reporting to *Union Parishad* members for the conclusive determination of beneficiaries.³⁸⁴

PROSHAR. PROSHAR holds a community sensitization meeting to communicate the labor projects and compensation (wage rates). In a second meeting, community members, regardless of poverty status, present their national ID card and residency in that village to participate. PROSHAR requires that beneficiaries hold a national ID card because banks require it for opening an account. The cash transfer component is done via mobile banking which requires opening an official bank account. As a national registration system still remains haphazard, therefore some beneficiaries without identification are then excluded. If demand exceeds the required number of workers for a labor project, PROSHAR puts the potential participants' names in a hat and carries out a lottery to select the beneficiaries.³⁸⁵

SHOUHARDO II. The VDC selects the beneficiaries eligible to participate using community-based targeting exercises centered on a well-being analysis that considers a variety of criteria, such as land and livestock ownership. SHOUHARDO II does not require the beneficiary to have a national ID card.³⁸⁶

5.5.3 Recommended Targeting Practices

MCHN. A new Title II PM2A program should continue to use indicator-based targeting. The PM2A approach for MCHN activities results in a straightforward targeting process because the program selects beneficiaries off predefined indicators - pregnancy status and infant age. This approach does not require the Union Chairman to rank wealth, the community to rank assets, or individuals to hold a national ID card. Once the Title II awardee selects the village, all PLW and U2s become automatically eligible contingent upon verification from a community health worker. Additionally, the awardees should continue to impose a conditionality to receive the transfer. A moderate level of conditionality will ensure participation while not overburdening beneficiary mothers.

FFW/CFW/FFT. A new Title II project should use a self-targeting approach for labor-based projects to attract the most needy. Typically, the design of the compensation and type of labor projects attracts only the most food insecure and discourage participation of other, well-off groups. Since this program differs in objective with PM2A it does not necessarily need to exclude PM2A beneficiaries. Program design should adapt interventions as necessary to ensure that individuals without national ID cards are not excluded from participation.

As much as possible, Title II awardees should consider streamlining the targeting process so as to conduct the outreach and selection of beneficiaries for all SOs at the same time. This coordinated effort will ensure a more transparent and organized

384 Personal communication with Nobo Jibon, April 2014.

385 Personal communication with PROSHAR, April 2014.

386 Personal communication with SHOUHARDO II, April 2014.

system for the awardees, implementing partners, local GoB offices, and beneficiaries.

5.6. SEASONAL TARGETING

Agricultural production and labor opportunities do shift slightly based on lean and harvest months (see below). Most projects can occur on an annual basis and programs can adjust activities for weather conditions.

Seasonality of consumption. In rural areas, per capita food consumption decreases during the lean season. The length and timing of the lean season varies by area. Overall, food consumption patterns do not vary much during the year.

Seasonality of marketing. Poor consumers (and typical Title II beneficiaries) heavily rely on the market for food purchases and are therefore subject to rising and falling prices of staple foods. Since Bangladesh is a net importer of most foods, with the exception of rice, the country is vulnerable to international price fluctuations. Despite this vulnerability, Bangladesh has managed so far to maintain consistent imports to meet supply and ensure that markets can stock the main staples year round.

Seasonality of production. Although HHs become busy during select months of the year depending on the crop and the location, HHs find it difficult to work in fields if weather conditions hinder production (e.g., monsoons flood croplands).

Seasonality of labor. Poorer HHs with small plots of land and the landless, whom primarily rely on the market for food purchases and labor opportunities, represent typical Title II beneficiaries participating in labor projects. During non-production months when on-farm labor decreases, and also during monsoon season, these HHs suffer as outdoor labor opportunities diminish.



Photo by Fintrac Inc.

PROSHAR hires community members to divide the food aid into rations for the beneficiaries. Mothers travel to this food distribution site to receive wheat grain, yellow split peas, and vegetable oil in exchange for their participation in the program. Khulna, Bangladesh, April 2014.

Recommendations for labor projects. Title II partners should schedule labor projects (FFW/CFW) during the non-rainy months (December-May) as the weather is more suitable for outdoor construction projects. In monsoon season, Title II could conduct FFT and/or CFT sessions on topics of relevance to both DRR and livelihoods. WFP, for example, utilizes July-December for trainings on disaster preparation as well as education sessions on health, nutrition, life skills, and livelihoods. The exact months of activities may differ slightly throughout the country based on precipitation and production patterns.

Recommendations for seasonal food aid rations. As food consumption patterns typically stay consistent throughout the year, Title II partners should not adjust MCHN food aid rations during select months; even within the MCHN program, the HH ration should maintain distributions year round. As with MCHN activities, to enhance targeting of PLW especially, MCHN transfers should be provided throughout the year without seasonal adjustments. The HH ration should be consistent throughout the year instead of changing during the lean and non-lean seasons. Shifting quantities can confuse beneficiaries and cause HHs to dip into the PLW and U2 ration since poverty and food deficits for typical Title II HHs are generally annual and on-going in Bangladesh. Additionally, changes and deductions in ration size provide unnecessary complications to HH expenditure planning.

5.7. CURRENT RATION SIZES

The following tables show food aid ration compositions, including beneficiary, commodity type, quantity, and frequency for Title II and WFP MCHN and FFW projects. The Title II food aid volumes and ration sizes are reflective of the current multi-year assistance program cycle, which runs from 2010-2015. At present, all three Title II programs distribute the same transoceanic in-kind food aid (wheat grain, pulses, and refined vegetable oil (RVO)) but the quantities differ greatly.

The rations were designed to fill an estimated caloric gap of the beneficiaries, according to each of the current Title II partners.³⁸⁷ SHOUHARDO II distributes soft white wheat, while Nobo Jibon and PROSHAR distribute hard red winter (HRW) wheat in their programs. SHOUHARDO II and Nobo Jibon distribute yellow split peas (YSP)s, and PROSHAR distributes lentils (regular brown variety).

According to AMEX Title II data, from FY10-FY14, a total of 54,107 MT of wheat grain, 6,977 MT of vegetable oil, 4,666 MT of yellow split peas (YSP), and 1,521 MT of lentils were imported for direct distribution. Based on market research and review of targeting practices, the USAID-BEST team does not believe that these Title II commodity levels have a substantial negative market impact.

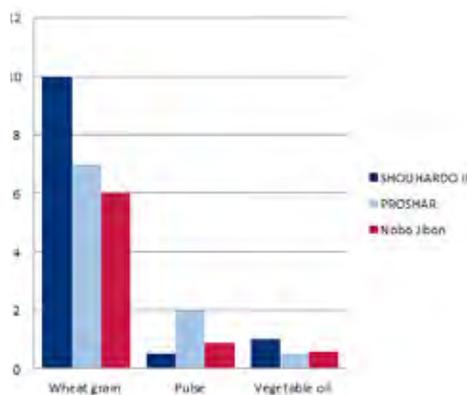
³⁸⁷ Personal communication with current Title II awardees, April 2014.

Table 31. Food Aid Ration (kg) for Title II MCHN Program

Program	Beneficiary	Wheat grain	Pulse	Vegetable oil	Frequency
SHOUHARDO II PM2A & MCHN	PLW/ PEP PLW	10	0.5	1	Monthly
PROSHAR PM2A	PLW	7	2	0.5	Monthly
Nobo Jibon PM2A	PLW	6	0.9	0.6	Monthly
SHOUHARDO PM2A & MCHN	U2s/PEP U2s	10	0.5	1	Monthly
PROSHAR PM2A	U2s	3	0.5	0.5	Monthly
Nobo Jibon PM2A	U2s	2.25	0.45	0.3	Monthly
SHOUHARDO non-lean	HH	0	0	0	n/a
PROSHAR non-lean	HH	0.5	1	0.5	Monthly
Nobo Jibon non-lean	HH	0	0	0	n/a
SHOUHARDO lean	HH	0	0	0	n/a
PROSHAR lean	HH	15	3	1	Select months
Nobo Jibon lean	HH	6.75	0	0.45	Select months

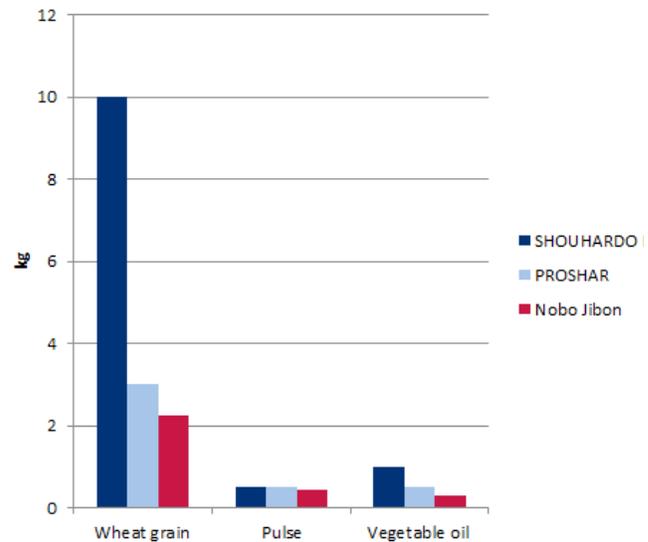
Source: SHOUHARDO II, PROSHAR, and Nobo Jibon staff, April 2014. PEP = poor and extreme poor.
 Note: Nobo Jibon discontinued HH lean season rations in 2012. The PROSHAR lean season rations are distributed during select months. The months vary by upazila and are supposed to best represent the lean months in that area.

Figure 44. Title II Monthly Ration (kg) for PLW



Source: Created by USAID-BEST using data from SHOUHARDO II, PROSHAR, and Nobo Jibon staff, April 2014.
 Note: This ration starts at three months of pregnancy until the child is six months of age.

Figure 45. Title II Monthly Ration (kg) for U2s



Source: Created by USAID-BEST using data from SHOUHARDO II, PROSHAR, and Nobo Jibon staff, April 2014.
 Note: This ration starts at six months of age until the child is two years of age.

5.7.1 MCHN

As the following table and figures show, the quantities for the PLW and U2 rations vary by program. In particular, the quantity of carbohydrate (wheat grain) distributed for U2s varies greatly across awardee.

Table 32. Food Aid Ration (kg and g) for WFP IMCN Program

Beneficiary	Wheat soy blend (WSB)+ (Super Cereal)	WSB++	Pulse	Vegetable oil
MAM PLW	3.15 kg			Bi-weekly
MAM PLW			280 g	Bi-weekly
MAM U5s		3 kg		Bi-weekly

Source: WFP/Khulna office, April 2014.

WFP also provides a food ration to moderately acute malnourished (MAM) PLW and U5s as part of its Improving Maternal and Child Nutrition (IMCN) MCHN program. To identify MAM cases, WFP uses MUAC, the mid-upper arm circumference measurement as the screening method. The following table summarizes the commodity breakdown of the ration by beneficiary.

WFP staff mix the WSB+ (imported from Turkey) and vegetable oil (imported palm oil from the Indonesia) at the final distribution point (generally health centers) before distributing to PLW. With WSB++, WFP receives this item prepackaged and imported from Italy and Belgium. Health professionals recommended usage for treatment is 225 grams for WSB+ and 200 grams for WSB++ per serving. At this recommended usage quantity, the ration lasts two weeks.



Photo by Fintrac Inc.

The intensity of BCC sessions is notable under IFPRI's TRMI. In this village in Rangpur district, mothers are encouraged to evolve from student to teacher, to share the knowledge they've gained about good nutrition and hygiene habits. Rangpur, Bangladesh, April 2014.

Additionally, as part of its research with IFPRI on the effectiveness of different transfer modalities, WFP distributes food rations to mothers with children 6 to 24 months old.³⁸⁸ Over the course of two years, mothers in ultra-poor HHs in seven districts across Bangladesh receive one of five possible transfer packages: 1) food rations only; 2) cash payments only; 3) food and cash payments; 4) food rations and BCC; and 5) cash payments and BCC.³⁸⁹ Food rations are distributed in pre-packaged, pre-labeled, and pre-weighed bags. The table below shows the quantities of food distributed in this project.

Table 33. Food Aid Ration for WFP TMRI MCHN Program

Treatment arm	Beneficiary	Rice (kg)	Lentil (kg)	Vegetable oil (liter)	Cash (BDT)	Frequency
Food	Poor HH w/ child 6-24 months	30	2	2		Monthly
Cash	Poor HH w/ child 6-24 months				1500	Monthly
Food + cash	Poor HH w/ child 6-24 months	15	1	1	750	Monthly
Food + training	Poor HH w/ child 6-24 months	30	2	2		Monthly
Cash + training	Poor HH w/ child 6-24 months				1500	Monthly

Source: WFP/Khulna office, April 2014.

WFP locally procures parboiled rice and bags it in 15 kg quantities; WFP also purchases local lentils (*mushur dal*) and

388 IFPRI and WFP selected beneficiaries based off the following criteria: poor HH (looking at poverty indicators), at least one child 6-24 months of age, and existing participation in other safety net projects.

389 See Chapter 3 for more details on this project.

packages them in 1 kg bags. The only item imported is vegetable oil (processed palm) from Indonesia that is pre-bottled into 1 liter bottles.³⁹⁰ For cash transfers, WFP uses mobile money technology. BCC trainings occur weekly (four times more frequently than the typical Title II MCHN program).

Imported Ready-To-Use Therapeutic Food (RUTF). Save the Children and ACDI/VOCA imported RUTFs for use in Nobo Jibon and PROSHAR programming, respectively.

Nobo Jibon imported 20 MT of a peanut-based RUTF from India (eeZee Paste) for community health clinics to distribute in their community management of acute malnutrition (CMAM) activities. As of April 2014, Nobo Jibon reported having used 8-9 MT and expects to complete distribution by January 2015.³⁹¹

PROSHAR imported 32.7 MT of a peanut-based RUTF in Implementation Year 3 for the treatment of acute malnutrition. PROSHAR was not able to use all the RUTF by the best-if-used-by date because supply exceeded the number of malnutrition cases requiring treatment. While possible that PROSHAR did not identify enough acutely malnourished children, further research indicated that the initial estimate of acute malnutrition was too high.³⁹² Given the excess of supply, PROSHAR identified Accion Contre La Faim (ACF) as a potential recipient of the remaining RUTF. Reportedly, ACF had a high need at that time in their treatment programs and did not have sufficient resources to import RUTFs. After discussions with the Ministry of Disaster Management PROSHAR transferred the RUTF to ACF under the condition that ACF only distributes the RUTF to Bangladeshi children, although ACF also works with Rohingya children.³⁹³

NGOs select to minimize the number of RUTF importations because going through the import process requires onerous paperwork to fulfill GoB documentation requirements. However, fewer purchases result in the NGOs procuring larger quantities at one time and then having to rely on in-country storage as they distribute. Therefore, procuring locally produced RUTFs would allow NGOs to purchase smaller lots, in addition to support local market development. Details on local procurement options for RUTFs are available in Chapter 3.

USAID-BEST recommends that new Title II programs take the lessons learned from the efforts of current awardees to identify and treat acute malnutrition. In assessing the inclusion of CMAM, awardees should consider program objectives and the operating context as well as the concern that Title II programs can become stretched too thin as they try to incorporate numerous activities and interventions into one program.

390 Observation in WFP/Khulna warehouse and visits to food aid distribution sites, April 2014.

391 Personal communication with Nobo Jibon staff, April 2014.

392 Personal communication with PROSHAR staff, April 2014.

393 Personal communication with PROSHAR staff, April 2014 and Moneval Solutions, March 2013, *Mid-term Review for the PROSHAR Program in Bangladesh*.

5.7.2 FFW/CFW

The Title II FFW/CFW projects distribute differing food aid rations and cash transfer amounts for participation in their activities.

Table 34. Food Aid Ration (kg) and Cash Transfer (BDT) Title II FFW/CFW Program

Program	Beneficiary	Wheat grain	Pulse	Vegetable oil	Cash	Frequency
SHOUHARDO II	VDC selected beneficiaries	0	0	0	200*	Daily
PROSHAR	Self-selected individuals	5	0.7	0.8	250	Daily
Nobo Jibon**	Program selected interested individuals	3	1	0.75	0	Daily

Source: SHOUHARDO II, PROSHAR, and Nobo Jibon staff, April 2014. Beneficiary selection criteria are noted above under HH and Individual Targeting.

*Before April 2014, the transfer was 175 BDT per day.

**Ration size and labor hours as of April 2014. Ration and hours have varied over the past four years.

Additionally, the amount of work required varies by awardee.

Table 35. Labor Division (hours, days), Title II FFW/CFW Program

Program	Hours per day	Days
SHOUHARDO II	8	15-30 per month
PROSHAR	6	6 days per week, 5 days of FFW and 7 days of CFW Designed for a work cycle of 12, 24, or 36 days
Nobo Jibon	6	20 days per month

Source: SHOUHARDO II, PROSHAR, and Nobo Jibon staff, April 2014.

Besides Title II labor projects, the WFP Enhancing Resilience (ER) project provides food and cash to beneficiaries during a labor cycle of 20 days based off volume output per day for a total of 100 days (December-May). Additionally, during the rainy season, WFP offers food as payment for a three-hour training session held one day per week over six months (July-December). The following table details the ration size and the cash transfer.

Table 36. Food Aid Ration (kg) and Cash Transfer (BDT), WFP ER FFW/CFW Project

Enhancing Resilience Cycles	Rice	Pulse	Vegetable oil	Cash	Frequency
Labor cycle	40	4	2	1,160	Monthly
Training cycle	22.5	0	0	652.5	Monthly

Source: WFP/Khulna office, April 2014.

Beneficiary Preferences. The majority of the MCHN beneficiaries interviewed during the April 2014 field visit reported a preference for what they are already receiving (mostly food aid rations), as compared to any hypothetical alternative.³⁹⁴ This preference for the status quo is presumably because beneficiaries do not want to risk losing the assistance. However, the majority of the beneficiaries for the labor-based projects reported a preference for food and cash, whether or not they are already receiving this combination.³⁹⁵ MCHN beneficiaries did mention a belief that Title II food aid is more nutritious than what is available in the market. Although this assumption is true for vegetable oil because the Title II oil is fortified, Title II wheat grain, YSP and lentils do not have any added nutrients over what is available in local markets. It is unclear where this notion of healthier Title II rations stemmed from, but could be possibly due to the unique packaging, misinterpretation of nutrition messaging, or miscommunication from the partners to the beneficiaries.

5.8. RECOMMENDATIONS FOR COMMODITY SELECTION

The quantity and type of food selected for distribution in a development program greatly affects incentives to produce and purchase food on the market and therefore could influence market prices. If the food aid ration exceeds perceived needs, the HH will likely decrease market purchases and/or sell the food aid.

USAID-BEST recommends future Title II partners design rations (both the ration composition and quantity of food transferred) to better reflect consumption patterns and programmatic options. The current Title II programs all distribute wheat grain, YSP, and RVO but the quantities differ without apparent justification. Moreover, despite the very distinct objectives of MCHN and FFW (labor) activities, these programs provide the same commodities in the ration. For the new cycle, awardees should design rations for the nutrition and labor-based objective and activities separately. For MCHN programming, the nutritional content of foods and their ability to meet the special nutritional needs of PLWs and U2s should dictate the type of ration selected. Labor activities, conversely, have no specific nutrition objective; instead, awardees should determine commodities and ration size so as to ensure self-targeting of the FFW activity.

5.8.1 Food Assistance Tools

Based off the research of agricultural markets in Chapter 2 and the review of initiatives to fortify local staple foods and develop specialty nutrition products in Chapter 3, the following table summarizes the commodity options that are available as of April 2014. The subsequent table provides recommendations for inclusion of each commodity option in the next Title II cycle.

³⁹⁴ Personal communication with beneficiaries of PROSHAR, Nobo Jibon, SHOUHARDO II, WFP IMCN, and WFP TMRI.

³⁹⁵ Personal communication with beneficiaries of PROSHAR, Nobo Jibon, and WFP ER, April 2014.



Photo by Fintrac Inc.

In the WFP IMCN project, Super Cereal plus (WSB++) is provided to acutely malnourished children under age 5. The Super Cereal plus is provided in a health clinic setting, and the package is designed to last two weeks. Satkhira, Bangladesh, April 2014.

From a market perspective, USAID/Bangladesh and future Title II awardees should note they can incorporate a myriad of food options into their MCHN and FFW rations, but they should seriously consider the program objectives, staff capacity to manage procurements, and cultural context when designing and selecting the appropriate rations and transfers.

For the purposes of these tables, transoceanic in-kind refers to traditional Title II food aid shipped from the US and distributed in Bangladesh. Donor local procurement refers to NGOs procuring a large quantity of food on the Bangladeshi market from imported and/or local production, for distribution in Bangladesh. Donor regional procurement refers to NGOs procuring a large quantity of food in a country within the region (e.g., India or Malaysia), for distribution in Bangladesh.³⁹⁶ Cash transfers and commodity vouchers refer to beneficiaries buying the foods in their local markets. Importantly, for the purposes of

Table 37. Availability for Procurement by Commodity and Modality

Commodity	Trans-oceanic in-kind	Donor local procurement	Donor regional procurement	Cash transfers	Commodity Vouchers
Wheat grain	√	√	√	√	√
White flour (fortified), US	√	x	x	x	x
Whole wheat flour (fortified)	x	√*	x	x	x
Milled rice, coarse	x	√	√	√	√
Milled rice, US	√	x	x	x	x
Vegetable oil, fortified	√	x*	x	x	x
Black gram	x	√	x	√	√
Chick pea (garbanzo)	√	x	x	√	√
Grass pea	x	√	x	√	√
Lentil, red	x	√	√	√	√
Lentil, Regular variety	√	x	x	x	x
Mung bean	x	√	x	√	√
YSP	√	x	x	√	√
Micronutrient powder (MNP)	x	√	x	√	√
WSB+ & ++	√	x	x	x	x
Rice, bio fortified	x	◇	x	x	x
Rice, fortified at soak	x	◇	x	x	x
Rice, golden rice	x	◇	x	x	x
Rice, coarse and fortified, pushhi chaal	x	◇ √*	x	x	x
RUCFS - local production, animal based	x	◇	x	x	x
RUCFS - local production, plant based	x	◇	x	x	x
RUTF - local production, animal based	x	◇	x	x	x
RUTF - local production, plant based	x	◇	x	x	x

Source: Created by USAID-BEST.

Note: The bottom eight products are still in the research stage. The status of each is discussed in Chapter 3.

√ = available

x = not available as of April 2014

◇ = in research stage

* = see following paragraph

396 The USAID-BEST team did not visit regional markets; therefore these recommendations stem from interviews with market actors in Bangladesh and review of literature and data during desk research.

this table, a check mark next to cash or commodity voucher is intended to convey that a beneficiary could easily purchase the food in their local market (i.e., the good is widely available) if given a cash transfer or commodity voucher.

Whole wheat flour (fortified) contains an asterisk in the table because at present the capacity to mill and fortify does exist in Bangladesh, but the fortified whole wheat flour is not available on the commercial market and donors are not demanding production. Title II could work with the mills to reactivate production (see Chapter 3 for details of previous wheat fortification initiatives). Fortified vegetable oil is available in Bangladesh but makes up only approximately 40 percent of current marketed supply of soybean and palm oil. Fortified vegetable oil is rarely available in rural markets. A recent vegetable oil fortification law has been adopted in Bangladesh. Depending on compliance and the speed of implementation the availability of fortified oil should increase. Chickpeas and YSP are only available in small quantities around the country so it would be difficult to aggregate a large quantity for a donor purchase. However, beneficiaries could feasibly purchase these pulses via cash transfers or commodity vouchers. Such small purchases would have minimal market impact, especially given that consumers view YSP as an inferior substitute to red lentils and infrequently purchase chickpeas. The fortified coarse rice (WFP's *pushi chaal* initiative) purchased under donor local procurement has an asterisk because it is currently being produced with WFP assistance and distributed under a pilot for the VGD program. The fortified coarse rice is not available on the commercial market but Title II could enter into an agreement with one of the millers involved in blending. See Chapter 3 for more details on the products still in research phase.

The USAID-BEST project has developed **recommended commodity options** for a future Title II project in Bangladesh based off (in no order of importance):

- market availability and anticipated market impact,
- food consumption patterns and beneficiary preferences,
- Title II program objectives,
- local market development objectives, and
- FFP policy.

Potential applicants should also consider these factors when designing their rations.

Table 38. Recommended Options for Title II Rations Based off Market Analysis and Food Consumption Patterns

Commodity	Trans-oceanic in-kind	Donor local procurement	Donor regional procurement	Cash transfer	Voucher
Wheat grain	√√	√√	xx	xx	xx
White flour (fortified), US	xx	xx	xx	xx	xx
Whole wheat flour (fortified)	xx	√√	xx	xx	xx
Milled rice, coarse	xx	√√	xx	√√	√√
Milled rice, US	xx	xx	xx	xx	xx
Vegetable oil, fortified	√√	√√*	xx	xx	xx
Black gram	xx	√√	xx	xx	xx
Chick pea (garbanzo)	xx	xx	xx	xx	xx
Grass pea	xx	xx	xx	√√	√√
Lentil, red	xx	xx	xx	√√	√√
Lentil, Regular variety	√√	xx	xx	xx	xx
Mung bean	xx	√√	xx	√√	√√
YSP	√√	xx	xx	xx	√√
Micronutrient powder (MNP)	xx	√√	xx	xx	√√
WSB+ & ++	√√	xx	xx	xx	xx
<i>Rice, bio fortified</i>	xx	xx	xx	xx	xx
<i>Rice, fortified at soak</i>	xx	xx	xx	xx	xx
<i>Rice, golden rice</i>	xx	xx	xx	xx	xx
<i>Rice, coarse and fortified, pushi chaal</i>	xx	√√	xx	xx	xx
<i>RUCFS - local production, animal based</i>	xx	?	xx	xx	xx
<i>RUCFS - local production, plant based</i>	xx	?	xx	xx	xx
<i>RUTF - local production, animal based</i>	xx	?	xx	xx	xx
<i>RUTF - local production, plant based</i>	xx	?	xx	xx	xx

Source: Created by USAID-BEST.

Note: The bottom eight products are still in the research stage. The status of each is discussed in Chapter 3.

√√ = recommended

xx = not recommended

? = insufficient information as of May 2014; USAID and its partners should monitor research outcomes.

*only if fortified vegetable oil is available. Note that vegetable oil is from imported oil seeds.



Photo by Fintrac Inc.

SHOUHARDO II conducted numerous community mapping exercises in this area to identify the poor and extreme poor. In this community, only the poor and extreme poor mothers and HHs with children under age 2 receive food aid rations. Sirajganj, Bangladesh, April 2014.

Cash transfers are only recommended as an option if research on food consumption patterns and beneficiary preferences suggest that a cash transfer is likely to result in increased consumption of the commodity by the intended beneficiary.

USAID-BEST does not recommend regional procurement for any commodity because donors can purchase sufficient food (from local and imported sources) within Bangladesh. The majority of the local fortified products cannot be recommended at this time because they are still in the research phase so a definite answer on their utility for Title II is uncertain. If they were to become available then USAID should review research outcomes and highly consider inclusion. If Food for Peace decides to consider a treatment component in the next Title II development cycle, the program should support local market development and procure from a local processor if possible.

5.8.2 Options for MCHN Ration Composition

Assuming a new Title II project continues to implement a PM2A model and provide food aid rations to all PLW and U2s in a defined geographic area, partners should harmonize the ration consistently around the year. By decreasing the ration for PLW and U2s in certain months, HHs become confused at the frequency in which they should consume the foods, which could

lead to mothers and U2s forgoing instructions to eat the ration altogether. Additionally, if partners provide a consistent ration then staff will have more time to dedicate to technical training rather than ration monitoring.

The tables below present the options, in no particular order, available to Title II for PLW and U2 rations that would not have a potentially negative market impact.

Table 39. Composition Options for MCHN PLW and U2 Ration

Option A	Commodity	Source
Carbohydrate	Wheat grain	Transoceanic
Protein	Pulse	Transoceanic YSP or lentil; or donor procurement of black gram or mung bean; or cash/voucher for red lentil and grass pea
Fat	RVO	Transoceanic or locally procured fortified RVO
Option B	Commodity	Source
Carbohydrate	WSB+ and WSB++	Transoceanic
Protein	Pulse	Transoceanic YSP or lentil; or donor procurement of black gram or mung bean; or cash/voucher for red lentil and grass pea
Fat	RVO	Transoceanic or locally procured fortified RVO
Option C	Commodity	Source
Complementary food supplement	RUCFS	Locally procured, not available as of April 2014
Fat	RVO	Transoceanic or locally procured fortified RVO
Option D	Commodity	Source
Carbohydrate	Rice, coarse and fortified, pushti chaal	Locally procured by NGO
Protein	Pulse	Transoceanic YSP or lentil; or donor procurement of black gram or mung bean; or cash/voucher for red lentil and grass pea
Fat	RVO	Transoceanic or locally procured fortified RVO
Option E	Commodity	Source
Carbohydrate	Wheat grain	Transoceanic
Protein	Pulse	Transoceanic YSP or lentil; or donor procurement of black gram or mung bean; or cash/voucher for red lentil and grass pea
Fat	RVO	Transoceanic or locally procured fortified RVO
Micronutrient supplements	MNP	Locally procured by beneficiary through vouchers

Source: Created by USAID-BEST.



This participant of the food and cash arm of the TMRI project shows her ration card as she waits in line to receive her transfer. She shares that she would appreciate receiving training in addition to the transfers but does not want to give up the food or cash assistance. Bagerhat, Bangladesh, April 2014.

Less preferred pulses include black gram and mung beans. More highly preferred pulses include red lentils and grass peas.

USAID-BEST recommends the inclusion of a micronutrient powder (MNP) in a ration through a restricted commodity voucher. This type of voucher would ensure MNPs are purchased by the HH directly from community health workers (CHWs). If beneficiaries procure MNPs from CHWs with vouchers, there would be more opportunities for CHWs to engage mothers on health and nutrition practices. Based off consumption patterns and the limited popularity of MNPs, it is unlikely that if beneficiaries were given cash they would use that money to buy them. Donors should not directly procure MNPs for distribution to their beneficiaries since doing so will not encourage mothers to routinely purchase these items directly from their CHWs, which would conflict with the best practices promoted by the public health community in Bangladesh.

To protect the PLW and U2 ration, awardees should also provide a HH ration consistently through the year instead of changing the ration size during the lean and non-lean seasons. Shifting quantities can confuse beneficiaries and cause HHs to dip into the PLW and U2 ration since poverty and food deficits for typical Title II HHs are generally annual in Bangladesh. Cultural norms in Bangladesh result in young wives, even if PLW,

being the last ones in the HH to eat. Even with BCC trainings, due to cultural norms it is probably necessary to provide larger rations so that a greater amount of the food “trickles down” to the PLW. USAID-BEST therefore recommends a medium-sized HH ration to protect the PLW ration in particular. Currently, PROSHAR is providing 15 kg of wheat during the lean season months and 0.5 kg of wheat during the non-lean season months per HH ration, which field research suggests is too drastic of a change. The HH ration could be either unconditional (since rations for PLW and U2s are generally conditional) or a partner might consider making the HH ration conditional upon behavior, e.g., family members participating in health/nutrition trainings.

The table below summarizes, in no particular order, the options available to Title II for HH rations that USAID-BEST believes would not have a negative market impact.

Table 40. Composition Options for MCHN HH Rations

Option A	Commodity	Source
Carbohydrate	Wheat grain	Transoceanic
Protein	Pulse	Transoceanic YSP or lentil; or donor procurement of black gram or mung bean; or cash/voucher for red lentil and grass pea
Fat	RVO	Transoceanic or locally procured fortified RVO
Option B	Commodity	Source
Carbohydrate	Coarse rice	Locally procured
Protein	YSP	Transoceanic YSP or lentil; or donor procurement of black gram or mung bean; or cash/voucher for red lentil and grass pea
Fat	RVO	Transoceanic or locally procured fortified RVO
Option C	Commodity	Source
Carbohydrate	Coarse rice	Locally procured
Protein		
Fat		
Cash	BDT 500	
Option D	Commodity	Source
Carbohydrate	Rice, coarse and fortified, pushti chaal	Locally procured (through select millers)
Protein		
Fat		
Cash	BDT 500	

Source: Created by USAID-BEST.

Although not necessary, Title II partners should consider incorporating more nutritious coarse rice, such as fortified coarse rice (WFP’s *pushti chaal* initiative), into the HH ration, coupled with intensive BCC to ensure HHs consume the food and do not pick out the fortified kernels before eating.

5.8.3 Options for FFW/CFW Ration Composition

In the next Title II cycle partners should harmonize rations across labor projects to make sure they reflect district-level wage rates. Additionally, given that beneficiaries reported self-monetizing select FFW commodities (RVO, wheat, and YSP in order of preference for self-monetization) because of cash needs for other food items, school, medicine, etc.,³⁹⁷ future awardees should complement food transfers with cash transfers to minimize any negative market impact. This transfer of money could also take place during the rainy/monsoon season when labor activities cease, as payment for participation in weekly or bimonthly training. The table below presents available possibilities for FFW/CFW rations that USAID-BEST believes would not have a negative market impact.

Table 41. FFW/CFW Ration Composition Options

Option A	Commodity	Source
Carbohydrate	Wheat grain	Transoceanic
Protein	Pulse	Transoceanic YSP or lentil; or donor procurement of black gram or mung bean; or cash/voucher for red lentil and grass pea
Fat	RVO	Transoceanic or locally procured fortified RVO
Option B	Commodity	Source
Carbohydrate	Coarse rice	Locally procured
Protein	Pulse	Transoceanic YSP or lentil; or donor procurement of black gram or mung bean; or cash/voucher for red lentil and grass pea
Fat	RVO	Transoceanic or locally procured fortified RVO
Option C	Commodity	Source
Carbohydrate	Coarse rice	Locally procured
Cash	BDT 500	

Source: Created by USAID-BEST.

Title II might consider cash transfers via mobile technology with a forced savings component.

5.9. ADDITIONAL CONSIDERATIONS

Imported food aid. Title II partners should stay abreast of GoB policies regarding the importation of genetically modified commodities and special importation certificates. Already, the GoB requires food imports are certified as “fit for human consumption” and current awardees have negotiated with the government an arrangement for Title II transoceanic shipments, but whether the GoB will continue this agreement for the next programming cycle remains unclear.

Community health workers. Discussing health and

397 Personal communication with beneficiaries of PROSHAR, Nobo Jibon, and WFP ER, April 2014.

pregnancy in front of women (e.g., in front of female health workers) remains uncomfortable for men. Title II could support male involvement in community health work by encouraging villages to elect males as health and nutrition workers. Existing health workers could start as mentors and teach the young males interested in taking on this role. The male community health workers could do BCC trainings with men in the communities. With a more equal distribution in the gender of health workers, all people in communities can feel more comfortable approaching a variety of topics around health and nutrition.

National ID card. Although currently in place, the national ID card system does not reach all people and issuance remains delayed and unreliable. A more comprehensive national ID system could improve beneficiary targeting in all programs.

National identification system of the poor. USAID should support the GoB in the design of a classification system for identification of the poor that would allow GoB safety net programs and donor-funded projects to effectively target the poorest of the poor. One model to consider is the Government of Cambodia Identification of the Poor (ID Poor) system that exists to identify and classify poor HHs.

Direct implementation. Title II awardees rely on local NGOs for nearly all direct implementation, but CARE directly implements 10 percent of SHOUHARDO II programs. Direct involvement in implementation can allow for practical lessons learned so that awardees can better engage the contracted local NGOs. Future Title II awardees might consider this model of partial direct implementation by the award holder.

PM2A pro-natal effect. Despite the concern that a PM2A program could have a pro-natal effect, field interviews suggest that the national family planning initiatives and messaging have become so ingrained in HH decision making that a small food ration in a five-year food assistance program would not significantly alter this mindset. Furthermore, contraceptives remain widely available at health centers at no cost. However, Title II partners have considered the possibility of such an effect and therefore each has come up with their own ways to ensure transfers do not have a pro-natal effect:

- *SHOUHARDO II.* The program does not bar entrance if a woman is pregnant numerous times during the program cycle, and she can receive food rations repeatedly.
- *PROSHAR.* A pregnant woman can take part numerous times during the program cycle; however she can only receive food rations once (for one pregnancy).
- *Nobo Jibon.* A woman can participate twice during the program cycle and she can receive food rations twice (for up to two pregnancies).



CHAPTER 6 MONETIZED FOOD ASSISTANCE

A variety of edible oils at different states in the refining process fill beakers in a testing lab in Chittagong. A sample of crude degummed soybean oil (CDSO) sits closest to the camera, followed by refined soybean oil (RSO), Super Refined Soybean Oil (SRSO), and a selection of palm oil. Chittagong, Bangladesh, April 2014.

Photo by Fintrac Inc.

6.1. BACKGROUND

Since 1995, USAID has helped fund development activities in Bangladesh via the monetization of in-kind food assistance. Monetization refers to the sale of donated food on quasi-commercial terms in order to help fund program operations. Some monetization programs also seek to support market development. At present, the three Title II awardees (ACDI/VOCA, CARE, and Save the Children) sell wheat directly to the Government of Bangladesh (GoB) for use in its national safety net programs.

The Title II monetization program in Bangladesh is unique in a number of ways. First, it is the only Title II program that involves monetization to a host government. Second, it is the only Title II program that monetizes a commodity for use in a national safety net program, rather than for sale on the commercial market. Third, the monetization in Bangladesh represents one of the largest in the world for Title II food assistance. According to the US Government Accountability Office, Bangladesh received nearly 216,000 metric tons (MT) in monetized Title II food assistance from 2008-10, which is more than five times the size of the average Title II monetization program over this period.³⁹⁸ From the beginning of the current Title II program, awardees

have monetized an average of 58,862 MT per year. Finally, Bangladesh remains the only country where USAID expects to continue Title II monetization as a food assistance tool following passage of the 2014 Farm Bill.

To determine whether monetization remains an appropriate assistance tool in Bangladesh, USAID required in-depth and independent market analysis to answer the following three questions:

1. Does the current Title II monetization of wheat to the GoB have a negative impact on any actors in the local market, such as farmers, millers, or traders?
2. Would it be feasible and more appropriate to sell wheat to the private sector so as to support market development or improve cost recovery?³⁹⁹
3. Would it be feasible and appropriate to monetize any commodities other than wheat to either the GoB or the private sector so as to support market development or improve cost recovery?

In considering these three inquiries from USAID, this chapter first provides a summary of findings and recommendations

³⁹⁸ US GAO, June 2011, *Funding Development Projects through the Purchase, Shipment, and Sale of U.S. Commodities is Inefficient and Can Cause Adverse Market Impacts*.

³⁹⁹ Cost recovery represents a simple rate of return on the sale, and here, equals the sales proceeds Title II partners receive from the GoB for the wheat divided by the cost to the USG of buying wheat in the US and shipping the wheat to Bangladesh.

before approaching those issues in greater detail in two main sections: 1) a description of the current Title II monetization program in format and performance followed by recommendations on best practices for the next Title II cycle; and 2) an exploration of alternative options for monetization, including sales of wheat to the private sector, and sales of Crude Degummed Soybean Oil (CDSO) or pulses to either the GoB or private commercial buyers.

6.2. SUMMARY OF FINDINGS AND RECOMMENDATIONS

In March-April 2014, the USAID-BEST project analyzed local markets and the current Title II monetization program and determined the following:

1. There is no evidence of negative market impact from the current Title II monetization of wheat to the GoB. These findings are consistent with findings in previous independent assessments conducted in 2009 and 2012.
2. It would be feasible to sell wheat to the private sector instead of the GoB, but sales would not necessarily support market development and Title II partners would likely achieve lower cost recovery than sales to the GoB.
3. As for alternative options, it would not be feasible to monetize edible oil to either the GoB or the private sector. It may be feasible to monetize pulses, but Title II partners would likely experience logistical and administrative obstacles.

Based on these findings, USAID-BEST recommends that, if USAID continues a monetization program in Bangladesh, Title II partners should continue selling soft white (SW) wheat to the GoB at volumes up to 200,000 MT per year based on government indication that it would be willing to purchase this quantity. Although this volume is higher than current levels, a USAID-BEST analysis of the wheat market shows that a monetization of this volume would not have a substantial negative effect on local markets in Bangladesh.

6.3. CURRENT TITLE II MONETIZATION PROGRAM

6.3.1 Monetization Sales Process

All three Title II awardees at present sell SW wheat to the GoB that the government uses in its Public Food Distribution System (PFDS), which supplies wheat and rice for the national safety net programs. The host country agreement (HCA)s for each respective awardee dictate that the GoB will pay in local currency 85 percent of the cost and freight value (CFR) of the commodity⁴⁰⁰ (i.e., the cost to the US government (USG) of buying and shipping the wheat to Bangladesh). From this 85 percent of CFR, the GoB subtracts a fee of 2.5 percent to cover its Internal Transport Shipping and Handling (ITSH) costs, thus

400 Awardees receive 85 percent of the value of the commodity as stated on the proforma invoice.

netting awardees a cost recovery⁴⁰¹ of 82.875 percent.⁴⁰² The GoB pays the awardees in Bangladeshi Taka (BDT) at the exchange rate on the final day of discharge from the vessel.⁴⁰³

At present, each NGO sets their own calls forward,⁴⁰⁴ and works with different line ministries: ACDI/VOCA and Save the Children have a HCA with the Ministry of Disaster Management and Relief, while CARE's HCA is with the Ministry of Local Government, Rural Care, and Cooperatives. Partners must receive remuneration from their respective government counterparts within 90 days (in the case of ACDI/VOCA and Save the Children) or within 90-120 days (in the case of CARE) after transferring goods to the GoB. However, the process actually runs through multiple GoB agencies, and the number of middlemen can delay payments.⁴⁰⁵

6.3.2 Monetization Sales Performance

Although a high or low cost recovery can indicate level of efficiency, the degree of market impact of monetization instead relies on whether sales occurred at a fair market price in the destination country, and whether the volume sold was relatively small considering total market supply. Lastly, a valuable attestation to market impact is the perception by private sector actors of harm to their businesses. Even if quantitatively it does not appear that the market is experiencing a substantial negative impact, any wariness on the part of the private sector may affect its behavior in ways that could ultimately harm markets.⁴⁰⁶

For these reasons, USAID-BEST assessed the performance of monetization sales through a quantitative computation of sales prices against local fair market prices and evaluated relative volumes of the transactions compared to market size. Qualitative research also informed the following analysis as USAID-BEST interviewed actors at all levels of the wheat value chain including farmers, millers, importers, wholesalers, and

401 According to the GAO, average cost recovery for Title II monetizations over the 2008-10 period was 76 percent. US GAO, June 2011, *Funding Development Projects through the Purchase, Shipment, and Sale of U.S. Commodities is Inefficient and Can Cause Adverse Market Impacts*.

402 Awardees commonly refer to total cost recovery as 82.5 percent, which makes it appear that the 2.5 percent is subtracted from the whole value of the commodity (i.e., 85 percent - 2.5 percent = 82.5 percent). Instead however, the 2.5 percent fee is subtracted from 85 percent of the CFR value (i.e., 85 percent - (85 percent X 2.5 percent) = 82.875 percent), which works out to be 82.875 percent. Electronic communication with a key informant involved in monetization sales, May 2014.

403 This conversion is made on the date when awardees submit the Joint Final Survey findings via the Final Discharge Report to the GoB. (Electronic communication with a key informant involved in monetization sales, July 2012).

404 A call forward is a formal request by the awardees to relevant USG agencies to release and ship commodity for use in direct distribution or monetization programs.

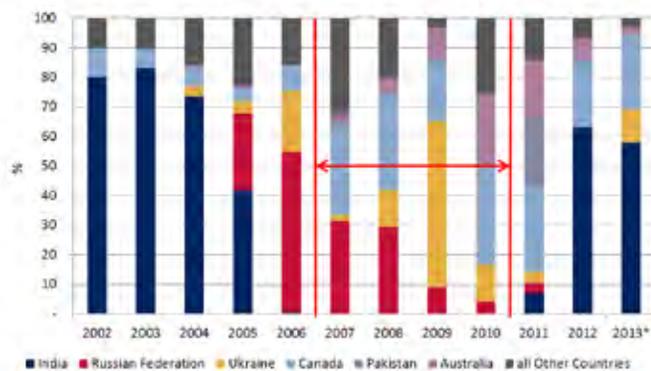
405 The awardees' partner GoB ministry submits a payment request to the Ministry of Finance, which in turn forwards its authorization to the Office of the Comptroller of the Auditor General; this department checks the amount due to awardees for accuracy before giving final approval and notifying Bangladesh Bank to transfer funds to the awardees.

406 The complete monetization methodology for determining the potential impact of monetized food aid is available on the USAID-BEST website: <http://usaidbest.org/other-best-products.aspx>.

retailers during the April 2014 field visit. Moreover, the team conducted interviews with the GoB and Title II stakeholders involved in the sales to understand their perceptions of the current monetization program. This section summarizes those findings and refrains from detailing the wheat market because Chapter 2 covers the specificities of wheat consumption and production in great depth.

Fair market price. To determine the most appropriate comparator, USAID-BEST conducted calculations based on two reference markets: northeast India and Ukraine. As the following figure shows, wheat from India generally comprises well over 50 percent of wheat imported into Bangladesh. This volume began falling as early as 2004 in the absence of a domestic support price from the Government of India (GoI).⁴⁰⁷ Increased consumption and sluggish domestic production eventually led the GoI to stop bulk exports in 2005⁴⁰⁸ and eventually impose a ban on exports in 2007⁴⁰⁹ that lasted until 2011.⁴¹⁰ During this period, Bangladesh supplanted Indian supply with wheat from Ukraine and Russia.

Figure 46. Share of Wheat Imports to Bangladesh by Country (%), 2002-13*



Source: Comtrade.
Note: Red lines and arrow in chart indicate period of India's export ban.
*2013 estimated figures from Comtrade Monthly.

As such the import parity price (IPP) involved in the computation for this analysis pulls from northeast India over the period of 2011-14 after the country lifted the ban on wheat

407 USDA, 2004, India - Grain and Feed, December Update, 2004. <http://apps.fas.usda.gov/gainfiles/200411/146118122.pdf>, accessed May 2014.

408 Bulk imports stopped as early as 2005: Far Eastern Agriculture, 2012, Cargill sells 32,000 tonnes of Indian wheat to Indonesia. <http://www.fareasternagriculture.com/crops/agriculture/cargill-sells-32000-tonnes-of-indian-wheat-to-indonesia>, accessed May 2014.

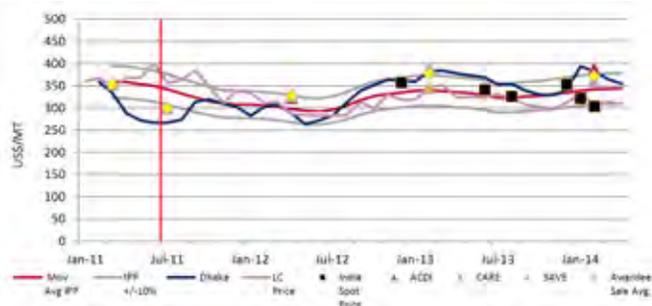
409 USDA, 2007, India - Grain and Feed, Quarterly Lock Up Report, August 2007. <http://apps.fas.usda.gov/gainfiles/200707/146291882.pdf>, accessed May 2014.

410 Ban lifted in 2012: Times of India, 2014, Govt lifts ban on wheat exports: Sharad Pawar. <http://timesofindia.indiatimes.com/business/india-business/Govt-lifts-ban-on-wheat-exports-Sharad-Pawar/articleshow/9246520.cms>, accessed May 2014. It appears this ban was partially relaxed in 2010 to allow for a sale of wheat to Bangladesh, although no wheat imports from India appear in the trade data that year: Food Digital, 2010, India: Wheat export ban lifted. <http://www.fooddigital.com/sectors/india-wheat-export-ban-lifted>, accessed May 2014.

exports, and from the Free on Board (FOB) Black Sea price quote for Ukrainian wheat during the time of the export ban when the Black Sea region primarily supplied wheat for Bangladesh. USAID-BEST calculated the IPP for Ukrainian milling wheat over the period of 2009-14 because of available price data.

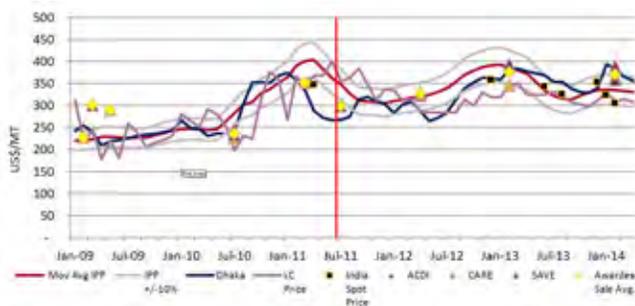
The figures below present graphically the results of these calculations and include an estimated IPP with a +/- 10 percent band, a settled Letter of Credit (LC) price series, and a Dhaka wholesale price. Although an LC price alone could evaluate monetization programs, such data represent a combination of different classes and qualities of wheat; by contrast, an IPP from India and Ukraine of the soft wheat commonly imported to Bangladesh provides a better comparison to the wheat monetized under Title II programs.⁴¹¹

Figure 47. Pooled Northeast India Import Parity Price (US\$/MT), January 2011-April 2014*



Source: IPP: USAID-BEST estimate based on select wholesale price series from India, Department of Consumer Affairs; LC Price: Bangladesh Bank; spot prices: various online news sources; awardee monetization sales prices: awardees.
*A vertical red line has been placed at July 2011 to note the end of the Indian export ban.

Figure 48. Ukraine Import Parity Price (US\$/MT), January 2009-April 2014*



Source: IPP: USAID-BEST estimate based on milling wheat FOB (offer) prices from APK Inform; Dhaka wholesale price: FAO GIEWS; LC Price: Bangladesh Bank; spot prices: various online news sources; awardee monetization sales prices: awardees.
*A vertical red line has been placed at July 2011 to note the end of the Indian export ban.

Tendered price quotes for Title II monetization awardees lie within or close to the range of 10 percent above or below the estimated IPP (using either India or Ukraine as reference markets) as well as the Dhaka wholesale price. From January 2011-April 2014, sales prices achieved 103 percent of the India

411 See Annex 3 for a table detailing these calculated IPPs and the data sources for the various price calculations.

IPP moving average. Over the period of 2009-14, sales prices achieved 104 percent of the Ukraine IPP moving average. The sales price for monetized wheat in the current programming cycle shows some minor differences because of exchange rate fluctuations and varying shipping rates. In general, the analysis finds that from 2011-14 awardees conducted Title II sales at prices competitive with prevailing market prices, and did not find any evidence that the program created a distortion in Bangladeshi domestic wheat markets. Annex 3 provides further details on the monetization sales price across partners and the performance of these sales prices against IPP and the LC price in different time periods.

Volumes relative to market size. Title II monetized wheat represents a small percentage of wheat supply in Bangladesh regardless of the perspective taken in defining supply, which strongly suggests that Title II monetized wheat has no substantial negative effect on local markets in Bangladesh. As evidence, the following paragraphs provide an overview of Title II monetized wheat volumes, a brief description of the wheat market, and a detailed comparison of Title II wheat against the various components of wheat supply.

Title II monetization. Title II has monetized wheat grain regularly since the beginning of the current development program and has sold an average of nearly 59,000 MT per year from FY10-14. The following table shows that the volume monetized has ranged from a maximum of 92,380 MT in FY10 to a minimum of 30,700 MT in FY11.

Table 42. US Title II Monetization Volumes by Awardee (MT), FY10-14

Fiscal Year	Commodity	ACDI/VOCA	CARE	Save the Children	Grand Total
FY10	SWWheat	18,560	57,010	16,810	92,380
FY11	SWWheat	13,220	10,470	7,010	30,700
FY12	SWWheat	14,950	37,000	9,600	61,550
FY13	SWWheat	11,740	30,270	9,620	51,630
FY14	SWWheat	13,900	34,640	9,510	58,050

Source: FY10-14 data from AMEX.

Wheat market. Wheat ranks as the second most important food crop behind rice. Total annual apparent consumption (demand) for wheat averages close to 4 MMT (compared to 34 MMT for rice).

A vibrant private milling industry alongside heavy intervention by the GoB creates a dynamic and complex environment. The GoB plays a large role in procurement and distribution of wheat for the PFDS. Indeed, the GoB has an estimated 14 different programs⁴¹² through which it distributes fully or partially subsidized wheat via the PFDS to safety net beneficiaries throughout the country. See Chapter 4 for more details about GoB safety net programs.

412 Plus a number of other minor programs that also distribute fully and partially subsidized wheat to beneficiaries. GoB Ministry of Food safety net data, received April 2014.



Photo by Fintrac Inc.

Although the country's main staple is rice, wheat is an important food security crop in Bangladesh. Title II partners have provided wheat as food assistance via both direct distribution and monetization. Here, an elderly woman harvests the remaining wheat crop from a field on the outskirts of Dhaka, Gazipur, Bangladesh, April 2014.

Components of wheat supply. Bangladesh produces 27 percent of its wheat needs (approximately 1 MMT), and imports the remaining 73 percent (just over 2.8 MMT during 2009-12). As the following table shows, **private sector commercial imports** account for the majority of domestic wheat supply (averaging 80 percent, 2009-12), and **GoB purchases** for the PFDS fall between 5 - 33 percent of total imports, averaging 18 percent annually in that same four-year time period; a small portion of the GoB purchases comes from Title II awardees (details on the next page).

Table 43. Domestic Wheat Supply (MT), 2009-12

Type	2009	2010	2011	2012	Average, 2009-12
Total Imports	3,674,829	3,110,649	2,906,976	1,668,881	2,840,334
- Total Commercial Imports	3,573,820	3,022,900	2,868,500	1,624,400	2,772,405
GoB Commercial Imports*	198,820	509,900	945,600	353,200	501,880
Title II Monetized grain**	59,120	92,380	30,700	61,550	60,938
Private Sector Commercial Imports	3,375,000	2,513,000	1,922,900	1,271,200	2,270,525
- Food Aid imports***	101,009	87,749	38,476	44,481	67,929
Exports	60	82	40	12	49
Net Trade	3,674,769	3,110,567	2,906,936	1,668,869	2,840,285
Production	969,000	972,085	995,356	1,254,778	1,047,805
Supply	4,643,769	4,082,652	3,902,292	2,923,647	3,888,090

Source: Imports: FPMU; Food Aid: AMEX, WFP/Bangladesh; Exports: Comtrade, Trade Map, FAOStat; Production – BBS.

* GoB commercial imports are purchased for PFDS; Title II monetized grain is included in this total. It is unclear if all government-to-government purchases are included in these figures.

** Title II monetized amounts already included in GoB commercial import figure.

*** Food aid imports represent wheat imports for direct distribution only.

International food aid from WFP and Title II awardees for **direct distribution** accounts for an average 2.39 percent of total imports. Title II awardees have distributed an average of 10,800 MT per year since the beginning of the current cycle in 2010, and have provided a total of 54,100 MT over the FY10-14 period.⁴¹³ WFP has directly distributed approximately 248,000 MT of internationally-sourced wheat grain in the FY09-14 period, primarily for the local production of High Energy Biscuits used in the school feeding program.⁴¹⁴

Over the 2009-12 period, **Title II monetized wheat** constituted 2.1 percent of total imports.⁴¹⁵ Title II monetization ranged from 3-30 percent of GoB commercial imports, averaging 12 percent per year, and averaged 5.8 percent of domestic production per year over the same period. Overall, these figures suggest that monetization wheat volumes have generally fallen below values considered cause for concern.

The phenomenon of “starch substitution” whereby consumers substitute one carbohydrate source for another is always a concern with food assistance programs. If this situation occurs, it could reduce demand for a local food and potentially disincentivize production and marketing.

Nonetheless, with any food assistance, the phenomenon of “**starch substitution**” where consumers may substitute the food aid commodity for another commodity, thus reducing demand for a local food and creating disincentives for production and marketing could arise. However, in Bangladesh, given the strong preference for rice and the small volumes of Title II wheat imported for monetization relative to total supply of both wheat and rice, USAID-BEST does not believe USAID should feel concern that monetized wheat affects cereal grain production on the whole.

Qualitative findings. Private commercial market actors

413 AMEX.

414 WFP Bangladesh, received April and May 2014.

415 Title II and USDA monetizations are not counted as food aid in the data.

reported that monetization of Title II wheat has no substantial negative impact on local markets, and instead benefits the GoB and awardees.

Since Title II wheat grain enters the PFDS, the effect of this Title II commodity would only manifest itself through the impact of PFDS distributions and sales. Thus, USAID-BEST surveyed private commercial market actors regarding their perception of how the PFDS has influenced their businesses and actions. The structure of the PFDS and the way the Ministry of Food reports the quantity of wheat and rice distributed through each channel prevents USAID-BEST from stating with certainty through which channel the GoB funnels Title II monetized wheat. Therefore, when interviewed, the team asked stakeholders about all major programs that involve wheat, including Open Market Sales, Vulnerable Group Development, Essential Personnel, and Vulnerable Group Feeding. (See Chapter 4 for details of these programs.)

Farmers, traders, and millers interviewed reported that they see little to no impact on their businesses from the PFDS. Representatives of importing companies, large mills, and bakeries consistently noted little if any impact on market price as a result of GoB PFDS interventions, nor did they feel Title II monetizations of wheat grain to the GoB harmed their business.

The GoB⁴¹⁶ reports satisfaction with the Title II monetizations for several reasons: 1) pre-negotiated sales terms simplify the purchasing process; 2) contract performance for Title II wheat is more certain than private sector suppliers; 3) the GoB expenditures stay in-country, and the money raised by awardees benefits vulnerable Bangladeshi HHs in Title II program areas;⁴¹⁷ 4) transactions occur in Bangladeshi Taka and therefore the GoB can save hard currency for some of its purchases required to

416 According to the GoB representative responsible for procurement for the PFDS, the Directorate General of Food at the Ministry of Food. Personal communication with Directorate General of Food, Ministry of Food, April 2014.

417 USAID-BEST cannot independently verify, but the GoB reports that Title II wheat is channeled to PFDS programs requiring wheat.

stock the PFDS;⁴¹⁸ and 5) Title II SW wheat represents a good quality wheat.

As an indication of their satisfaction with the current monetization arrangement, the GoB reports a willingness to pay a premium for Title II wheat over its normal commercial purchases. For example, in April 2014, spot prices for Indian wheat on the Bangladeshi market were US\$305-315 compared to a landed price for US SW wheat of approximately US\$400.⁴¹⁹ A discount of 15 percent applied to the US prices brings the landed price for US wheat (i.e., US\$340 per MT) much more in line with prevailing prices on the Bangladeshi market.

Likewise, **Title II awardees** report a high degree of satisfaction with the current arrangement for several reasons: 1) pre-negotiated sales terms set forth in their respective HCAs; 2) the GoB can and will purchase large volumes of wheat throughout the year; 3) despite an occasional late payment, the GoB maintains a good history of properly transferring money to the awardee; and 4) sales consistently lead to above average cost recovery (82.875 percent) compared to other Title II monetizations worldwide.⁴²⁰

6.3.3 Recommendations for Next Title II Cycle

USAID-BEST recommends that the practice of monetizing wheat to the GoB for use in its PFDS continue as currently structured for four reasons: 1) lack of substantial negative impact on the local market in Bangladesh; 2) consistently above-average cost recovery; 3) high level of satisfaction among Title II awardees and GoB stakeholders; and 4) the advantage of a relaxation on the GoB provision requiring a certificate from the country of origin confirming goods are “fit for human consumption.”

Given the estimated 2.77 MMT yearly average for total commercial imports (2009-12), Title II volumes of monetized wheat up to 277,000 MT should not adversely affect domestic production or marketing of wheat grain in Bangladesh. However, such a large volume has greater potential to displace normal international commercial trade and may raise concerns among World Trade Organization trading partners, even though doing so would save the GoB scarce hard currency in its normal purchases of commodities for the PFDS. Instead, USAID-BEST recommends that partners consider a maximum monetization volume of 200,000 MT of SW wheat per year based on GoB indication that it would purchase up to that level; this quantity could generate approximately US\$68.8 million per year.⁴²¹

418 Personal communication with Directorate General of Food, Ministry of Food, April 2014.

419 Personal communication with Directorate General of Food, Ministry of Food, April 2014.

420 According to the GAO, average cost recovery for Title II monetizations over the 2008-10 period was 76 percent. US GAO, June 2011, Funding Development Projects through the Purchase, Shipment, and Sale of U.S. Commodities is Inefficient and Can Cause Adverse Market Impacts.

421 At the most recent IPP of US\$344 per MT for April 2014. See Annex 3 for details.



Photo by Fintrac Inc.

Wheat-based products like loaf bread and biscuits are especially common in urban areas where the ability to stave off hunger on-the-go creates demand. Here, a vendor sells a variety of pre-packaged wheat products for travelers setting off on long ferry rides at Saderghat, Dhaka, Bangladesh, April 2014.

If agreeable to the GoB, USAID-BEST recommends the continuation of the current practice whereby HCAs set forth all sales terms along the lines of the process detailed above in section 6.3.1.

Despite the relative success of Title II monetization to the GoB (if evaluated against awardee and buyer satisfaction), achievement of sales prices close to local fair market prices, and avoidance of harming private sector actors or markets, some changes could further improve the program.

Negotiate a higher percentage of the cost on the Bill of Lading (B/L). Ideally, prior to the start of a new Title II cycle, USAID and awardees should negotiate for a higher percentage of the cost noted on the B/L. Currently, awardees receive 85 percent but USAID should consider negotiating for closer to 90 percent. Given that the GoB already pays a premium for Title II wheat, and that the discount of 15 percent applied to the US prices does appear to bring the landed price for US wheat much more in line with prevailing prices for wheat from alternate sources, USAID should not expect the GoB to willingly pay more but should consider approaching this topic.

Reduce use of US flagships. Given the higher cost of shipping on US flag relative to foreign flag vessels, if USAID could find a way to reduce the use of US flag vessels in shipments of monetized commodity, doing so would be the most promising option to improve cost recovery.

Adjust timing of calls forward. If possible, the timing of calls forward should occur so that shipments can arrive before monsoon season so as to avoid unloading delays and lightering of cargo in months with shallower drafts, which can greatly increase costs.

Another related issue concerns the differences between the USG fiscal year and the Bangladeshi fiscal year.⁴²² Awardees

422 The USG fiscal year lasts from October to September. The GoB fiscal year lasts from July to June.

should recognize the varying dates and plan their call forwards accordingly to ensure timely shipping, processing, and final payment.

Payment period. At the time of drafting the HCA, the awardee and the associated GoB line ministry determine the terms of payment, including the window of payment to the awardee. If any awardee wants to shorten the payment period (for example, from 90-60 days), the awardee would have to negotiate such an adjustment with the GoB while drafting the HCA. If discussing some potential changes with the GoB in the sales arrangement, the awardee could also explore introducing language into the HCAs instituting a late fee for payments made after the agreed upon payment period.

Coordination with GoB. Awardees could consider an agreement with the GoB whereby the GoB seconds a GoB employee knowledgeable about the demands on and requirements of the numerous GoB agencies involved so as to better to keep track of the relevant paperwork. Save the Children adopted this arrangement for the current cycle and reports satisfaction with this model.

6.4. ALTERNATIVE MONETIZATION OPTIONS IN NEXT TITLE II CYCLE

This section explores alternatives to continued sales of wheat to the GoB, including sales of wheat to the private sector and sales of CDSO or pulses to either the GoB or private commercial buyers. Chapter 2 details the commodity markets for CDSO and pulses.

6.4.1 Criteria to Determine Potential Options

To determine the options most appropriate for inclusion in a monetization program, USAID-BEST performed a desk review to identify an initial set of commodities for study. Then, based on available trade statistics, previous Bellmon studies from 2009, the 2012 USAID-BEST Post-Monetization Monitoring Analysis,⁴²³ relevant country reports, and interviews with key informants during a March-April 2014 field visit, the USAID-BEST team assessed possible options against six tests:

1. Eligibility for export from the US;
2. Eligibility for import to Bangladesh;
3. Significance of domestic demand;
4. Whether domestic supply shortfalls are filled through commercial imports;
5. Presence of adequate competition for the commodities; and
6. Expectations that fair market prices can be achieved.

Test 1: Eligibility for export from the US. All of the commodities discussed in this report are eligible for export and listed in the current Food For Peace (FFP) commodity list.

⁴²³ An internal USAID document.

Test 2: Eligibility for import. Two different GoB phytosanitary requirements may exclude certain commodities for import: GMO policy and a requirement for a certificate indicating goods are “fit for human consumption.”

Import regulations state that GMO products entering the country must adhere to the Bangladesh Biosafety Guidelines,⁴²⁴ which mandate onerous paperwork before importation.

Interviews and review of additional written policy suggest some relaxation for humanitarian assistance that may extend to future programming. USAID and potential awardees will need to monitor GoB policies to ensure compliance, specifically around the certificate requiring confirmation that goods are “fit for human consumption.”

At the moment, under the Import Policy Order 2012-2015, the Ministry of Food will test those goods imported by the GoB that are considered relief items following arrival at the port of entry.⁴²⁵ This same exception does not apply to private sector imports, however, and it appears the GoB will continue to require the certificate confirming that goods are “fit for human consumption” from the country of origin to accompany the B/L for commercial imports.⁴²⁶

USAID-BEST examined the feasibility of monetizing to the private sector Title II wheat, CDSO, and refined vegetable oil (RVO), all with the understanding that GoB regulations may complicate importation.

Tests 3 and 4: Significance of domestic demand and deficit in Bangladesh. To warrant importation and sale of monetized food aid, both local dietary preferences and available market information must strongly suggest significant demand, and insufficient national production to meet demand. USAID-BEST estimates demand based on the latest four-year overall estimates of domestic production and net trade. Market size suggests absorptive capacity of local markets and therefore potential maximum recommended volumes.

Tests 5 and 6: Competition and fair prices. An analysis of local market competition (which must be adequate - Test 5) and

⁴²⁴ GoB, 2012, Import Policy Order 2012 - 2015. <http://www.mincom.gov.bd/doc/Final%20copy%20of%20Import%20Policy%20Order%20English-12-15.doc>, accessed April 2014. Chapter 4, Section 16 (28). Interested parties are encouraged to review Section 3.9.1 of GoB, 2007, Biosafety Guidelines of Bangladesh. <http://www.doe.gov.bd/BiosafetyGuidelineBD.pdf>, accessed April 2014.

⁴²⁵ GoB, 2012, Import Policy Order 2012 - 2015. <http://www.mincom.gov.bd/doc/Final%20copy%20of%20Import%20Policy%20Order%20English-12-15.doc>, accessed April 2014. Chapter 4 Section 16 (27) and Chapter 7 (10).

⁴²⁶ GoB, 2012, Import Policy Order 2012 - 2015. <http://www.mincom.gov.bd/doc/Final%20copy%20of%20Import%20Policy%20Order%20English-12-15.doc>, accessed April 2014. Nonetheless, if all import policies are not followed, it appears that the goods may still be permitted to enter, but they must be issued a Clean Report of Findings specifying which statutory requirements of the import policy had not been followed. (http://sgsmink.by/_/media/Global/Documents/Technical%20Documents/Technical%20Datashets/SGS-PSI-BANGLADESH-Datasheet-A4-EN-12-V1.pdf). However, as of the time of this report's drafting, it is not clear the extent to which this is accepted or even permitted.

prices (which must be fair - Test 6) reveals the feasibility of selling a commodity at a fair market price.

Possible commodity options in Bangladesh. USAID-BEST recommends monetization if local markets can absorb these commodities, favorable government policies exist, and sales are likely to achieve fair market prices. One common rule of thumb adapted for the present analysis requires that monetized food aid not exceed 10 percent of average yearly commercial import volumes. The table below lists ten commodities with four-year average import values of greater than US\$10 million that also appear on the current FFP list of products eligible for monetization.

Table 44. Average Annual Commercial Import Volume and Value for Select Commodities, 2009-12*

Commodity	Volume (MT)	Average Value (US\$)
Edible Oils	1,367,891	1,269,706,017
Wheat Grain	3,165,510	748,359,247
Rice	721,626	323,273,674
Oilcake	523,130	193,928,989
Dairy	61,940	185,940,690
Maize Grain	531,383	132,786,654
Lentils	147,626	119,538,135
Peas	331,803	92,301,560
Soybeans	152,128	72,848,704
Chickpeas	145,114	73,524,853

Source: Comtrade, accessed March 2014.

*Volumes and values for all commodities are for the period 2009-12, except rice and maize which are for the period 2009-11.

The following table summarizes the results of Tests 1-4.

Table 45. Initial Selection of Commodities Based on Test 1-4

Commodity	Eligible to export from US?	Eligible to import into Bangladesh?	Significant domestic demand?	Imports fill gap?
CDSO/RVO	Yes	Potential GMO restrictions	Yes	Yes
Wheat Grain	Yes	Yes	Yes	Yes
Rice	Yes	Sensitive commodity	Yes	Yes
Soybean Oilcake	Yes	Potential GMO restrictions	Primarily for the animal feed sector	Yes
Dairy	Yes	Sensitive commodity	Yes	Yes
Lentils	Yes	Yes	Yes	Yes
Maize Grain	Yes	Potential GMO restrictions	Primarily for the animal feed sector	Yes
Peas	Yes	Yes	Yes	Yes
Soybeans	Yes	Potential GMO restrictions	Yes	Yes
Chickpeas	Yes	Yes	Yes	Yes

Source: UN Comtrade; USDA GAIN reports; 2012 USAID-BEST Post Monetization Monitoring Study.

Out of these ten commodities, USAID-BEST ruled out 1) RVO because of insufficient import demand; 2) milled rice because Bangladesh is generally self-reliant and rice is a sensitive commodity; 3-4) soybean oilcake and maize since both these products go into animal feed instead of human consumption;⁴²⁷ and 5) non-fat dry milk powder due to possible use for infant formula, thus violating FFP policy on breast milk substitutes, and current GoB efforts to support the development of the domestic dairy industry.

6.4.2 Wheat Grain Sales to Private Sector

Although awardees could sell wheat grain to the private sector, experience from previous transactions and current observations regarding the market environment suggest that this option remains a secondary alternative to sales to the government.

Performance of previous sales to the private sector. In a previous cycle of Title II programming CARE monetized Hard Red Winter (HRW) wheat to the private sector in FY07-08. Despite cost recovery reportedly improving from 68 percent to 80 percent across the two fiscal years, after this attempt CARE elected to focus solely on monetizing to the GoB given the pre-negotiated sales terms, ease of transaction, and relatively higher cost recovery. Management at CARE expressed concerns about collusion among buyers as part of the reason for the shift.

In 2011, under a USDA Food for Progress grant, Small Enterprise Assistance Funds performed a monetization of HRW wheat that resulted in poor cost recovery due to problems with credit available to buyers and fluctuations in the international price of wheat grain.

Current market environment. Millers and importers expressed interest in purchasing Title II wheat, and the import market could absorb a sufficient volume of monetized wheat. Therefore, awardees could sell to the private sector with little to no negative impact. If considering the desirable objective of Title II monetization programs to help with market development, in the case of Bangladesh, the wheat market does not require this assistance.

The primary concern for sales to the private sector remains the GoB phytosanitary regulations, and in particular the mandate requiring the governing authority in the country of origin submit a certificate confirming goods are “fit for human consumption” before sending food commodities to Bangladesh. While USDA no longer furnishes this documentation, awardees have managed to circumvent this restriction for monetized wheat via negotiations with the GoB on an arrangement whereby the Ministry of Food performs testing in-country after imports have arrived. However, this leniency from the GoB may not apply to commercial transactions. One key informant at a large company warned that his business would incur the cost of shipping goods

427 USAID-BEST does not generally exclude these products, but since food aid reforms have enabled USAID to lower the required monetization volumes, exclusion of these commodities for the present research was warranted.



Photo by Fintrac Inc.

Larger wheat mills are overtaking the Bangladeshi wheat market. While the country has over 2,000 mills in country, it is estimated that fewer than 10 supply half of all wheat flour for sale domestically. This photo depicts an unfinished wheat mill that should come online in late 2014 with an estimated milling capacity of 500 MT per day, which would make it one of the largest. Chittagong, Bangladesh, April 2014.

out of the country if it failed the testing required for the certification of “fit for human consumption.” Further, the loss of wheat from the planned shipment would hurt his business.⁴²⁸

Additionally, no evidence indicates that sales to the private sector would improve performance (as measured by fair market price and improved cost recovery) and, as the example above demonstrates, the private sector would likely only bid on Title II wheat if sold at low enough prices to compensate companies for the risk involved in bidding.

Not surprisingly, Title II awardees expressed reticence about shifting sales to the private sector. When interviewed in April 2014, Title II awardees indicated a strong preference to continue with the status quo, and all current Title II partners stated that they would only pursue monetization to the private sector if necessary.

Recommendations. Should USDA resume providing certification that goods are “fit for human consumption” and/or the GoB **relax** their policies around the requirement of this documentation, then awardees could potentially sell two varieties of wheat to the private sector without stressing the market: 1) Dark Northern Spring (DNS), a premium quality, high protein (13 percent), high gluten wheat similar to Canadian Western Red Spring (CWRS) wheat; and 2) HRW wheat (12 percent protein).

Awardees could in total monetize up to 59,000 MT of DNS (10 percent of the estimated 590,300 MT of CWRS wheat imported from Canada) to generate approximately US\$22,400,00 in proceeds.⁴²⁹ However, awardees should break this volume into

428 Personal communication with key informant in the wheat milling sector, Dhaka, April 2014.

429 To estimate the volume of Canadian wheat imported by Bangladesh, USAID-BEST calculated the percentage of wheat imported from Canada based on data from Comtrade, and applied this percentage to the volume of private sector wheat imports as reported by the FPMU. At estimated IPP of US\$379.50, based on FOB price of US\$339.50 (CN\$369.87 (HGCA, 2014,

two-three shipments because the private sector warned that a single shipment larger than 50,000 MT could distort the market.

If instead awardees select HRW wheat, up to 168,000 MT could raise proceeds of approximately US\$57.8 million.⁴³⁰ Millers indicated a preference for receiving a constant supply of wheat every two-three months on average in shipments of 30-50,000 MT so that they could more readily integrate the monetized wheat with their supply chain.

Finally, if a monetization to the private sector occurs, USAID partners should do so via public tender so commercial market actors can make adjustments to their procurement plans, as necessary.

6.4.3 CDSO Sales to GoB or Private Sector

Although the GoB does not buy CDSO, Title II awardees could sell CDSO to the private sector. Despite this possibility, past monetization sales and observations regarding the current market environment rank this option as the third best alternative to wheat sales to the GoB. This section summarizes past experiences with CDSO monetizations and concludes with recommendations should USAID and its partners wish to pursue this option. Chapter 2 covers the specificities of edible oil consumption and production in greater depth.

Performance of previous sales to the private sector.

During a previous Title II cycle, CARE monetized CDSO in FY05-06 to the private sector. During the 2012 USAID-BEST Post Monetization Monitoring Study, CARE management expressed concerns about collusion among actors.⁴³¹

In early 2014, Land O’ Lakes (under a USDA award) attempted to tender a CDSO monetization sale to private businesses.⁴³² However, concerns around GMO policy forced Land O’ Lakes to abandon CDSO as an option.

Observations regarding current market environment.

The Bangladeshi edible oil market already demonstrates competitiveness and scale. CDSO imports alone average close to 396,000 MT per year. In discussions with key informants in

World Export Prices. <http://data.hgca.com/archive/physical/xls/Data%20Archive%20-%20Physical%20International.xls>, accessed May 2014.) and CN\$0.91788=US\$1 (Oanda.com, May 13, 2014), plus proxy shipping rate of US\$40 (Canada to Pakistan (IGC May 7, 2014)). According to data from Comtrade, imports from Canada account for 26 percent of imports from 2009-12. Only the private sector would import this high quality grain. The private sector imports approximately 2,270,500 MT of wheat per year; 26 percent of this volume equals approximately 590,300 MT.

430 To estimate the appropriate volume of HRW wheat to monetize, USAID-BEST subtracted the estimated volume of Canadian wheat imported by Bangladesh (as per above footnote) of private sector commercial wheat imports as reported by FPMU. Based on estimated private sector imports minus estimated imports of Canadian wheat. It would compete against wheat being imported from India, so the India Wheat IPP of US\$344 (as noted above) should be used.

431 Personal communication with CARE, July 2012.

432 Personal communication with key informant at Land O’ Lakes, Dhaka, April 2014. The informant did not reveal the negotiated price but said cost recovery was not a concern.



Photo by Fintrac Inc.

The majority of edible oil in Bangladesh is sold in unbranded, bulk form via drums like the ones pictured above. Here, empty bulk oil containers are piled together at a large-scale oil refinery near the country's main port, Chittagong, Bangladesh, April 2014.

the edible oil commercial sector, companies expressed interest in possibly buying Title II CDSO. However, while the import market could absorb a sufficient volume of monetized CDSO, government policies regarding GMOs and the additional mandate requiring a certificate confirming goods are “fit for human consumption” pose major obstacles to monetizing CDSO to the private sector.

Recommendations. Selling CDSO to the GoB is not an option because the government only purchases wheat and rice for the PFDS. Additionally, since almost all imported oil enters in crude form for processing in-country, awardees would not find a suitably large market for RVO. Even if awardees found willing buyers, **USAID should not support attempts to monetize Title II RVO** because it would compete with domestic processors and potentially undermine the GoB efforts to increase the level of domestically fortified edible oil.

Pursuing the possibility of monetizing to the private sector, though feasible, would require significant time and effort from USAID and awardees applying for permission to circumvent the current GMO regulations. Given the burdensome nature of such a process, **monetizing CDSO could face serious challenges**. Moreover, in addition to the GMO roadblock, the certificate confirming goods are “fit for human consumption” could arise as an issue if working with the private sector since it remains unclear whether the GoB would relax this requirement for commercial transactions with the private sector. (Interestingly, potential buyers interested in the Land O’ Lakes CDSO sale did not seem deterred by this particular mandate.⁴³³)

Should USAID and partners wish to pursue CDSO as an option, USAID-BEST recommends the following:

Tonnage. Awardees could monetize up to 39,600 MT of CDSO

433 Personal communication with key informant involved in monetization sale, April 2014.

without negatively affecting production or marketing of edible oil in Bangladesh. This quantity represents approximately 10 percent of the estimated average CDSO imports from 2009-12.⁴³⁴ A sale of this volume could feasibly generate approximately US\$35.4 million,⁴³⁵ and at this level could occur in a single shipment.

Sales platform. In structuring the monetization sale, awardees should consider the standard industry practice of goods sold CFR Liner Out, which means the buyer then must pay for lightering and associated costs; this arrangement could possibly affect revenue for the partners.

Moreover, one industry standard may conflict with regular operations for monetization sales: importers and mills typically pay in full only after arrival of the commodity at port, whereas awardees generally require around 10 percent of the purchase cost as an advance payment. Awardees should expect potential buyers to have reservations about paying any deposit, and should consider other acceptable alternatives for reducing risk of non-performance.

Additionally, actors in the edible oil industry requested an open tender to ensure fair and equal involvement of all market participants, but future awardees should also prepare for negotiated agreements if these open tenders fail.

If awardees pursue sales to the private sector, so as to reduce confusion in the market, awardees should consider selecting **a single organization among them as lead to coordinate monetization** if sales become more frequent and consistent.

6.4.4 Pulse Sales to the GoB or Private Sector

The GoB does not regularly purchase pulses for the PFDS;⁴³⁶ therefore, awardees electing to monetize pulses would have to do so to the private sector. Such sales would be subject to GoB import policies which, as noted above, may complicate attempts to monetize pulses. Chapter 2 covers in greater detail the pulse market and the details on production and marketing. The following paragraphs focus on the possible quantities that awardees could sell if US varieties match closely enough those

434 To estimate the volume of CDSO imported by Bangladesh, USAID-BEST calculated the percentage of CDSO imported based on import data from multiple online trade databases (Comtrade, Trademap, FAOStat, and USDA PSD), and applied this percentage to the total estimated volume of commercial imports. CDSO equals 28.89 percent of edible oil imports. Based on the 2009-12 estimation for total commercial imports (1,370,576 MT), CDSO imports equal approximately 396,000 MT per year; 10 percent of this volume would be 39,600 MT.

435 At the calculated IPP of US\$895.50 per MT based on the May 7, 2014 rate of US\$843 per MT (Argentine CDSO, GoA Ministeria de Agricultura, Ganaderia y Pesca, 2014, Precios FOB por Día. http://www.minagri.gob.ar/sagpya/agricultura/precios_fob_-_exportaciones/02-series%20hist%C3%B3ricas/_archivo/000001-Precios%20FOB%20por%20d%C3%ADa.open.php?imp=1, accessed May 2013). Shipping estimated at US\$50 per MT (quote from City Group), plus BDT 200 per MT for lightering (US\$2.5 per MT - quote from S Alam Group).

436 The Trading Corporation of Bangladesh does buy small volumes of pulses to ensure adequate supplies for Ramadan. Personal communication with GoB staff and private market actors in the pulse sector, April 2014.

pulses already imported and consumed, specifically grass peas, lentils, and mung beans as they represent the most important and preferred pulses in terms of volume.

Across rural and urban areas, pulses play an important part in the typical Bangladeshi diet. However, with limited production, Bangladesh is a net importer of all pulses. Imports of lentils average approximately US\$119.5 million per year. Although lentils comprise the majority of imports, peas value close to US\$92 million annually in imports and chickpeas account for US\$73.5 million. The bulk of these three pulses comes from Canada, but Australia also sends pulses (though primarily chickpeas) and ranks as the second most important overseas source for pulse imports.

If USAID and its partners wish to pursue pulses as an option, USAID-BEST recommends awardees contact domestic traders and processors to determine whether the US pulses available to FFP awardees meet their requirements. Awardees could potentially monetize US versions of Canadian peas⁴³⁷ and Canadian or Australian chickpeas⁴³⁸ to generate, respectively, US\$7.2 million for a volume of approximately 33,100 MT and US\$7.3 million for a volume of approximately 14,500 MT. Market research reveals that Bangladesh does not currently source commercially imported lentils from the US, and that US varieties of lentils are not sufficiently comparable to the red lentils sold in Bangladesh. Therefore, USAID-BEST advises against attempting to monetize lentils for Title II programming.⁴³⁹

437 Similar to dry peas, locally known as *keshari* (grass peas).

438 Such as whole chickpeas in their shell (*solar*), split chick peas, out of their shell (*chola dal*), or whole chickpeas out of their shell (*boter dal*).

439 Known locally as *mushur dal*, but much larger than the *mushur dal* varieties grown in Bangladesh or imported from Nepal.



CHAPTER 7 ADEQUACY OF PORTS, INLAND TRANSPORT, AND STORAGE

This truck is stopped at a gas station while the driver takes a quick break. Despite the availability of water ways, Title II food aid is primarily transported by road on trucks to the primary warehouses. Gopalganj, Bangladesh, April 2014.

Photo by Fintrac Inc.

7.1. INTRODUCTION

The Bellmon Amendment requires that adequate facilities are available in the recipient country to prevent spoilage or waste of any donated US food aid. USAID-BEST investigated Bangladesh’s ports, transport routes, and storage depots in April 2014, and found them capable of handling current food aid tonnages as well as any potential increase in volumes for the next Title II development program. The following sections outline in detail these aspects of logistics and provide recommendations for future Title II awardees to consider.

7.2. PORTS

7.2.1 Port of Chittagong

Location. The Port of Chittagong lies in the southeast tip of Bangladesh in the estuary of the Karnaphuli River and extends eight nautical miles to the outermost anchorage.⁴⁴⁰

Capacity. As the primary trading hub for transoceanic shipments, including Title II monetized and distributed food aid, the Port of Chittagong accounts for 92 percent of total maritime goods entering Bangladesh and 60 percent of food grain imports. In 2013, this seaport handled approximately 44

440 CPA, 2013, *Overview 2013*.

million metric tons (MMT) of cargo, of which imports accounted for around 39 MMT. The table below lists the capacities of the equipment used for general cargo.

Table 46. General Cargo Handling Equipment

Equipment	Capacity (MT)	Number
Mobile Crane	10-50	31
Forklift Truck	10	3
Forklift Truck	2.5-5	81
Industrial Tractor	25	14
Heavy Trailer	25	2
Light Trailer	6	30

Source: CPA, 2013, *Overview 2013*.

In terms of containers, the Port of Chittagong cleared 1,343,408 Twenty Foot Equivalent Units⁴⁴¹ (TEUs) in Bangladesh Fiscal Year (BFY) 11-12.⁴⁴² To handle this traffic, the port possesses the following machinery:

441 An approximation of the volume of a 20-foot-long container.

442 CPA, 2013, *Overview 2013*.

Table 47. Container Handling Equipment

Equipment	Capacity (MT)	Number
Quay Gantry Crane	40	4
Rubber Tyred Gantry Crane	40	11
Straddle Carrier	40	31
Reach Stacker	45	12
Forklift Truck	25-42	5
Forklift Truck	7-16	19
Reach Stacker	7	2
Container Mover	50	6
Terminal Tractor	50	43
Trailer	50	55

Source: CPA, 2013, Overview 2013.

Despite a decline in the number of vessels calling at the port (down from 2,308 in 2010-11 to 2,079 in 2011-12),⁴⁴³ the Port of Chittagong remains an important contributor to the national economy. During the period 2012-13, the port experienced a 5.5 percent growth in container traffic. Recognizing the significance of this seaport, the Government of Bangladesh (GoB) plans to direct further investment into developing and boosting the capacity for increased traffic at the port; proposed improvements include the construction of two additional container terminals, procurement of modernized equipment, and development of a new bulk terminal via a public-private partnership. The Chittagong Port Authority (CPA), the management body for the port, did not specify a date for completion of these projects in its announcements of the upgrades. However, in April 2014 construction was underway on the container terminals.

Specifications. The complexity of navigating to the Port of Chittagong depends on the tides, as the entrance into the Karnaphuli River can become difficult to cross in shallow waters. Tides range from 1.5-4.8 meters (m)⁴⁴⁴ and are semi diurnal with prominent diurnal effect. All vessels calling at the port must not exceed the maximum permissible draft of 8.5-9.2 m and length overall (LOA) of 188 m.⁴⁴⁵ Vessels unable to pass through shallow waters must lighten their cargo.

Although on-going and planned developments could add additional facilities in the next few years, currently there are six conventional berths, 11 container berths, and one silo berth.

According to the CPA, armed guards provide 24-hour security, a closed circuit television monitors port activities, and a public broadcast system announces any emergencies.⁴⁴⁶ The port maintains compliance with the International Ship and Port Facility Security (ISPS) Code.

A private business operating berths at two of the four current

443 CPA, 2013, Overview 2013.

444 WFP, 2011, *Bangladesh Logistics Capacity Assessment*.

445 WFP, 2011, *Bangladesh Logistics Capacity Assessment*.

446 CPA, 2013, Overview 2013.

container terminals stated that there has been an improvement in the efficiency of port operations since the 2011 implementation of an automated Commodity Tracking Management System, which monitors the movement of commodities and all the associated documentation. Moreover, the port sees minimal congestion issues but some traffic does occur when third-party operators bring their own trailers into the port to unload cargo, although the frequency of this activity has minimized.⁴⁴⁷ Additionally, port operators cited some concern about the increased growth in container traffic and the ability of planned upgrades to adequately meet the burgeoning export and import volumes.

7.2.2 Port of Mongla

Location. In the southwest corner of Bangladesh, the Port of Mongla sits at the intersection of the Pussur and Mongla rivers about 48 kilometers (km) south of Khulna city. Although located 100 km from the Bay of Bengal, the port maintains connections to the major inland river ports.

Capacity. The Port of Mongla is the second largest port in Bangladesh despite clearing considerably lower volumes in comparison to the traffic at the Port of Chittagong. Although no food assistance currently passes through this port, its proximity to potential programmatic areas in the southwest of the country means that partners should consider and monitor the current capacity of this facility and intended improvements.

From 2011-12, the Port of Mongla handled approximately 2.6 MMT of general cargo⁴⁴⁸ and 30,045 TEUs of containers. Sitting on 22,000 hectares (ha) of land, the port utilizes 7,000 ha and



Photo by Fintrac Inc.

Ships wait for their next journey in Bangladesh's second largest port, the Port of Mongla. Although this port only accounts for eight percent of total maritime goods, the government is increasingly recognizing the importance of further investment in a robust alternative port. Mongla, Bangladesh, April 2014.

447 Personal communication with a key informant in Chittagong port operations, Chittagong, April 2014.

448 MPA, 2010, Mongla Port Authority. <http://www.mpa.gov.bd/index.php>, accessed February 2014.

from 2012-13 operated at 50 percent of its full capacity.⁴⁴⁹ A confluence of factors, including environmental concerns about major dredging work, has hindered the development of this port as a viable option for public and commercial activities. The main issue, however, remains a lack of financial support from the GoB, and subsequently the necessary investment to undertake modernization efforts.⁴⁵⁰

Recently, with the Port of Chittagong operating at around full capacity, the GoB has come to see the value in exploring and investing in other port options. Additionally, the impending construction of the Padma Bridge linking western Bangladesh to eastern Bangladesh (due to start June 2014⁴⁵¹) has heightened interest in transforming the Port of Mongla up to a standard that would attract increased vessel traffic and movement of transoceanic goods. Current facilities lack vacuators, silo facilities, and bagging machines for bulk grain handling, but should traffic increase in the coming years these additional improvements could follow.

Specifications. Vessels entering the Port of Mongla must not exceed the maximum LOA of 225 m and draft of 8.5 m at the outer anchorage.⁴⁵² The tide ranges between 1.2-3.5 m and are semi diurnal with a prominent diurnal effect.⁴⁵³

The Mongla Port Authority (MPA) manages and oversees port operations. The MPA reports that security services provide 24-hour protection for ships and cargo.⁴⁵⁴ The port maintains the implementation of the ISPS Code.

From 2011-12, of the 235 container and general cargo ships that called at the port, the average turnaround for clearing goods was 6.1 days.⁴⁵⁵ Facilities can adequately berth 14 ships at a time.⁴⁵⁶

7.2.3. Other Ports

By 2015, the GoB expects to complete the first phase of a new deep sea port project on the island of Sonadia - located off the coast of Cox's Bazar in Chittagong Division. However, as of April 2014, funding for the project remains uncertain. Although the People's Republic of China (PRC) pledged almost 100 percent of the US\$1.9 billion going into the development of this port, the GoB is in talks with other countries should the assistance from

449 Personal communication with the Mongla Port Authority, Mongla, April 2014.

450 WFP, 2011, *Bangladesh Logistics Capacity Assessment*.

451 Personal communication with key informants in government ministries, Dhaka, Mongla, and Chittagong, April 2014.

452 MPA, 2010, Mongla Port Authority. <http://www.mpa.gov.bd/index.php>, accessed February 2014.

453 MPA, 2010, Mongla Port Authority. <http://www.mpa.gov.bd/index.php>, accessed February 2014.

454 MPA, 2010, Mongla Port Authority. <http://www.mpa.gov.bd/index.php>, accessed February 2014.

455 MPA, 2010, Mongla Port Authority. <http://www.mpa.gov.bd/index.php>, accessed February 2014.

456 MPA, 2010, Mongla Port Authority. <http://www.mpa.gov.bd/index.php>, accessed February 2014.

the PRC fall through.⁴⁵⁷ If future Title II programming intends to cover the Chittagong Hill Districts then awardees should monitor the development of this port construction.

7.3. INLAND TRANSPORT

A diverse network of roads, rail, and inland water transport (IWT) routes, along with various vehicle modalities, provide a multitude of options for moving goods around Bangladesh year round and in all weather conditions. Title II food aid is primarily transported via roads. The following sections detail the capacities and specifications of these transportation forms and their ability to safely and efficiently deliver commodities around the country and onward to final distribution points.

7.3.1 Roads

Although the road network in Bangladesh extends across the country, the Road and Highway Department (RHD) only manages the National Highway, Regional Highway, and Zila Roads⁴⁵⁸ and does not oversee the 82,558 km of rural roads (that task falls to the Local Government Engineering Department (LGED)). The table below details the specific road classifications.

Table 48. Road Network by Classification

Classification	Network Length (km)
National Highway	3,544
Regional Highway	4,278
Zila Road	13,659
Rural Road	82,558

Source: WFP, 2011, Bangladesh Logistics Capacity Assessment. Road and Highway Department website.



Photo by Fintrac Inc.

Motor-powered vehicles of various types are the primary transport options for goods. As rice harvests start to come in, trucks of all shapes and sizes are seen hauling paddy to local mills. Sirajganj, Bangladesh, April 2014.

457 CASS-India, 2014, Adding a pearl: China looks for a naval base in Bangladesh. http://cassindia.com/inner_page.php?id=20&&task=diplomacy, accessed February 2014.

458 A term used for roads that pass through the districts.

Table 49. Distance (km) Between Major Cities and Towns

	Dhaka	Barisal	Bogra	Chittagong	Dinajpur	Jessore	Khulna	Mymensingh
Dhaka		277	229	264	414	274	335	193
Barisal	277		438	541	673	261	322	470
Bogra	229	438		492	185	320	381	422
Chittagong	264	541	492		678	538	599	457
Dinajpur	414	673	185	678		549	566	607
Faridpur	145	132	356	409	541	129	190	338
Jessore	274	261	320	538	549		61	467
Khulna	335	322	381	599	566	61		528
Kushtia	277	264	224	541	409	79	158	470
Mymensingh	193	470	422	457	607	467	528	
Noakhali	192	468	420	151	605	465	526	385
Pabna	161	280	158	425	343	163	224	354
Rajshahi	270	401	264	534	449	233	295	464
Rangpur	335	594	106	599	79	426	488	528
Rangamati	340	616	568	76	753	626	687	533
Sylhet	346	623	575	425	760	632	694	539

Source: WFP, 2011, Bangladesh Logistics Capacity Assessment.

Of the total network under RHD oversight (21,481 km), the majority (17,546 km) of these roads are regularly maintained paved, two-way lanes.⁴⁵⁹ Given that trade activity via the Dhaka-Chittagong corridor represents 50 percent of GDP, the GoB recognizes the value of maintaining national and regional highways.⁴⁶⁰ Moreover, LGED has been developing farm to market roads since the implementation of the rural development strategy in 1985.⁴⁶¹ The table above lists the distance between major cities and towns by road.

To further emphasize the connectedness of the country, the following map shows that major national highways provide linkages throughout Bangladesh.

Figure 49. National Highway Network



Source: Created by USAID-BEST using GoB, 2009, Road Master Plan:Volume 1 - Main Text.

459 WFP, 2011, Bangladesh Logistics Capacity Assessment.

460 WFP, 2011, Bangladesh Logistics Capacity Assessment.

461 WFP, 2011, Bangladesh Logistics Capacity Assessment.

Despite the adequacy of physical infrastructure on these primary routes, the overcrowding of motorized vehicles, non-motorized vehicles, and pedestrians worsens road conditions and increases the risk of accidents. Police statistics cite 4,000 deaths annually from collisions, and that number climbs even higher to 10-12,000 if accounting for unofficial data; such a rate represents one of the highest in the world.⁴⁶² Congestion does not only arise because of a road width issue, but also because stalls, repair shops, and other vendors often line the unsealed path along roads, and rickshaw pullers and pedestrians prefer to use well-conditioned and paved ground. With this high volume of cars, trucks, and people, traffic movement slows down considerably, especially on routes entering Dhaka city and at the country borders.⁴⁶³ A truck curfew applies in Dhaka during daylight hours to reduce congestion, but though this regulation appears enforced, the nuances behind what constitutes a truck, the load quantity, and the category of goods transported means that a multitude of vehicles continues to bog down traffic throughout the day.⁴⁶⁴

Further exaggerating the crowded road conditions, the low weight limits for trucks on public roads means that fewer than one in five containers from the Port of Chittagong move inland. Additionally, a regulation on the books requires workers to break down items for loading onto Bangladeshi trucks - a process that not only leads to significant delays, damages, loss, and uncertainty, but also results in a greater number of trucks traveling the roads as they can only carry 15-20 metric tons (MT), or more typically, an overloading of trucks that degrades

462 WFP, 2011, Bangladesh Logistics Capacity Assessment. GoB, 2009, Road Master Plan:Volume 1 - Main Text.

463 WFP, 2011, Bangladesh Logistics Capacity Assessment.

464 WFP, 2011, Bangladesh Logistics Capacity Assessment. Personal communication with a key informant in the logistics industry, Chittagong, April 2014.

infrastructure.⁴⁶⁵ The following table specifies the weight limit for the different types of axle permitted on the road.

Table 50. Maximum Permissible Axle and Laden Weight Limits for Motor Vehicles

Type of Axles	Maximum Permissible Weight Limit for an Axle (MT)
Steering/Single axle with two tires	5.5
Single rear axle with four tires	10
Two closely spaced axles (center lines of axles 1.02-2.5 m apart) with two tires each	6.25
Two closely spaced axles with four tires each	8.25
Three closely spaced axles (center lines of outermost axles no more than 3.25 m apart) with two tires each	4.5
Three closely spaced axles with four tires each	6.5
Four closely spaced axles with four tires each	5.5

Source: WFP, 2011, *Bangladesh Logistics Capacity Assessment*.

Weigh stations, though infrequent and often lenient in enforcement, do exist and are often located at the ports and the entrance of major bridges. A key informant in the private logistics industry cited some inconsistencies in practice between different weigh stations in the fee collected for overloaded trucks. Additionally, if a weigh station deems a truck too heavy to cross the bridge then it must unload and wait for a second truck, which can take anywhere from a few hours to several days depending on availability. Overloading costs Bangladesh approximately Bangladeshi Taka (BDT) 3 billion per year in road maintenance to repair the damage from degraded infrastructure. Recently, India announced that it may allow Bangladeshi vehicles to travel freely through the borders instead of stopping at the borders to unload trucks.⁴⁶⁶ Should this measure come to fruition, then Bangladesh may consider reciprocating on its end and allowing Indian trucks on its roads, but the GoB has not stated anything definitively.⁴⁶⁷

The multitude of rivers and waterways in Bangladesh can also hinder the flow of road traffic. Although RHD manages 18,258 bridges/culverts in its road network and LGED oversees the 804,635 bridges/culverts in rural areas, some parts of the country continue to require ferry transportation. This modality of transport extends travel time and slows the movement of goods as ferries run infrequently and often operate at reduced

speed.⁴⁶⁸ The construction of bridges may further facilitate the efficient transport of commodities, but crossing them requires a toll of Bangladeshi Taka (BDT) 20-50 for cars and BDT 100-600 for trucks.⁴⁶⁹ This payment amount, though fixed on paper, often rises or decreases depending on the bridge crossed and the ability of the transport company to negotiate with the toll collector.



Photo by Fintrac Inc.

One of many ferry stations along the Jamuna River hosts ferries and low-capacity boats alike. Small ports such as this one facilitate the slow but steady transport of goods between the north and south of Bangladesh. Rajbari, Bangladesh, April 2014.

At the moment, the top priority for the GoB remains the construction of a road-rail bridge over the Padma River that will better link southwest Bangladesh to Dhaka, the Port of Chittagong, and the rest of the country. The project has come under scrutiny after the World Bank suspended the US\$1.2 billion line of credit in 2012 because of possible corruption in the construction process.⁴⁷⁰ Although India, China, and Malaysia have offered financial assistance, the GoB announced in April 2013 that it would utilize its own resources to complete the bridge and the government has since adamantly stated that it possesses adequate funds for the construction to go forward.⁴⁷¹ During the field visit in April 2014, construction on the bridge had not yet begun but several key informants stated their conviction that work would commence by June 2014. The planning minister targets to complete the bridge in 2017.⁴⁷²

Additionally, RHD, under the Ministry of Communication, created a Road Master Plan in 2007 outlining anticipated projects and developments through 2027 that includes: 1) upgrading national highways into 4/6 lanes with medians; 2)

465 WFP, 2011, *Bangladesh Logistics Capacity Assessment*.

466 Pakistan Defence, 2014, India may allow entry to freight vehicles from Bangladesh to improve bilateral ties. <http://defence.pk/threads/india-may-allow-entry-to-freight-vehicles-from-bangladesh-to-improve-bilateral-ties.303041/>, accessed May 2014.

467 Pakistan Defence, 2014, India may allow entry to freight vehicles from Bangladesh to improve bilateral ties. <http://defence.pk/threads/india-may-allow-entry-to-freight-vehicles-from-bangladesh-to-improve-bilateral-ties.303041/>, accessed May 2014.

468 WFP, 2011, *Bangladesh Logistics Capacity Assessment*.

469 WFP, 2011, *Bangladesh Logistics Capacity Assessment*.

470 Al Jazeera, 2013, Bangladesh takes bold step to bridge Padma.

471 Al Jazeera, 2013, Bangladesh takes bold step to bridge Padma. bdnews24, 2014, 'Enough funds for Padma bridge'. <http://bdnews24.com/bangladesh/2014/04/19/enough-funds-for-padma-bridge>, accessed April 2014.

472 bdnews24, 2014, 'Enough funds for Padma bridge'. <http://bdnews24.com/bangladesh/2014/04/19/enough-funds-for-padma-bridge>, accessed April 2014.



Photo by Fintrac Inc.

A driver stands ready to run on his latest delivery of edible oil. Although some companies have refineries directly at the port, others must deliver their crude unprocessed oil to their processing plants via tankers. Chittagong, Bangladesh, April 2014.

constructing new bridges and repairing older, narrow bridges; 3) establishing an independent agency dedicated to road safety; 4) constructing 18 additional weighbridges; and 5) developing more farm to market roads via LGED.⁴⁷³

7.3.2 Rail

Bangladesh Railways (BR), the state-owned rail transport agency, operates the 2,835 km of rail line, 440 stations, 286 locomotives, 1,503 coaches, 10,226 wagons, 261 passenger trains, and 55 cargo trains that form the rail network in the country.⁴⁷⁴ Railways connect almost 44 districts.⁴⁷⁵ The largest inland container depot (ICD) in Dhaka (capacity of 90,000 TEUs) falls under the purview of BR.⁴⁷⁶ However, despite the availability of this transportation mode, certain issues still remain, such as irregularities in train timetables, the threat of floods, waterlogged tracks, missing rail links between major cities, poor technical capacity, and reduced speed. Passenger trains run between districts but operational tracks remain limited; furthermore, the slow speed of carriage cars and high rate of accidents deter greater use of this transportation.⁴⁷⁷

The GoB uses rail for transporting wheat from its silos to storage depots around the country. At the moment no humanitarian actors are utilizing rail to move food assistance commodities, and no private millers or processors reported using rail to reach markets and traders.⁴⁷⁸

473 GoB, 2009, *Road Master Plan: Volume 1 - Main Text.*; WFP, 2011, *Bangladesh Logistics Capacity Assessment.*

474 WFP, 2011, *Bangladesh Logistics Capacity Assessment.*

475 WFP, 2011, *Bangladesh Logistics Capacity Assessment.*

476 WFP, 2011, *Bangladesh Logistics Capacity Assessment.*

477 Personal communication with key informants in the logistics industry, Chittagong, April 2014.

478 Personal communication with donors and private sector actors, Dhaka, April 2014.

7.3.3 IWT

Given the weight limits on trucks for road transportation and the unreliable rail network, IWT offers an alternative for moving dense, heavier cargo. The network consists of 11 major inland ports, 23 coastal island ports, 133 launch stations, and more than 1,000 minor landing points in rural areas across 24,000 km of inland waterways throughout the country.⁴⁷⁹ However, navigability issues in the dry season reduce operations by 50 percent to 12,000 km.⁴⁸⁰ Larger vessels traversing these waters can typically carry 1,800 MT of cargo while smaller country boats often hold less than 1 MT.⁴⁸¹

Despite the potential for using IWT as a competitive transport mode, most of the landing points in rural areas suffer from inadequate dredging, a shortage of berthing facilities, and lack of proper equipment and facilities to handle significant volumes of cargo. However, the GoB has taken steps to increase development of IWT. For example, the National Strategy for Accelerated Poverty Reduction (NSAPR) calls for a series of improvements that includes: 1) enforced standards for bridges/berthing facilities; 2) better internal government coordination so there is sufficient clearance under road bridges; 3) integration of country boat owners into the development process; and 4) tolls so that local authorities feel a sense of ownership over facilities.⁴⁸² The Bangladesh Inland Water Transport Corporation, which mainly operates the passenger ferry services although it does oversee some cargo operations, stated that the upgrades detailed in the NSAPR are ongoing.⁴⁸³



Photo by Fintrac Inc.

The ebb and flow of Bangladesh's rivers and tributaries dictate life for the country of 160 million. With some 24,000 km of inland waterways, river transport is essential for livelihoods and commerce. Dhaka, Bangladesh, April 2014.

479 WFP, 2011, *Bangladesh Logistics Capacity Assessment.*

480 Personal communication with Bangladesh Inland Water Transport Corporation, Dhaka, April 2014.

481 WFP, 2011, *Bangladesh Logistics Capacity Assessment.*

482 WFP, 2011, *Bangladesh Logistics Capacity Assessment.*

483 Personal communication with the Bangladesh Inland Water Transport Corporation, Dhaka, April 2014.

Current Title II awardees stated that IWT appeals as a mode of transportation if travel on road becomes difficult and some partners have utilized IWT to reach beneficiaries in monsoon season, although they reported that especially rough weather in rainy months deters water transport as boats can capsize due to storms. Moreover, IWT remains an alternative selection for moving commodities because its highly unregulated system increases susceptibility to loss from accident or theft.⁴⁸⁴

7.4. STORAGE

Bangladesh possesses a variety of adequate government and commercial storage spaces though availability of quality facilities decreases depending on the level of remoteness. As the country has expanded its export garment industry, the concept of on-time logistics and sufficient storage capacity has become central to private businesses.

7.4.1 GoB

Location. The GoB maintains 13 Central Storage Depots⁴⁸⁵ (CSDs) in Dhaka and 609 Local Supply Depots (LSDs) in cities and towns around the country for storing the rice and wheat in its Public Food Distribution System (PFDS).⁴⁸⁶ CSDs are primarily situated in division and district headquarters while LSDs reach into *upazilas* and often draw supply from CSDs.



Photo by Fintrac Inc.

These newly renovated government warehouses contain bagged wheat and rice for the Public Food Distribution System. The facility seen here is one of 13 Central Storage Depots. Chittagong, Bangladesh, April 2014.

Specifications and capacity. Although the GoB maintains a number of storage spaces, the year-round risk of floods and cyclones could potentially reduce the capacity of these

484 Personal communication with CARE, Save the Children, and ACIDI/VOCA, Dhaka, April 2014.

485 Note that the term depot refers not to a single warehouse but rather a site in which several godowns (also called sheds) house the rice and wheat in the PFDS.

486 Personal communication with the Ministry of Food, Dhaka, March 2014.

warehouses and damage commodities. However, WFP reports that the GoB recognizes this threat and maintains an early-warning system as well as sufficient stock to handle any disruptive weather conditions.⁴⁸⁷ Already, the Bangladesh Meteorological Department and Flood Forecasting and Warning Center collaborates with the Regional Integrated Multi-Hazard Early Warning System for Africa and Asia on new technologies to improve disaster risk response and management.⁴⁸⁸ As of April 1, 2014 GoB storage facilities stock 1,938,000 MT of rice and wheat.

Wheat silos. Five silos dedicated to wheat, have a collective installed capacity of 225,000 MT. Awardees should consider this information for Title II monetized wheat sold to the GoB.

Table 51. Capacity (MT) of GoB Wheat Silos

Silos	Capacity (MT)
Chittagong	100,000
Narayanganj	50,000
Ashuganj	50,000
Santahar	25,000
Khulna	800*

Source: WFP, 2011, Bangladesh Logistics Capacity Assessment.

*Silo manager at the silo in Chittagong stated that the silo in Khulna has been inactive for the last 10-15 years.

Yet despite the ability of the GoB storage system to handle grain, warehouse capacity remains underutilized throughout the year and many facilities, originally constructed in the 1960s/70s, are outdated. Furthermore, areas prone to natural disasters continue to lack adequate capacity due to improper maintenance. It is unclear whether commodities move consistently from CSDs to LSDs and when that transfer occurs. The Ministry of Food, responsible for maintaining CSDs and LSDs, cited community need as the rationale for the location of its depots and the determinant for its transfers.

Moving forward, the GoB plans to modernize and improve the capacity of silo facilities and storage sites in eight locations: Ashuganj and Chittagong silos, Barisal CSD, Narayanganj CSD, Dhaka CSD, Mymensingh CSD, Maheswarpasha CSD, and Madhupur site. In coordination with the World Bank, the GoB anticipates that such a project would increase the capacity for storing milled rice to 550,000 MT at each of these locations.⁴⁸⁹ Additionally, the Ministry of Food stated that it intends to create eight silos for rice that would collectively be ready for operation in 2020.

Another proposed component of the government goal to increase grain reserves would target household (HH) storage. Using a voucher system, the GoB and contracted non-

487 WFP, 2011, Bangladesh Logistics Capacity Assessment.

488 UNESCAP, 2014, Bangladesh improves disaster early warning system with ESCAP support. <http://www.unescap.org/features/bangladesh-improves-disaster-early-warning-system-with-ESCAP-support>, accessed April 2014.

489 GoB, 2013, Environment & Social Assessment & Management Framework (ESAMF) - Bangladesh Modern Food Storage Facilities Project, Phase I (BMFSP-I).



Photo by Fintrac Inc.

Government silo bins tower into the sky. Throughout the entire country, the government has built five wheat silos of varying capacities. Chittagong, Bangladesh, April 2014.

governmental organizations (NGO)s plan to offer select beneficiaries a discounted price for purchasing specially designed 70 liters (40 kg) fiber glass containers that can store rice seeds. These containers feature a water tight lid that prevents damage in the event of floods or storm surges. With the voucher, families could buy these cans at US\$25 instead of the market US\$50 price tag.

HHs chosen for this project would receive only one voucher. The GoB expects to provide one million HH fiber glass cans that would generate about 40,000 MT of storage for rice seed (or milled rice) in coastal areas at risk of weather emergencies.⁴⁹⁰ As of mid-April 2014, this project had not yet started and USAID-BEST did not notice the availability of these fiber glass containers for sale in markets.

7.4.2. Commercial Storage

Due to the burgeoning garment industry, a large concentration of shipping agents and businesses in Bangladesh coordinate with or are affiliates of international logistics companies. These corporations bring along with them high quality transport and storage services that fall in line with global standards.⁴⁹¹ Especially as the GoB moves to utilize more of their CSDs and LSDs, Title II awardees may need to rely more on available private sector rentals. In 2011, humanitarian organizations rented these commercial spaces for an average of BDT 20-35 per square feet per month (including 10 percent value added tax and usually 10 percent rent inflation per year).⁴⁹²

One issue to consider is that the current management of commercial spaces tends to turn over stock in a short period as

490 GoB, 2013, *Environment & Social Assessment & Management Framework (ESAMF) - Bangladesh Modern Food Storage Facilities Project, Phase I (BMFSFP-I)*.

491 WFP, 2011, *Bangladesh Logistics Capacity Assessment*.

492 WFP, 2011, *Bangladesh Logistics Capacity Assessment*.

these non-perishable items do not require any kind of extended storage time. However, food items tend to move out of storage slowly since the quantity leaving the warehouse often depends on amount demanded for distribution days.⁴⁹³ Therefore, the logistics chain for long-term storage of perishable commodities poses certain hurdles. Commercial storage spaces beyond the capital and the primary maritime port remain insufficient and unreliable.

7.5. IMPLICATIONS FOR TITLE II PROGRAMMING

Given the historical experience of Title II in Bangladesh, awardees possess a comprehensive knowledge of the logistics industry and significant experience handling the transport and storage challenges that have arisen in moving food aid through the port and onward to the final distribution point. The following sections detail the practices of current Title II partners and then offer recommendations for the next programming cycle.

7.5.1 Ports

Although the United Nations (UN) and its implementing partners do not need to apply for an exemption certificate to avoid paying duties and taxes on cargo, this automatic exception does not apply for Title II awardees. Those humanitarian organizations outside of the UN scope must receive the appropriate certification from the Ministry of Disaster Management before they can clear cargo at the port duty and tax free. This Certificate of Donation from the government usually takes one-two weeks to process from the time of application. Customs officials also require the following documents:⁴⁹⁴

- Bill of Lading
- Certificate of Origin
- Original Invoice
- Original Packing List
- Phytosanitary Certificate (Cereals and Pulses)
- Radiation Certificate (from load port)
- Certificate confirming goods are “fit for human consumption”

Title II awardees stated that the clearance time at the Port of Chittagong typically occurs within a week, but this duration varies depending on the political climate, weather conditions, and/or any other unforeseen blockades.⁴⁹⁵ Consequently, awardees should consider prepositioning commodities so that they arrive before monsoon season as heavy rains delay the unloading process, can cause damage to goods, and increase congestion because of a greater number of ships sitting at the port. The port charges a daily fee of US\$6 per TEU if a vessel docks for longer than the four free port days; this rate rises each week.

493 WFP, 2011, *Bangladesh Logistics Capacity Assessment*.

494 WFP, 2011, *Bangladesh Logistics Capacity Assessment*.

495 Personal communication with current Title II partners, Dhaka, April 2014.

Currently, all Title II awardees use the Port of Chittagong as the entrance into Bangladesh because of the adequate equipment to handle containers and so as to better manage commodities via one single port. Additionally, humanitarian cargo⁴⁹⁶ receives preference in the clearing queue, which means that all current awardees experience a quick turnaround time at the port with little issues of congestion.⁴⁹⁷

In the next Title II cycle, awardees should continue to use the Port of Chittagong as the primary port option given its historical experience utilizing this port for transoceanic shipments. However, if programming concentrates in western Bangladesh then partners should continuously monitor the development of the Port of Mongla for distributed food aid, as its proximate location to anticipated distribution sites could prove cost-effective. At the moment, no partners utilize the Port of Mongla due to poor facilities and low permissible draft for transoceanic shipments, but if the targeted improvements to the port (detailed in section 7.2.2) come to fruition then awardees could potentially use this entrance for all or part of its needs.

7.5.2 Inland Transport

Current Title II awardees primarily utilize the road network for transportation of food aid because, despite the crowded conditions and congestion, the system extends fairly well into distribution areas, requires few steps, and so far has experienced minimal loss.⁴⁹⁸ Currently, the three awardees contract with the same private logistics company who has an established relationship with four-five trucking companies. Given the lack of major issues with road transportation, it makes sense for NGOs to continue their relationship with a third-party logistics business in the next Title II cycle.

At the outset of the on-going Title II cycle in 2010, awardees negotiated a flat fee that does not meet realistic demands of the ever-changing trucking market in which rates can rise from BDT 1,800 per MT to BDT 100,000 per MT depending on road conditions, the political environment, fuel costs, and the availability of trucks.⁴⁹⁹ Going into the next cycle, private voluntary organizations (PVO)s should consider negotiating a graduated scale for trucking costs that takes into consideration inflation as well as other outstanding factors which may raise trucking rates. Without contingency funding, the logistics company cannot so readily absorb shocks in fluctuating trucking costs, and distribution of commodities becomes greatly delayed.

PVOs also use IWT as a way to reach final distribution points in remote areas with limited road access, and during times when travel on road becomes difficult, such as during heavy rain.

496 As the monetized wheat sold to the GoB enters the PFDS for social safety net programming, it appears that monetized goods fall under the humanitarian assistance purvey in addition to distributed foods.

497 Personal communication with current Title II partners, Dhaka and Chittagong, April 2014.

498 WFP, 2011, *Bangladesh Logistics Capacity Assessment*. Personal communication with current Title II partners, April 2014.

499 Personal communication with a key informant in the logistics industry, Chittagong, April 2014.

However, IWT can lead to greater loss from poor conditions of boats, susceptibility to water damage, and an increased number of handlers in the transference of commodities, than compared to road. PVOs tend to avoid rail because of the unreliable timetable and the damage to tracks that can occur if the weather becomes uncooperative.

7.5.3 Storage

The number of government and privately-owned storage spaces indicates that Bangladesh can sufficiently handle large quantities of food aid entering the country as well as any locally procured foods for direct distribution. Current Title II awardees rent a mix of private and government warehouses and report that conditions remain adequate for their operations (see table below).

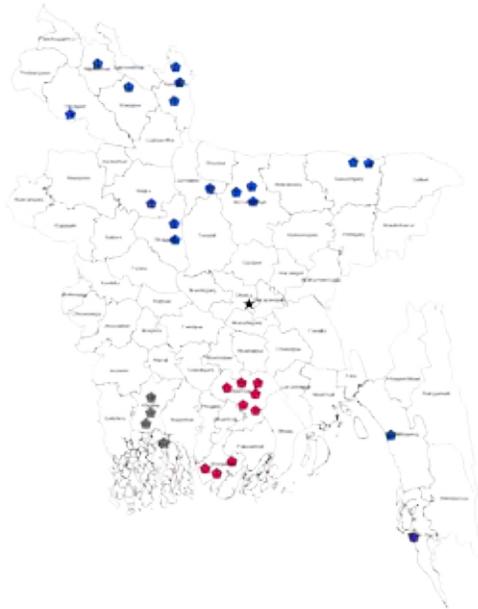
Table 52. Storage Capacity and Location for Current Title II Partners, 2014

Awardee	Location	Capacity (MT)	Ownership
ACDI/VOCA	Khulna	1,000	GoB
	Khulna	1,000	GoB
	Lohagara	80	Private
	Sarankhola	50	Private
CARE	Bogra	350	Bangladesh Rural Development Board
	Chittagong	5,000	Private
	Cox's Bazar	1,000	GoB
	Dinajpur	150	Private
	Jamalpur	500	Private
	Kurigram	600	Private
	Kurigram	500	Private
	Kurigram	200	Private
	Mymensingh	1,000	GoB
	Mymensingh	1,000	GoB
	Mymensingh	500	GoB
	Nilphamari	200	Private
	Rangpur	600	Private
Save the Children	Sirajganj	1,000	GoB
	Sirajganj	600	Private
	Sunamganj	500	Private
	Sunamganj	200	Private
	Amtoli	1,000	GoB
	Barguna	500	GoB
	Barisal	1,000	GoB
Barisal	1,000	GoB	
Bauphal	500	GoB	

Source: Created by USAID-BEST, based off personal communication with ACDI/VOCA, CARE, and Save the Children, April 2014.

The following map provides a visual representation of current Title II warehouse spaces.

Figure 50. Storage Sites of Current Title II Awardees



Source: Created by USAID-BEST based on field visit in April 2014.

Storage rental costs range greatly depending on location and size. CARE rents three godowns (also called sheds) from a jute mill in Chittagong at approximately BDT 1,100,000 for 5,000 MT storage capacity per month.⁵⁰⁰ For another private space in Sirajganj, CARE pays a monthly rent of BDT 40,000 for 600 MT



Photo by Fintrac Inc.

Title II programs in Bangladesh are distributing wheat grain, yellow split peas, and vegetable oil in their health and nutrition programs and FFW programs. Bags of transoceanic food aid are stored at this warehouse for use in PROSHAR's activities in Khulna and Bagerhat. Khulna, Bangladesh, April 2014.

capacity. Government rentals typically range from a monthly BDT 40,000-70,000 per godown of around 1,000 MT capacity or less. Among the three partners, all noted different preferences for government versus private storage; some insisted on the ease of renting space from the GoB due to a long-standing relationship while others cited complex paperwork and greater challenges to acquiring facilities because standardization of procedures remains an issue in working with the GoB. In the end, awardees work around the availability of warehouse space in their program areas and have learned to coordinate with both the GoB and the private sector to locate suitable storage sites.

All partners reported the necessity of some renovations to the rented spaces no matter commercial or public storage in order to maintain the required standard for storing Title II commodities, though the level of renovation varied significantly because of the pre-existing conditions of these spaces rather than the distinction between government or private. On the whole, across facilities visited during the April 2014 field visit, conditions looked adequate and shared the following characteristics: cross ventilation; consistent fumigation schedules and pest control; regularly updated stock cards; security guards stationed at the gate and the individual entrances to each shed; and tarps underneath ceilings to protect against water damage.

One potential problem that future awardees should consider in the next programming cycle remains the storage of commodities upon arrival at the Port in Chittagong. The logistics company handling shipments for Title II awardees reports delays in moving commodities without some type of central depot as trucks can only carry limited loads and are often in short supply. Ideally, all goods would clear the port and head directly to Title II storage sites in programming areas, but the lack of trucks and the limited capacity of these vehicles frequently hinder that process and leave the transport company scrambling at the last minute to find warehousing options. Going forward, future partners should consider the costs of maintaining a storage structure at the port (or nearby) for transoceanic in-kind food aid and the possibility of jointly renting storage, especially if commodity selection and timing of calls forward coincide.

⁵⁰⁰ CARE plans to close out these godowns at the start of May 2014 and transfer the existing commodities to its other storage sites as the present cycle of Title II programming winds down in its last year.

ANNEXES

Interested readers can access additional data and relevant background information via a series of annexes comprised of charts, graphs, and tables highlighting important economic, agricultural, and food security indicators; details of the price analysis conducted to assess market integration; and detailed calculation of import parity price. Additionally, USAID-BEST has provided in these annexes primary contacts from research and field work, and a list of references cited.



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USAID OFFICE OF FOOD FOR PEACE BANGLADESH USAID-BEST ANALYSIS ANNEXES

MAY 2014

This report is made possible by the support of the American people through the United States Agency for International Development (USAID). The contents of this report are the sole responsibility of Fintrac Inc. and do not necessarily reflect the views of USAID or the United States government.

PREFACE

The following annexes present essential background information to the full USAID-BEST report, including data and research on the economy, agricultural sector, household consumption and expenditure patterns, and food security. USAID-BEST also provides a detailed calculation of import parity price, list of contacts from the research and field work, and a collection of references cited.

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ANNEX I

SELECT ECONOMIC AND AGRICULTURAL INDICATORS

A1.1. INTRODUCTION

This annex provides supplementary information regarding key macroeconomic and agricultural indicators for Bangladesh. The findings noted below are entirely from secondary sources and informed the analysis presented in the main report.

The annex begins by presenting indicators on the macroeconomy and then the agricultural sector; follows with information on international trade, and then concludes with a table summarizing the government policies most relevant for staple food markets in Bangladesh.

A1.2. MACROECONOMY

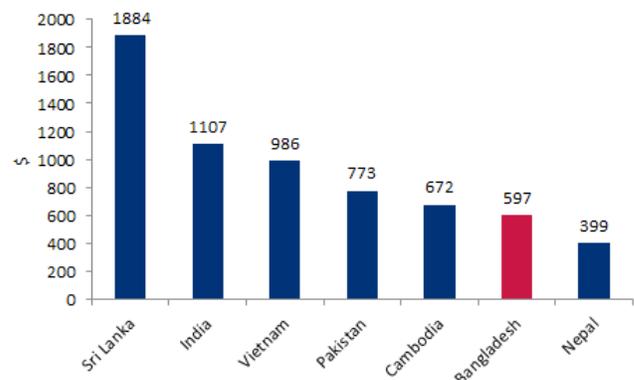
A1.1.1. Gross Domestic Product (GDP)

Table 1. GDP Indicators, 2006-12

	2006	2007	2008	2009	2010	2011	2012
GDP (constant 2005 US\$ millions)	64,274	68,405	72,640	76,810	81,472	86,937	92,356
GDP growth (annual %)	6.63	6.43	6.19	5.74	6.07	6.71	6.23
GDP per capita (constant 2005 US\$)	444	467	491	514	539	569	597

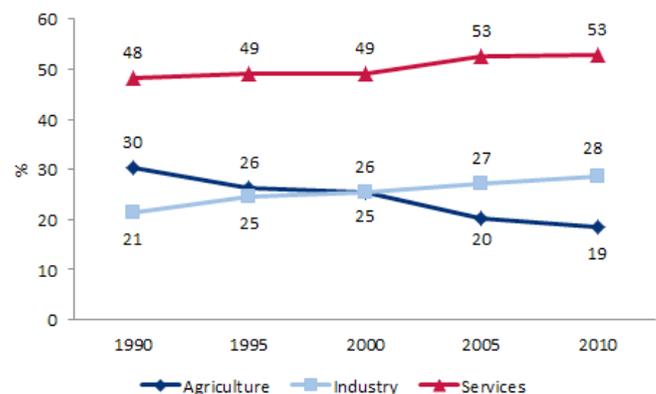
Source: World Bank, World Development Indicators, February 2014.

Figure 1. GDP per Capita in South Asia (Constant 2005 US\$), 2012



Source: World Bank, World Development Indicators, February 2014.

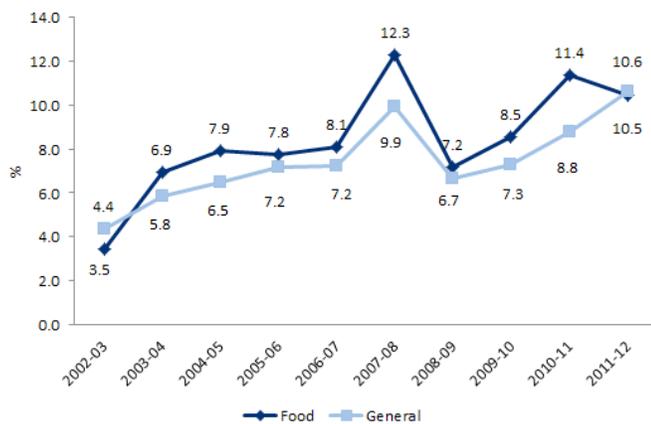
Figure 2. Proportion of GDP (%) by Sector, 1990-2010



Source: World Bank, World Development Indicators, February 2014.

AI.1.2. Inflation

Figure 3. Annual Inflation Rate, 2002-12

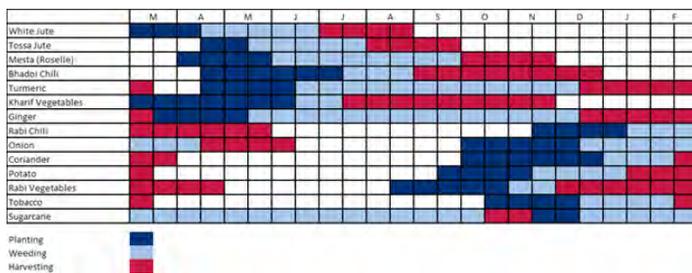


Source: GoB, May 2012, Bangladesh Economic Review 2012.

AI.3. AGRICULTURAL SECTOR

AI.1.3. Seasonality of Crop Production and Prices

Figure 4. Cash Crop Seasons



Source: GoB.

Note: Tossa Jute and White Jute refer to different varieties. Tossa Jute generally produces superior quality fibers compared to White Jute. Kharif and Rabi are the two main crop seasons. Kharif crops are grown in the spring/summer and harvested in late summer, and Rabi crops are sown in the winter and harvested in the spring or early summer. Rabi vegetables include: eggplant, cauliflower, cabbage, water gourd, tomato, radish, bean, pointed gourd and cucumber; Kharif vegetables include: pumpkin, spinach, okra, and bitter gourd. See chapter 2 for a seasonal calendar for staple food crops (e.g., rice, wheat, pulses, and oil seeds).

Figure 5. Nominal Wholesale Coarse Rice and Wheat Grain Prices (Bangladeshi Taka (BDT)/kilogram (kg)), 2008-13



Source: Department of Agricultural Marketing.

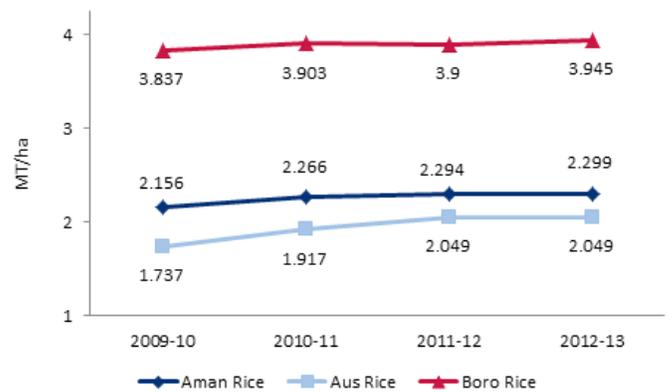
AI.1.4. Trends in Area Planted, Yields, and Production

Table 2. Total Area of Rice Planted (hectares (ha)), 2009-13

	2009-10	2010-11	2011-12	2012-13	% Change (2009-13)
Aman Rice	5,662,605	5,645,637	5,580,160	5,610,158	-0.9
Boro Rice	4,706,875	4,770,337	4,810,025	4,760,055	1.1
Aus Rice	984,052	797,049	1,138,134	1,053,093	6.6

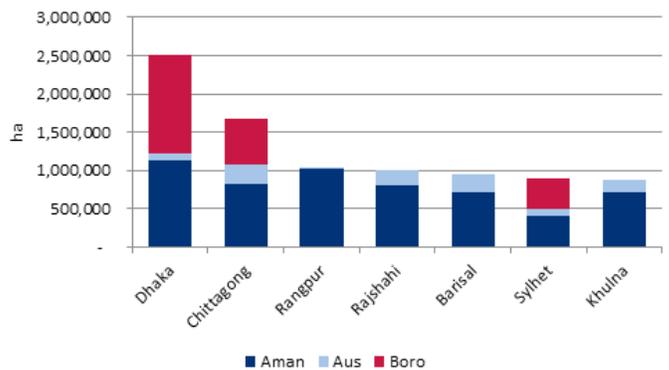
Source: BBS.

Figure 6. Average Rice Yield (metric tons (MT) per ha), 2009-13



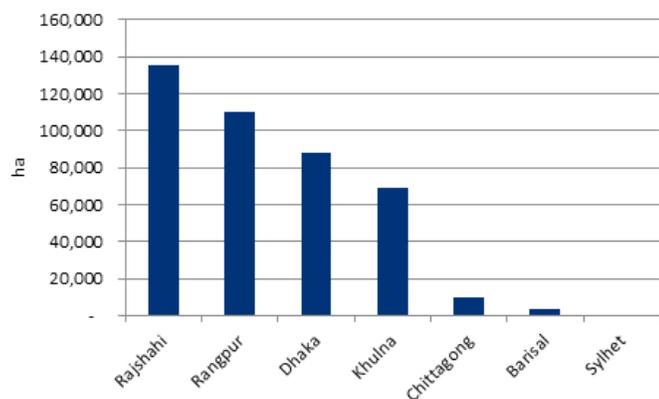
Source: BBS.

Figure 7. Total Area of Rice Planted (ha) by Division, 2012-13



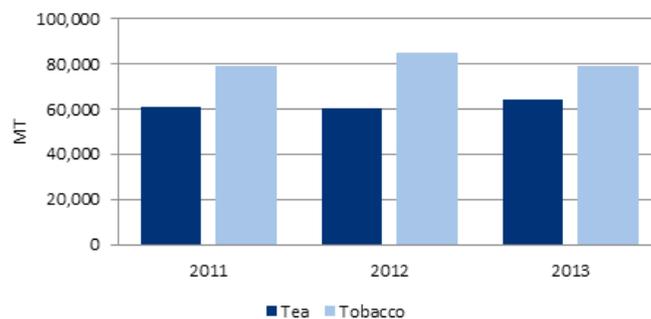
Source: BBS.

Figure 8. Total Planted Area of Wheat (ha) by Division, 2012-13



Source: BBS.

Figure 10. Tea and Tobacco Production (MT), 2011-13



Source: BBS.

Table 3. Cash Crop Area (ha), Production (MT), and Yield (MT/ha), 2013

Crop	Area (ha)	Production (MT)	Yield (MT/ha)
Jute	681,615	7,610,000	11.2
Tea	58,320	64,000	1.1
Tobacco	48,600	79,000	1.6
Potato	444,285	8,603,000	19.4
Sugarcane	109,350	4,434,000	40.5

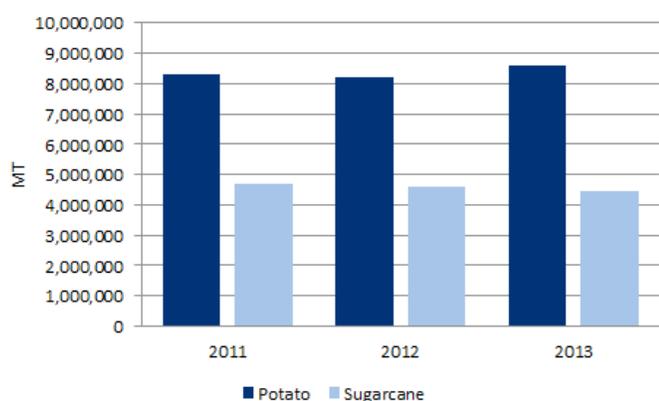
Source: BBS.

Table 4. World Jute Production (MT), 2010-12

Country/Region	2010	2011	2012	% Change (2010-12)
Bangladesh	923,464	1,523,315	1,452,044	57.2%
India	1,799,100	1,960,380	1,912,000	6.3%
Rest of World	105,969	99,461	97,920	-7.6%

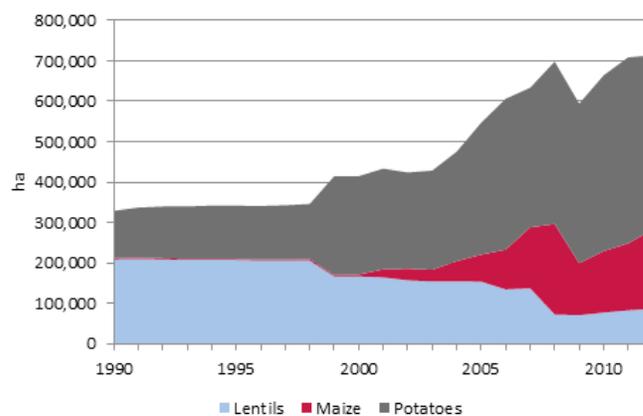
Source: FAOSTAT, April 2014.

Figure 9. Potato and Sugar Cane Production ('000 MT), 2011-13



Source: BBS.

Figure 11. Area of Lentils, Maize, and Potatoes Harvested (ha), 1990-2010



Source: FAOSTAT, April 2014.

A1.1.5. Characteristics of Agricultural Land

Table 5. Agricultural Land Area (ha), 1976-2010

	1976		2000		2010		% change (1976-2010)
	Area (ha)	% of total land area	Area (ha)	% of total land area	Area (ha)	% of total land area	
Crop land	9,761,450	67.38	9,439,541	64.96	8,751,937	60.04	-10.3%
Forest	1,754,917	12.11	1,311,121	9.02	1,434,136	9.84	-18.3%
Mangrove forest	452,444	3.12	486,791	3.35	441,455	3.03	-2.4%
River	911,819	6.29	888,441	6.11	939,073	6.44	3.0%
Lake	50,829	0.35	58,261	0.4	51,739	0.35	1.8%
Marsh	239,977	1.66	251,774	1.73	250,727	1.72	4.5%
Aquaculture	582	0.01	143,506	0.99	175,663	1.2	30,082.6%
Tea estate	119,847	0.83	138,533	0.95	96,152	0.66	-19.8%
Salt pan	11,789	0.08	24,306	0.17	36,022	0.25	205.6%
Total	13,303,654	91.83	12,742,274	87.69	121,76,904	83.53	-8.5%

Source: GoB and SDRI, August 2013, Trends in the Availability of Agricultural Land in Bangladesh.

Table 6. Irrigated Area (ha), 2006-11

	2006-07	2007-08	2008-09	2009-10	2010-11	% Change (2006-11)
Power pumps	959,509	1,035,995	1,093,460	1,091,032	1,111,671	15.9%
Tube wells	4,516,696	4,703,256	4,908,432	5,110,695	5,381,104	19.1%
Traditional	419,659	378,785	354,099	352,481	348,029	-17.1%

Source: BBS.

Table 7. Fertilizer Use (ha), 2008

Type	Area (ha)
Urea	10,849,365
Triple super phosphate (TSP)	7,888,116
Organic fertilizers	4,269,198
Single super phosphate	958,452
Diammonium phosphate (DAP)	890,987
Potash	671,388

Source: BBS.

Table 8. Average Fertilizer Use (kg/ha) by Type of Rice and Farm Size, 2011-12

		Marginal	Small	Medium	Large	Total
Transplant Aman (local)	Urea	161	132	124	105	139
	TSP	46	41	36	17	40
	DAP	6	9	4	2	7
Transplant Aman (HYV)	Muriate of Potash	18	17	15	14	17
	Urea	192	171	187	155	179
	TSP	68	56	68	53	61
Boro (HYV and Hybrid)	DAP	13	15	21	19	15
	Muriate of Potash	38	37	44	42	39
	Urea	272	248	255	219	254
	TSP	107	102	105	87	103
	DAP	28	28	30	32	29
	Muriate of Potash	67	69	72	67	69

Source: IFPRI, April 2013, The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey. Note: Marginal farmers are those with landholdings below 0.5 ha; small farmers between 0.5 and 1.49 ha; medium between 1.50 and 2.49 ha; and large 2.5 ha or more.

AI.4. INTERNATIONAL TRADE

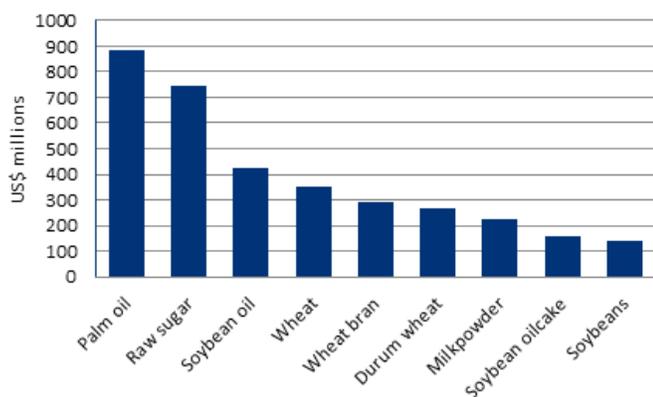
AI.1.6. Imports and Exports

Table 9. Top Imports (US\$), 2012

Description	Trade Value (US\$)
Cotton	4,589,096,679
Machinery and mechanical appliances	3,013,746,408
Electrical machinery and equipment	1,893,459,620
Mineral fuels, mineral oils and products of their distillation	1,808,009,211
Iron and steel	1,503,553,425
Animal or vegetable fats and oils	1,450,406,987
Man-made staple fibers	1,058,388,624
Plastics and articles thereof	1,036,976,432

Source: UN Comtrade, February 2014.

Figure 12. Top Agricultural Imports (US\$ millions), 2012



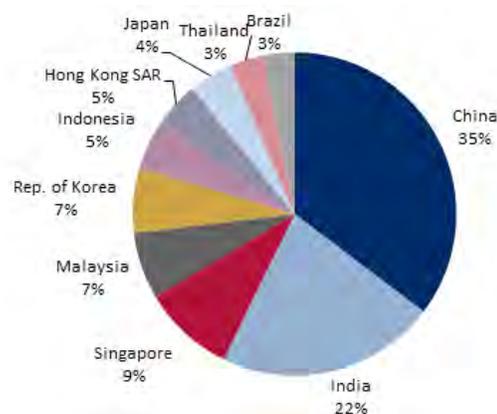
Source: UN Comtrade, February 2014.

Table 10. Quantity of Imports ('000 MT), 2007-11

	2007-08	2008-09	2009-10	2010-11
Cement	9,038	6,098	6,921	10,537
Wheat	1,585	1,611	3,202	3,544
Fertilizer	1,361	1,767	1,936	3,374
Edible oil	2,485	2,347	2,533	2,603
Rice	1,656	680	162	1,807
Sugar	1,146	1,025	1,298	1,216
Raw cotton	984	812	874	934
Petroleum: crude	806	695	449	627
Chemical products	161	168	165	350
Milk powder	48	74	47	66
Dyes	51	52	47	66
Old garments	7	9	7	14
Pharmaceutical products	5	7	2	5
Pig iron	3	6	10	5

Source: BBS.

Figure 13. Top 10 Trade Partners by Value of Imports (%), 2012



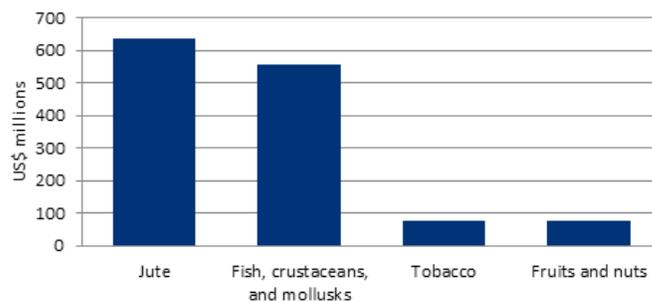
Source: UN Comtrade, February 2014.

Table 11. Top Exports (US\$), 2012

Description	Trade Value (US\$)
Clothing, apparel, and clothing accessories	23,761,208,956
Jute	637,484,015
Fish, crustaceans, and mollusks	556,792,181
Footwear	396,913,839
Raw hides, skins, and leather	306,188,366

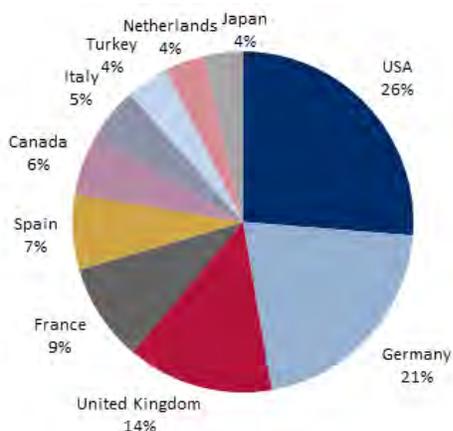
Source: UN Comtrade, February 2014.

Figure 14. Top Agricultural Exports (US\$ millions), 2012



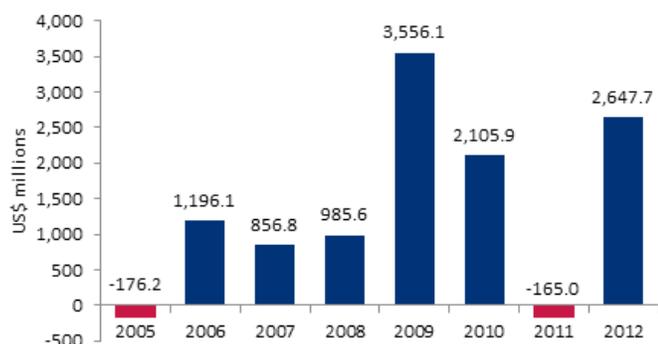
Source: UN Comtrade, February 2014.

Figure 15. Top 10 Trade Partners by Value of Exports (%), 2012



Source: UN Comtrade, February 2014.

Figure 16. Current Account Balance (US\$ millions), 2005-12



Source: World Bank, World Development Indicators, February 2014.

Table 12. Summary of Global and Regional Economic Linkages

Country/Region	Agreement/Treaty	Main Benefits	Signatory Date
Multilateral	WTO	Member of Asian developing members, G-90, and Least Developed Countries.	1995
Regional	Asia-Pacific Trade Agreement	Tariff concessions between Bangladesh, China, India, South Korea, Laos, Nepal, Sri Lanka, and Philippines.	1976
Regional	South Asia Preferential Trade Agreement	Tariff concessions between Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka.	1995
Regional	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation	Tariff concessions, assistance, collaboration, and cooperation toward economic, political, and social progress between Bhutan, Myanmar, Sri Lanka, Bangladesh, India, Nepal, and Thailand.	1997
Regional	South Asian Free Trade Area	Framework agreement reducing customs duties between Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka.	2006

Source: WTO; Asian Development Bank.

AI.5. MAJOR AGRICULTURAL POLICIES

Table 13. National Policies Affecting Agriculture

Policy/Program	Objectives
The Seed Ordinance 1977 and The Seed Amendment Act (1997 and 2005)	<ul style="list-style-type: none"> • Lays down the role and functions of the National Seed Board (NSB) and the Seed Certification Agency (SCA) • Regulates import and export of seed • Determines the standards for quality of seed • Oversees the approval and registration of new varieties and the labeling of seed
Plant Quarantine Regulation (PQR) 1966	<ul style="list-style-type: none"> • Governs plant quarantine regulations • Ensures the importation of plant products, including seed, so as to avoid unnecessary obstacles to international agricultural trade and transfer of germplasm
GoB Irrigation Policy 1990	<ul style="list-style-type: none"> • Lifts the ban on small engine imports • Eliminates import duties • Withdraws standardization requirements
National Seed Policy 1993	<ul style="list-style-type: none"> • Promotes balanced development of public and private-sector seed enterprises • Simplifies the import of seed and planting material • Provides training and technical support for seed stakeholders in topics related to seed production, processing, storage, and use of high-quality seed • Monitors, controls, and regulates the quality and quantity of seed produced in Bangladesh
Seed Rules 1998	<ul style="list-style-type: none"> • Clarifies the functions of the NSB • Details the seed regulatory framework and the procedures related to variety registration, field inspection, seed certification, and market control
GoB Fertilizer Policy 1990s-2000s	<ul style="list-style-type: none"> • Revamps the fertilizer distribution system and introduces some amount of subsidy
Biosafety Guidelines and National Biosafety Guidelines, 2008	<ul style="list-style-type: none"> • Identifies and evaluates the potential adverse effects of GMOs/LMOs on the conservation and sustainable use of biological diversity likely in the potential receiving environment, taking into account risks to human health
Plant Quarantine Act 2011	<ul style="list-style-type: none"> • Prevents the introduction of insects or pests into the country • Enforces phytosanitary requirements

Source: Pullabhotla, Hemant and Ganesh-Kumar, A., July 2012, Review of input and output policies for cereal production in Bangladesh; DOE; MOA.

ANNEX 2

SELECT FOOD SECURITY INDICATORS

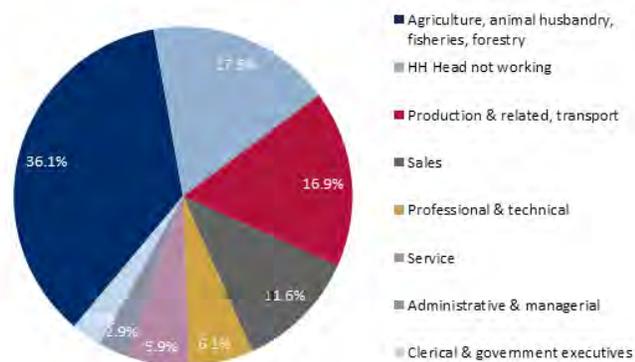
A2.1. INTRODUCTION

As a supplement to the information on food security conditions in Bangladesh presented in the main report, this annex presents additional data from relevant assessments. The annex begins by providing indicators on livelihoods and diets and then highlights data on water, sanitation, and hygiene (WASH) conditions. Next, the annex outlines typical shocks to food security and coping strategies, followed by information on the distribution of food insecure households (HHs) and malnutrition rates. Finally, the annex concludes with a table summarizing the recent major reports that informed desk research as well as a list of relevant bulletins that provide information pertinent to food security in Bangladesh.

A2.2. LIVELIHOODS

A2.2.1. Income Indicators

Figure 17. Main Occupation of HH Heads (% distribution) by Sector, 2010



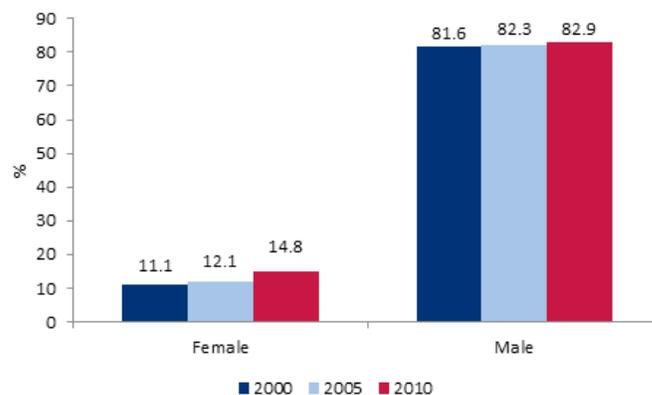
Source: Created by USAID-BEST using data from GoB, June 2011, Household Income and Expenditure Survey 2010.

Table 14. Main Occupation of HH Heads (% distribution) by Sector and Strata, 2010

Main Occupation	Rural	Urban
Agriculture, forestry, fisheries, animal husbandry	46.4	8.3
HH Head not working	17.9	16.7
Production & related, transport	13.4	26.5
Sales	8.9	18.9
Professional & technical	4.8	9.5
Service	5.4	7.4
Administrative & managerial	1.9	5.8
Clerical, government executives	1.3	7.0

Source: GoB, June 2011, Household Income and Expenditure Survey 2010.

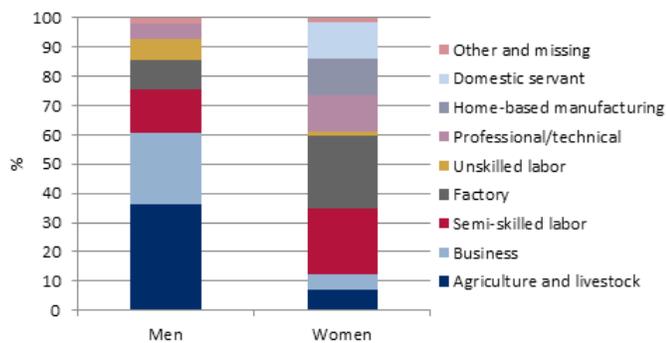
Figure 18. Employment of Working Age Population (%) by Gender, 2000-10



Source: World Bank, June 2014, Bangladesh Poverty Assessment: Assessing a Decade of Progress in Reducing Poverty, 2000-2010.

Note: This chart defines working-age population as ages 15-64.

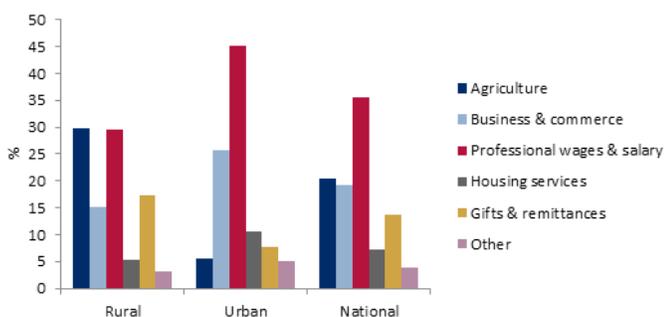
Figure 19. Employment of Ever-Married Adults Aged 15-49 (% distribution) by Sector and Gender, 2011



Source: Created by USAID-BEST using data from National Institute of Population Research and Training (NIPORT), Mitra Associates, et al, January 2013, Bangladesh Demographic and Health Survey 2011.

Note: Some categories condensed for display. Agriculture and livestock includes agricultural worker/farmer and poultry/cattle raising.

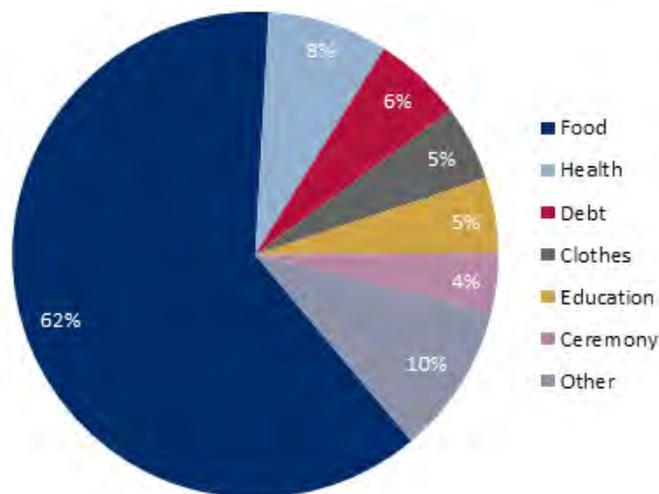
Figure 20. Share of HH Income (%) by Sector and Strata, 2010



Source: Created by USAID-BEST, using data from GoB, June 2011, Household Income and Expenditure Survey 2010.

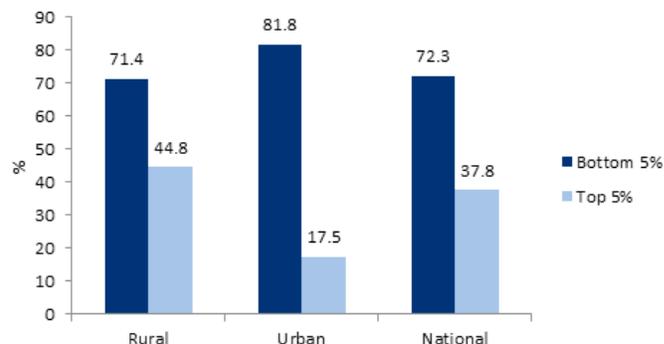
A2.2.2. Expenditure Indicators

Figure 21. HH Expenditure (%) by Category, 2009



Source: Created by USAID-BEST using data from WFP, 2009, Bangladesh Household Food Security and Nutrition Assessment Report 2009. Some categories are condensed for display. Other includes: cooking fuel, transport, soap, water, other.

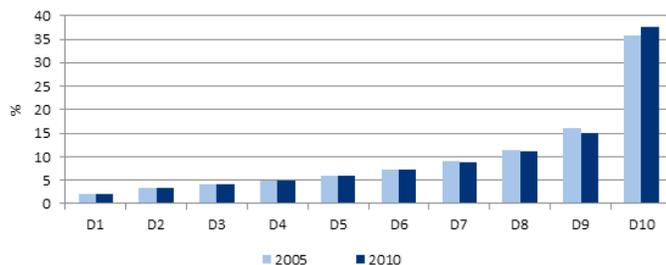
Figure 22. HH Expenditure on Food (%) by Expenditure Group and Strata, 2010



Source: Created by USAID-BEST using data from GoB, June 2011, Household Income and Expenditure Survey 2010.

Note: Bottom 5 percent represents the poorest HHs with the lowest expenditures whereas the top 5 percent have the highest.

Figure 23. Income Distribution (%) by Wealth Group, 2010

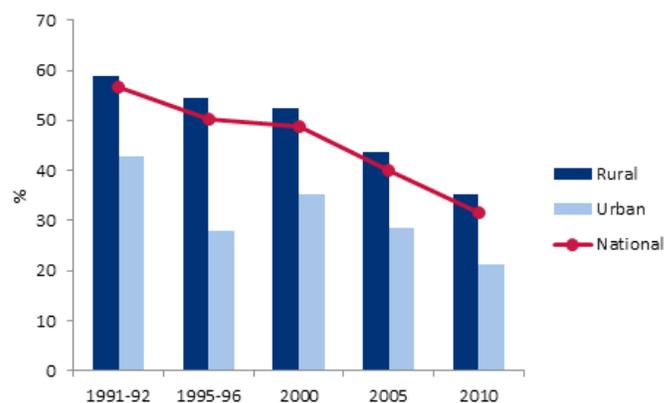


Source: GoB, June 2011, Household Income and Expenditure Survey 2010.

Note: D = Decile.

A2.2.3. Poverty indicators

Figure 24. Population Below the Poverty Line (%) by Strata, 1991-2010



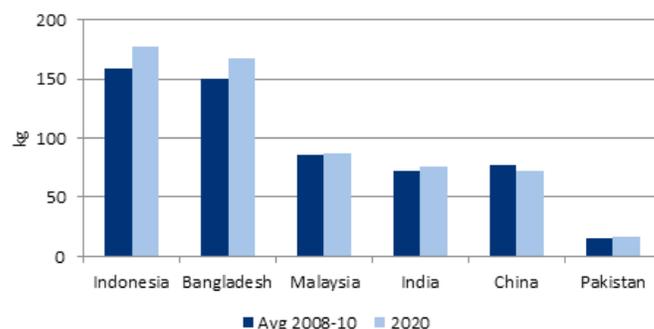
Source: Created by USAID-BEST using data from GoB, June 2011, Household Income and Expenditure Survey 2010.

Note: There is no single poverty line in Bangladesh. Instead, the GoB defines an upper and lower poverty line for 16 geographic stratas (10 urban and 6 rural). This graph displays data from the upper poverty line.

A2.3. TYPICAL DIET

A2.3.1. Food Consumption Patterns

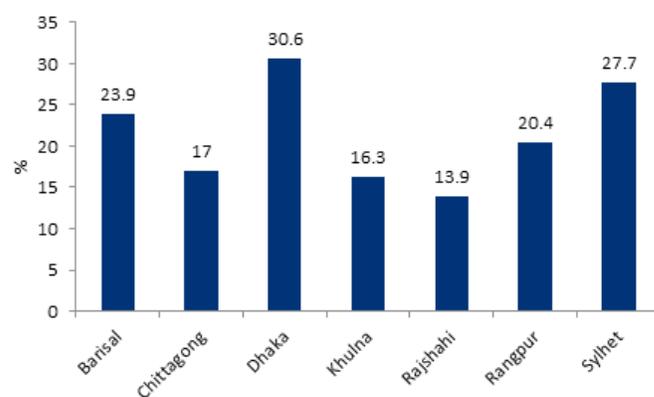
Figure 27. Per Capita Rice Consumption (kg/year) in Select Asian Countries, 2010



Source: Created by USAID-BEST using data from OECD/FAO, 2011, OECD-FAO Agricultural Outlook 2011-2020.

Note: 2020 is a projection.

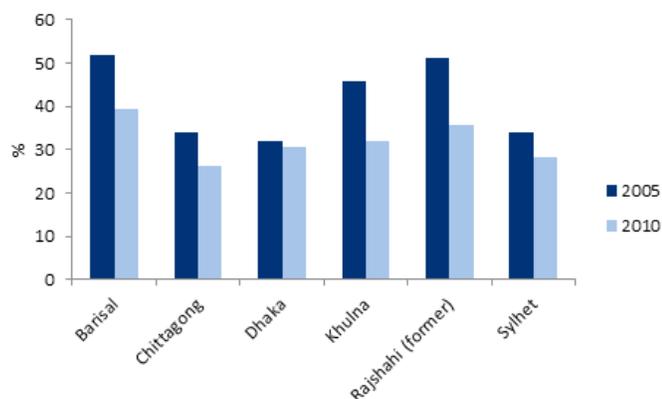
Figure 28. Children (6-23 months) Achieving Minimum Dietary Diversity (%) by Division, 2012



Source: 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.

Note: Children achieving minimum dietary diversity reportedly consume food from four or more food groups (of the seven assessed).

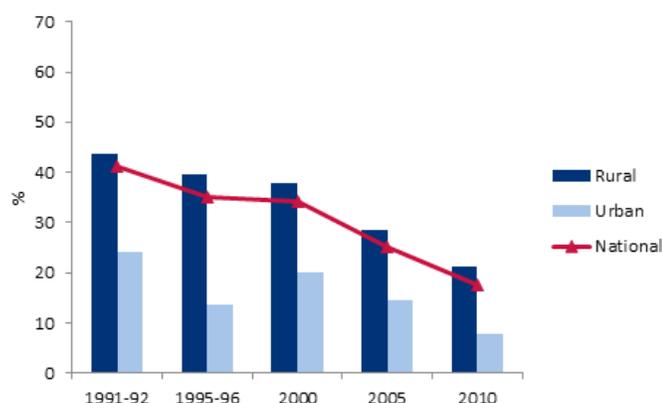
Figure 25. Population Below the Poverty Line (%) by Division, 2005 and 2010



Source: Created by USAID-BEST using data from GoB, June 2011, Household Income and Expenditure Survey 2010.

Note: In 2010 Rajshahi division was split into two divisions: Rajshahi and Rangpur. For this time series HIES shows 2010 data from the former Rajshahi division to facilitate comparison. This graph displays data from the upper poverty line.

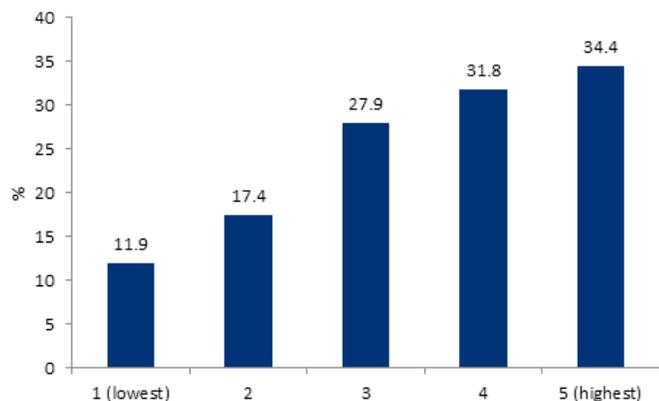
Figure 26. Population Below the Extreme Poverty Line (%) by Strata, 1991-2010



Source: Created by USAID-BEST using data from GoB, June 2011, Household Income and Expenditure Survey 2010.

Note: There is no single poverty line in Bangladesh. Instead, the GoB defines an upper and lower poverty line for 16 geographic stratas (10 urban and 6 rural). This graph displays data from the lower poverty line.

Figure 29. Children (6-23 months) Achieving Minimum Dietary Diversity (%) by Expenditure Quintile, 2012



Source: 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.
Note: Children achieving minimum dietary diversity reportedly consume food from four or more food groups (of the seven assessed).

A2.3.2. Sources of Food

Table 15. Net Buyers of Rice (% of HHs), 2010

	Net Buyers of Rice
Non-poor	72.1
Poor	86.02
Extremely Poor	87.67

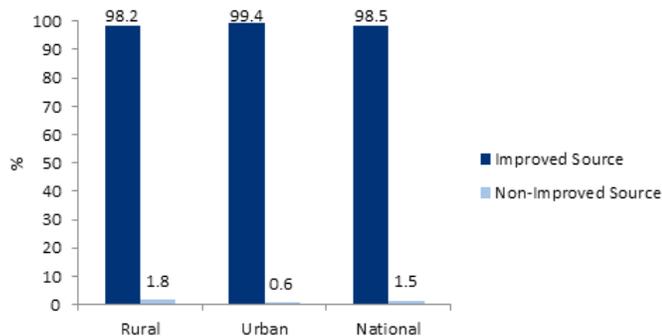
Source: World Bank, June 2014, Bangladesh Poverty Assessment: Assessing a Decade of Progress in Reducing Poverty, 2000-2010.

A2.4. WASH

A2.4.1. Access to Water

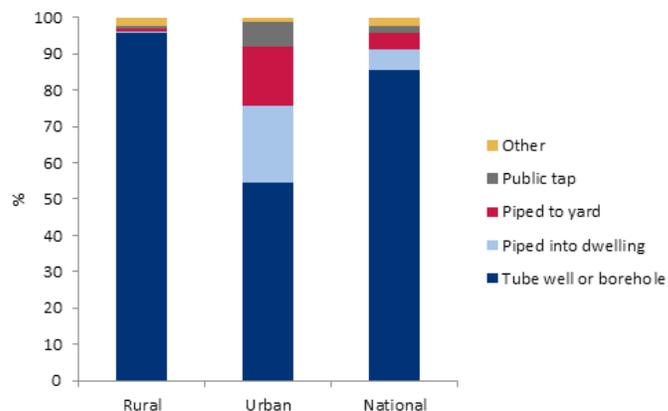
Importantly, access to an improved water source does not necessarily equal safe water, as such data do not take into account issues such as water quality, collection, storage, or utilization methods.

Figure 30. Drinking Water Source (% of HHs) by Strata, 2011



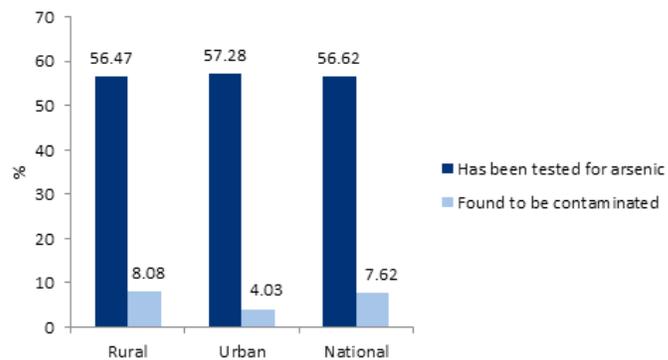
Source: Created by USAID-BEST using data from National Institute of Population Research and Training (NIPORT), Mitra Associates, et al, January 2013, Bangladesh Demographic and Health Survey 2011.

Figure 31. Improved Water Source (% of HHs) by Strata, 2011



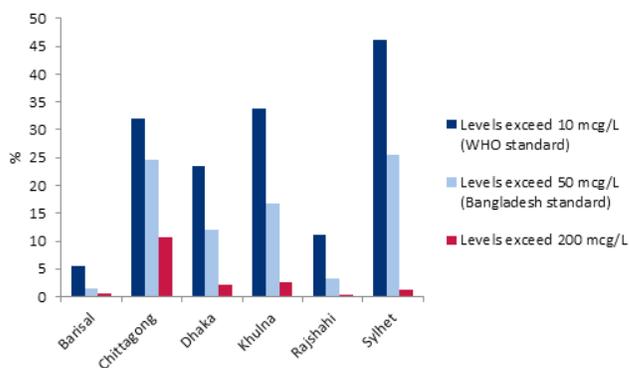
Source: Created by USAID-BEST using data from National Institute of Population Research and Training (NIPORT), Mitra Associates, et al, January 2013, Bangladesh Demographic and Health Survey 2011.

Figure 32. Arsenic Testing (% of Tube Wells) and Contamination, 2010



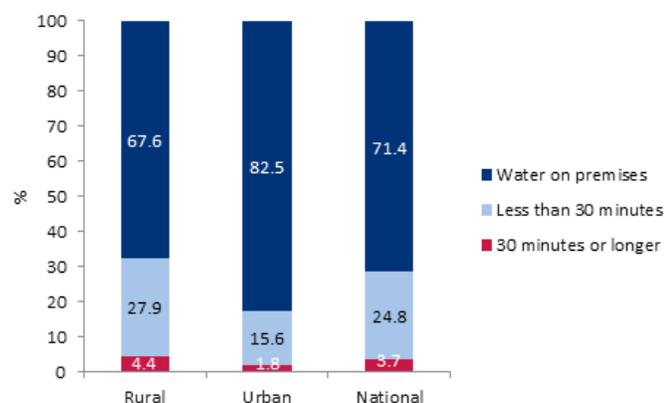
Source: Created by USAID-BEST using data from GoB, June 2011, Household Income and Expenditure Survey 2010.

Figure 33. Arsenic Levels in HH Drinking Water (% of HHs) by Division, 2009



Source: Created by USAID-BEST using data from UNICEF, 2010, Bangladesh Multiple Indicator Cluster Survey 2009: Monitoring the Situation of Children and Women.
Note: Standards for acceptable levels of arsenic: World Health Organization: less than 10 micrograms per liter; Bangladesh: less than 50 micrograms per liter; levels exceeding 200 micrograms per liter are not labeled with a standard but are considered dangerous.

Figure 34. Time to Obtain Drinking Water, 2011



Source: Created by USAID-BEST using data from National Institute of Population Research and Training (NIPORT), Mitra Associates, et al, January 2013, Bangladesh Demographic and Health Survey 2011.

Table 16. Water Treatment Methods (% of HHs) by Strata, 2011

Treatment	Rural	Urban	National
Boiled	0.6	23.4	6.3
Bleach/chlorine added	0.3	0.4	0.3
Strained through cloth	0.3	1.0	0.5
Ceramic, sand or other filter	2.3	10.8	4.4
Other	0.6	0.4	0.6
No treatment	96.2	68.7	89.3

Source: National Institute of Population Research and Training (NIPORT), Mitra Associates, et al, January 2013, Bangladesh Demographic and Health Survey 2011.

A2.4.2. Sanitation

Table 17. Sanitation Facilities (% of HHs) by Strata, 2011

Type of Facility	Rural	Urban	National
Improved, not shared facility	31.7	39.6	33.7
Flush/pour flush piped to sewer	0.1	6.5	1.7
Flush/pour flush to septic tank	3.1	12.7	5.6
Flush/pour flush to pit latrine	0.5	0.9	0.6
Ventilated improved pit (VIP) latrine	7.8	8.6	8.0
Pit latrine with slab	20.0	10.8	17.7
Improved, shared facility	16.7	25.6	18.9
Flush/pour flush piped to sewer	0.1	4.5	1.2
Flush/pour flush to septic tank	0.9	6.5	2.3
Flush/pour flush to pit latrine	0.3	0.8	0.4
Ventilated improved pit (VIP) latrine	3.8	6.0	4.4
Pit latrine with slab	11.6	7.7	10.6
Non-improved facility	51.6	34.8	47.4
Flush/pour flush not to sewer/septic tank/pit latrine	0.1	18.1	4.6
Pit latrine without slab/open pit	37.1	13.8	31.3
Hanging toilet/hanging latrine	8.6	2.0	6.9
No facility/bush/field	5.8	0.9	4.6

Source: National Institute of Population Research and Training (NIPORT), Mitra Associates, et al, January 2013, Bangladesh Demographic and Health Survey 2011.

A2.4.3. Hygiene

The following table presents data on handwashing facilities from the 2011 DHS in the absence of nationally representative information on actual practice. However, the availability of these facilities does not necessarily translate into proper hygienic handwashing.

Table 18. Availability of Handwashing Facilities (% of HHs) by Wealth Quintiles, 2011

	Place for hand washing	Had water only	Had soap and water	Had water and another cleansing agent
Lowest	76.2	84.9	3.8	6.8
Second	81.5	79.3	8.5	7.9
Middle	85.3	77.7	12.7	6.9
Fourth	90.7	64.6	27.5	6.5
Highest	97.8	30.7	66.5	2.2

Source: National Institute of Population Research and Training (NIPORT), Mitra Associates, et al, January 2013, Bangladesh Demographic and Health Survey 2011.

A2.5. SHOCKS AND COPING

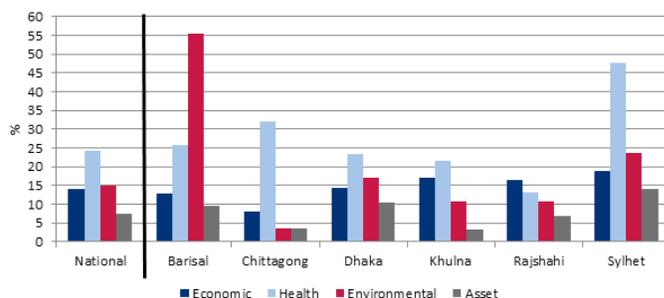
A2.5.1. Main Shocks

Table 19. Incidence of Most Common Shocks* (% of Rural HHs) in Last 5 Years, by Expenditure Quintile, 2011-12

Type of Shock	Lowest Expenditure	Highest Expenditure	All Rural
Medical expenses due to illness or injury	21.9	22.7	21.8
Increase in food prices	9.4	6.2	7.6
Loss of productive assets due to storm/cyclone, river erosion, theft, fire, etc. (reasons other than floods)	4.7	4.9	4.9
Loss of livestock due to death	5.5	3.7	4.7
Loss of income due to illness or injury of HH member	4.2	3.4	3.8
Other shocks	2.2	5.1	3.5
Major loss of crops due to drought, storms, pests, disease, etc. (reasons other than floods)	2.5	2.6	3.0
Major loss of crops due to floods	2.2	2.8	2.5
Other costs of wedding	2.3	3.0	2.5
Dowry payment	3.1	1.8	2.2
Failure or bankruptcy of business	1.2	2.9	1.9
Losses due to court case	1.3	2.4	1.9
Death of main earner	1.9	1.4	1.6
Cost of court case	0.6	1.8	1.6
Death of other than main earner in family	0.9	1.1	1.1
Loss or destruction of other consumption assets due to floods	1.0	0.8	0.9
Lost home due to river erosion	2.0	0.4	0.7
Loss of livestock due to theft	0.5	0.4	0.6
Loss of a regular job of a HH member	0.4	0.9	0.5
Loss of consumption assets due to factors other than floods	0.5	0.4	0.5

Source: IFPRI, April 2013, The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey.
*The survey lists 34 distinct shocks, including a category for "Others", but this table shows only the top 20 shocks as sorted by percent of all rural HHs.

Figure 35. Incidence of Shocks (% of Respondents) in the Last Year, by Type of Shock and Division, 2009



Source: Created by USAID-BEST using data from Santos, I., Sharif, I., et al, September 2011, How Do the Poor Cope with Shocks in Bangladesh? Evidence from Survey Data.

A2.5.2. Main Coping Strategies

Table 20. Most Common Coping Mechanisms* (% of Rural HHs) by Mechanism and Expenditure Quintile, 2011-12

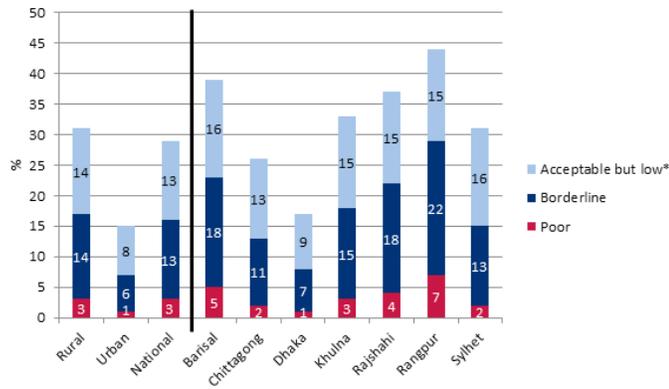
Coping Mechanism	Lowest Expenditure	Highest Expenditure	All Rural
None	31.7	49.5	42.5
Took help from others	28.2	19.1	21.3
Took loan from non-formal source	18.6	19.3	18.9
Took loan from NGO/formal institution	18.6	14.5	18.1
Sold productive asset	5.8	4.6	6.2
Ate less food to reduce expenses	7.1	5.3	6.0
Ate lower quality food to reduce expenses	5.4	2.6	5.6
Others	4.5	5.7	5.4
Mortgaged/leased out land	2.5	8.7	4.9
Sold land	3.4	5.7	4.4
Sold consumption asset	1.7	3.4	2.2
Emergency receipt of remittance from migrant family member	0.8	3.5	1.2
Mortgaged productive asset	1.3	1.6	1.0
Mortgaged consumption asset	0.4	0.9	0.9
Forced to change occupation	1.5	1.5	0.9

Source: IFPRI, April 2013, The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey.
*Multiple responses were accepted for this question, so totals exceed 100. While the survey lists 20 distinct coping mechanisms, this table shows only the top 15 as sorted by percent of all rural HHs.

A2.6. DISTRIBUTION OF FOOD INSECURITY

A2.6.1. Food Insecurity by Region

Figure 36. Food Insecurity (% of HHs) by Food Consumption Score, Strata, and Division, 2012

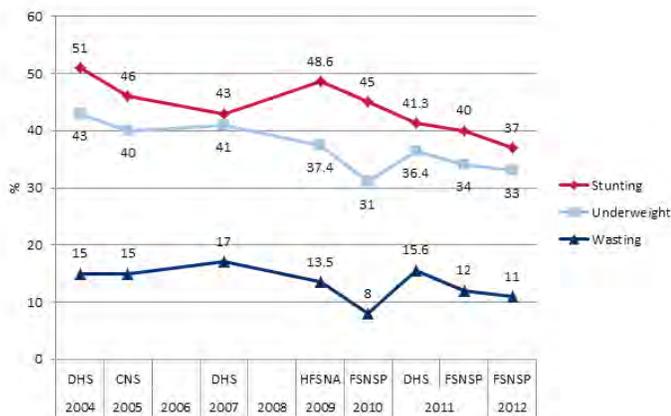


Source: BRAC Institute of Global Health and Helen Keller International, 2014, The State of Food Security and Nutrition in Bangladesh: 2012.

*The 2009 Bangladesh Household Food Security and Nutrition Assessment created four consumption groups: Poor (=28), Borderline (>28 and =42), Acceptable but low (43-52), and Acceptable high (>52). Households with poor or borderline consumption, below 42, are considered food insecure. HKI follows this standard for FSNP surveillance. (WFP, 2009, Bangladesh Household Food Security and Nutrition Assessment Report 2009.)

A2.6.2. Malnutrition Rates

Figure 37. Prevalence of Child Undernutrition (% of Children 0-59 Months) by Survey, 2004-12

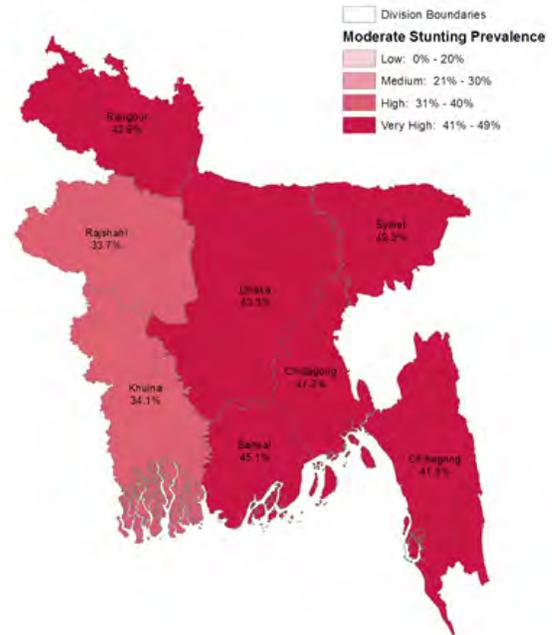


Source: Created by USAID-BEST using data from BRAC Institute of Global Health and Helen Keller International, 2014, The State of Food Security and Nutrition in Bangladesh: 2012.

(consolidates and provides analysis of data from the Food Security and Nutrition Surveillance Program (FSNSP)); National Institute of Population Research and Training (NIPORT), Mitra Associates, et al, January 2013, Bangladesh Demographic and Health Survey 2011.; WFP, 2009, Bangladesh Household Food Security and Nutrition Assessment Report 2009.

Note: Seasonality should be taken into account when reviewing these trends. For more information on when the most recent DHS, FSNSP, and HFSNA surveys took place please refer to the Recent Food Security Assessments table at the end of this Annex.

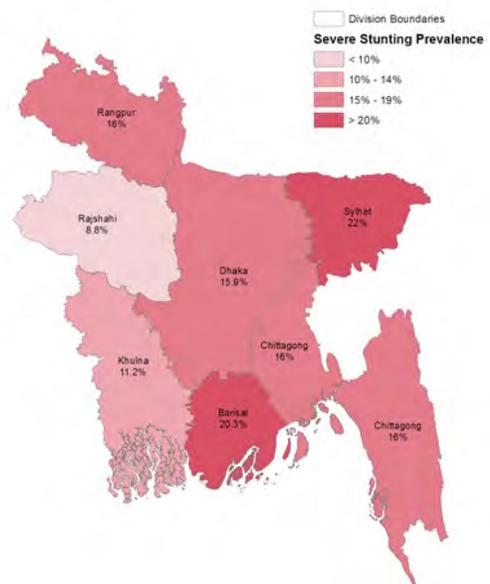
Figure 38. Prevalence of Moderate Stunting (% of Children 0-59 Months) by Division, 2011



Source: Created by USAID-BEST using data from National Institute of Population Research and Training (NIPORT), Mitra Associates, et al, January 2013, Bangladesh Demographic and Health Survey 2011.

Note: Moderate stunting = height for age <-2 z-score. Categories low to very high provided for moderate stunting prevalence are WHO international threshold standards.

Figure 39. Prevalence of Severe Stunting (% of Children 0-59 Months) by Division, 2011



Source: Created by USAID-BEST using data from National Institute of Population Research and Training (NIPORT), Mitra Associates, et al, January 2013, Bangladesh Demographic and Health Survey 2011.

Note: severe stunting = height for age <-3 z-score.

A2.7. RECENT FOOD SECURITY ASSESSMENTS

The following table provides a summary of the major food security reports for Bangladesh including select findings.

Table 21. Recent Food Security Assessments

Author, Publication Date, Title	Data Collected	Objective	Methodology	Select Findings
BRAC Institute of Global Health and Helen Keller International, 2014, The State of Food Security and Nutrition in Bangladesh: 2012.	2012	To track the level and distribution of food insecurity and malnutrition	<ul style="list-style-type: none"> Compiles and analyzes data from the Food Security and Nutrition Surveillance Program (FSNSP), a nationally representative surveillance system Tracks 6 surveillance zones 9,024 HHs per round Covers 3 major seasons: post-Aman harvest (Jan-Apr); the height of the monsoon (May-Aug); and post-Aus harvest (Sep-Dec) Collects data on maternal and child health and nutrition, food access and utilization, water, and hygiene 	<ul style="list-style-type: none"> For children under 5 - stunting prevalence: 37%, or over 6 million children; wasting: 11%; underweight: 33% 1 in 4 pregnant women are so thin that their fetuses face a moderate risk of growth retardation Among children 6-23 months only 39% met minimum dietary diversity targets, this proportion has changed little since 2008 Between 2010 and 2012, an average of 42.6% of HHs with young children reported that they ran out of food in the month before each interview. An average of 35.6% reported eating only rice.
IFPRI, April 2013, The Status of Food Security in the Feed the Future Zones and Other Regions of Bangladesh: Results from the 2011-2012 Bangladesh Integrated Household Survey.	October 2011-March 2012	To determine and compare the food security situations in the Feed the Future zone in southern Bangladesh and other regions across the country	<ul style="list-style-type: none"> Analysis of the Bangladesh Integrated Household Survey data Nationally representative survey down to the division level - for rural HHs 2,040 HHs Collected data on employment, agriculture, consumption, nutrition, WASH, shocks, and coping mechanisms 	<ul style="list-style-type: none"> 35.8% of HHs in rural Bangladesh are below food energy thresholds (less than 2,122 kcal/person/day) Children 6-23 months of age achieving minimum dietary diversity: 11.9% in the lowest wealth quintile; 34.4% in the highest wealth quintile 51% of HHs in the FTF zone and 57% of HHs in rural Bangladesh are landless - they do not own cultivable land In rural Bangladesh 44.9% of HHs participate in at least one safety net program, in the FTF zone: 50.6% of HHs
National Institute of Population Research and Training (NIPORT), Mitra Associates, et al, January 2013, Bangladesh Demographic and Health Survey 2011.	July 2011 - January 2012	To track health and nutrition indicators	<ul style="list-style-type: none"> Nationally representative survey down to the division level Men and women of reproductive age 18,000 HHs Collects data on fertility, health, childhood mortality, and nutrition 	<ul style="list-style-type: none"> Population: 149.8 million; population density: 1015/sq km Infant mortality rates for the past 5 years: 43/1,000 live births; under 5 mortality: 53/1,000 live births 41% of children under 5 are stunted, 16% are wasted, 36% are underweight 90% of children are breastfed until age 2, 64% of children under 6 months are exclusively breastfed 99.4% of all HHs use an improved source of drinking water
GoB, June 2011, Household Income and Expenditure Survey 2010.	February 2010 - January 2011	To estimate and track poverty in Bangladesh, considered the main poverty data source for the GoB	<ul style="list-style-type: none"> Nationally representative survey down to the division level 12,240 HHs Collects data on expenditure, consumption, income, shocks, and credit 	<ul style="list-style-type: none"> Nationally 31.5% of HHs fall below the upper poverty line and 17.6% below the lower poverty line, down from 40% and 25.1%, respectively, in 2005 Nationally, the share of expenditure on food is 54.8% 12.28% of HHs reported any kind of migration, the average remittance amount is 151.89 thousand taka per recipient HH When faced with a crisis 35.43% of HHs coped by using savings
World Bank, June 2014, Bangladesh Poverty Assessment: Assessing a Decade of Progress in Reducing Poverty, 2000-2010.	2000-10	To provide trend analysis on progress in poverty reduction in Bangladesh over the period of 2000-2010	<ul style="list-style-type: none"> Analysis of various data sources, draws heavily from the Bangladesh Household Income and Expenditure Survey Reports data on wages, food security, safety nets, and other key factors impacting and impacted by poverty levels 	<ul style="list-style-type: none"> Data shows a persistent decline in the number of poor people from nearly 63 million in 2000, to 55 million in 2005, and then 47 million in 2010 Low dietary diversity was a persistent problem in Bangladesh, and showed no significant change across all income groups even as the country experienced a significant decline in poverty. For the average Bangladeshi HH, 74% of calories consumed comes from cereals In 2010, as much as 77% of rural HHs were considered net buyers of rice

WFP and UNHCR, June 2010, Report of the UNHCR-WFP Joint Assessment Mission 2010.	May - June 2010	To assess the food and non-food needs of refugees in the Cox's Bazaar camps	<ul style="list-style-type: none"> • Key informant and HH interviews, focus groups discussions, observation, and secondary data sources • Collected data on health, nutrition, WASH, camp services, and possible livelihood activities 	<ul style="list-style-type: none"> • 1 in 3 children from 6 to 23 months were wasted • Despite adequate food assistance and health care in official camps prevalence of under-nutrition was no different than in the host community or in the site receiving no assistance. • More than 2 out of 3 children were stunted in the camps – much higher than the host community • Mortality and morbidity in the camps were well within norms but rates of anemia in children under 5 were over 50% and increasing
UNICEF, 2010, Bangladesh Multiple Indicator Cluster Survey 2009: Monitoring the Situation of Children and Women.	April - May 2009	To provide disaggregated data on children and women in order to monitor progress toward the MDGs, and serve as a baseline for the five-year National Development Plan	<ul style="list-style-type: none"> • First attempt in Bangladesh at a nationally representative HH survey down to the sub-district (upazila) level • 299,842 HHs • Collected data on the education, environment, health, and child protection sectors 	<ul style="list-style-type: none"> • Infant mortality: 49 deaths/1000 live births; under-five mortality: 64/1000 • 54.1% of the population is using an improved sanitation facility • 97.8% of the population is using an improved source of drinking water; 85.5% when adjusted for arsenic contamination • Tubewells in 14% of rural HHs and 6.2% of urban HHs have arsenic levels exceeding 50 mcg/L (Bangladesh standard) • 44.1% of HHs have not had their tubewells tested for arsenic
WFP, 2009, Bangladesh Household Food Security and Nutrition Assessment Report 2009. (HFSNA)	November 2008 - January 2009 (Aman harvest season)	To determine the impact of the 2007/08 food price increase on the food security situation as well as nutrition and health status	<ul style="list-style-type: none"> • Nationally representative survey down to the division level • 10,378 HHs • Market survey of 180 markets and 900 traders • Collected data on nutrition, markets, food access and utilization, health, water, and sanitation 	<ul style="list-style-type: none"> • Malnutrition rates: global acute malnutrition - 13.5%; severe acute malnutrition - 3.4%; stunting - 48.6%; underweight - 37.4% • Share of HH expenditure on food is 62% • 17% of urban HHs and 27% of rural HHs are food insecure, Rajshahi has the highest rate of any division at 31%
GoB, November 2010, Bangladesh Census of Agriculture 2008.	May - December 2008	To collect and track basic data on the agriculture sector	<ul style="list-style-type: none"> • A full-count of all HHs in rural and urban areas and a sample HH survey • Collects data on land holding, tenure and utilization, cropping patterns, and livestock 	<ul style="list-style-type: none"> • 18,815,381 acres are under cultivation • 62.96% of cultivated land area is irrigated • There are 25,853,643 cattle in the country, 1.02 per farm holding; and 135,119,224 poultry, 5.33 per farm holding
WFP and FAO, August 2008, Crop and Food Supply Assessment Mission to Bangladesh.	April - May 2008 (Boro harvest season)	To estimate the 2008 boro rice harvest, and assess market access, food supply and demand, and food prices and their potential impact on food insecurity	<ul style="list-style-type: none"> • A rapid verification assessment • Analysis of available data, interviews with key informants and HHs, and field visits • Visited 37 districts (of 64 total) • Collected data on harvests, stocks, markets, and levels of food insecurity 	<ul style="list-style-type: none"> • Bangladesh's food insecure population is estimated at 65.3 million people, it has risen by 7.5 million largely as a result of higher food prices • 2008 rice production is estimated at 17.539 million tons, approximately 17% above the previous year and 29% over the five-year average • The rapid increase in the planting of hybrid varieties played a part in raising overall yields and production

Source: Created by USAID-BEST.

A2.8. BULLETINS

Table 22. Bulletins

Publication Title, Source	Frequency	Description
Fortnightly Foodgrain Update, Government of Bangladesh, Food Planning and Management Unit	Every two weeks	<ul style="list-style-type: none"> • Focuses on rice and wheat • Provides information on domestic and international prices, global production and stocks, imports, and government interventions
Bangladesh Food Situation Report, Government of Bangladesh, Food Planning and Management Unit	Quarterly	<ul style="list-style-type: none"> • Overviews the current food situation • Provides information on domestic production forecasts and food grain prices, public food operations and other government actions, food aid and commercial imports, and relevant international prices
Bangladesh Food Security Monitoring Bulletin, WFP, GIEWS	Quarterly	<ul style="list-style-type: none"> • Outlines the current food security situation • Provides information on domestic crop production, food price trends, and household food access • Includes analysis of environmental conditions and macro-economic indicators
Food Security and Nutrition Surveillance Program Bulletin, BRAC Institute of Global Health & Helen Keller International	After each surveillance round, every 4 months	<ul style="list-style-type: none"> • Surveys health and nutrition indicators across six zones throughout the country • Provides information on maternal and child health and nutrition, food access and utilization, water, and hygiene
Bangladesh Integrated Food Security Phase Classification (IPC) Acute Food Security Situation Overview, IPC Bangladesh	As needed	<ul style="list-style-type: none"> • Classifies food insecurity levels • Provides estimates of the population impacted by food insecurity • Uses existing data sources to come to a technical consensus among participating agencies

Source: Created by USAID-BEST.

ANNEX 3

DETAILED CALCULATION OF IMPORT PARITY PRICE (IPP)

Table 23. IPP Calculation Using Pooled Price for India Wheat (US\$/MT), January 2011 - April 2014

Date	Pooled Price	Inland Transport	Freight	Handling	IPP	Mov Avg IPP	IPP -10%	IPP +10%	Dhaka Wholesale	LC Price	India Spot Price	ACDI/VOCA	CARE	SC	Awardee Sales Price Avg	Sales Price vs. Mov Avg IPP
Jan-11	299	12	20	21	352				374	360						
Feb-11	307	12	20	21	360				358	366						
Mar-11	308	12	20	21	361	359	323	395	334	348			352		352	98%
Apr-11	306	12	20	21	359	358	322	394	289	368						
May-11	310	12	20	21	363	354	319	390	272	367						
Jun-11	293	12	20	21	346	349	314	384	266	400						
Jul-11	288	12	20	21	341	342	308	376	267	356		300		298	299	87%
Aug-11	283	12	20	21	336	332	299	365	274	362						
Sep-11	270	12	20	21	323	324	292	356	313	384						
Oct-11	261	12	20	21	314	316	284	347	319	350						
Nov-11	253	12	20	21	306	309	278	340	310	311						
Dec-11	246	12	20	21	299	308	277	339	302	337						
Jan-12	251	12	20	21	304	307	277	338	283	334						
Feb-12	264	12	20	21	317	305	275	336	302	311						
Mar-12	257	12	20	21	310	303	272	333	309	313						
Apr-12	243	12	20	21	296	298	268	328	287	286		323	325*	332*	327	110%
May-12	232	12	20	21	285	293	264	322	264	284						
Jun-12	228	12	20	21	281	292	263	321	272	283						
Jul-12	240	12	20	21	293	296	267	326	283	283						
Aug-12	251	12	20	21	304	305	275	336	312	284						
Sep-12	265	12	20	21	318	317	285	349	339	313						
Oct-12	277	12	20	21	330	327	294	359	352	299						
Nov-12	286	12	20	21	339	331	298	364	363	330						
Dec-12	288	12	20	21	341	335	301	368	362	318	358					
Jan-13	274	12	20	21	327	338	305	372	359	318						
Feb-13	283	12	20	21	336	340	306	374	383	348		392	345	392	376	111%
Mar-13	296	12	20	21	349	338	304	372	384	350						
Apr-13	293	12	20	21	346	335	302	369	377	324						
May-13	278	12	20	21	331	334	300	367	373	324						
Jun-13	260	12	20	21	313	328	295	361	369	324	341					
Jul-13	276	12	20	21	329	323	291	355	353	331						
Aug-13	268	12	20	21	321	323	291	355	354	321	325					
Sep-13	269	12	20	21	322	326	294	359	338	308						
Oct-13	276	12	20	21	329	327	295	360	330	302						
Nov-13	278	12	20	21	331	332	298	365	328	298						
Dec-13	281	12	20	21	334	335	301	368	341	312	352					
Jan-14	289	12	20	21	342	339	305	373	394	331	323					

Feb-14	285	12	20	21	338	342	307	376	383	308	303	390	363**	359	371	108%
Mar-14	298	12	20	21	351	343	309	378	365	314						
Apr-14	290	12	20	21	343	344	310	378	355	307						

Sources:

Pooled Price: Average of the wholesale prices from Bhagalpur, Bhubaneshwar, and Patna, India. Data available from Government of India's Department of Consumer Affairs, Ministry of Consumer Affairs

Inland transportation: Estimate of transportation cost from northeast India to port of export.

Freight: Estimation from key informant in wheat market sector, April 13, 2014.

Handling: Estimation to include cost of lightering.

IPP: Equals sum of 1) Pooled Price, 2) Inland Transportation, 3) Freight, and 4) Handling.

Mov Avg IPP: Five month moving average for IPP.

IPP - 10%: IPP minus 10 percent.

IPP +/- 10%: IPP plus 10 percent.

Dhaka: Wholesale price for wheat grain, Dhaka, FAO GIEWS.

Letter of Credit (LC) Price: Monthly average for LC Settled price, Bangladesh Bank.

India Spot Price: Estimated and landed price quotes for India milling wheat taken from various press quotes. February 2014 price quote is cost and freight (CFR) Liner Out Chittagong.

Other prices are estimated CFR Liner Out Chittagong, noting Free on Board (FOB) India plus estimation for lightering (US\$21 per MT) and shipping (US\$20 per MT).

ACDI/VOCA: Sales price provided by awardee. Purchase date from AMEX.

CARE: Sales price provided by awardee. Purchase date from AMEX.

Save the Children (SC): Sales price provided by awardee. Purchase date from AMEX.

Awardee Sale Average: Average for Title II awardees for given month.

Sales price vs. Mov Avg IPP: awardee sale price average divided by moving average IPP.

Some prices differ here from what was reported in the 2012 USAID-BEST Post-Monetization Monitoring Report

*The April 2012 sales prices for CARE (US\$325) and Save (US\$332) had been based off preliminary estimates of sales proceeds (US\$322 and US\$323 respectively), as the sales were not yet final at the time of report drafting in 2012. Values here reported are from awardees.

**February 2014 sales price for CARE (US\$363) is an estimate based off actual costs as reported by awardee.

Estimated average performance versus moving average IPP for January 2011 - April 2014: 103 percent.

Table 24. IPP Calculation Using Ukrainian Wheat (US\$/MT), January 2009 - April 2014

Date	FOB Ukr	Freight	Handling	IPP Ukr	Mov Avg IPP	IPP -10%	IPP +/- 10%	Dhaka Wholesale	LC Price	India Spot Price	ACDI/VOCA	CARE	SC	Awardee Sales Price Mov Avg	Sales Price vs. Mov Avg IPP
Jan-09	173	14.25	21	208	220	198	242	242	312						
Feb-09	180	23.25	21	224	221	199	243	254	219			227		227	103%
Mar-09	176	30.50	21	228	222	200	245	237	244				301*	301	135%
Apr-09	173	28.80	21	223	228	206	251	209	178						
May-09	177	31.50	21	230	228	205	251	218	220			290		290	127%
Jun-09	187	30.00	21	238	227	204	250	221	181						
Jul-09	171	29.60	21	222	226	204	249	225	259						
Aug-09	169	33.25	21	224	226	203	248	230	239						
Sep-09	163	35.00	21	219	226	203	248	234	206						
Oct-09	165	40.25	21	226	232	208	255	235	214						
Nov-09	174	43.50	21	238	237	213	261	240	222						
Dec-09	185	45.40	21	251	242	218	266	244	231						
Jan-10	184	45.25	21	251	246	221	270	265	281						
Feb-10	179	45.25	21	245	247	222	271	249	265						
Mar-10	173	48.80	21	243	246	221	270	245	251						
Apr-10	172	49.50	21	243	244	220	268	230	291						
May-10	173	53.50	21	248	245	221	270	236	279						
Jun-10	170	50.80	21	242	263	237	289	236	254						
Jul-10	191	38.75	21	251	283	254	311	239	196		248**	226*	233**	236	83%
Aug-10	270	39.75	21	331	301	271	332	302	230						
Sep-10	280	40.80	21	342	308	277	338	353	224						
Oct-10	283	38.00	21	342	327	294	360	352	313						
Nov-10	216	36.00	21	273	337	303	371	352	376						
Dec-10	292	35.67	21	349	351	316	386	368	360						
Jan-11	326	33.75	21	380	365	328	401	374	266						
Feb-11	360	31.75	21	413	390	351	429	358	366						
Mar-11	355	33.80	21	410	401	361	441	334	348			352		352	88%
Apr-11	345	31.75	21	398	404	363	444	289	368	346					
May-11	350	33.00	21	404	383	345	421	272	367						
Jun-11	338	34.75	21	393	363	326	399	266	400						
Jul-11	254	35.00	21	310	348	314	383	267	356		300		298	299	86%
Aug-11	252	35.00	21	308	328	295	360	274	362						
Sep-11	270	36.25	21	327	311	280	342	313	384						
Oct-11	241	38.25	21	301	309	278	340	319	350						
Nov-11	246	41.40	21	308	308	277	339	310	311						
Dec-11	240	41.50	21	302	306	275	336	302	337						
Jan-12	242	38.20	21	301	310	279	341	283	334						
Feb-12	262	34.75	21	317	314	282	345	302	311						
Mar-12	267	35.00	21	323	317	285	349	309	313						
Apr-12	267	36.50	21	325	320	288	351	287	286		323	325***		327	102%
May-12	261	37.20	21	319	324	291	356	264	284						
Jun-12	257	34.75	21	313	330	297	363	272	283						
Jul-12	283	34.60	21	338	339	305	373	283	283						
Aug-12	301	33.00	21	355	354	318	389	312	284						
Sep-12	316	32.00	21	369	369	332	406	339	313						
Oct-12	340	32.40	21	393	380	342	418	352	299						
Nov-12	340	30.17	21	391	387	348	425	363	330						
Dec-12	340	28.67	21	390	392	353	431	362	318	358					
Jan-13	341	27.80	21	390	392	353	431	359	318						

Feb-13	345	29.00	21	395	386	347	425	383	348		392	345	392	376	97%
Mar-13	342	31.00	21	394	380	342	418	384	350						
Apr-13	309	31.50	21	362	372	335	409	377	324						
May-13	306	31.20	21	359	353	318	388	373	324						
Jun-13	300	29.00	21	350	334	301	367	369	324	341					
Jul-13	250	29.40	21	300	322	290	354	353	331						
Aug-13	248	30.67	21	299	315	284	347	354	321	325					
Sep-13	249	31.75	21	301	313	282	344	338	308						
Oct-13	270	33.80	21	325	322	290	354	330	302						
Nov-13	288	31.75	21	340	330	297	363	328	298						
Dec-13	293	31.50	21	345	334	301	368	341	312	352					
Jan-14	286	30.00	21	337	336	303	370	394	331	323					
Feb-14	277	26.50	21	325	335	301	368	383	308	303	390	363****	359	371	111%
Mar-14	289	24.25	21	334	332	299	366	365	314						
Apr-14	290	22.50	21	333	331	298	364	355	307						

Sources:

FOB Ukr: Ukraine Milling Wheat, FOB. Data available from APK-Inform.

Freight: IGC International Shipping Rates publication (subscription service).

Handling: Estimation to include cost of lightering at Port of Chittagong.

IPP Ukr: Ukraine Estimated IPP. Equals sum of 1) FOB Ukr; 2) Freight, and 3) Handling.

Moving Average IPP: Five month moving average for IPP Ukr.

IPP - 10%: Ukraine Estimated IPP minus 10 percent.

IPP + 10%: Ukraine Estimated IPP plus 10 percent.

Dhaka: Wholesale price for Dhaka, FAO GIEWS.

LC Price: LC Settled Price, Bangladesh Bank.

India Spot Price: Estimated and landed price quotes for India milling wheat taken from various press quotes. February 2014 price quote is CFR Liner Out Chittagong. Other prices are estimated CFR Liner Out Chittagong, noting FOB India plus estimation for lightering (US\$21 per MT) and shipping (US\$20 per MT).

ACDI/VOCA: Sales price provided by awardee. Purchase date from AMEX.

CARE: Sales price provided by awardee. Purchase date from AMEX.

SC: Sales price provided by awardee. Purchase date from AMEX.

Average of Awardee Sales: Average for Title II awardees for given period.

Sales Price vs. Mov Avg IPP: awardee sale price average divided by moving average IPP.

Some prices differ here from what was reported in 2012 USAID-BEST Post-Monetization Monitoring Report.

*March 2009 SAVE (US\$301) and July 2010 CARE (US\$226) sales prices noted in this table represent weighted average sales prices for each awardee's shipments in those months. Values reported in 2012 USAID-BEST study reported US\$298 and US\$229, respectively, which had been calculated based on simple averages for those shipments.

**July 2010 values for ACDI/VOCA and SAVE reported in 2012 USAID-BEST Post-Monetization Monitoring Report had been taken from awardees' ARR Annex F documents which listed sales prices as US\$239 and US\$247, respectively; upon further review, these appear to have been projections. Values updated in this table to reflect awardees' reported sales prices: US\$248 and US\$233, respectively.

***The April 2012 sales prices for CARE (US\$325) and SAVE (US\$332) reported in 2012 USAID-BEST Post-Monetization Monitoring Report had been based off preliminary estimates of sales proceeds, as the sales were not yet final at the time of report drafting in 2012. Values reported in this table are from awardees.

****February 2014 sales price for CARE (US\$363) is an estimate based on actual costs as reported by awardee.

Estimated performance vs. moving average IPP, January 2009 - April 2014: 104 percent.

ANNEX 4

CONTACTS

Table 25. Contacts

NAME (LAST)	NAME (FIRST)	ORGANIZATION	TITLE
Afsar	A.K.M. Nurul	WFP	Manager, Supply Chain and Rice Fortification
Ahmed	Tahmeed	icddr;b	Director, Centre for Nutrition & Food Security
Ahmed	Akhter	IFPRI/Bangladesh	Chief of Party
Ahmed	Tariq	T.K. Group of Industries	Director, Operations & Marketing
Ahmed	Faisal	WFP	Logistics Associate, Rangpur Area Office
Akanda	Zakir Hossain	GAIN/Bangladesh	Head, Policy and Advocacy, Joint Secretary to the Government
Akhter	Shirin	S.A. Group of Industries	Assistant General Manager, Commercial
Al Mamun	Abdullah	USAID/Bangladesh	Project Management Specialist, OFDHA
Alam	Shamsul	Bangladesh Agricultural University Germplasm Centre	Senior Research Associate
Alam	Ali Ahmed	Rumpa Enterprise (Importer & Exporter)	Owner
Alam	Md. Shahabuddin	S.A. Group of Industries	Chairman
Alam	Jahangir	ACDI/VOCA	Commodity Support Manager, PROSHAR
Alam	Manjurul	EU Delegation to Bangladesh	Food Security Advisory
Alam	Mahfuz	WFP	Head, Khulna Sub-office
Ali	Kowser	Mongla Port Authority	Chief Engineer
Amin	Bani	DAI	Deputy Chief of Party, AVC
Bashar	Md. Khairul	HarvestPlus/Bangladesh	Country Manager
Begum	Jesmin	Bangladesh Inland Water Transport Corporation	Chief Planning Manager
Begum	Rubina	Eco-Social Development Organization	Community Nutrition Worker
Begum	Shawkat	CIP	Chief of Party, USAID Horticulture Project
Bhattacharjee	Lalita	FAO	Nutritionist, National Food Policy Capacity Strengthening Program
Bhowmick	Subrata	S.Alam Group	Executive Director
Bhuiyan	H R	Mongla Port Authority	Chairman
Bhuiyan	M. Shahidur Rahman	USAID/Bangladesh	Senior Food Security & Ag Policy Advisor, Economic Growth Office
Bishop	Treena	ACDI/VOCA	Senior Director, Operations, PROSHAR
Cadrin	Marie Anne	ACDI/VOCA	Chief of Party, PROSHAR
Chanda	Debashish	GAIN/Bangladesh	Project Manager, Agriculture and Nutrition
Chandra Saha	Razon	CARE	Regional Commodity Logistics Manager, SHOUHARDO II
Choudhury	Nusha	WFP	Head, VAM
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El Hamzaoui	Ramona	USAID/Bangladesh	Director, Office of Economic Growth
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Fuli	Rachel	WFP	Head, Nutrition Unit
Gupta	Swapan	Mostafa Group of Industries	General Manger, Finance
Habibullah	Abu Mohammad	Meghna Group of Industries	Senior General Manager, HR & Admin

Hadi	Sayed	Golden Enterprise	Proprietor
Haq	Shah Md.Aminul	Economic Relations Division, Ministry of Finance	Joint Secretary
Haque	Raisul	BRAC	Program Coordinator Health Nutrition and Population Program
Haque	Anamul	DBL Group	Executive, Corporate
Haque	Emdadul	Mongla Port Authority	Joint Secretary
Haroon	Mohammed	Ancient Steamship Company Limited	Director, Operation
Hasan	Md. Rafiqul	Department of Agricultural Extension	Deputy Director, Monitoring
Hasan	Mahmudul	DBL Group	Executive, Corporate
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Hossain	Delwar	Bangladesh Agricultural University	Associate Professor, Department of Agronomy
Hossain	Md. Sakhawat	BARI	Chief Scientific Officer, Oilseed Research Centre
Hossain	Md. Alamgir	HarvestPlus/Bangladesh	Post-Doctoral Fellow, Plant Breeding
Hossain	Md. Mukter	Ministry of Commerce	Assistant Chief
Hossain	Monzur	Ministry of LGRD & Cooperative	Senior Secretary, Local Government Division
Hossain	Mosharof	SAIF POWERTEC LTD.	Deputy Terminal Manager, Admin & CTMS
Hossain	Alamgir	UNDP	Programme Analyst (Environment)
Hossain	Iqbal	WFP	Head, Barisal Sub-office
Hossain	H.M. Jakir	WFP	Senior Programme Associate, Khulna Sub Office
Hossain Farazi	Mohammed Tasharuf	Ministry of Disaster Management and Relief	Deputy Chief
Hossain Sarker	Khodadad	PCI	Team Leader, DRM, PROSHAR
Hussain	Sayed Sarwer	USDA	Agriculture Specialist, Foreign Agriculture Service
Hussain	Akhter	WFP	Senior Logistics Officer, Logistics and Procurement Section
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Islam	Joarder	Chittagong Silo	Silo Superintendent, Director of Food
Islam	Md. Ariful	FHI 360	M&E Specialist, USAID mSTAR
Islam	Md. Kamrul	Haque Group	Chief Supply Chain Officer
Islam	Bakaul	Save the Children	Advisor, Livelihoods, Nobo Jibon
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Kalam	M.A.	T.K. Group of Industries	Managing Director
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Karim	Rezaul	WFP	Head, Programme Implementation
Kataoka	Mie	WFP	Head, Logistics and Procurement Section
Khadka	Deepak	iDE	Country Director
Khan	Nazbul	ACDI/VOCA	Director, Economic Growth, PROSHAR
Khan	Md. Mahmudul Hasan	BARI	Scientific Officer, Plant Breeding, Oilseed Research Centre
Khan	Rafiqul Alam	CARE	Regional Technical Manager, SHOUHARDO II
Khan	Md. Reza Ahmed	Department of Agricultural Marketing	Assistant Chief
Khan	Ahmed Hossain	Directorate of Food, Ministry of Food	Additional Secretary, Directorate of Food, Director General
Khan	Rokonuzzaman	North Bengal Flour Mills Ltd.	Senior Manager, Sales & Marketing
Khan	Iqbal Hossain	Northern Flour Mills Ltd.	Manager
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Kumar Kar	Basanta	GAIN	Country Manager

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Mahmud	Zeba	BRAC Institute of Global Health	Director, Nutrition
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Meah	Md. Baktiar	Nurjahan Group	DY. General Manager- R&D
Misha	Mohammad	Bangladesh Inland Water Transport Corporation	Public Relations Officer
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Morshed	Monjur	SEAF	Chief of Party, Food for Progress
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Rahim	Meah	Ancient Steamship Company Limited	Chairman & Managing Director
Rahman	Mahbubur	ACDI/VOCA	Food and Logistics Director, PROSHAR
Rahman	Mazibur	ACDI/VOCA	Senior Commodity Manager, PROSHAR
Rahman	Md. Mosiur	BARI	Scientific Officer, Pulse Breeder, Pulses Research Centre
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Rahman	Mohammad Mizanur	Nurjahan Group	Director
Rahman	Siddiqur	Nurjahan Group	General Manager, Technical
Rahman	Md. Mizanur	Save the Children	Deputy Chief of Party, Nobo Jibon
Rahman/Sazon	Mofizur	M/S. Sazon Enterprise	Proprietor
Reza	Murtozaa	Ministry of Commerce	Additional Secretary
Riad	Mohammed	MEB Industrial Complex Ltd.	Managing Director
Richardson	Jimi	WFP	Head, Programmes
Righi	Peter	SEAF	Global Director, CEED
Rose	Richard	iDE	Technical Director, Programs
Roy	Sumitro	FHI 360	Chief of Party, SHIKHA, Alive & Thrive
Russell	Timothy	IRRI	Chief of Party, CSISA
Saha	Anup	ACI	Business Director
Sarker	Md. Shahabuddin	BBS	Deputy Director
Sattar	Abdus	Save the Children	Deputy Program Manager, DRR and WASH, Nobo Jibon
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Sultana	Kauser	WFP	Senior Procurement Officer, Logistics and Procurement Section
Talukder	Rezaul	FAO	National Physical & Social Access Advisor, National Food Policy Capacity Strengthening Programme
Tegenfeldt	Mark	USAID/Bangladesh	Agriculture Development Officer, Office of Economic Growth
Treacy	Mark	CNFA	Chief of Party, Agro-Inputs Project
Trotter	Danielle	WFP	Programme Officer, Social Safety Nets & Gender
Tuhim	Kibria	Sahidul Islam Khan	Traffic Inspector
Uddin	M. Forhad	Citygroup	Executive Director
Uddin	Jahir	Mostafa Group of Industries	Managing Director & CEO

ul Alam	Mesbah	Ministry of Disaster Management and Relief	Secretary
Ullah Khan	Md. Zafar	Save the Children	Advisor, Government Liaison , Nobo Jibon
Virani	Madad	Olympic Industries Limited	Executive Director
Zafar	M.	Marine Consultant & Surveyor	Consultant
Zakaria	Shahnaz	USAID/Bangladesh	Deputy Director, OFDHA
Zaman	S.M. Khalequez	CARE	Regional Coordinator, SHOUHARDO II

Source: USAID-BEST.

ANNEX 5

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Back cover: This merchant sells seeds, fertilizers, and animal feed. He saw a surge in sales when beneficiaries from Nobo Jibon came to his store with seed vouchers. He reports that he now has a new client base that recognizes the value in buying his high quality vegetable seeds. Barguna, Bangladesh, April 2014.

Photo by Fintrac Inc.



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