I. Project Context

Country Context

1. Bangladesh is highly vulnerable to natural disasters and climate change, facing frequent extreme weather events that cause serious damages to infrastructure, crops, and the overall economy. Bangladesh’s vulnerability to widespread floods, severe droughts, and super cyclones is particularly acute for the rural poor; almost 80 percent of Bangladesh’s population lives in the rural areas, with around 53 percent of the rural population classified as poor. For many poor rural people, reliance on subsistence agriculture means that the impact of climate shocks and stresses are likely to have negative implications for their food and livelihood security, human capital and welfare.

2. Projected climatic changes and rise in the sea level are likely to worsen the situation; climate change is anticipated to lead to more intense and frequent cyclones, floods, and droughts, as well as sea level rise and associated salinity intrusion in the coastal areas leading to growing pressure on ensuring adequate food security and nutrition. This pressure on nutrition and health will be particularly acute for women and children, who face difficulties in the aftermath of a natural disaster event. Growing climate variability and natural disaster risks is anticipated to increase pressure on the Government of Bangladesh to effectively distribute food packets and food aid as a part of its post-disaster recovery programs. During the 2007 floods and the subsequent Cyclones Sidr and Aila (in 2007 and 2009, respectively), crop losses were estimated to be over one million tons each. However, while floods typically cause damage to crops and food stocks (both household
and government stocks), post-flood crop yields are typically higher than average (“bumper crops”) because of rich silt deposited on the topsoil, leading to high production that has often served to replace stock shortages. In the case of cyclones, on the other hand, not only do losses occur during the cyclone but production is also severally hampered in the following year because saline sea water from storm surges is often is deposited on agricultural lands, resulting in food stock shortages for at least two years.

3. The recurrence period for a major cyclone and widespread flooding in Bangladesh is around three years, necessitating an improved food storage system that can adequately distribute food aid during emergencies and disasters. This improved system would make use of modernized technologies that could store food grain (rice and wheat) for between two and three years, and would limit food storage losses significantly. This, combined with efforts to improve the efficacy and accountability of the grain distribution systems in post-disaster periods, could serve to significantly address food shortages experienced as a result of natural disaster events.

II. Sectoral and Institutional Context

4. During 2011-2012, production of milled rice equivalent was about 33.5 million tons, up from 18.5 million tons in 1996-97 and production of wheat was about 1.1 million tons. Bangladesh has three planting seasons. About 55 percent of the production is from the Borro crop (planted in Dec/Jan and harvested in May/Jun, 18.4 m tons), about 38 percent from Aman (planted in July/August to harvested in November/December, 18.8 m tons) and about 7% from Aus (planted in March/April and harvested in June/July 2.33 million tons). During this same year, the remainder of the food stocks was made up by imports: about 0.635 million tons of rice were imported (89% by the government purchase) and 1.6 million tons of wheat were imported (approximately about 68% by private commercial imports). In May 2012 the rice stocks were about 1.6 million tons and wheat stocks about 1.8 million tons.

5. Annual consumption is estimated at about 30 million tons of rice and 1.1 million tons of wheat. At present, the Ministry of Food (MoFood) is responsible for managing food grain operations in Bangladesh and maintaining food grain stocks. The food grains are stored in traditional brick and concrete godowns that were built by the Bangladesh Agricultural Development Corporation (BADC) many years ago.

6. At present, the total capacity of these godowns is over 1.6 million tons, and they are located all over the country. Most of these godowns are in poor physical condition, and the storage is very ineffective; on average, food grain losses from these godowns exceed 15% of the stored grain. In addition, many of these buildings are expected to further deteriorate over the next 5-7 years, diminishing the available effective food storage capacity to about 1.2 million tons by 2020.

7. Though rice is the main staple crop, the DG Food relies equally on wheat and rice for food grain distribution under various non-monetized (no payment by beneficiaries) schemes that are targeted to help victims of disasters in the short and medium term. These include Vulnerable Group Feeding, Vulnerable Group Development, Test Relief, Food for Work, among others. Out of 1.0 to 1.5 million tons of food grains distributed in an average year, wheat makes up 40% to 50%. About two thirds of the distributions are non-monetized, disaster relief related schemes, and in these wheat accounts for an even higher share since rice makes up a bigger share of monetized open market sales, which in an average year account for only about 20% of all government food grain distributions.
8. Wheat is particularly important for disaster relief preparedness because its international price is generally about 30 percent less than rice and it is much more widely traded internationally (at 130 million tons per year versus 30 million tons for rice). Wheat is procured by the government especially when domestic and international rice prices are high. However, government purchases to prepare for or respond to disasters would send the domestic market higher. Therefore adequate storage infrastructure to receive and distribute imported wheat is critical to food security in Bangladesh.

9. Strategy for Grain Storage: Food storage/stocks are generally designed to meet three objectives: (i) meeting safety net demands; (ii) price stabilization; and (iii) addressing needs during emergencies and disasters, (especially with shortages in the international market, as happened during 2007-2008). In Bangladesh, the stocks required for safety net demands and national price stabilization objectives are small, while substantial quantities are needed to meet the requirements during and after the disasters and emergencies. Improving the capability to store food for post-disaster availability and distribution is based on three factors: (i) optimizing the storage level; (ii) optimizing the site and logistics of the sites; and (iii) optimizing the technology available to store the food grain; and (iv) proper monitoring and management of the stocks for effective use and minimizing losses and pilferage.

10. Optimum Storage Level: The Directorate General of Food (DG Food) estimates that, by 2020, grain storage requirements would be about 3 million tons for a population of about 170 million people. Based on current and project storage availability, this is expected to result in estimated shortages of grain storage space of about 1.7 million tons by the year 2020. However, given the current implementation capacity of the DG Food, and in order to avoid overstocking, it is recommended that the expansion of storage facilities occur in a phased approach. In the first phase of a multi-year program, a proposed additional modern bulk technology storage of about 0.6 million tons could be developed to maintain food grains for long duration storage. Storage capacity can be built up gradually, allowing for monitoring and feedback in management of stocks, supplies and distribution, and as climate risks continue to grow.

11. Optimum Site and Logistics: Locating the storage and logistics is extremely important to minimize cost, losses, to reach target beneficiaries and to ensure effective and timely distribution. Use of food stocks in the case of emergencies and disasters would require that distribution can be done promptly, leaving more time available for transporting or for restocking. Indeed, such stocks should be kept as long as possible and filled slowly during the time between disasters to avoid shortages in the country that could result from speedy stocking. This is discussed further in the section on optimal storage technology below. The sites selected would have appropriate transportation links for distribution and re-stocking the storage facilities with proper means for handling distribution and collection of food grain.

12. Optimum Technology for Storage: The food grain stocks in Bangladesh are mostly stored in warehouses and godowns. Most of the rice growing countries in Asia (for example, India, Pakistan, Indonesia, the Philippines, Malaysia and Thailand) are gradually switching to large modern integrated bulk handling grain storage facilities in the form of silos. The main reason for this switch is better controls, low cost, higher operational efficiency, minimum losses, need for less space (and, by extension, land), higher security and a greater likelihood of minimum insect pest infestation and grain molds. With modern storage facilities like silos that offer storage and treatments and bagging
facilities, rice can be stored for 2-3 years (see Annex 2 for details on technology used). Such a period for storage would be optimal as it would involve least cost in transportation and re-stocking, thus minimizing the turnover requirements and transportation costs. In addition, a 2-3 year storage period matches well with the cycle of disasters which Bangladesh faces.

13. Monitoring and Management of Food Stocks: The National Food Policy of 2006 established the Food Planning and Monitoring Committee (FPMC) at the national level and the Directorate of Food Planning and Monitoring Unit (FPMU) in the Ministry of Food. The FPMU, among other things is responsible for monitoring, and planning and management of food stocks. It is provided some assistance by the Food and Agriculture Organization (FAO). In order to have effective management of food stocks, the capacity of the FPMU needs to be strengthened, and modern technology would have to be provided for improved monitoring and stock management. The silo design inherently provides an improved monitoring system so that the stocks can be monitored and audited better. In addition, the proposed project would also support capacity building of the FPMU, as well as support to modernize the monitoring and management systems.

14. Storage of Seed paddy: The design of the silo storage facilities including drying and chilling would also be suitable for storage of emergency reserves of seed paddy in a cooperative arrangement between the Food Department and BADC (Bangladesh Agricultural Development Corporation). One of the critical needs of farmers after a cyclone or flooding is replacement of the seed paddy for next crop sowing. The state-owned entity BADC produces about 20% of the improved rice varieties supplied to farmers every year. They operate a network of warehouse facilities where the seed paddy is kept in bags. The same grain drying and chilling technology in the project design would make the long term storage of the seed paddy in bulk possible in steel silos reducing storage losses from insects and moisture. At certain sites, up to 20% of the storage capacity could be devoted to seed paddy. Preliminary discussions are taking place between BADC and DG-Food.

III. Project Development Objectives
The overall Project development objective is to increase the grain reserve available to households to meet their post-disaster needs and improve the efficiency of grain storage management.

IV. Project Description
Component Name
Component A – Construction of Modern Grain Storage Silo Facilities
Component B – Support for Food Planning and Monitoring Program
Component C - Project management, construction supervision, technical assistance

V. Financing (in USD Million)

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VI. Implementation
15. Project Implementation: The project would be implemented by the Ministry of Food through its two Directorate Generals. The Directorate General (DG) Food will have overall responsibility for project implementation and would be directly responsible for implementation of components A, B2, and C. The DG-Food would also be responsible for overall financial management and operation of the designated account. Component B1 would be implemented by DG FPMU in close collaboration with DG Food, other concerned ministries and FPMC. A Project Steering Committee (PSC), chaired by the Minister/Secretary of the Ministry of Food would provide overall guidance and help coordination among various part of the Government. The Secretaries of Planning, Agriculture, Forestry, Environment, Finance and Disaster Management, BADC, Deputy Commissioners of the districts where Silos are being constructed, DG Food and DG FPMU would be the members of the PSC. The DG Food will act as the Secretary of PSC. The project would be implemented over a period of about seven years. All works would be completed in less than six year and one year would be allowed for the warranty period.

16. A Project Management Unit (PMU) has been established in the DG Food’s office for day-to-day implementation and monitoring of the project activities. The PMU would be headed by a Project Director and consist of: (i) Deputy-Project Director; (ii) two technical specialists; (ii) once Senior Procurement Specialist, and one Procurement Analyst; (iii) One Senior Financial Management specialist, one Financial Management Specialist and one accountant and a book keeper; (iv) Senior Environmental Specialist, Senior Social Specialist, and Senior Communication Specialist (who would also act as Right to Information Officer); and (v) at each site in the field the PMU would have one Project Coordinator for coordination with the contractors, consultants and local administration as well as with communities, two Technical Specialists and one Social and Environment Specialist and support staff.

VII. Safeguard Policies (including public consultation)

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