

# LDC Issues for Operationalisation of the SAARC Food Bank

Bangladesh Case Study

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**SAWTEE Working Paper**

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## Executive Summary

Over the recent years, Bangladesh has been able to achieve notable success in raising her foodgrain production. Notwithstanding this success, Bangladesh faces formidable challenges in ensuring food security for its growing population in view of the rising demand for food, frequent natural disasters, and more importantly, in the backdrop of the rising price of foodgrains. To address the adverse impact of climate-induced natural disasters in SAARC region and tackle the consequent affect on food security, (SAARC Food Bank) SFB was put in place in 2007 as an institutional mechanism to safeguard food security interests of the regional countries. It is, however, to be noted that the food reserves under the food bank have never been utilised, despite the fact that some of the countries in the region had been subjected to several natural disasters which had undermined their food security status. This has justifiably drawn attention to the need for examining SFB with a fresh look. In the context of this emergent situation, correction of major drawbacks that characterises the operationalisation and the functioning of SFB, and the identification of effective channels for the distribution of food from SFB, have now assumed growing importance and relevance. It is proposed that rather than putting in place a new system, it would be preferable to institutionally and strategically link the existing PFDS in place in Bangladesh with SFB, as a cost-effective modality of operationalising SFB.

In the Bangladesh context, domestic food production plays a critically important role in sustaining the country's population. Import caters to only a small proportion of the total food demand in Bangladesh.

In Bangladesh, higher production of foodgrain, especially of rice, was attained, thanks to the increase in the acreage under the High Yielding Variety (HYV) crops, the increase in the availability of fertiliser and pesticide, and the adoption of hybrid seeds. Production levels also rose as a consequence of the expansion of irrigation infrastructure, and as a result of the implementation of agricultural extension services, research and development, public subsidies, and appropriate market reforms. A number of other South Asian countries have also made significant progress in terms of increasing their food production, with India and Pakistan being able to graduate to the status of food surplus countries.

In spite of the low share with respect to the total demand in Bangladesh, foodgrain import plays a significant role in stabilising the domestic market during times of production shortfall. In Bangladesh, whenever there are production losses due to natural calamities, it is mainly the private sector which imports foodgrain from the international market to bridge the demand-supply gap, and thus plays a key role in stabilising the market. It is to be noted here that India is the major source of rice import for Bangladesh. However, when India imposed a ban on the export of rice in FY2008, in order to ensure food security in the wake of rising food prices in the international market, Bangladesh's food security concerns were understandably deepened. Indeed, it is during such times that SFB could play an important role in mitigating such concerns. However, as mentioned earlier, this was not the case. Consequently, a significant number of people in

Bangladesh fell below the poverty line. This experience has once again drawn the attention of policymakers, researchers and practitioners to identify modalities to operationalise SFB that would be both practical and cost-effective. Herein emerges the issue of linking SFB with PFDS in times of food security concerns.

Bangladesh has a well established PFDS system, the origin of which dates back to colonial times when a food distribution system was developed to address the 1943 Bengal famine. At present, Bangladesh's PFDS is operated through 9 distribution channels of which 4 are monetised channels Open Market Sales (OMS), Essential Priorities (EP), Other Priorities (OP) and Large Employers (LE). The other 5 channels are non-monetised channels- Food For Work (FFW), Vulnerable Group Development (VGD), Vulnerable Group Feeding (VGF), Test Relief (TR) and Gratuitous Relief GR.

PFDS in Bangladesh mainly focuses on the below poverty line population - about 26 million people are still to cross the minimum threshold line of poverty. As is the case, inequality in income and access to assets, and natural, manmade and seasonal shocks, compel people to move up and under the poverty line. PFDS attempts to cater to the needs of these groups of people. Upazila level poverty and food vulnerability maps are also important guidelines for allocating the resources under food based safety net coverage. In the crisis period, PFDS is speedily deployed, and it is expanded during times of disaster and price shocks in accordance with the emergent needs. Examples include OMS operation by the Bangladesh Rifles (BDR) and the scaled up social safety net programme which includes the FFW, VGD, TR and GR. All these avenues were deployed in 2008 in the backdrop of rising price of foodgrain in the domestic and global market. The general practice is to have a stock of foodgrain which is equivalent to three months' demand, to cater to the needs of the locality at the outset of any possible food shortage. In some coastal districts, and also in some of the northern monga prone (lean period shortage) districts of Bangladesh, the aforesaid security quantum of three months is maintained throughout the year. In general, PFDS in Bangladesh has been able to overcome the various obstacles in reaching the poorest of the poor. Its network is covered up to the Upazila level. Additionally, 640 Local Storage Depots (LSDs) have been established in 485 Upazilas in Bangladesh which ensures a countrywide network of food distribution. A wide multi-modal network has gradually developed that is generally capable of reaching the most vulnerable and remotest areas of the country. However, PFDS still suffers from a number of weaknesses. These include, inclusion errors arising from faulty selection, targeting bias, and an absence of adequate manpower to service the system. On the other hand, exclusion error occurs due to resource constraints. Leakage of food includes losses due to natural conditions, time involved in transportation of foodgrain, and deterioration of quality due to evaporation, inefficient management, obsolete or inappropriate technology, adverse weather conditions, and misappropriation. However, in general, the system has been found to work with reasonable efficiency in times of need. This provides an opportunity to use the system as the delivery arm of SFB in periods of food crisis.

SFB in its current form faces a number of problems which constrain its functioning. The triggers are not clearly articulated, the volume of reserves is inadequate with respect to the total demand, and the pricing mechanism remains unsettled; other problems include the absence of a clear-cut transportation mechanism, lack of clear ideas about the system of distribution in the recipient country, lack of information sharing, and incoherence in trade practice. It is also telling that after these many years, political commitment among SAARC members still remain weak as far as the effectual use of SFB in times of food security related concerns and crisis.

To make SFB effective, a number of changes, both in terms of institutional mechanism, as well as operational aspects, will need to be brought into play. These include the following:

#### Policy Initiatives

There is a need to enhance the coverage and volume of foodgrain; this is envisaged to be reviewed every three years. Policymakers could also think of including relatively less perishable goods such as maize and potato in addition to rice. Conditions for disbursement from SFB should also include food related emergencies such as price volatility, in addition to the current condition which only specifies for natural or man-made calamities. Trigger criteria of average production shortfall due to natural and man-made calamities could be brought down to 3 to 5 percent from existing 8 percent. Access price for foodgrain from SFB ought to be lower than the price level quoted in the international market. Further discussion will be required to finalise the price determination formula proposed by Bangladesh in the fourth meeting of SFB. Also, countries need to deliberate on other terms and conditions of payment for the operationalisation of SFB.

SAARC should have a long term perspective plan on agriculture, food security concerns and emergency response. SFB should also engage in research on trade, production and distribution, so that it can harness operational efficiency and reduce leakages in the distribution system. A food security fund may be created to support the operating cost of the food bank; a part of the fund could be marked as endowment fund to support post-disaster infrastructure restoration. Developing countries among SAARC members should set up a modality to address the food security concerns of LDCs. The case of relatively weaker economies should be considered more favourably when decisions concerning the allocations from SFB are made.

#### Efficient Distribution Mechanism

In Bangladesh, the institutional linkage between PFDS and SFB has been maintained through the representation of the Food Division, which oversees PFDS, in the SFB. Further linkage may be established by allowing the reserves to be used as a regular channel of PFDS. More flexibility is needed in terms of using the reserves as loan. Detailed information concerning the distribution system should be made public with a view to ensuring good governance and avoiding leakage. For reaching out to people in



relatively inaccessible areas, SAARC should provide assistance, on an urgent basis when such need arises, to re-establish the infrastructure in the remote areas and to help restore connectivity. Micro-mapping of the local poverty situation should be undertaken to identify poverty stricken regions so that food from the warehouse can reach affected areas in an efficient and timely manner. Central government, local government, local NGOs and community organisations - the four tiers that are present at the field level in Bangladesh - should be integrated into the food distribution system to ensure accountability in the process.

#### Institutional Mechanism

Steps involved with regard to getting access to SFB should be minimised to accelerate the process of withdrawal of reserves in times of crisis. At its meeting, the Board of Governors of SFB could invite local and international experts, and seek their expert opinion with regard to raising the efficacy of SFB. Strengthening the capacity of SAARC Agricultural Centre (SAC) should be seen as an important vehicle to generate information covering national, sub-regional, regional and local level production, storage, distribution, prices, and other relevant issues.

#### Development of Infrastructure

Existing storage facilities should be upgraded to the appropriate standards, with attendant proper measures to ensure security of the reserves. Such facilities should also include a roll over database system to track losses in the storage system. Harmonisation of quality standards to arrive at a common set of positions acceptable to all the regional countries, will reduce testing and auditing standards and compliance, and would also lower border hassles for quarantine. SFB ought to be supported by an appropriate information network system linking the relevant departments of the member countries.

#### Promoting Cooperation

Support at the highest political level is essential for the full-fledged operation of the food bank. To increase the mutual trust among the various participating countries, the mechanism of SAFTA should be made to play to its full potential, so that normal foodgrain trading channels are not disrupted in times of rising prices and supply shortfall.

In spite of the commendable progress made by SAARC countries in the context of agricultural development in general, and food production in particular, food security concerns continue to remain at the heart of policymaking in all individual members of SAARC. From this perspective, being ready for any food-related emergency, be it originating from natural or man-made disasters, price-hike, lack of availability in the global market, or disruptions in global trading regime, is of key importance for SAARC countries such as Bangladesh. SFB could, from this perspective, play a vitally important role in providing access to food reserves when the need arises, and also, which is no less important, transmit a message of confidence to calm down the market and reduce price volatility and expectationary inflationary pressure. A well-established link between SFB

and the national distribution system is necessary for the speedy delivery of the foodgrains during times of emergency, and from this perspective, a well-designed nexus between SFB and PFDS, could serve this objective well.

# LDC Issues for Operationalisation of the SAARC Food Bank Bangladesh Case Study

Professor Mustafizur Rahman and Nafisa Kahled

## 1. Introduction

### 1.1 Background of the Study

As one of the most densely populated countries in the world, ensuring food security has always remained a key challenge for Bangladesh. Efforts to achieve MDG-1 concerning reduction of poverty level by half by 2015 has brought commendable success to Bangladesh, in the backdrop of its six percentage plus growth rate of GDP sustained over the last decade, and targeted poverty reduction initiatives. Bangladesh's poverty levels have come down from 56.6 percent in FY1992 to 31.5 percent in 2010 (GED 2012). If this trend continues, Bangladesh will hopefully achieve the MDG target of bringing down the poverty level at 29.0 percent. Indeed, the Global Hunger Index (GHI) of 2011 reports Bangladesh as one of the successful countries in terms of reducing hunger. According to GHI, Bangladesh was able to move from „high alarming“ to „alarming“ group over the past years (IFPRI 2011). This was in recognition of the fact that Bangladesh has achieved notable success in increasing foodgrain production, graduating from the status as a country with a chronic and persistent food deficit that depended on food aid.

In spite of the above, a large proportion of Bangladesh's population still live below the poverty line. With 1.4 percent population growth rate, a significant number of people join the lowest quintile of the population (according to income) every year. Along with food availability, purchasing power also remains a concern. As the standard of living of the population gradually improves, better nutrition and higher demand for food are also emerging as concerns. Repeated natural disasters have caused significant and periodic destruction in Bangladesh adding to the country's food security concerns. In recent times, price volatility has also been a concern from the perspective of ensuring food security. The rising price of foodgrain in the local and international market threatens food security, particularly amongst low income groups.<sup>1</sup> Consequently, food security remains an issue of practical policy significance in Bangladesh.

As evidence suggests, food security is a major concern, not only for Bangladesh, but also for South Asia. Due to the geographical location, incidence of high poverty and heavy reliance on agriculture for the livelihood of the majority of the population, countries in the South Asian Association for Regional Cooperation (SAARC) remain vulnerable and prone to being disproportionately affected by climate change. To counter the impact of climate induced natural disasters in this region SAARC Food Bank (SFB) was put into

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<sup>1</sup> Children are especially vulnerable in such times. Because of the price spike of foodgrain in 2011, the lives of an additional four lakh children in Bangladesh were at risk (Save the Children, 2012).

effect in 2007. Though it has been five years since its establishment, food reserves under the food bank have not been utilised as yet, despite the fact that the region has, in the meantime, suffered from both price volatility and a number of large-scale natural disasters. Addressing the major drawbacks of the system and its capacity to distribute foodgrain to the most fragile sections in times of need have emerged as tasks that need urgent attention. Linking SFB with the public food distribution systems of SAARC countries could serve as an appropriate modality to operationalise SFB.

Bangladesh's Public Food Distribution System (PFDS) has passed through a series of reforms over the past years. PFDS is a key programme in ensuring that the basic needs of the poor in Bangladesh are met. It is proposed in this paper that rather than putting in place a new system, it would be preferable to institutionally and strategically link the existing PFDS in place in Bangladesh with SFB as a cost-effective way to make SFB functional in times of emergency.

## 1.2 Objectives

Major objectives of the study are to:

- Analyse the status and trends concerning agriculture and food security in Bangladesh.
- Analyse status, trends and challenges relating to the public food distribution system at national and local levels.
- Analyse the efficacy of the policies and programmes designed to enhance access to, and fairly distribute food.
- Identify the major drawbacks of SFB.
- Identify modalities to strategically and institutionally establish a link between SFB and the existing PFDS in Bangladesh.
- Recommend a way forward in terms of food security, with the involvement of both SFB and PFDS.

## 1.2 Methodology

Within the overall framework provided by South Asia Watch on Trade, Economics & Environment (SAWTEE) for the present study, the methodology focuses on collection and compilation of data and information through literature review, and consultation with stakeholders to identify and define priority issues that are vital to operationalise SAARC Food Bank. The study has made use of both primary and secondary information. Primary data was obtained through discussion with stakeholders, including researchers, government officials, bureaucrats, NGO representatives, and development partners, for which a set questionnaire was used. The scope of information gathering focused mostly on information regarding SFB and its modalities, and on the existing PFDS in Bangladesh and its linkage, if any, with SFB. Information was also gathered on supporting infrastructure, on present policies in support of PFDS and SFB, and on the development of an approach to promote regional cooperation in food security. Collection of secondary data focused on an extensive literature review covering, among others, relevant agreements and meeting documents, conference proceedings, national-level studies, and

reports. Additionally, working papers and websites of relevant organisations have also been studied. Statistical data related to regional and international production, import and price, have been obtained from online databases such as UN Comtrade and FAO. A number of other national level information has been collected from government agencies such as Food Planning and Monitoring Unit (FPMU), Directorate General of Food (DGF), and Bangladesh Bureau of Statistics (BBS).

This report has been prepared on the basis of the exercise involving the above. Following the introductory section, Section 2 deals with such issues relating to the present status and trends in food production and food availability in Bangladesh; the section also deals with the food security status of Bangladesh, and highlights the importance of SFB in this connection. Section 3 focuses on the present status, trends and institutional mechanisms of PFDS in Bangladesh and highlights the role of policies in putting in place and ensuring a pro-poor distribution system. Section 4 draws attention to the present status of SFB and identifies a number of impediments that constrain and limit its operation; the section also dwells on evidence from a number of cross-regional experiences in operationalising regional food reserves. Based on the discussions presented in the foregoing sections, the last section puts forward a number of recommendations with regard to national and regional issues of concerns and interest, which ought to be addressed to ensure the provision of food security in Bangladesh.

## 2. Rice Production in Bangladesh: From Import Dependency to Self Sufficiency

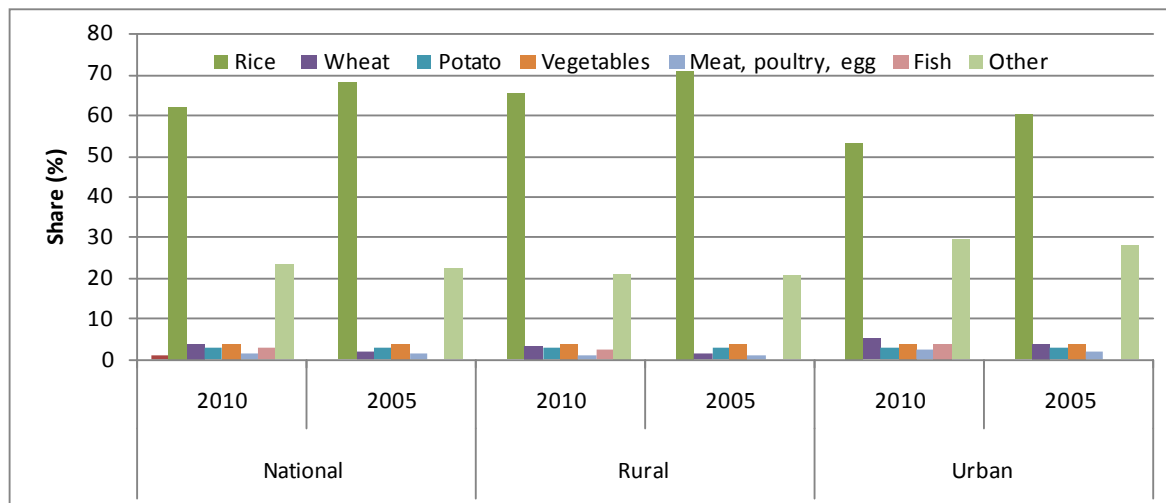
### 2.1 Role of Agriculture Sector in the Economy

As far as food security is concerned, the capacity of domestic production to address the demand for food is the most important factor to consider. From this perspective it is important to review the dynamics of agriculture sector development in Bangladesh.

The agricultural sector plays a crucial role in Bangladesh's economy, accounting for about 15.5 percent of the country's GDP. The crop sector's contribution is key here because of its importance from the perspective of food security. Rice is the most important item in Bangladesh from the perspective of maintaining food security. It is the staple diet of the people and occupies the most important place in the daily food basket of common people. The Household Income and Expenditure Survey (HIES) 2010, estimates that in Bangladesh about 65.8 percent of the total daily calorie intake comes from foodgrain, of which rice alone contributes to about 62 percent (national average in 2010). The share of rice in the total calorie intake has been on a declining trend since 2005, replaced, to a large extent, by wheat and other food items. Dispersion in consumption is also evident in the case of rural and urban areas. In rural areas, rice consumption accounted for 65 percent of the total food intake, while in urban areas the share is about 53 percent. In view of the rice dominated food-habit of the population, a central plank of government's

food security policy entails providing appropriate incentives to encourage farmers to take up sustainable food production practices.

Figure 1: Share of Food in the Daily Consumption Basket in 2010



Source: BBS2010.

Availability of food in the local market depends mainly on production, stocks, import, and foreign food aid. Food produced in the country plays a critically important role for ensuring timely supply to the domestic market. In the particular case of Bangladesh, import caters to only a small proportion of the total food demand of the country. Imports are determined by three factors: level of domestic production; replenishment of food stock; and loss of crop due to natural disasters. However, although the share of import was low with respect to total food demand of the country, its share in marketed foodgrain was higher. Not surprisingly, international food price remains important for Bangladesh and price volatility in the international market tends to get passed through to the local market in Bangladesh. The following section looks at the dynamics of food production in Bangladesh, its import scenario and the food price in the international market. All three are important for assessing the status of food security in the country.

## 2.2 Trends in Foodgrain Production

Since Bangladesh's independence in 1971, its crop sector has undergone significant changes. In view of favourable weather conditions and the existence of a large delta alluvial plain, most of the areas in the country (except the hill tracts) are conducive to rice cultivation. Traditionally, the farming practice in Bangladesh involved the annual cultivation of two major crops, aus and aman<sup>2</sup>. Thanks to the arrival of the winter season boro rice crop, which is mostly dependent on irrigation, there has been a gradual rise in cropping intensity in Bangladesh agriculture. As a result, rice production has seen significant rise over the past years. Prior to 1980s, boro harvest in Bangladesh was relatively small and only some local varieties were cultivated. At present, local varieties are cultivated only in some deep-flooded areas in depressed basins and in saline prone coastal areas of the country (Hossain and Deb 2009). Technological changes in the

<sup>2</sup> Main rice crop was Aman, which entirely depends on the monsoon season for natural rainfall.

cultivation practice, along with government's trade liberalisation and reform policies have also contributed to this change. Agriculture saw a notable rise in yield per acre and productivity. Between FY1972 and FY2011, rice production in Bangladesh increased by 232.7 percent, from 9.77 million metric tons to 32.52 million metric tons, while the area under rice cultivation increased only to a limited extent, from 9.28 million ha to 11.52 million ha, an increase of 24.25 percent over the corresponding period.

Table 1: Foodgrains Production Scenario in Bangladesh

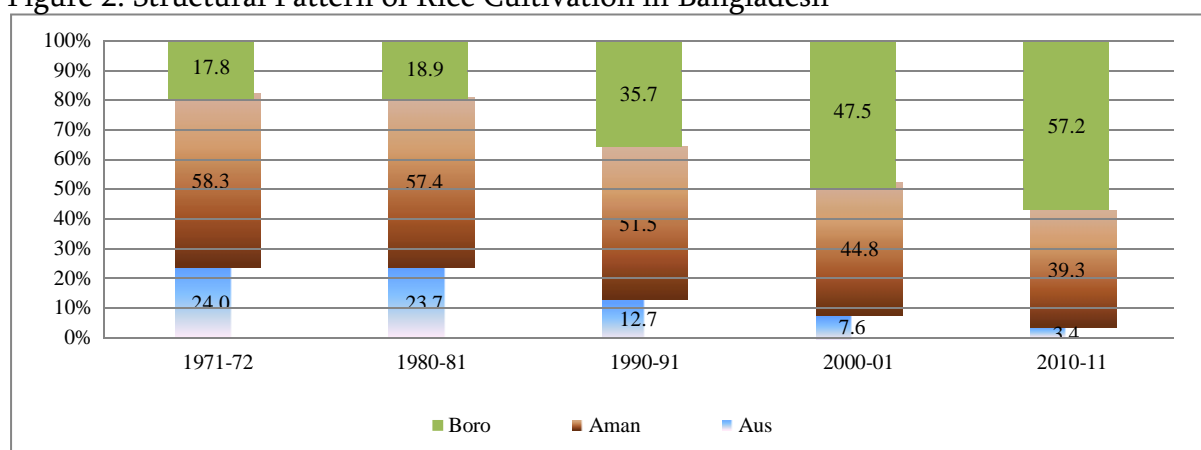
Food Item	Production				Average Annual Growth ( percent)		
	FY 1981	FY 1991	FY 2001	FY 2011	FY 1981to FY 1991	FY1991 to FY 2001	FY2001 to FY2011
Area (Million Ha)							
Rice	10.31	10.43	10.80	11.53	0.26	0.31	0.63
Wheat	0.59	0.59	0.77	0.37	4.37	3.68	-7.48
Total Foodgrain	10.90	11.03	11.57	11.90	0.40	0.50	0.21
Production (Million MT)							
Rice	13.88	17.79	25.08	32.52	3.61	2.83	3.23
Wheat	1.09	1.00	1.67	0.97	2.18	7.80	-6.13
Total Foodgrain	14.97	18.79	26.76	33.49	3.46	3.09	2.72
Yield (MT/Ha)							
Rice	1.35	1.71	2.32	2.82	3.34	2.47	2.53
Wheat	1.85	1.68	2.16	2.60	-1.91	4.04	1.38
Total Foodgrain	1.37	1.70	2.31	2.81	3.04	2.54	2.47

Source: Bangladesh Bureau of Statistics (BBS).

Higher quantities of rice production during 1980s and 1990s came mainly from the increase in acreage under High Yielding Varieties (HYVs) and Hybrid seeds during the boro cultivation season. This process was stimulated through higher availability of fertiliser, public subsidy, expansion of irrigation infrastructure - especially shallow tube-wells in the case of boro cultivation, farm extension services, research and development and lastly, appropriate market reforms. Higher crop intensity allowed Bangladesh to narrow the gap between sowing and harvesting seasons; the duration of the lean period between two harvesting seasons has also seen some reduction. Boro rice production alone contributed over 80 percent of the increased production since independence (Hossain and Deb 2009); in FY2011 boro accounted for about 57.2 percent of the total rice production, compared to only 17.8 percent in 1972 (Figure 2). Liberalisation of imports for modern irrigation and other equipments necessary to encourage the adoption of mechanised farming also played an important role in contributing to the increase in production in this period. Almost two-third of the total land in the country is now covered by modern irrigation systems (Hossain and Deb 2009). Resilience of the crop sector has grown due to the inception of more salinity-resistant varieties for the coastal areas, drought tolerant

varieties for drought-prone areas and flood-submersible varieties for flood-prone areas. Consequently, Bangladeshi farmers are now less dependent on the vagaries of nature. However, the pace of growth in rice production has decelerated during the current decade. Many of the available sources of productivity growth and production rise have by now been exhausted, with some arguing that Bangladesh has reached a technological frontier. Greater technological diffusion in unfavourable areas, innovative ideas and technologies with regard to cultivation in the submergible and drought prone areas, and lower dependency on ground water irrigation, are all likely to be required in the future in order to sustain the past momentum.

Figure 2: Structural Pattern of Rice Cultivation in Bangladesh



Source: BBS

Wheat is the second cereal crop, after rice, and is mostly cultivated in the north-western region of the country. Though traditionally not very popular, availability of high yielding variety seeds in the 1970s encouraged farmers to grow wheat, substituting some low yielding local varieties. Wheat production rose significantly during 1980s and 1990s, with 2.2 percent and 7.8 percent annual growth respectively. During FY1981 to FY2001, wheat production increased by about 53.2 percent, with 30.5 percent increase in area under cultivation, and 16.8 percent increase in yield rate. In the 1990s, better price relative to rice encouraged some farmers to go for wheat in place of some traditional rice varieties. During the late 1990s, due to the expansion of ground water irrigation, boro rice cultivation became more popular among the farmers, replacing wheat. Production of wheat saw a sharp fall during 2000s, from 1.7 million tons of wheat in FY2001 to 1.0 million tons in FY2011. During FY2001 to FY2011, the area of cultivation declined by 7.5 percent annually, and this resulted in a reduction in the production volume by 6.2 percent. Other factors were also responsible for the reduction in wheat farming, including Bangladesh's unfavourable agro-climatic environment during winter, and unfavourable soil conditions. Further, the relative profitability (in terms of financial return to farmers' labour and management) in cultivating other crops such as maize or boro, and the government's general policy of accepting large quantities of low-cost food aid to stabilise domestic food price, also undermined farmers' incentive to plant wheat and induced them to go for other profitable options (IFPRI 1997).



Rising population in South Asian countries has led to growth in foodgrain consumption, although in some countries such as Bangladesh, population growth rates have come down significantly in recent years. Production deficits at the regional level, measured in terms of the difference between annual requirement and annual production, reveals that most South Asian countries have made significant progress in increasing food availability. India and Pakistan have been able to attain commendable success in this respect and are now food surplus countries for most years. Bangladesh enjoyed a net surplus of 5164000 metric tons of cereals in 2007 (Table 2). On the other hand, Maldives and Sri Lanka are the most vulnerable regions with respect to food security in the backdrop of declining trends in production growth (0.4 percent and 5.8 percent respectively). Maldives can meet only 0.5 percent of its total demand through domestic production, while for Sri Lanka the corresponding share is about 74 percent. In general, these countries have to meet their supply-requirement gap through the help of imports.

Table 2: Production Deficit/Surplus of South Asian Countries in 2007

Countries	Consumption (g/capita/day)	Population (Million)	Yearly Requirement (,000 metric ton)	Production (‘000 metric ton)	Food Gap (Surplus/Deficit) in ‘000 metric ton
Bangladesh	495.48	143.96	26034.62	31199.03	-5164.41
India	417.97	1173.97	179100.00	288150.79	-109050.79
Maldives	302.18	0.30	33.48	0.17	33.31
Nepal	469.39	28.37	4861.21	7618.44	-2757.22
Pakistan	355.64	164.45	21346.45	56328.58	-34982.13
Sri Lanka	393.17	20.27	2909.21	2150.48	758.74

Source: FAO Database, UN Database Note: Negative sign demarcates surplus

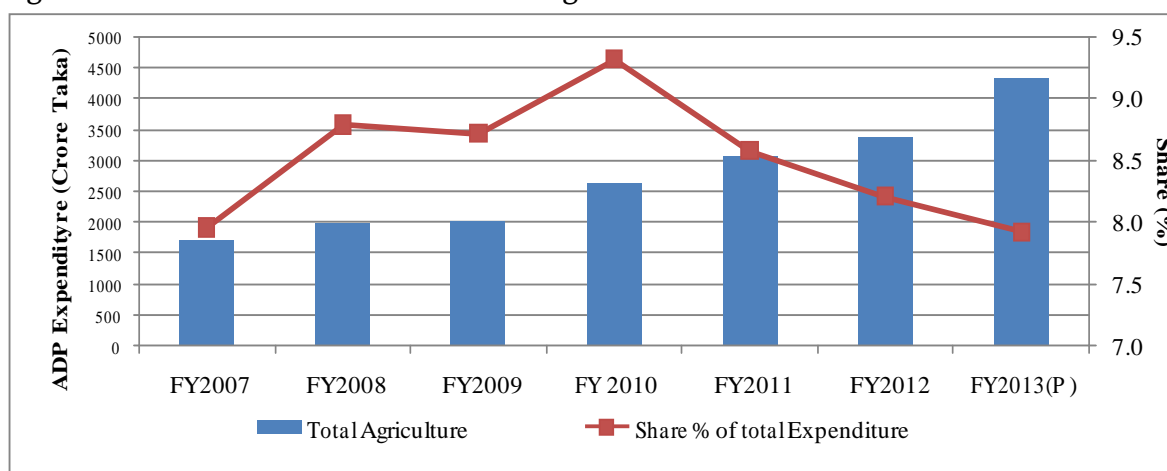
The food production scenario in Bangladesh is uneven spatially. Food gap/surplus analysis at the district levels shows that 48 of the total 64 districts in Bangladesh fell under the category of food surplus (Annex 1, Map 1). Districts with the most surplus are in the northern region – these are Noagaon, Dinajpur, Mymensingh and Bogra districts of Bangladesh. Production deficit at the regional level is highest in the urbanised areas and also in the remote and inaccessible areas, such as those in Chittagong Hill Tracts, char areas, coastal regions, and areas affected by frequent floods and river erosion.

### 2.3 Investment in Agriculture

Both public and private investment in the agriculture sector played an important role in accelerating the sector’s growth. This was supported by progressive adoption of modern technologies, inputs and equipments. Transition from subsistence to modern farming in Bangladesh was mostly driven by the private sector and mediated by the public sector. The allocation for development expenditure in the agriculture sector rose significantly from Tk. 1718 crore in FY2007 to Tk. 4355 crore in FY2013, a 2.8 times increase. Though, the share of agriculture sector has declined significantly in recent years (Figure 3) due to the growing importance of other secondary and tertiary sectors in the economy, subsidy

in the agriculture sector rose by more than six fold, from Tk. 10.41 billion in FY2007 to Tk. 60 billion in FY2013. Input subsidies allow small scale farmers to reduce the cost of production and to increase production through higher use of fertilisers, greater availability of better quality seeds, and improved access to inputs such as diesel and electricity at a subsidised price. Public interventions in agriculture are mainly focused on three critical areas. Firstly, intervention is focused in the area of research and technology generation, which is undertaken by various research organizations such as Bangladesh Agriculture Research Institute (BARI), and Bangladesh Rice Research Institute (BRRI). Secondly, Bangladesh Agriculture Development Corporation (BADC) contributes through innovation in the areas of improving the variety of seeds and developing better cultivation methods. Thirdly, the Department of Agricultural Extension (DAE) has offered need-based extension services for the farmers to help ensure the optimum utilisation of resources. The Department of Agricultural Marketing (DAM), with a view to facilitate agriculture marketing through the free flow of market information system, has recently undertaken an e-government initiative in order to develop and disseminate updated market information to relevant stakeholders. Alongside the public sector, the push in rice production has also owed a lot to higher investments made by the private sector. Some of the NGOs and private sector entrepreneurs have been supplying quality seeds in the market, which have had a positive impact on the availability of good quality seeds. The development partners of Bangladesh played an important role in financing rural infrastructure, such as the construction of road connectivity and the development of growth centres, which also contributed to higher crop production and marketing of the outputs. Following steps to liberalise the grain import market, private importers were able to demonstrate their capacity to ensure supply from the overseas grain market.

Figure 3: Trend in Public Investment in Agriculture



Source: Finance Division, Ministry of Finance

#### 2.4 Government Policy towards Agriculture Development

For ensuring food security at the national level, successive governments in Bangladesh have made attempts to achieve the objective of self-sufficiency in food production. Towards this end, governments have supported agricultural research and infrastructure

development in irrigation and rural road construction, -often allowing the private sector to import irrigation and other agro-equipments. Further, the government has managed the inflow of food aid and the import of foodgrain as a strategy towards market stabilisation. In order to implement the SAPs in the 1980s and the 1990s, governments of the period undertook a number of reform initiatives in the agricultural sector. Reduction of tariff on agricultural equipment in the late 1980s expanded irrigation coverage and helped achieve robust growth in the crop sector. Withdrawal of the ban on rice import by private sector in 1995 eased the supply situation in the market. Opening up the rice market for the private sector stimulated foodgrain output by enhancing commercialisation of rice market. As a consequence, private sector stock became an important source of foodgrain in the country. Private sector was also allowed to produce, process and distribute seeds for commercial purposes. The government also allowed private ownership of agricultural equipments, with large-scale irrigation projects executed by the public sector. The monopoly of Bangladesh Agricultural Development Corporation (BADC) was brought to an end in the area of wholesale trade and fertiliser distribution, and the private sector was allowed to import and distribute non-urea fertilizers beginning from the late 1980s and early 1990s. On the negative side, public sector credit disbursement in the agriculture sector declined against the backdrop of strong criticism by donors on account of the poor recovery rate. The exchange rate liberalization and the consequent market driven rate had an impact on the import of agricultural inputs by making it more expensive, although exports gained from it. Murshid (n.d.) identifies a number of positive and negative impacts of SAP on the agriculture sector of Bangladesh. Major positive outcomes of SAP were reflected in the improved food security regime as a result of good agricultural performance, and secondly, at micro-level, where access to food significantly improved as a consequence of growth of non-farm income and employment opportunities. The two serious market failures that were identified were related to inadequate information among farmers about the quality of inputs and the inability of the market to take cognisance of the adverse impact on soil, surface and ground water.

As part of the aid conditionalities of the late 1980s and early 1990s, pressure was put on the government by donors to reduce and eliminate expenditure on subsidies. The government's subsequent privatisation of the input market led to the private sector and NGOs involvement in agro-businesses. Agricultural policies pursued since late 1990s were meant to encourage these and other organisations to complement government's efforts in areas of credit disbursement and recovery, extension services and research activities. GO-NGO collaboration helped the government to reach the poor and the marginal farmers through credit and technical support (Akanda and Ito 2009). During disasters, government's involvement in supplying seeds and agricultural credit provided support to the affected people and helped sustain agricultural activities (Akanda and Ito 2009). This policy support continued over the following decade. In the 2000s, thanks to the introduction of a number of measures, the quality of public support programmes and input delivery to farmers were improved significantly (CPD 2011). These measures included the introduction of agro-inputs assistance cards for farmers, disbursement of

diesel subsidy directly to farmers' bank accounts, subsidised electricity for irrigation and collateral free credit to tenant farmers. Policies pursued by successive governments had positive influence on technology diffusion in the agriculture sector by ensuring farm level use of small scale irrigation devices and mechanised farming. Thus, public-private partnership played an important role in the development of the agriculture sector of the country.

## 2.5 Import Scenario

In spite of the low level of imports, foodgrain import in Bangladesh plays a significant role in stabilizing the domestic market during production shortfall. In normal years, for example in FY2011, foodgrains import accounted for 12.9 percent of the total domestic supply of foodgrain. Prior to the liberalisation, food aid was a significant part of net foodgrain inflows (97.7 percent in FY1991). Rice import was derived solely through government commercial import while wheat was mostly imported as food aid. After liberalisation, food aid was successively replaced by private import during 2000s and came down to 6.4 percent in FY2011. The amount of rice imported through the private sector varied according to trends in domestic and international market conditions. As was noted, private sector import continues to play an important role in market stabilisation; this is particularly evident in times of production shortfalls after natural disasters. After the massive floods that struck the country during FY1999 and FY2005, and the consecutive floods and cyclone that hit during FY2008, the private sector import provided an important support to meet production shortfalls. Indeed, its share was 63.8 percent, 88.4 percent and 86.3 percent of the total inflow for the three years respectively. During the global price volatility observed in FY2008, the total import of rice was 185.8 percent higher than the comparable period of FY2007. Substantial production loss after consecutive natural calamities induced the private sector importers to take over the responsibility to ensure a sustained supply in the domestic market. Even though the import was significantly higher, it failed to meet the gap between demand and production loss. The high price volatility in the local market could not be avoided (CPD 2009).

Before the 1990s, Pakistan and Thailand were the most important sources of rice import for Bangladesh. In 1989, Bangladesh imported almost all of its rice from these two countries (UN Comtrade 2012). After liberalisation, when the private sector gradually took over foodgrains import, India emerged as the preferred source and single largest source of import. This was mainly due to the advantages of lower transport cost, lower delivery time and the possibility of smaller import contracts (Ninno et.al 2005). In 2007, Bangladesh's market of imported rice was taken over by India which supplied about 98.5 percent of its total rice import. This over-reliance on a single source turned out to be costly. When India changed its export policy in FY2008 and imposed a ban on export of rice, Bangladesh became vulnerable. Detail on this issue will be discussed in the next section.

Table 3: Inflow of Major Foodgrains (Thousand Metric Tons)

	FY1991	FY1999*	FY2001	FY2005*	FY2008*	FY2011
Food Aid	1540	1233	491	289	259	164
Rice	10	59	32	27	82	6
Wheat	1530	1174	459	262	177	158
Govt. Commercial Import	37	774	0	102	292	2117
Rice	0	345	0	72	292	1297
Wheat	37	429	0	30	0	820
Private Import	0	3480	1063	2982	3466	3108
Rice	0	2660	529	1196	2055	290
Wheat	0	820	534	1786	1411	2818
Net Inflow	1577	5487	1554	3373	4017	5389

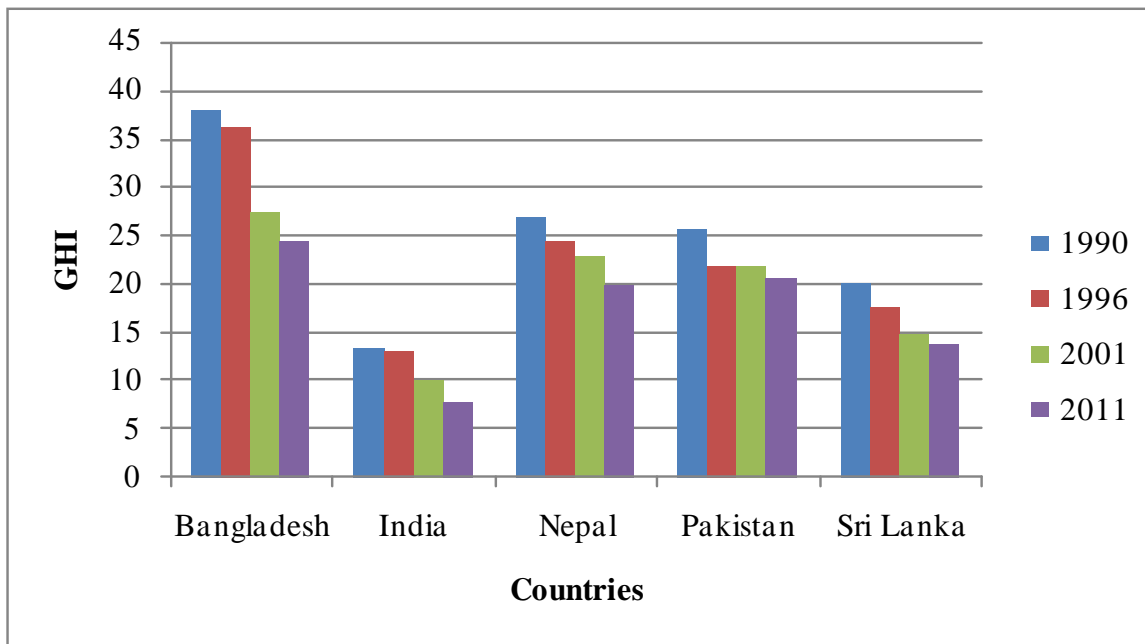
Source: FPMU

Note: \* indicate disaster year

## 2.6 Status and Trends in Food Insecurity

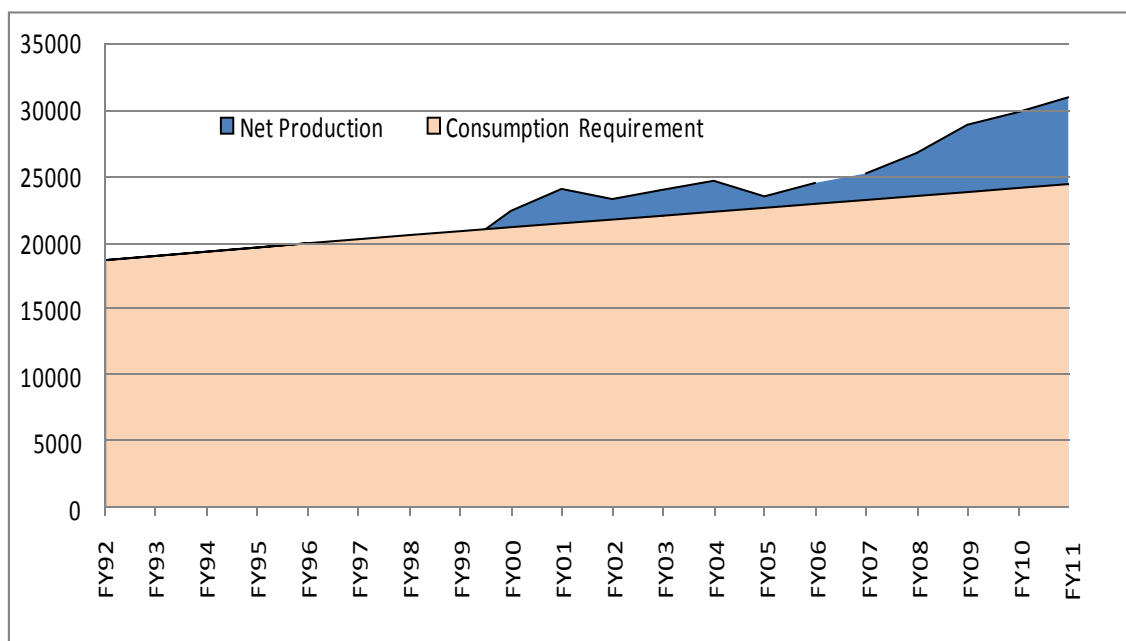
Among South Asian Countries, Bangladesh lies at the top of the list according to the Global Hunger Index with a score of 24.5 points, followed by Pakistan with 20.7 points and Nepal with 19.9 points (Figure 4). However, Bangladesh was able to make notable improvement in the index during last two decades by successfully reducing the share of the undernourished population by 14 percentage points, the prevalence of underweight children by 15.4 percentage points and the under-five mortality rate by 6.1 percentage points. Per Capita Availability of food (considering production, import and available stock) increased from 453 gm/day in FY1992 to 666 gm/day in FY2011, a remarkable increase of 47 percent (Rahman and Iqbal 2011). Begum and D'Haese (2010) found that the general growth of food production in Bangladesh was higher compared to the population growth rate and this resulted in a marked improvement in the availability of food during the 2000s (Figure 5). Although food aid has gradually come down and was rather insignificant at present, import of food has remained critical to maintaining the needed food availability in the country and ensuring food security. In recent times however, questions have been raised with regard to the estimates of actual demand in the country, particularly in view of estimates of production surpassing the estimated demand despite the clear foodgrain imports. The policy of maintaining sufficient food stocks to ensure food security is one reason for such import occurring even when there was production surplus. However, the debate still continues.

Figure 4: Global Hunger Index (GHI) in South Asia



Source: IFPRI (2011)

Figure 5: Demand-Supply Gap/Surplus of Foodgrains in Bangladesh



Source: Estimated based on data from FAO, BBS, DAM, DAE and FPMU

Despite the positive changes in the policy environment and the cropping system, food continues to remain an issue in Bangladesh due to growing population pressure, natural disasters and the possible impact of climate change on the agriculture sector. Other than these factors, several economic factors are also responsible for increasing demand together with supply side constraints. Demand for food, due to higher population growth and

rising purchasing power exceeds supply, which is also limited due to shrinking arable land, stagnating yield, hoarding of supply by producers and traders, and regional export restrictions (Carrasco and Mukhopadhyay 2012). On the other hand, lower purchasing power of those in the lower rungs of the income level brings forth the issue of entitlement, particularly when price spiral severely constrains the ability of this segment of the population to access their basic needs, mainly food. Thus, food security remains an ongoing concern in Bangladesh. CPD (2007) found that, in Bangladesh, the major determinants of food price are global food price, input price, food inflation and agricultural production. The experience of Bangladesh in FY2008 clearly illustrates the impact of food shortage on national food security.. In FY2008, two consecutive floods and a cyclone caused significant destruction and severely affected the production of aman rice. Food stock in the country came down to as low as 200 thousand metric tons resulting in uncertainties regarding the availability of food. Stocks may be changed in response to supply and demand, but once the stock goes down below the acceptable threshold level, supply can no longer be increased until the next harvest without imports (FAO 2011). As a result of the destruction, a price hike in food occurred. According to an estimation of FAO and WFP (2008), 6.9 million people in Bangladesh fell into the category of severely food insecure group due to the price hike in FY2008. The organisations also found that 45 percent of Bangladesh’s total population fell into the category of food insecure (less than 2,122 kcals/person/day), whilst 23.9 percent of the population is understood to have been severely food insecure (less than 1,805 kcals/person/day). Another recent study carried out by Save the Children (2011) found that due to the price hike of staple foods by 50 percent during 2007 and 2008, real income of poor people in Bangladesh decreased by about 37 percent. This led to severe increase in malnutrition among children. ADB (2012) also estimates that considering the poverty line of US\$1.25 income per person per day, a 10 percent increase in food price could push about 64 million more people below the poverty line. Decomposition on the effect of poverty during second half of 2000s has taken into consideration the income effect, food price and non-food price effect along with the population effect, and indicates that 110 million people could have been saved from poverty, if during the late 2000s, food price in Asia had remained stable. In South Asia, the countries with greatest food price volatility were India, Pakistan and Bangladesh, where 54 million, 9.4 million and 5.5 million people respectively were affected. These people would have been able to escape poverty if food prices had remained unchanged.

Table 4: Explaining the Change in the Number of Poor People (Million)

Country	Change in number of poor due to				
	Population	Food price	Non-food price	Income	Net effect on poverty
Bangladesh	0.7	5.51	5.89	-13.43	-1.33
Bhutan	0	0.01	0.01	-0.04	-0.02
India–Rural	3.31	40.37	45.38	-99.69	-10.63
India–Urban	2.55	13.22	13.42	-30.85	-1.65

Nepal	0.14	0.85	0.88	-2.8	-0.92
Pakistan	0.6	9.4	8.78	-18.99	-0.2
Sri Lanka	0.01	0.42	0.62	-1.33	-0.28
Total	6.5	111.73	95.46	-244.1	-30.4

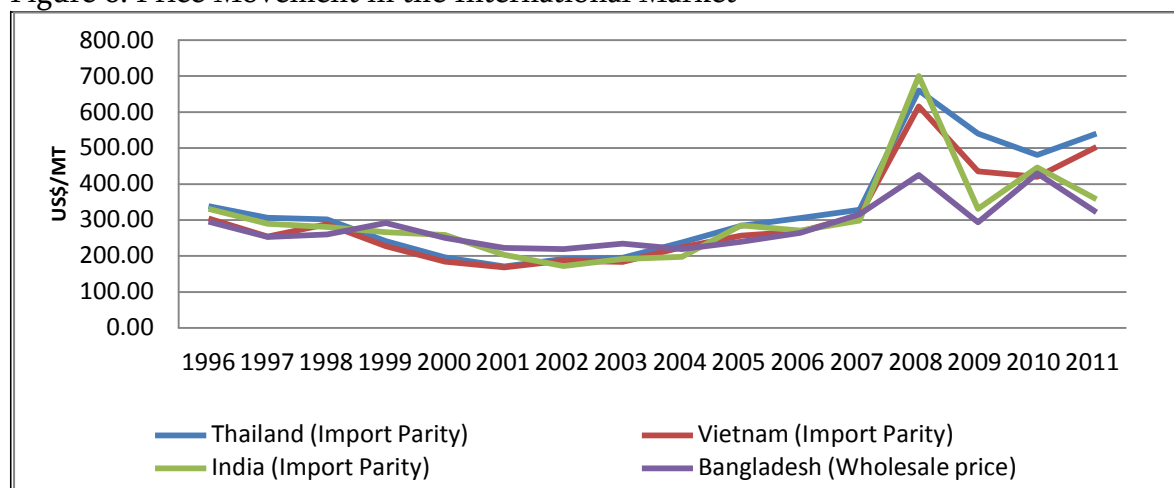
Source: ADB (2012)

It is to be noted that in 1998 and 2004, Bangladesh had to deal with similar crises to those faced in 2007 and 2008. In 2007, Bangladesh faced the situation by increasing private sector imports from India to bridge the gap between demand and supply. However, in FY2008, the crisis was growing due to price volatility and unavailability of rice in the international market. BIDS (2011) identified that the production shock of late 2007 would have required an injection of about 1.0 million tons of rice in the Bangladesh market, in addition to 1.25 million tons of private sector import. However, in 2007, in order to ensure India's own food security, India took a number of restrictive measures. India imposed an export ban on wheat and a minimum export price, of US\$ 425 per metric ton in October 2007; this was increased to US\$ 505 in December 2007 and US\$ 650 in March 2008. Later, the minimum export price was fixed at US\$1,000 for non-Basmati rice and US\$1,200 for Basmati rice; finally India imposed a total ban on rice export in April 2008 (Rahman et al. 2008). India's stance persuaded other rice exporting countries such as Thailand and Vietnam to revisit their export strategies and they also imposed temporary bans in order to secure their respective stocks. As a consequence of the volatility in the international market, price of rice in the wholesale market of Bangladesh went up to more than US\$500 in April FY2008 – this was a rise of almost 60 percent from July FY2008. A somewhat similar situation happened with wheat in FY2011, when minor supply shock due to drought in the Black Sea region triggered significant price volatility. Against a backdrop of radical policy response by exporting countries such as Russia and Ukraine, the total wheat supply in the world market was reduced by 23.0 percent. This led to an increase of about 50 percent in the price level of wheat between June 2010 and December 2010 (D&B 2010). Due to the increase of price in the global market, the price of wheat in Bangladesh increased by 45.0 percent (Save the Children 2011)<sup>3</sup>. Recent experience suggests that policy response of major exporting countries could have serious implications for the world foodgrains market, create challenges for supply and demand chains, and increase speculative behaviour in the global agricultural market. Consequently, all these could adversely impact those who are food insecure and lived below the poverty line. Net food importing poor countries are particularly vulnerable. Vulnerable countries, in a bid to curb inflation have to pursue policies to reduce aggregate demand and increase public spending on social safety net coverage and food subsidies. These forced policies are likely to amplify domestic financing risks by worsening fiscal deficits (Carrasco and Mukhopadhyay 2012). As a result, ensuring availability of and access to food is a major challenge from the perspective of maintaining food security as well as ensuring macroeconomic stability.

<sup>3</sup> Price increased by 54.0 percent in Kyrgyzstan, 31.0 percent in Sri Lanka and 16.0 percent in Sudan and Pakistan.



Figure 6: Price Movement in the International Market



Source: FAO

## 2.7 Identification and Mapping of Food Insecure Regions

Poverty mapping is an important statistical and regular monitoring tool used for estimating poverty at regional and local levels. The spatial dimension of poverty and food security is important from the perspective of addressing regional vulnerabilities. Poverty mapping facilitates identification and helps encourage more effective collaboration among stakeholders, researchers and policymakers in formulating needed policies. A number of studies have identified that targeting small administrative areas gives a better outcome in terms of cost effectiveness, and is also helpful in targeting the poor people in the neglected areas in a more effective manner (Baker and Grosh 1994; Bigman and Fofack 2000; Elbers et al. 2004). This calls for the development of detailed maps, showing other associated indicators of poverty and welfare. The technique followed in undertaking poverty mapping is to establish a link between survey and census data in order to estimate the income and expenditure for small administrative areas in the country (Hyman et al. 2005). In Bangladesh's case, BBS and the World Bank, in collaboration with World Food Programme (WFP), prepared poverty maps at Upazila (sub-district) level using the Household Income and Expenditure Survey (HIES) of 2005 and the Population Census of 2001 (Annex 1, Map 2). The vulnerability mapping methodology used in this poverty mapping include identification of potential bottlenecks by using factors such as availability and accessibility to food, food consumption and dietary diversity, education, health, nutrition, food utilisation and vulnerability during natural disasters. BBS uses two different approaches to measure poverty - the direct calorie intake (DCI) method, and the cost-of-basic-needs (CBN) method<sup>4</sup>. Upazila level poverty mapping identified poverty stricken regions in Bangladesh according to Head Count Rates (HCR). According to the mapping exercise, 20 Upazilas in Bangladesh have more than 55 percent HCR. Vulnerability mapping has also been prepared in accordance with prevalence of natural

<sup>4</sup> The Bangladesh Bureau of Statistics uses two different approaches to measure poverty: the direct calorie intake (DCI) method, and the cost-of-basic-needs (CBN) method. DCI method measures the calorie intake per capita per day. If this is below 2,122 kcal, it is defined as "absolute poverty", whilst "hard-core poverty" refers to a calorie intake of less than 1,805 kcal per capita per day. In CBN method, poverty lines are calculated based on the per capita expenditure required to meet basic food needs plus an allowance for non-food consumption.

disasters. Poverty mapping at Upazila level provides a useful guideline based on local conditions for the prioritisation and programming of policy interventions and resource allocation. As poverty trends vary across regions, consideration of local specificities and the presence of pockets of poverty within regions are critically important to gauge the extent of variations with regard to food security concerns.

A new form of food security analysis has now been put in practice in Bangladesh with an aim of providing decision makers with timely, reliable and accessible information about the food security situation. With the support of FAO, the Government of Bangladesh has been implementing a project on Integrated Food Security Phase Classification (IPC), which has been developed by an innovative multi-agency partnership of eight donors and NGOs<sup>5</sup>. The aim was to build a common standardised scale that integrates food security, nutrition and livelihood information at national and sub-national levels, and takes into cognisance the nature and severity of a crisis and its implications for strategic response. The reasons for developing a new form of mapping was related to the absence of a well-established standard to classify the severity of food security by all actors, the inability to compare crises over time and across countries, the lack of clear links between situational analysis, and the difficulties involved in convincing decision makers, which can lead to the misallocation of resources (IPC Global Partner 2008). IPC classifies geographical area and social groups into one of five phases of food security (Table 5). The multisectoral indicators that have been used to classify particular situations include - crude mortality rate, acute malnutrition, stunting, food access/ availability, dietary diversity, water access/ availability, structural, coping, livelihood assets, civil security and hazards. Once finalised this new form of mapping system will allow food security analysis to track the severity of crisis over time and could help decision makers to compare the severity of the situation and allocate the resources accordingly.

Table 5: Integrated Phase Classification (IPC) Indicators

Phase	General Description
1A. Generally Food Secure	Usually adequate and stable food access with moderate to low risk of sliding into Phase 3, 4, or 5.
1B. Generally Food Secure	
2. Moderately/Borderline Food Insecure	Borderline adequate food access with recurrent high risk (due to probable hazard events and high vulnerability) of sliding into Phase 3, 4, or 5.
3. Acute Food and Livelihood Crisis	Highly stressed and critical lack of food access with high and above usual malnutrition and accelerated depletion of livelihood assets that, if continued, will slide the population into Phase 4 or

<sup>5</sup> CARE International, Joint Research Center of the European Commission, FAO, FEWS NET, Oxfam GB, Save the Children (UK&US), WFP

	5 and / or likely result in chronic poverty.
4. Humanitarian Emergency	Severe lack of food access with excess mortality, very high and increasing malnutrition, and irreversible livelihoods asset stripping.
5. Famine/Humanitarian Catastrophe	Extreme social upheaval with complete lack of food access and/or other basic needs where mass starvation, death, and displacement are evident.

Source: FAO et al. n.d.

## 2.8 Role of Food Reserve to Combat Food Scarcity

Food security involves a number of complex issues that go beyond the estimate of production of food. Food security entails ensuring that all people at all time have physical and economic access to the required amount of nutritious and safe food. FAO report defines food security in terms of four key aspects- food availability (sufficient availability of food through production, import and stock; economic physical access to food (capability to purchase and procure food); food utilisation (consumption of safe food with nutritional safety and dietary balance); and food vulnerability (vulnerability due to psychological, economic, social or political reasons) (FAO 2008). In recent times the issue of food security has gained resurgence due to the alarming rise of chronic hunger. Vulnerable groups of society who are yet to secure their basic survival are relatively more exposed to the risks associated with food security. Reserves are generally designed to smooth out price volatility. However, this is only possible if the reserve is available for use. Ability to use the food reserves has favourable implications in terms of the ability to control market manipulation. To address the uncertainties noted above, the importance of food reserve is currently being reemphasised in the mainstream food security dialogue. As may be recalled, the Association of Southeast Asian Nations (ASEAN) and Inter-State Committee on Drought in the Sahel (CILSS) took the initiative to establish a regional reserve during global food crisis back in FY1974. However, the complex nature of this is also revealed by the fact that, unresolved issues regarding trigger price level, stock levels, contributions, and special provisions for developing countries were reasons for this initiative not having the expected outcome (Torero 2011). These proposals were revisited during the recent crisis in 2007. In the G8-summit held in Italy in July 2009, Heads of States signed a declaration to develop a system of stockholding to deal with humanitarian food emergencies and to limit price volatility (Murphy 2009).

In order to face the emergent concern, Braun et al. (2008) proposed three global collective actions to setup grain reserves – a small and independent physical emergency reserve, a internationally coordinated global grain reserve, and a virtual reserve with an intervention mechanism backed by a financial fund. There were several reasons for building the reserves (Murphy, 2009). Firstly, food reserves could contribute towards the

correction of market failure in the food market and could address issues of market imperfections. Secondly, reserves could reduce price volatility over time and ensure equitable regional distribution. Thirdly, publicly managed reserves could act as a safeguard against predatory pricing. Finally, food reserves could be an important support in times of natural disaster, war, under-investment in agriculture, or when local prices are depressed. Integrating this type of national food reserve into regional or international food reserve systems could ensure food availability during emergencies and promote shared benefits during price spirals.

## 2.9 Why SAARC Food Bank is Important for Bangladesh

As is known, access to food involves more issues than that of mere availability of food. Carrasco and Mukhopadhyay (2012) estimated that among all the countries in South Asia, Bangladesh is the country which will be most adversely affected in case of increase in food price. This is because of the likely climate change impacts effecting Bangladesh, including sea level rise, increased water salinity, changes in rainfall pattern, extreme variations of temperature and rainfall, and increased frequency of natural disasters. All these will have an impact on the supply of foodgrain. According to some estimates, due to climate change, rice production in Bangladesh was likely to be reduced annually by 1.22 million metric ton by 2030 (Deb et al. 2009). Demand for food will gradually rise owing to increase in population and income level. Augmented growth of food production will not be enough for sustainable food security of the additional population unless collective efforts are taken to address any likely adverse situation. SAARC Food Bank (SFB), which was established to provide emergency support to member countries facing production shortfall due to man-made or natural calamities is thus of significant importance to Bangladesh for SFB is a possible option for ensuring food security. Another possible option is an open trade regime, whilst it could facilitate trade in food items, does not always serve the intended purpose. Restrictions in international trade in food, experienced in recent times, bear this out in a very explicit manner. In this context, a collective food security reserve geared towards the relatively less-endowed people of the region could potentially serve a very important and useful purpose. On the other hand, ensuring food security to the vulnerable groups demands a food distribution network that is efficient and cost-effective. The next section will thus present a review of the food distribution system in place in Bangladesh which could potentially serve a conduit for the distribution of food from SFB.

## 3. Public Food Distribution System (PFDS) in Bangladesh

### 3.1 Historical Overviews

For a resource constrained country such as Bangladesh, ensuring food security through the mobilisation of resources to ensure adequate access to food for all its citizens remains a formidable challenge. Since independence, successive governments in Bangladesh declared their commitment towards ensuring food security for the entire population. An extensive network of social safety net programmes (SSNPs) and PFDS was gradually put

in place to implement this goal. The strategies included both direct measures, such as the distribution of food through SSNPs, and indirect measures such as the provision of employment opportunities and cash transfer programmes. Along with this, periodic market interventions were also used by the government as a tool to stabilise the price of food and ensure food security. This is generally done in Bangladesh through procurement from the producers during the harvest season and also through the open market sales (OMS) programme during lean season.

Through experience and various changes and restructuring, Bangladesh currently has a well-established PFDS system. Bangladesh's PFDS has a long history dating back to 1943 when, at the time of the great Bengal famine, a system was developed to guarantee a minimum quantity of cereals at controlled prices to urban consumers. After independence in 1971, a food delivery system was gradually put in place by successive governments, which was based on an extensive statutory rationing system in urban and rural areas targeted to the poor and the lower middle class. This was gradually dismantled from 1992 onwards. Although, the general objective was to support distressed people, a number of targeted programmes have shifted the focus of PFDS with more emphasis on development rather than relief. During mid-1970s, development partners who provided food aid to Bangladesh enforced the reorientation of some of the programmes. The contributions made by the development partners were directed to more targeted poverty oriented distribution programmes. Subsequently, the government introduced such programmes as Food for Work (FFW), Vulnerable Group Development (VGD) and Vulnerable Group Feeding (VGF) in 1975. With a view to stabilise seasonal price fluctuation, the Ministry of Food introduced Open Market Sale (OMS) in 1978. After 1993, the safety net system went through some downsizing and readjustment. The government introduced Food for Education (FFE) programme with a view to expand primary school enrolment. However, the programme came to an end in 2002 due to lack of efficacy, leakage, wastage and weakness in reaching the targets. The administrative mechanisms which deliver the services have also changed over the years. Partnership with other stakeholders, such as non-government organisations (NGOs) and micro-finance organisations have been forged to implement these programmes. These have helped the government to reach the target group, ensure better coverage and reduce leakage.

### 3.2 Trends in PFDS

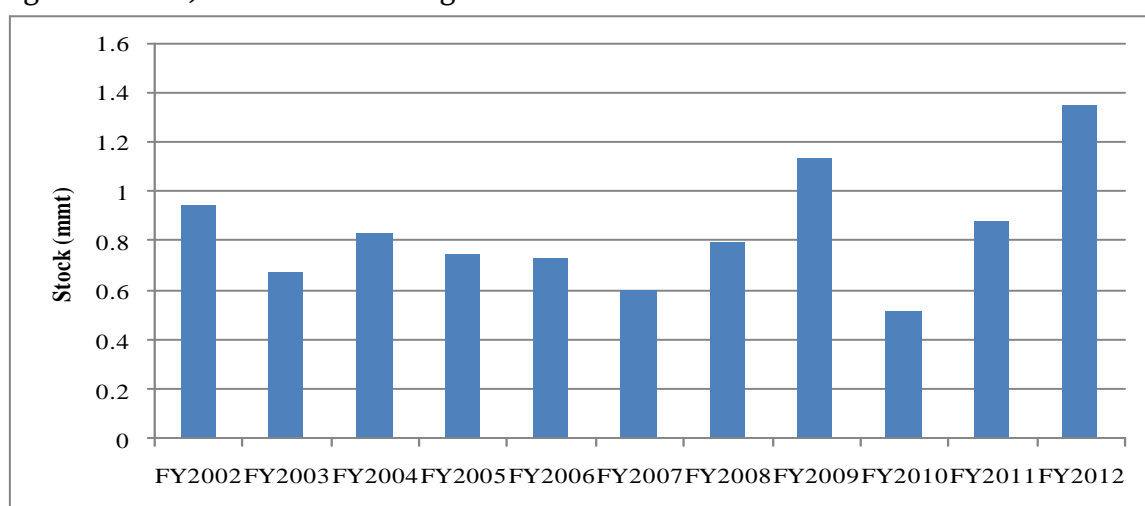
#### Procurement

PFDS works with two major principles - building up adequate rice stock through procurement in order to support the distribution system, and providing income support and price support to farmers and consumers. Traditionally, successive governments in Bangladesh have pursued the policy of price support favouring farmers so that during harvesting season, prices do not suffer a significant fall and farmers are not compelled to start distress selling. The food stock thus created is then used for monetised and non-monetised distribution to support the poor and low income people, and to stabilise

market through OMS programmes. Setting a procurement price that provides adequate incentives to the farmers takes interest of consumers, and keeps the subsidy at a reasonable level, is a formidable challenge in Bangladesh. However, attaining targets set for procurement has proved to be difficult in recent years. Between 2000 and 2009, procurement of boro rice was about 80 percent of the target in 8 out of 10 years, while the target was achieved by only 60 percent in 2007 (Ahmed et al. 2010). A major reason of the unsatisfactory performance with regard to the procurement programmes in the past was that the price level offered was not able to incentivise the farmers. Lack of storage capacity, limited access of farmers to the procurement sites, absence of adequate number of procurement centres, and failure to collect from small and marginal farmers were some of the other reasons (Ahmed et al. 2010).

### Stock management

Figure 7: End-June Stock of Foodgrains in Different Years



Source: FPMU

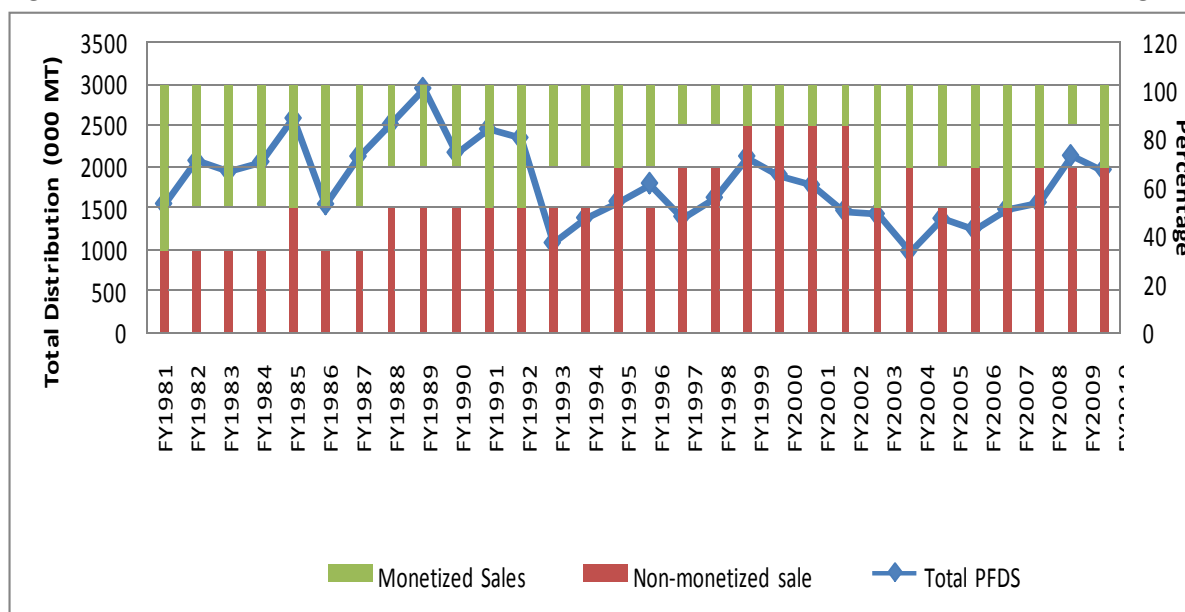
Maintaining adequate stock and its management is an important function of PFDS in view of the need to provide emergency response during times of disaster, sustain targeted food distribution, and undertake market intervention when needed. However, there is a significant cost involved in procuring, storing, managing and distributing a large public stock. In addition to the costs involved, due to limited storage capacity and quality deterioration due to changes in weather conditions, governments are not able to hold on to large amounts of foodgrain stock for an unlimited time period. Furthermore, grain reserves also divert public expenditure away from other investments (Shahabuddin et al. 2009). Stock of foodgrain is generally rolled over twice a year. Maintaining a minimum grain reserve is thus crucial. Grain reserves have also been used to maintain price stability in the domestic grain market. In the mid-90s, a stock target of 700 to 800 tmt was generally maintained in Bangladesh (Dorosh and Farid 2003). However, a sharp decline in food stock during 1998 due to unexpectedly poor production in the aftermath of flood compelled the government to revise its food stock upward. In the National Food Policy, the government has readjusted the target in order to maintain a public stock of 1.0

million tons of foodgrains. However, between FY2002 to FY2011, average stock has exhibited a declining trend, averaging 0.8 million metric ton (mmt). In FY2012, up to the month of March, the government has managed to keep the stock level well above 1.3 mmt. The end stock of FY2012 has been forecasted to be at 1.4 mmt (FPMY 2012).

### Distribution

The major structural change in the distribution system that took place over the past years was related to reorientation of the distribution focus from monetised channels to non-monetised channels. The share of monetised channel-mediated distribution in the total PFDS came down to 30.2 percent in FY2011 from 66.3 percent in FY1981. In order to develop a pro-poor distribution system, about two-thirds of the total PFDS is now diverted towards the development of the poor and distressed people. During 1980s, PFDSs' annual distribution ranged from 1.5 mmt to 3.0 mmt. During 1990s, an average of 1.8 mmt was distributed. Significant rise was visible at post-disaster periods, against a backdrop of an influx of food aid whereby 2.1 mmt of foodgrain was distributed to support the flood-affected people in FY1999. In the 2000s, the average amount has further declined to 1.5 mmt. Since FY1994, about 1 mmt of foodgrains are allocated every year in support of the non-monetised food distribution programme.

Figure 8: Monetised and Non-monetised Channel Distribution of Foodgrain



Source: FPMU

In FY2011 a total of 2.3 mmt foodgrain was distributed either through monetised or non-monetised channel. Due to the volatile market situation in FY2011, OMS distribution increased by 358 percent and recorded its highest level in that year (Figure 8). This intervention was helpful to bring down the price level to a tolerable limit. In recent years, PFDS is operated through nine distribution channels, four of which were monetised channels and five of which were non-monetised channels. Monetised channels

included Open Market Sale (OMS), Essential Priorities (EP), Other priorities (OP) and Large Employers (LE) programmes, while non-monetised channels included Food for Work (FFW), Vulnerable Group Development (VGD), Vulnerable Group Feeding (VGF), Test Relief (TR) and Gratuitous Relief (GR). A detailed description of each programme is shown in Annex 2.

### 3.3 Institutional Mechanism

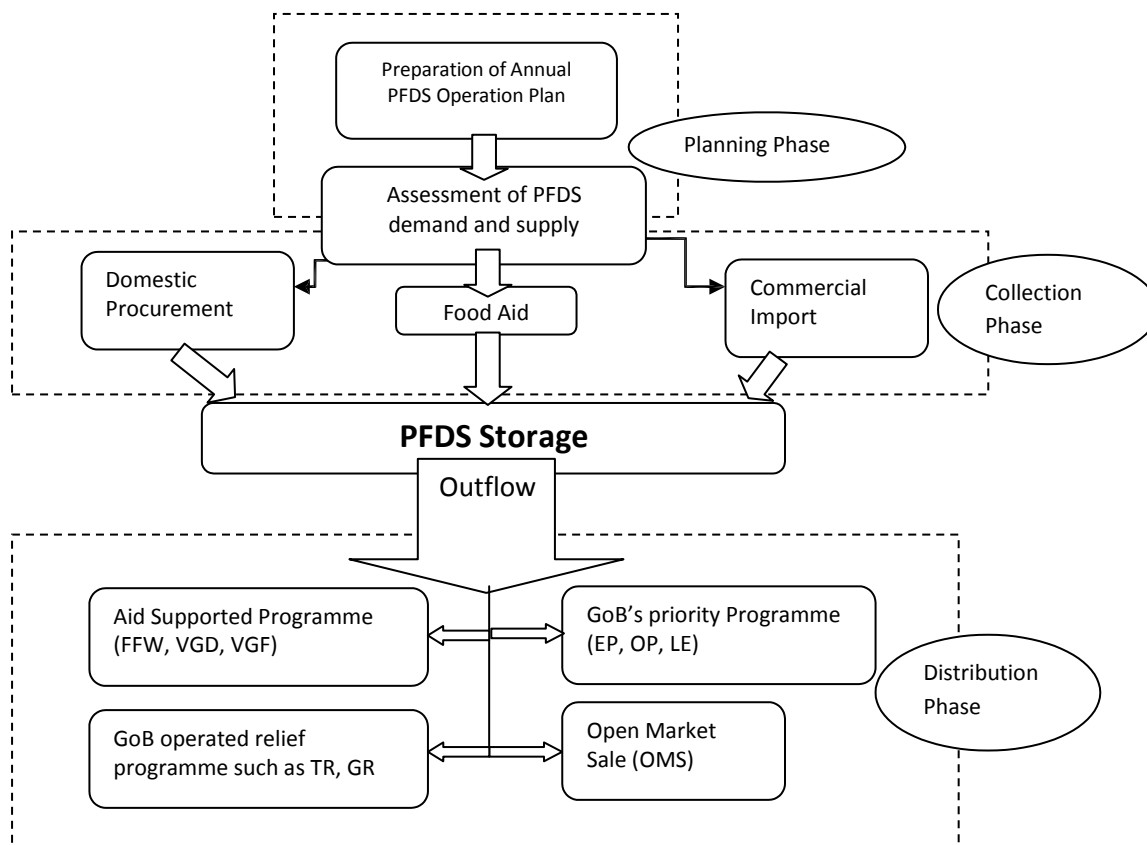
#### National Level

Ministry of Food and Disaster Management (MoFDM) is the apex body for the purpose of operating PFDS in Bangladesh. This body is devoted to promoting food security and providing necessary assistance and support in the form of food and relief to the vulnerable and the poor. MoFDM is supervised by a cabinet level committee, the Food Planning and Monitoring Committee (FPMC). FPMC provides overall leadership and supervises the formulation of food security policies. FPMC is assisted by the Food Planning and Monitoring Unit of MoFDM, which is responsible for monitoring food security situation in Bangladesh; implementing policies formulated by FPMC; collecting, storing and disseminating information for food security analysis and policy information; and delivering evidence-based policy advice to MoFDM. This body is also responsible for enhancing inter-ministerial collaboration for implementation of different plans and policies related to food security.

PFDS in Bangladesh is operated in three major phases – planning, collection and distribution. In the planning process, a detailed PFDS operation plan is prepared by FPMU through an extensive consultation process with other ministries, donors and stakeholders. This plan includes a detailed account of demand and supply situation with regard to foodgrains, proposed target of procurement and import, and distribution of food at the time of any possible natural disaster. The annual assessment of demand for PFDS depends on the size of food aid supported programmes, food based social safety net programmes and other price support programmes, and the projected food balance in the country (Ahmed et al. 2004). Depending on the production forecast and population projection, these figures are readjusted every year within a range of 10 percent (Ahmed et al. 2004). Flow Chart 1 summarises the operation plan and decision making process in PFDS. FPMU prepares the annual public food operation plan which is further reviewed by MoFDM and directed to FPMC for final approval. The Cabinet takes the final decision about the optimum stock level, which is subject to further revision if and when required. Stocks are accumulated with the inflow of food aid, commercial import and domestic procurement. After examining the stock level, MoFDM prepares a detailed plan of procurement process and initiates international tendering. The Minister in charge or the secretary of MoFDM declares the procurement price prior to the harvest season. Based on the cost of procurement, the suggestion of the adjusted channel-wise distribution prices of FPMU are finally approved by FPMC.



Flow Chart 1: Operation Plan and Decision Making Process in PFDS



Source: Prepared from Ahmed et al. (2003)

On the other hand, the officer-in-charge of each storage centre submits a report on current stock, estimated end-month stock, and requirement of foodgrains to the District Controller of Food (DCF). DCF prepares an overall report about the food situation in the district with estimates of available, individual and aggregate stock level in the particular district. This report is then sent to MoFDM to help prepare the movement plan of the overall stock. After finalisation, this movement plan, mentioning sources of supply, destination, quantity and modes of transport of all the districts is then distributed to DCF, Silo Superintendent and CSD managers. The distribution of food relief programme is coordinated by the Disaster Management and Relief Division (DMRD). MoFDM, with the help of Food Division and DMRD undertakes public distribution among the target group population through TR, VGD, VGF, and OMS from domestic procurement, commercial imports and food aid.

#### Local Level

At the local level, relief and other food-based distribution programmes are implemented by DMRD, to ensure social safety nets for the poor. As per the usual procedure, DMRD allocates stipulated quantity of foodgrain to the Director General of Directorate of Relief and Rehabilitation (DRR) according to guidelines. A pre-determined quantity of foodgrain for each district is then allocated to the Deputy Commissioner (DC). DC reallocates these resources to the Upazila Nirbahi Officer (UNO) for distribution. DRR,

DC office, Upazila Parishad, Upazila Administration and Union Parishad are responsible for the overall implementation, supervision and monitoring of these programmes. In the case of FFW and TR, resources are allocated on the basis of population size (50 percent), poverty situation (20 percent) and narrowing down of regional disparity (30 percent). GR are distributed by UNO to the affected people immediately after any disaster as humanitarian assistance. All these distribution systems have dedicated committees which include Members of Parliament (MP), local level government officials, local representatives, leaders and self help groups. OMS has separate committees for divisional headquarters, district headquarters and union headquarters. District Relief and Rehabilitation Officer, and the Deputy Commissioner (DC) have the power to take legal action against any misappropriation. Collective efforts of the public representatives and government officials offer a transparent decision making process to ensure pro-poor and equitable food distribution system.

### 3.4 Policies to Ensure Fair Distribution: Experiences from Emergencies

Stabilisation of seasonal variation in food prices is a key concern, particularly in view of its implications for the poor. Sharp increase in food price lowers the real income of poor people since a significant proportion of their income is spent on food (Shahabuddin et al. 2009). The rationale for a scaled up and effective food distribution system was underwritten by increasing concern about food security, which became particularly relevant following the melancholic experiences of 1999 floods in Bangladesh. The consecutive natural disasters of Sidr and Aila in 2008 reemphasised the need for comprehensive disaster preparedness and drew attention to the need to put in place an appropriate delivery programme that is speedy and is supported by an effective policy and action plan. The food distribution system in Bangladesh is supported by a series of policies, plans of action and investment priorities, most notable among which are Bangladesh Public Procurement Regulation (PPR) 2008, National Food Policy (NFP) 2006, National Food Policy Action Plan (PoA) (2008-2015) and Bangladesh Country Investment Plan (CIP) 2010 (updated in June 2011). These policies are designed to be internally linked and geared to address the emerging challenges of population growth, climate change, scarcity of resources, vulnerability to price shocks, and malnutrition.

The major objectives of NFP 2006, as has been mentioned in the policy document, are ensuring adequate and safe food supply, increasing access to food and ensuring adequate nutrition for women and children. NFP 2006 also aims to improve emergency preparedness of the food distribution system, and aims to increase the coverage and effectiveness of the emergency distribution programme, in a manner which is supported by adequate public food stock and swift distribution. NFP 2006 attempts to address the nutritional risks emanating from limited access to food, seasonal food insecurity, malnutrition and food deprivation. To ensure fair distribution and to reduce leakage, the policy envisages the inclusion of local bodies in the distribution system. For addressing the needs of urban slum dwellers and rural landless people, poor families that have aged people, abandoned women, helpless widows and disabled were identified by the policy as priority groups. Due to high frequency of natural calamities in Bangladesh, flood prone and coastal areas have been identified as regions with high priority. NFP 2006 thus

addresses the needs of particular population groups, regions and times of the year in its targeted food distribution programmes. These are in the form of emergency relief programmes, targeted distribution through VGF programme, FFW, VGD and programmes for the ultra-poor and under privileged population.

The objectives mentioned in NFP 2006 are translated into 26 strategic areas of interventions in the Plan of Action (PoA) under which, priority actions, responsible actors, and a set of policy targets and indications have been identified. 11 ministries, civil society organisations (CSOs), NGOs, private sectors and Development partners were identified as major actors. In order to achieve the core objective of enhanced access to food from the nearest local supply depot, the followings are considered to be important: an efficient management system, adequate transport infrastructure, and a quick and efficient emergency distribution of public stock, - in a manner which covers ecologically vulnerable and economically weak areas such as monso-prone, char areas, haor areas. Also important are improved targeting, improved cost-effectiveness and enhanced adequacy to vulnerable people's nutritional needs.

To support implementation, 26 priority areas mentioned in PoA have been further grouped into a set of 12 priority investment programmes in the comprehensive Country Investment Plan (CIP). "Programme 8" of CIP is about enhancing the efficiency and effectiveness of the public food management system with the specific priority areas of price stabilisation, capacity building and the modernisation of storage and handling. "Programme 9" deals with the issue of institutional and capacity development for efficient social safety net programmes. Programme 9 proposes inflation adjusted transfers, the integration of NGOs to assist in the implementation process, and to ensure appropriate targeting reaches the poorest of the poor and the food insecure, especially pregnant women and children in the rural areas. PPR 2008 also complements urgent initiatives of the government to meet national emergency or catastrophic events. Section 68 of PPR offers the provision, "to meet a national urgency or a catastrophic event, the government, in the public interest and with the recommendation of the Cabinet Committee on Economic Affairs may procure goods/services on an urgent basis by following the direct purchase method (GoB 2008). Indeed, this particular provision in PPR was made to take concerted actions to import rice from international market in FY2008 when food prices experienced unusual volatility.

### 3.5 Challenges and Opportunities of Food Distribution System in Bangladesh

#### Addressing below Poverty Line Population

Despite having a successful food based social safety net coverage, a significant proportion of people in Bangladesh still live below the poverty line. According to the Household Income and Expenditure Survey (HIES 2010), the incidence of poverty based on lower poverty line declined by 7.5 percentage points between 2005 and 2010, and had come down to 17.6 percent in 2010 from 25.1 percent in 2005. If the present population is taken to be 148 million, then about 26 million people are still to cross the minimum threshold line of poverty. The same report also identifies that 43.4 percent of the safety net

beneficiaries are yet to graduate from this situation. In addition, increasing inequality, and natural, manmade, and seasonal shocks compel people to move in and out of poverty line. CPD (2008) estimated that income erosion due to high inflation in FY2008 was to the tune of 21.1 percent. The study also found that an additional 8.5 percent of the population or 2.5 million households have fallen below poverty line. Characteristics of ultra poor also vary across regions. Even within developed regions, there are pockets of poverty where the situation is similar to that of the underdeveloped regions. All this, including the spatial distribution of poverty makes maintaining food security a challenging task in Bangladesh. Targeted, as well as spatial coverage of the food distribution system are deployed in Bangladesh to cater to the basic needs of the poor.

### Speedy Disaster Response

In the past, PFDS programmes in Bangladesh have been successfully developed to ensure food availability in response to disasters and price shocks. The programmes were tested in 1989 when Bangladesh experienced devastating floods. At the time, the government distributed about 2.94 mmt of foodgrains through public channels (Figure 8). Following the floods of 1998, about 1.8 mmt of rice was distributed with the combined effort of the government, donors and NGOs, together with private traders. With a view to stabilise the price in FY2008, the government deployed a number of interventions including OMS operated by the Bangladesh Rifles (BDR) and up scaled social safety net programmes such as FFW, VGD, TR and GR. The total distribution of foodgrains under non-monetised PFDS was 1.05 mmt, which was 25 percent higher than the previous normal year. Special VGD programmes were in operation in cyclone affected areas for three months, and VGF card holders received 10 to 15 kg of rice per month for one to six months while under GR, and 10 kg rice was given as a single instalment (CPD 2009). Floods and price shocks experienced by Bangladesh have helped the country to build a significant capacity to deal with food-related challenges. Maintaining good food stocks is a key element in maintaining Bangladesh's food security. BIDS (2011) states that the availability of about one mmt of rice as a public stock or import is needed to handle any future disruptions similar to that experienced in FY2008. According to government estimates, a stock of between 0.7 to 1.5 mmt of foodgrains is adequate for national food security (Ahmed, et al. 2010). Bangladesh has at least one food godown in each Upazila level and more than one in coastal upazilas. Considering 80 thousand tons of daily requirement, a total amount of 1.1 mmt is kept as stock to support fifteen days' consumption during a normal year. After a disaster, a total consumption equivalent of three months' requirement is stored to meet the needs of the locality. In some coastal districts such as Jhalokati, Barguna, Patuakhali, Bhola, Noakhali, Lakshmipur, Satkhira, Bagerhat and Khulna, along with some northern monga<sup>6</sup> prone districts such as Kurigram and greater Rangpur, a security amount for three months is maintained throughout the year. Thanks to the absence of any severe natural disaster in the recent past, the government was able to maintain a handsome stock of 1.3

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<sup>6</sup> "Monga is seasonal food insecurity in ecologically vulnerable and economically weak parts of north-western Bangladesh, primarily caused by an employment and income deficit before aman<sup>2</sup> is harvested. It mainly affects those rural poor, who have an undiversified income that is directly or indirectly based on agriculture" (Zug, 2006).

mmt (as of April, 2012). Through coordination between central administrations, foodgrains are moved within 24 hours following a disaster, and the food gets distributed under the Upazila administrative structure. A well-coordinated physical and human infrastructure has been put in place in Bangladesh to support the emergency preparedness and post-disaster response.

#### Food Distribution in Remote, Rural Inaccessible and Vulnerable Areas

Remote and inaccessible areas in Bangladesh include Chittagong Hill Tracts, haor areas, char areas, coastal areas and islands near the Bay of Bengal. Distribution to these remote and inaccessible areas often tend to be less effective, due to due to disruptions of the communication infrastructure in post-disaster situation, and because of inaccessibility due to natural and geographic conditions. Some of the areas are also characterised by high rates of river erosion or flooding, limited infrastructure and a lack of access to services. PFDS in Bangladesh has tried to overcome the geographical obstacles in reaching the poorest of the poor. PFDS institutional network in Bangladesh is covered up to Upazila level. Storage networks are maintained through silos in ports (preferably for wheat) and in other important locations. Central Storage Depots (CSDs) are mostly located at regional level and Local Storage Depots (LSDs) are mostly located at Upazila level. 640 LSDs have been established in 485 Upazilas to develop a countrywide network of food distribution. In remote and inaccessible upazalias, the equivalent of three months worth of foodgrain (for each Upazila's consumption) is stored in LSDs all year round. Food in the deficit areas are supplied from the nearby surplus Upazilas. Food is distributed to the affected villages with the support of the Chairman of each Union, the lowest tier in the local government system in Bangladesh. A three modal transportation system including railway, waterway and road transport is deployed to transfer food in the shortest possible time. Contractors are appointed to move food to preferred locations. In remote areas with poorly integrated market and road network, food is distributed through the water transportation system. In the island areas, which suffer from food deficiency as a consequence of tidal surge or cyclones, food is often distributed by sea trucks. Due to the disruption of communication infrastructure in the post-disaster situation, affected people in remote areas sometimes have to depend on aerial supply for their food. However, this particular mode has its limitations, since large volumes cannot be transported by air. In certain cases, food is made available to the nearest possible location of the vulnerable areas. Deployment of such wide multi-modal and diverse networks allows Bangladesh to reach vulnerable and remote areas during times of need and in most instances, in an effective and efficient manner.

#### Appropriate Targeting and Leakages

In order to strike a balance between Bangladesh's resource availability and its large poor population, it is crucial that it improves the targeting effectiveness to reach the poorest of the poor, and removes the bottlenecks that constrain these processes. Weakness of the targeting mechanism, the lack of availability of detailed information at household level and inclusion errors, all limit the success of food-based programmes (Sharif 2009). Inclusion error arises due to faulty selection criteria that are neither observable nor

verifiable (Ahmed et al. 2007). Moreover, targeting bias and lack of manpower also undermine the effectiveness of the targeting procedure. Beneficiary selection in the local level is often guided by vested interests of the political leaders. Patronage of influential persons or affiliation with the party in power often tends to influence selection. Exclusion error occurs due to resource constraints in bringing all the poor people into the coverage. Various efforts are however being taken in order to ensure an inclusive coverage of the adversely affected people in the near future. These include a periodic revision of selection criteria, the inclusion of local representatives in the committees, more vigilance on the part of committees, increased coverage of the poor, and above all, improvements aimed at ensuring sound disaster preparedness.

Leakage of food includes losses due to natural conditions, time involved with transportation, deterioration of quality due to evaporation and misappropriation. Inefficient management, obsolete or inappropriate technology, and adverse weather conditions also lead to losses and leakages. At certain times, the diversion and misappropriation of the resources is also a problem. In the field level distribution system, the delivery of less than actual entitlement is not uncommon and is often a consequence of possible leakages, resulting from transportation problems, misappropriation, diversion of materials for selling in the black market, and distribution of inferior quality foods. Leakages can occur at several points in the distribution system. Ahmed et al. (2004) estimates that in case of VGD programme, leakages due to shortages in the amount of allocation for ration was 7.5 percent, share of under coverage was 0.5 percent and overall leakage in the VGD programme for wheat allotment was found to be 8.0 percent. The government has taken several steps to minimise leakages and to make the system more effective. Rural rationing has been abolished as have been some of the urban statutory channels. However, ensuring good local level micro-management and paying the cost of delivering the services in advance could help to improve efficiency in operationalising these programmes. The government now prefers cash-based safety net programmes where level of leakages tends to be relatively low. Ahmed et al. (2007) estimated that the cost of transferring Tk. 1 to the beneficiaries was Tk. 0.00115, while the cost of Tk. 1 transfer of foodgrains was Tk 1.20 due to involvement of other supportive physical and human infrastructures. That is why, in many cases, cash-based transfer has been preferred to the food based distribution system. However, because of food security concerns, ensuring economic access to and improving biological use of food is important, and can only be ensured through an efficient food-based transfer system.

#### Fiscal Implication of Larger PFDS

In pursuing sustainable and inclusive social development, successive budgets in Bangladesh have, from the perspective of inclusive growth, tried to address the issue of providing social safety net to the segments of population in need. In FY2011, allocation under food security programmes cost Tk. 7232.1 crore, which amounted to 4.3 percent of the total budget and 0.8 percent of the total GDP of Bangladesh. A significant amount of subsidy is also allocated for distribution of foodgrains through the various non-monetised channels. The share of food subsidy has, however, declined in recent years, in the backdrop of rising subsidy for fuel and fertiliser. Actual allocations for subsidy and food

security programmes also show declining trends when inflationary adjustments are considered. Additional allocation of foodgrains for SFB will likely increase fiscal pressure on governments. Political commitment will be needed for this. In Bangladesh's case, since the infrastructure for storage and distribution of foodgrains from SFB are already in place, and considering that the per metric ton cost of distribution for food security programmes in FY2011 was Tk. 36,000, an additional allocation of Tk 145 crore will be needed to distribute the available amount from its own source for distribution through existing channels. However, this amount will be much higher if this resource is also to be made available for the use of others.

Table 6: Budgetary Allocations for Food Security Programmes

	FY2009	FY2010	FY2011
Allocation for Food Security Programme (Crore Taka)	5282.31	4932.48	7232.12
Subsidy (Crore Taka)	1016	984	1035
Total Distribution (Th. MT)	1877	1626	2000
Allocation (Tk/ MT)	28142	30335	36161
Share of Food Subsidy in total Subsidy ( percent)	1.51	1.29	1.1
Share of Food Security Programme in Non-development Budget ( percent)	7.87	6.31	7.79

Source: Ministry of Finance, FPMU

#### 4. Present State of SAARC Food Bank – Experiences of other Regional Food Bank

##### 4.1 Historical Background of Food Reserve in South Asia

As has been observed earlier, the right to food is generally defined in terms of availability through production, distribution and efficient market system and accessibility (Shahabuddin 2010). Keeping in sight the basic rights of the poor citizens in South Asia, SAARC Food Security Reserve was established in 1988. However, due to structural flaws and procedural problems, the reserve has not been operationalised as yet. Indeed, beyond signing of the agreement, not much progress had actually taken place. In this regard, some SAARC members have failed to fulfil their respective obligations to contribute, as they were mostly net-importing countries. Some felt that the initiative did not take off because of “complicated procedures, harsh conditions and a balance of payment crisis in the region” (Mittal and Sethi 2009). In the recent past, the possible adverse impact of climate change in the region and the need for legally binding commitment to ensure adequate amount of food at affordable price have led to renewed interest in the issue of operationalising SAARC food bank. This commitment was reaffirmed once again at the time of 14<sup>th</sup> SAARC Summit in 2007 in Islamabad, with the adoption of a common

approach to provide emergency supplies to disaster victim countries. SAARC Food Bank idea thus started a new journey in 2007. Significant changes in this new version include – specific amount of contributions from the members; specific withdrawal guidelines based on humanitarian considerations; availability of food at a discount price; explicit reasons for support from the bank; instruction for storage; and detailed guidelines on quality standards. The agreement also mentions the inclusion of Afghanistan as a new member which will be eligible for participation in SFB initiative (Robinson 2011). However, although the present agreement draws attention to the previous mistakes, not much has been done to resolve implementation problems which were confronted during the earlier attempts to operationalise SFB.

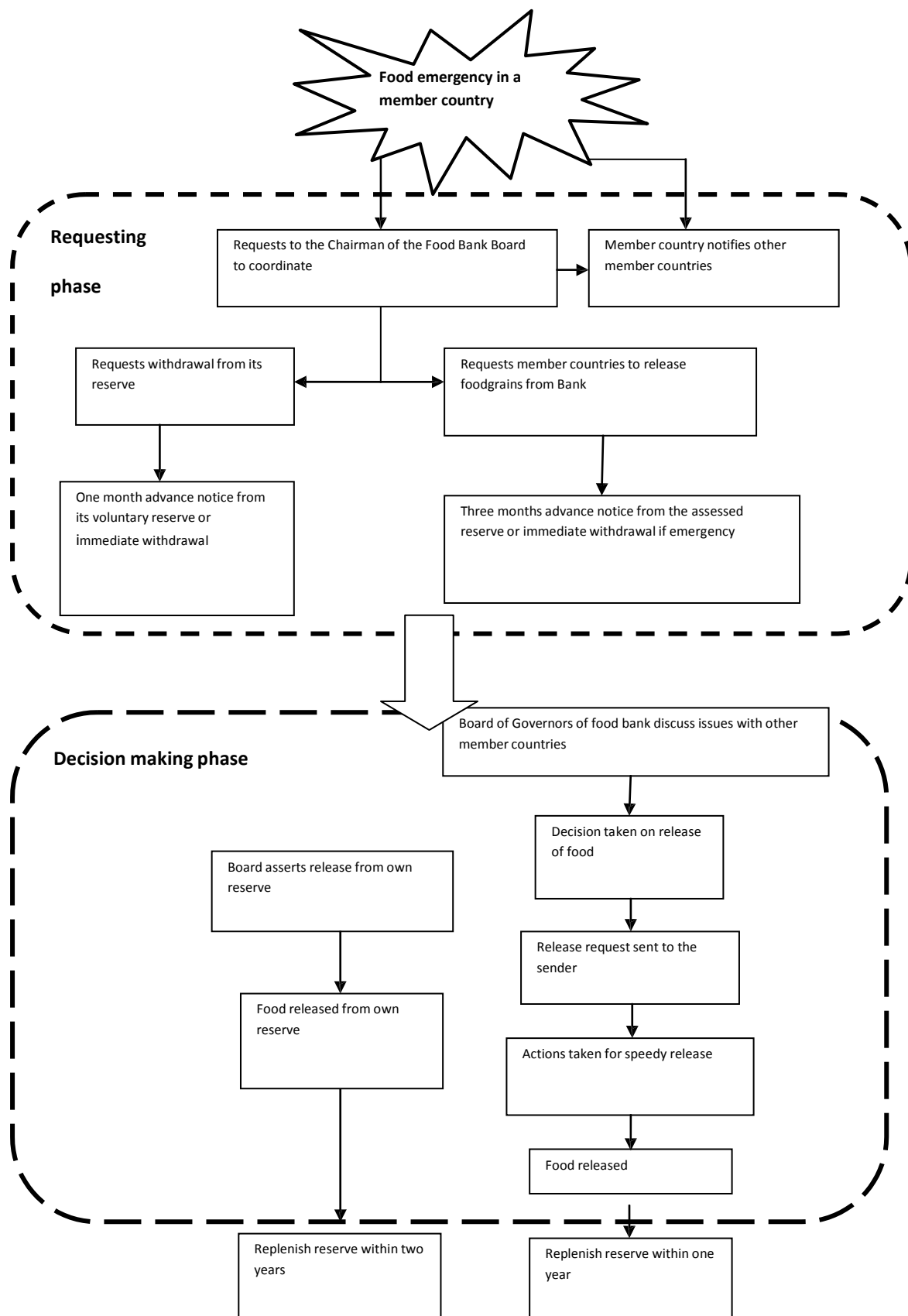
#### 4.2 Structural Framework

SAARC Food Bank (SFB) was setup with two major distinctive goals. Both during emergencies and normal times, the banks were to serve as a source of emergency supply of foodgrain and address food shortages faced by particular countries. Initially, SFB had a total dedicated stock of 241.58 tmt of foodgrain in the form of either rice or wheat. Out of this, India contributed 153.20 tmt, Bangladesh and Pakistan 40.00 tmt each, Nepal and Sri Lanka 4.00 tmt each, Afghanistan 1.42 tmt, Maldives 0.20 tmt and Bhutan 0.18 tmt of foodgrain. The share of the members was determined on the basis of comparative data on production capacity, per capita consumption and availability. At the third meeting held in Kabul, Afghanistan in 2009, taking into account the growing population, overall production, growing demand and increased vulnerability due to disaster and climate change, the board decided to double the quantum of the reserves to 486 tmt.

SFB is guided by SFB Board which is vested with the responsibility of administering the functions of the bank. The board undertakes an annual review and recommends steps and proposes adjustments in the rules of business. The board elects a Chairperson, based on the principle of rotation among member countries (according to alphabetical order) for the duration of one year (from one annual meeting to the next). At present (2012), Bangladesh holds the position of the Chairperson of the board. Each country has a designated nodal point responsible for activities in that particular country. The last meeting of SFB Board was held in December 2010. In 2011, the meeting was supposed to be held in Dhaka; however, the meeting was deferred because some of the member countries were not adequately prepared. The decision making process of withdrawal and release of foodgrain is depicted in the Flow Chart 2.



Flow Chart 2: SAARC Food Bank



Source: Prepared by authors based on various sources.

### 4.3 Major Administrative and Implementation Bottlenecks

SFB was setup with a noble intention; however, it is yet to achieve its aim of putting in place a mechanism of food security in the region in times of food shortage, high price volatility and natural disaster. After the signing of the agreement, a number of natural disasters have affected the region, including a wheat crisis in Pakistan, and floods and cyclones in Bangladesh. However, despite these crises, the arrangement for the operationalisation of SFB could not be achieved. Major problems in operationalising SFB include the supply-side and demand-side constraints. The operational and political issues that are at the root of the problems were misleading triggers, unsettled pricing mechanism, absence of clear-cut transportation mechanism, lack of clear idea about system of distribution in the recipient country, lack of information sharing, and lack of mutual interdependence in trade practice.

#### Misleading Trigger Criteria

Article V in SFB constitution declares– “A food emergency shall mean a state or condition in which a Member Country, having suffered a severe and unexpected natural or man-made calamity, is unable to cope with such a state of condition by using its national reserve” or “A food shortage shall mean a state or condition in which a Member Country has suffered a production shortfall and /or storage shortfall, and finds it difficult to cope with such a state or condition by using its national reserve, provided that the production of foodgrains in the current year is lower than the average of the production of the previous three years by 8 percent”. This would mean that, in order to qualify for applying for support from the food bank, Bangladesh has to either go through a food crisis due to a natural shortfall as a result of natural calamity, which it is unable to manage through its national reserve, or experience a production shortfall to the tune of 8 percent lower than the last three years average. If neither of these conditions is satisfied, the member country cannot apply for support from SFB. After 2007, Bangladesh did not face any natural disaster leading to sizeable production shortfall. However, the country had to confront the consequences of high price volatility in 2007 and 2008. Considering that the present production level of Bangladesh is about 35 mmt, only a shortage of 2.7 mmt would qualify Bangladesh to apply for the use of the stock. Table 7 shows that, Bangladesh did not experience an acute shortage in production of rice in recent years, as defined by the eligibility criteria for applying to SFB. It is to be noted that food security concerns such as lack of supply in the international market or high price volatility, are not applicable as valid criteria for applying to the regional food bank. As the trigger factors imply, SFB acts more like an „emergency relief bank“ rather than a „food bank“. It was mentioned above that Bangladesh’s food security concerns were at its highest in FY2007. A similar situation was also experienced in 2010 and 2011 when there was a shortage of wheat in the international market. In this period, Bangladesh was unable to make use of the Food Bank mechanism, and consequently had to meet domestic demand by importing wheat at a very high price. Because an 8 percent production shortage had not occurred, the food bank mechanism was not triggered. Thus, the food shortage in Bangladesh was not a cause for the food security concerns.

Table 7: Bangladesh's Status for Qualification to Apply

Years	A. Yearly Production (Th MT)			B. 3 years Moving Average (Th MT)			Dispersion between A & B (in percentage)		
	Rice	Wheat	Total Food Grain	Rice	Wheat	Total Food Grain	Rice	Wheat	Total Food Grain
FY2007	27318	737	28055	26335	816	27151	3.6	-10.7	3.2
FY2008	28931	844	29775	27593	772	28365	4.6	8.5	4.7
FY2009	31317	849	32166	29189	810	29999	6.8	4.6	6.7
FY2010	32257	969	33226	30835	887	31722	4.4	8.4	4.5
FY2011	33520	970	34490	32365	929	33294	3.4	4.2	3.5

Source: Authors' calculation based on data from BBS

### Quantum of Foodgrain

Some have argued that the proposed volume of reserves under SFB is lower than what it should be. Recent available data shows that the total inflow (both import and food aid) of foodgrains to the region in FY2011 was about 5.1 mmt. The amount of readily available foodgrains under the custody of SFB was about 40 tmt, which was only 0.8 percent of the total import. When the total quantum of food stock in the food bank is considered (which is quite unlikely to be issued to Bangladesh at one go), it amounts to the equivalent of only 4.7 percent of Bangladesh's total import in an average year. When consumption requirement is taken into account, the share of the readily available amount and the total volume of stock in the food bank stood at 0.2 percent and 1.0 percent only. Thus, the quantum actually to be available from SFB, at least in the case of Bangladesh, would only be effective and of use if the food shortage is confined to a small area or sub-region. Indeed, the amount available from the food bank will not even be remotely adequate if there is any national level disaster and consequent food shortage. However, as is known, incidences of natural disaster are rather common for the neighbouring countries as well since these countries share a common ecological setup. For example, the tsunami in the Indian Ocean in 2004, or cyclone Sidr that visited India and Bangladesh. The upshot of the above discussion is that the total amount of food available through the window of SFB is not large enough to address the needs if there was a large scale disaster in the region. Modalities in the agreement do not clearly describe how such a possibility will be taken care of if this is actually to happen.

### Pricing Mechanism

A pricing mechanism accepted by all the members will enhance the process of quick transfer of foodgrains from SFB during times of disaster. In the existing bureaucratic procedures relating to sanctions of food export under government-to-government deals, price fixation remains a key issue. In times of emergency, this „luxury“ is not available since speedy decisions have to be taken. If high prices existing in the market as a consequence of natural disaster and/or reduced supply are to be the reference point, this would defeat the purpose of the whole enterprise. The allowable price will also need to

include transportation cost and cost of other logistics support. A common price for accessing the food stock is difficult to setup because of domestic demand-supply situations, policy specificities, and incentives and support mechanisms in individual countries. Arriving at an acceptable, reasonable, humane and concessional price level without diverting the load of economic inefficiencies on the recipient country is a significant challenge in determining the price at which food is to be accessed.

#### Storage and Stock Level

SFB delivery mechanism suggests that stocks should be transferred as speedily as possible from a relatively closer distance and at economic cost. As far as Bangladesh is concerned, the problem of storage is to be addressed through dedicated storage facilities in the border areas from where speedy supply can be ensured. Bangladesh has to maintain an earmarked stock of 40 tmt for SFB, of which 32 tmt is in the form of rice and 8 tmt is in that of wheat. Under existing arrangements, Bangladesh is maintaining a dedicated stock level for rice in Dinajpur district which is a surplus production region and is situated at close proximity to the border with India. Wheat is stored in Chittagong, near the sea port to facilitate transportation. According to Bangladeshi officials, the reaction time has been reduced to 24 hours as far as Bangladesh is concerned. A public stock involves significant costs related to storage, administrative, financial and other costs. This stock is rolled over every three months to avoid quality deterioration. A minimum level of 40 tmt is being maintained at fourteen points in Bangladesh round the year. The costs involved in maintaining the stocks are thus not insignificant. However, if there is lack of synchronisation across countries in dealing with rolling stocks, it could lead to a situation where it will be difficult to have the food stock ready for access in times of emergency. Consequently, the managing of the rolling stocks by individual countries has to be done in a manner whereby partner countries have a clear idea about the overall situation with regard to food stocks under SFB initiative.

#### Lack of Unified Quality Standard

Harmonisation of quality of foodgrains in SFB poses a challenge. Indeed, there is lack of unified quality specification for SFB, and the standard of acceptable limit for foodgrain varies across countries. In Bangladesh, for example, the acceptable moisture content is 14 percent for rice and 13 percent for wheat. Maintaining moisture content is essential for ensuring the quality and quantity of foodgrains. Other quality standards such as percentage of broken grains, black grains, dead grains and foreign matters are also important. However, these criteria also vary across countries. The allowable limit of dead grains for Bangladesh, India, Nepal and Sri Lanka are 4 percent, 10 percent, 5 percent, and 12 percent respectively. Sub-standard warehouses that exist in many parts of the region also have negative consequences on the storage quality and some are also vulnerable to the vagaries of nature. In view of this, there is a need to set specified parameters for quality standards of foodgrains and warehouses dedicated to SFB by member countries.

#### Differences in Trade Capacity

In the regional context in general and SAARC in particular, trade in foodgrain ought to be seen as a key component of overall food security of the region. In 2010, SAARC intra-regional trade in food and agriculture was only 10 percent of the total global trade of the region. SAARC members are a heterogeneous group with respect to trade orientation; a combination of importing and exporting countries as far as foodgrains trade was concerned. Net importers do not necessarily import from SAARC countries and exporters do not necessarily export to the region. India is the largest exporter of rice in the world, but only 1.7 percent of its total rice export goes to SAARC countries. In the case of Pakistan, only about 6.5 percent of its foodgrain export is sent to other SAARC countries. Bangladesh imports wheat mostly from the Black Sea countries, but does not import from India because India has been enforcing a ban on wheat export since 2007. Dependence on import varies across countries and consequently, trade dependence on foodgrain also varies. Indeed, many SAARC members including Bangladesh have very low import duties on foodgrain. For example, although Bangladesh has set very high tariff ceilings in WTO for foodgrain, operative tariffs are very low for these items: for rice the import tariff has actually been zero for a number of years. Greater and more facilitated trade in foodgrain within the region could play an important role in maintaining overall food security in the region.

#### Lack of Information Sharing

The availability of reliable food related real time information and data, and access to relevant information remains an important concern in South Asia. This is also crucially important for operationalising SFB. The second meeting of SFB, held in Colombo in February 2009, assigned SAARC Agricultural Centre (SAC) to undertake periodic assessment of production patterns involving major foodgrains. At present, SAC, which is mandated to provide timely, relevant and universal access to information, does not have the capacity to deal with large scale data. Moreover, there are also supply-side constraints in a number of countries in the region which limit their capacity to produce annual data; Afghanistan and Bhutan are two examples. Indeed, Bangladesh is one of the very few countries in the region which provide data on a regular basis in the specified format; however, it has to depend only on officially published data. Given this situation, if a country were to suffer production setback, it would become difficult to transmit early emergency warning due to lack of uniform and usable data and information. This hinders the functioning of SFB.

#### Political Commitment for the Food Bank

The functioning of SFB is also vulnerable to the political economy of the food security concerns in the region. High price volatility and natural disasters could affect many countries of the region at the same time. There could be interpretational differences as to which country had suffered most, which country needs support from SFB most, and to what extent. Cooperation and collaboration among the bureaucracies is also equally important. Some stakeholders are rather sceptical about the prospects of SFB and some have blamed this on a lack of political will. During consultations, many stakeholders thought this was one of the main reasons for the failure of SAARC Food Security Reserve,

which was in place previously. The recent experiences of food price volatility and India's ban on rice export, and the consequent reactions around the region, once again reemphasise the need for greater political commitment to SFB.

The consequences of climate change are likely to have significant adverse impact for agriculture in all countries of the region. From this perspective, the need for heightened political commitment to address food security concerns of the future through concerted regional efforts of the type of SFB must be seen as crucially important. For Bangladesh, which by all reckoning is likely to be the most affected country, there is an added urgency to have SFB in place. Indeed, Bangladesh has put in a dedicated amount of reserve for the food bank in two of its districts, as a sign of commitment. The government has also linked SFB institutionally with the Food Division under MoFDM. Officials have been assigned with responsibilities for making speedy decisions with regard to allocation and transport of foodgrains from the stock kept with SFB. As the focal point for the year 2011, Bangladesh has sent invitation to the member countries to attend the fifth meeting of SFB. However, response was not received from some of the member countries. Since food security remains a major concern for Bangladesh, the government is keen to explore all possible options through which food security can be ensured. It is important that all SAARC members take an interest in SFB and are keen to make it a success.

#### 4.4 Experiences from Other Regions

The extraordinary price surge and price volatility in the commodity markets, experienced in 2008, particularly in the food market, compelled many countries, even those which had mechanisms in place to address food security situations, and to develop common regional agendas and approaches. Some of the cross countries experiences will be relevant to review in this context.

##### ASEAN +3

In 1979, ASEAN member states signed an agreement on ASEAN Food Security Reserve (AFSR), which paved the way for the subsequent establishment of ASEAN Emergency Rice Reserve (AERR). However, AERR could not be made effective due to inadequate volume of stock, and a lack of funds for the secretariat and faulty negotiation procedures, which, to a large extent, was a duplication of regular market mechanism or government to government negotiation (Briones 2011). The condition of making use of the reserve only during an emergency was possibly one major reason why AERR could never function effectively. In order to provide a mechanism for short term relief and to face food emergencies, a pilot project titled East Asia Emergency Rice Reserve (EAERR) was initiated in 2003 for three years and later, it was further extended till February 2010<sup>7</sup>. EAERR comprised of two types of reserves: the earmark and the stockpile. Releases from the earmark were made under two tiers - special commercial transaction or as a form of loan or grant by the earmarked countries. This was a resource to overcome food emergencies, which was mostly targeted to address market disruption, to bridge food

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<sup>7</sup> For detail, see Briones (2011)

availability gap, and to counter extreme price hikes. Releases from the stockpile are to be used to provide humanitarian food relief during times of acute emergency, in support of disaster victims, and to address food crises. EAERR stockpile release was implemented in Cambodia, Indonesia, Lao PDR and Philippines. In the course of the project, 3.0 tmt of rice was distributed in the form of relief. Implementation of EAERR helped to increase the size of the primary stock of AERR from 50 tmt to 787 tmt (Briones 2011). A number of subsequent changes in EAERR helped the scheme to improve in terms of quality of delivery. In implementing EAERR, more attention was paid to promote regional cooperation by incorporating regional teams to coordinate the reserve rather than leaving this to be dealt with through bilateral negotiations (Dano and Peria 2006). EAERR provided a regional safeguard mechanism for the member countries in view of emergencies. It may be noted here that, following the success of the pilot project, a new ASEAN Plus Three Emergency Rice reserve (APTERR) scheme has been signed in October 2011 to give support on information sharing, earmarking and stockpiling.

### RESOGEST

To provide guaranteed access to food in the event of scarcity, Sahel countries of West Africa<sup>8</sup> along with Inter-state Committee for Drought Control in the Sahel Region (CILSS) have established a food reserve known as RESOGEST<sup>9</sup>. In order to address food security in the region and to build up markets, RESOGEST strives to enhance trade in cereals within the region. Still in the process of being setup, RESOGEST countries are pledged to contribute 5 percent of their emergency food stock to the regional food stock, remove trade barriers, use all available resources to mobilise food stock during emergencies, and take advantage of each other's information systems including early warning and surveillance systems. After setting up the ceiling of the regional food reserve, the emergency reserve would be divided into a regional food stock and a regional food security fund. Integrating national food reserves with the regional food stock was expected to serve the objective of efficiency and limit costs. The network was also supposed to establish an extensive information system which would be linked with the various existing systems such as the "Regional Food Crisis Prevention Network (PREGEC in French)", "market information systems (SIM in French)", "livestock market information systems (SIMB in French)", "early-warning systems (SAP in French)", "the Food and Nutrition Security project (SAN for Sécurité Alimentaire et Nutritionelle)", "the AGRicultural Information System (AGRIS)", and "the West- African Market Information System Network (whose French acronym is RESIMAO)"<sup>10</sup>.

SFB could draw useful lessons from these above-mentioned regional experiences.

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<sup>8</sup> Benin, Burkina Faso, Cape Verde, Chad, the Gambia, Guinea-Bissau, Mali, Mauritania, Niger, Senegal.

<sup>9</sup> The Network of National Structures in Charge of Food Security Stocks.

<sup>10</sup> For detail, see SWAC (2010)

## 5. Recommendations for Operationalisation of SAARC Food Bank

There is no doubt that SFB could potentially serve a useful purpose in ensuring food security of the countries of SAARC, particularly for people below the poverty line and the food insecure. As it happens, in spite five years of existence, SFB continues to remain, for all practical purpose, dysfunctional. For Bangladesh, SFB has added importance because (a) for most years Bangladesh has been a net food importing country, (b) Bangladesh faces frequent natural disasters, (c) Bangladesh has experienced price volatility in recent past, (d) Bangladesh is one of the most climate-wise vulnerable countries in the region and (e) Bangladesh has one of the largest concentration of below poverty-level and food insecure population in the world. However, to make SFB effective, a number of changes, both in terms of institutions as well as provisions have to be brought in. The analysis presented in this paper, as well as discussion with stakeholders and cross-country experience allows us to draw some conclusions with regard to what can be done to raise the institutional efficacy and operational usefulness of SFB.

### 5.1 Policy Initiatives

#### Contribution

- The modalities that inform the operationalisation of SFB till now, have been akin to those of a Relief Bank. There is a need to expand the coverage of the Food Bank. The volume of SFB is rather insufficient in view of meeting the demand that could potentially originate in times of emergencies. The reserve will need to be raised further, perhaps to a total of at least at one mmt. This amount will help address a possible situation, in which a single disaster results in demand from more than one country. Equally, such an amount will help in circumstances where the scale of volatility (such as price volatility) is of large magnitude. This target contribution should be subjected to review every three years. Exporting countries could add a certain percentage annually, may be five percent of their total exportable volume to SFB in order to replenish the food stock. SFB could also include other relatively less perishable goods such as maize or potato, to expand the food reserve base.

#### Trigger Condition

- In order to raise the speed of access and better delivery of the expected results, trigger conditions for accessing SFB will need to be changed. Withdrawal conditions should put more emphasis on food related emergencies rather than on natural calamities (which may not necessarily have serious food availability consequences). Price volatility, both in the national and international market, and the lack of food and food availability that directly affect the food security of the poverty-prone people, also need to be added to the trigger mechanisms. Focus also needs to be given to local and sub-regional food-related adverse situations, along with those that are of national scale. The trigger of average production loss could be brought down to three to five percent from the existing eight percent of total foodgrains production.



### Pricing Policy

- Rationalisation of the price level of foodgrains to be traded under SFB is an important issue to be considered. Access price for foodgrains from SFB ought to be lower than the price level quoted in the international market. Indeed, at the fourth meeting of SFB, Bangladesh had prepared a price determination formula, both for exporting and non-exporting countries. Detail of this formula is shown in Annex 3. Further discussion will be needed to finalise the formula. SAARC member countries will also need to deliberate on the terms and conditions of payment towards operationalisation of SFB.

### SAARC Food Security Plan

- It will be difficult to have an effective SFB unless the regional cooperation itself is deepened in the first place through trade, investment and policy coordination of some type. SAARC should have a long term perspective plan on the development of agricultural sector and on how to address food security concerns and emergency response. The plan should also include research in the area of foodgrain trade, production and distribution. Close regional cooperation will be needed to create an environment where institutions such as SFB can function effectively.

### SAARC Food Security Fund

- Following the model of RESOGEST, a food security fund may be created to support the operating cost of the food bank. A part of the fund could be marked as a proposed endowment fund to support the restoration of infrastructure in the period following a disaster. Participating countries, mostly those which were deficit in food production, could make cash contribution towards this fund.

### Special Arrangement for LDCs

- Considering food insecurity, particularly of the least developed countries (LDCs) such as Bangladesh, developing countries in the group could setup a modality to address food security concerns. If there is a need to prioritise in terms of allocation from SFB, the case of relatively weaker economies should be considered more favourably.

## 5.2 Efficient Distribution Mechanism

### Linkage with PFDS

- The issue of how to establish linkage and interface between SFB and PFDS has been a less-talked-about area in the policy documents. Food policies and plans should consider how the food reserves under SFB could also help to address seasonal shortages in the vulnerable areas. More flexibility is needed under SFB to make use of the reserve as loan during lean period and repayment during harvest season in the form of “receive now and return after”; or “receive here and return there”. For example, Bangladesh could borrow foodgrain from India by receiving it from the

western border, and return the same amount via the eastern border, which is a relatively less developed region in India.

#### Ensuring Pro-poor Distribution System

- In order to be fully operational, both putting in place an effective distribution system at the nationally and regionally is crucial for SFB to operate in a pro-poor manner. In order to avoid leakage, corruption and misappropriation, detailed information concerning the distribution system should be made public. Local level institutions, possibly even union level institutions should have a detailed list of beneficiaries, along with the received amount to be displayed in the public places. A nation-wide beneficiary database could be developed to avoid duplication. A more localised survey on prevalence of poverty to understand the micro-level poverty situation is essential for targeting of the needy people in times of food crisis. Ensuring equitable distribution of the available food could contribute to eradicating extreme poverty and hunger, a key MDG-I target.

#### Reaching out People in Inaccessible Areas

- In the context of post-disaster situation, many remote areas in Bangladesh are hard to reach because of disruption of infrastructure. Relief stocks should be made available at the regional level in order to provide rapid assistance to remote areas through aerial supply. Cyclone shelters in the coastal areas could be converted into food godowns on a temporary basis. SAARC could provide immediate assistance to re-establish infrastructure in the remote areas on an urgent basis. Once the infrastructure is put in place, the existing disaster response and distribution from SFB would be relatively easy.

#### Efficient Distribution Mechanism at National Level

- The national level distribution system should focus more on increasing cost effectiveness of the distribution and expanding the coverage to reach poor sections of the countries. Micro-mapping of the local poverty situation should be undertaken to identify poverty stricken regions and to ensure efficient and timely delivery from the warehouse to the affected areas. A district level map (Annex 3) showing food surplus and deficit regions prepared by the authors can be effective in this regard. The response time between request and actual commencement of foodgrains delivery should be brought down to the minimum.

#### Efficiency at Local Level Distribution

- Strong monitoring and supervision of the distribution system at the local level is essential for bringing down misappropriation and leakages, and for raising the efficiency of the delivery system. In the context of Bangladesh, all the four tiers that are present at the field level – central government, local government, local NGOs and community organisations, should be integrated into the food distribution system to ensure accountability in the process. Training of the officials at the various nodal points in the distribution system with regard to appropriate targeting, delivery and

distribution will contribute to raising the efficacy of the system and the speedy distribution of food from SFB through the system during times of emergency. Regular inspection of foodgrains before, during and after transportation, and use of appropriate transportation containers will help reduce leakage, and maintain the required quality standards.

### 5.3 Institutional Mechanism

#### Four Tiers of Decision Making

- Lengthy inter-government processes involving accessing common resources such as SFB remains a nagging concern. A four tier system involving the Board of governors, the Technical Committee on Agriculture and Rural Development, SAARC Standing Committee at the level of Foreign Secretaries, and SAARC Council of Ministers, makes the decision making procedures concerning SFB a rather lengthy one. Steps involved in accessing food supplies from SFB should be reduced to accelerate the process. The Board of Governors at their meeting could invite local and international experts and seek their expert opinion with regard to raising the efficacy of SFB.

#### Increase Analytical Capacity of SAC to Undertake Analysis

- SAARC is severely handicapped because of absence of reliable and timely data on agricultural production, prices, food stock, demand, shortage/surplus and import. Strengthening the capacity of SAARC Agriculture Centre (SAC) to generate and use relevant data and information covering national, sub-regional, regional and local level will be critically important.

### 5.4 Infrastructure Development

#### Storage Facilities

- Existing storage facilities dedicated to SFB are in many cases not equipped to maintain the needed quality and standards of the foodgrain. These facilities should be upgraded to the appropriate standards with proper measures to ensure security. These facilities should also include a roll over database system to track the losses in the storage system.

#### Harmonisation of Quality

- Ensuring compliance with multiple standards for the foodgrain is costly and delays transaction process, a crucially important concern during times of emergency. Harmonisation of quality standards is thus important. There is a need to arrive at a common set of standards which are acceptable in all regional countries. This will reduce testing and auditing standards compliance, and lower border hassles for quarantine.

## Information Sharing

- SFB should be supported by an appropriate information network system linking the relevant departments of the member countries. A detailed web portal may be created to keep record of and share national level data on production, price, distribution and import. Such a database will help the assigned body to analyse the price movements in the regions, stock situation and demand supply-gap and will allow estimation of the Food Security Vulnerability Index<sup>11</sup> for individual countries. In this regard, linking with the existing National Food Security Portal under FPMU with the regional data sharing web portal demands careful consideration. SAARC countries should come together to setup such portals at national and regional levels.

## 5.5 Political Support

- A well-functioning SFB will need the full support at the highest political level. Many of the issues involve complex understanding about information sharing on sensitive matters, cross border movement of commodities, integration with national food distribution system, a common set of standards and a common approach to priorities with regard to food security. Cooperation to deal with medium to long term issues of concern with regard to food security, including cooperation in dealing with such regional commons as climate change impacts will be required. A collective development goal set by SAARC countries would be needed for a meaningful and effective institutional mechanism to safeguard food security interests of the member countries. SAARC Secretariat could play a more proactive role in this regard and for this, the full support of SAARC political leaders will be essential.

## 6. Conclusion

Food security concerns may originate from number of factors: high price and price volatility, natural disasters, supply disruptions and production failures. All these could result in demand-supply gap which could have potentially drastic adverse implications for the relatively less endowed section of the population. Since ensuring food security remains a major concern for all the member countries of SAARC, issues of operationalising SFB merit close examination and consideration. SFB was conceptualised as a safety net mechanism for countries of SAARC which faced problems in maintaining food security of its population in times of emergencies. SFB was supposed to act as a „buffer“ that would be brought into play in times of any likely „food-insecurity“ situation. However, till now, SFB has not been able to perform its

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<sup>11</sup> A composite index for which, factors to be identified in the Board of Governors meeting. Following tools are used to detect vulnerability due to price shocks on global markets.

1. “The “World Markets” indicator corresponds to “Nutritional Exposure to World Markets” and shows how a country is dependent on world markets for its current supply of calories, fats, and proteins.
2. The “Household” indicator corresponds to “Household Vulnerability to Food Price Volatility” and shows how within each country poverty, current malnutrition, and the cost of food expenditures in total household income makes this country particularly vulnerable to food price shocks.
3. The “Macroeconomics” indicator corresponds to “Macroeconomic Exposure to World Food Prices” and shows how a country, at its macroeconomic level and from a balance of payments perspective, will face difficulties if agricultural prices go up on world markets.” (IFPRI, 2012)

intended tasks for various reasons. Past experience shows that despite pressing demands, including times when there was flood in Pakistan, cyclone hit Orissa, floods and cyclones afflicted Bangladesh and price volatility affected almost all SAARC countries- the countries were still unable to take advantage of what SFB was had to offer.

This paper has come up with a number of proposals to operationalise SFB in times of food emergencies in the region. These proposals relate to the building of food reserves, safety and security of reserves, institutional reforms, triggers for accessing the reserves, pricing mechanisms, and the delivery of foodgrain. There was also a case for harnessing the various standards that are maintained for the food reserves in different countries of the region. The paper points out that Bangladesh has submitted a formula for price fixation and the proposal deserves to be carefully considered. The paper argues that food reserves in SFB should be increased through higher contribution, and the trigger for access should be reduced. Factors that would enable member countries to access food from SFB need also be revised to take into account food emergency situations, particularly those arising from high food prices and price volatility. Local food emergencies should also be considered for support from SFB, if required. The speedy delivery of food from the reserves when needed, and its quick and effective distribution in affected regions and localities, and among the vulnerable sections of the population, remains a major concern in the operationalisation of SFB. From this perspective, the paper proposes an effective blending of access from SFB, with the delivery of food through the national public food delivery system. The paper points out in this context, that Bangladesh has a well-established delivery system which could be taken advantage of to operationalise SFB in case of an emergency afflicting Bangladesh. The paper argues that access to SFB could be integrated with the national food distribution system in a way that could address food security concerns in times of emergencies and crises in a speedy and effective manner. The paper argues in favour of a SAARC Food Security Fund which could assist in post-food crisis infrastructure development. The paper further argues that LDCs needs should be given special attention in any emergency situation affecting multiple countries.

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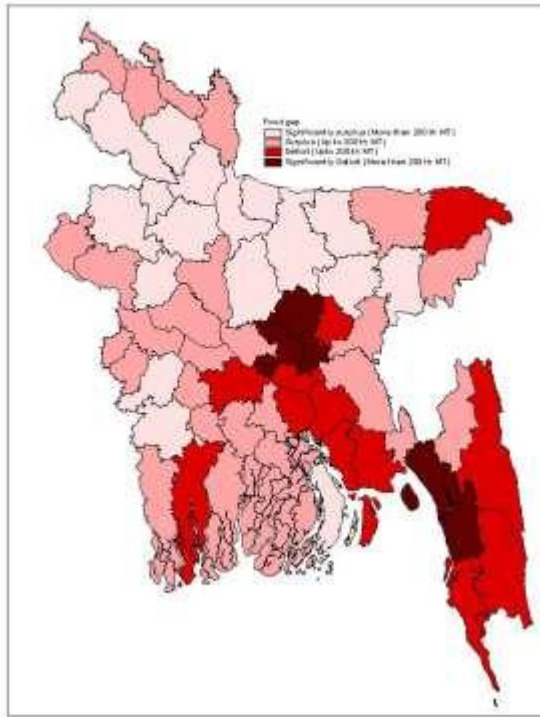
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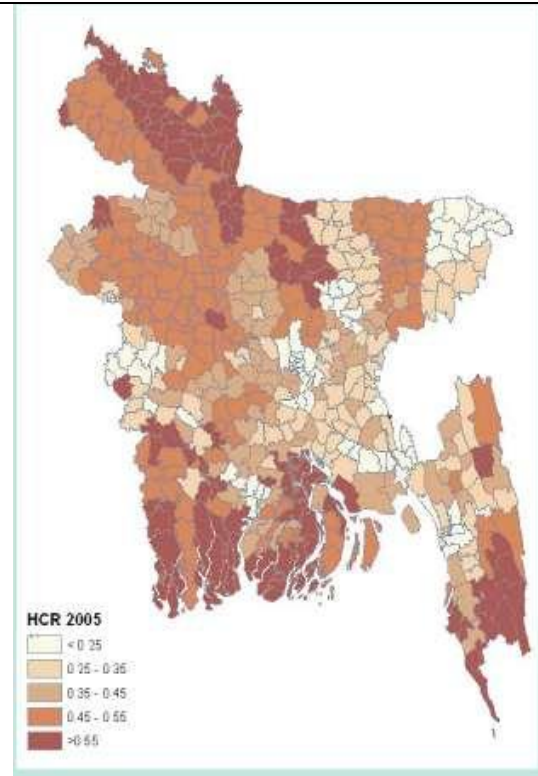
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Annex 1: Poverty and Vulnerability Mapping of Bangladesh

Map 1: Food Gap (Deficit/Surplus) in District Level



Map 2: Poverty at Upazila Level (Head Count Rate)



Map 3: Vulnerability Mapping Due to Disaster

Source: WFP and BBS

Annex 2: Detail of PFDS in Bangladesh

Program	Main objective	Targeting criteria	Financing/ implementing Ministry	Number of Beneficiaries Lac Man (LM)/ Man Month (MM)	Allocated amount (crore tk.) in FY2012	Program off-take in 2010-11 (000 metric tons)
Open Market Sale	To provide support to the low income people during food price hike	Low income people	GoB / MoFDM	231.93 LM	1848.00	1186
Essential Priorities (EP)	Rationing for armed forces, police, and other forces	Defense forces	GoB / MoFDM	n.a.	n.a.	253
Other priorities (OP)	Rationing for Government employees	Government employees	GoB / MoFDM	n.a.	n.a.	21
Large Employers (LE)	Food subsidies for targeted people working for employers of more than 10 employees	Targeted employees	GoB / MoFDM	n.a.	n.a.	17
Sales						1477
Food for Work	Employment generation for the poor, mainly in the dry season	1. People who are functionally landless 2. People who lack productive resources 3. Women headed	GoB ADB WFP / MLGD	38.10 MM)	1276.00	128

Program	Main objective	Targeting criteria	Financing/ implementing Ministry	Number of Beneficiaries Lac Man (LM)/ Man Month (MM)	Allocated amount (crore tk.) in FY20 12	Program off-take in 2010-11 (000 metric tons)
	Development and maintenance of rural infrastructure	household where women are widowed, deserted, and destitute 4. Day labor or temporary workers 5. People with income less than Tk. 300 per month	MSW MWR			
Vulnerable Group Development	Assistance to disadvantaged women in rural areas; training in market-based income generating activities, functional education	1. Households with not more than 15 acres of land 2. Households with income less than Tk. 300 dependent upon seasonal wage employment 3. Women of reproductive (18-49) age 4. Day labor or temporary worker 5. Households with little or no productive assets	GoB WFP EC CIDA / MWA	88.33 MM	754.64	264
Vulnerable Group Feeding	Disaster relief: foodgrains distribution to needy families in	1. Disaster and calamity victims 2 Landless people with less than 0.15 acre of land	GoB DPs / MFDM	104.44 LM	1607.15	114

Program	Main objective	Targeting criteria	Financing/ implementing Ministry	Number of Beneficiaries Lac Man (LM)/ Man Month (MM)	Allocated amount (crore tk.) in FY2012	Program off-take in 2010-11 (000 metric tons)
	periods of distress	3 Not covered by other programmes				
Test relief	Employment generation for the poor, mainly in the rainy season (similar to FFW except with lighter labor requirements)	1. Generally a location is targeted where poverty is relatively severe 2. Implementing period is 45 days.	GoB DPs / MFDM	39.05 MM	1117.32	177
Gratuitous relief	Disaster relief: foodgrains distribution according to perceived need	1. Disaster and calamity victims 2. Maximum 20 kg foodgrain (rice or wheat) at a time	GoB DPs / MFDM	80.00 LM	273.56	33
Other					225.90	98
Non-sales						814
Total					7102.57	2292

Source: Murgai and Zaidi (2005), Ministry of Finance

## Annex 3

### Elaboration of Guidelines for Determination of Price

A. If the lending country does not normally export the requested foodgrains or do not publish export price

Formula for calculating export price may be developed as:

$$\text{Price per unit} = \text{Cost of maintaining reserve} \times (1 + \alpha)$$

$\alpha$  is the percentage of margin regionally agreed; not more than 2-3 percent (i.e. from 0.02-0.03); to create incentive for the responding country.

Here, Cost of maintaining reserve = Collection price + transportation cost (collection point to godown/ silo) + storage cost + margin of losses

Collection price = average of yearly average foodgrains price +  $\beta \times (\text{average in the preceding quarter} - \text{yearly average})$

$\beta$  – may be an agreed percentage based on empirical figures.

Cost of transportation from the release point (silo/godown) to the port would have to be added based on national rates of freight.

B. If the lending country has export price for requested foodgrains

a. During emergency

$$\text{Price per unit} = \text{Export price per unit} \times (1 - \lambda)$$

$\lambda$  – Percentage of preferential treatment to be agreed regionally (3-5 percent) to create preferential treatment for SAARC member states to reflect humanitarian aspect in line with the clause 2 and 3 (a) of Article IX and to uphold the spirit of collective self reliance as enshrined in the SAARC Charter.

b. In case of difficulty under a normal time food shortage scenario

$$\text{Price per unit} = \text{Export price per unit} \times (1 - \lambda) + \eta \times (\text{average export price per unit in the preceding season} - \text{yearly average export price per unit})^2$$

$\eta$  – to be agreed regionally; may be within 0.3 – 0.5

## Annex 4

### Questionnaire Survey on

#### The LDC Issues for the Operationalisation of the SAARC Food Bank: Case Study of Bangladesh

1. Name:
2. Designation:
3. Organization:

#### SAARC Food Bank

4. What are the reasons behind the failure of the previous South Asian Food Security Reserve (SAFSR) that was established in 1988?
5. What are the reasons behind the non-functioning of the SAARC food bank established in 2007?
6. What are the general constraints of utilising the food bank during disaster?
7. What are the issues that are needed to be resolved for the operationalisation of food bank?

#### Modalities

8. Is Bangladesh satisfied with the present coverage of the food items? If not, what should be the possible options?
9. Is there any scope to include other foods such as maize, potato as well?
10. What should be the modalities of contribution in the SAARC food bank (Options: according to GDP/ population size, relative share of production)?
11. What should be the strategies of replenishment if the country is deficit in producing food grains?
12. How countries in immediate need can be assisted to benefit from the system?
13. What would be the triggers to activate the food bank? (Price level/ emergencies)
14. How the pricing negotiations will take place?
15. What institutional monitoring system can be established to meet the obligations to contribute grains?
16. What should be the maximum time limit to release the food after appeal?
17. What should be the efficient procedure for the release of food?
18. Does the present SAARC Food Security Reserve Board has the capacity to deal with the dispute settlement mechanism or arbitration system? What would be the procedure?

#### Public Food Distribution System

19. What are the major strengths of Public Food Distribution System (PFDS) in Bangladesh?
20. What are the major drawbacks of Public Food Distribution System (PFDS) in Bangladesh?



21. How efficiently the system works during post disaster situation?
22. How efficiently the distribution system takes place in remote, rural, inaccessible and vulnerable areas/regions?
23. What are the significant flaws in the national level distribution systems?
24. What are the significant flaws in the local level distribution systems?
25. How these drawbacks can be overcome?
26. What measures Bangladesh usually takes to distribute foods during emergencies in the remote areas?
27. What delivery or distribution methods can be appropriate to ensure a pro-poor delivery system?

#### Linking PFDS with SAARC Food Bank

28. What mechanism can be initiated to link the Public Food Distribution System with the SAARC Food Bank? How it can be linked institutionally?
29. Who will be responsible for transportation and distribution of food grains from SAARC Food Bank?
30. What steps can be taken to ensure quick and efficient commencement of the delivery system?
31. What can be done to increase the efficiencies of the distribution system so that the leakages can be avoided?
32. What should be done for efficient management of food grains?
33. Is there any need for a new institutional arrangement?
34. Do you think SAARC Food Security Reserve Board with permanent office staff will be able to distribute the emergency food efficiently in the local area or it can be done under the umbrella of existing institution such as Ministry of Food and Disaster Management or Disaster Management and Relief Division?
35. What will be the arrangements to distribute food in the local areas?
36. How the distribution system will work efficiently in the remote areas?
37. How the local government such as District Administration, Upazila (Sub district) Administration or Union Administration can be integrated into the system?
38. Who will be liable to finance the fixed costs and liable costs?
39. Is there any scope to establish a regional food security fund to support the cost and handling?
40. How a decentralised distribution system can be ensured with the help of local government, self help groups?
41. How the mapping of food-insecure areas can be utilised for efficient distribution of food?

#### Supporting Infrastructure

42. Are the existing storage infrastructures in Bangladesh enough for the food bank? What are the major drawbacks of arranging suitable storage infrastructure in Bangladesh?

43. Where are the present storages located now? What are the criteria for the selection of the location? (Border area/remote area)
44. How existing storage facilities can be updated to comply with the requirements of the food bank?
45. How are the border protocols that hinder the smooth transfer of food bank grains? What steps can be taken to lessen the border formalities?
46. What are the steps that can be considered for an efficient transport of food grains?
47. Who will be liable for maintaining the transportation and storage costs?
48. Is there any scope to establish an efficient information system to monitor food and nutrition security? (Production, market information, domestic price level, quality or dissemination of early warning of disaster, available food stock)

### Policy Instruments

49. Is there any conflict between present food policy of Bangladesh and SAARC food bank? (Conflict with national storage)? If yes, how can it be resolved?
50. Is there any conflict between present export and import policy of Bangladesh and SAARC food bank (Export ban, NTBs)? If yes, how can it be resolved?
51. What policies can be taken to increase inter-country cooperation and collaboration?
52. What initiatives can be taken for timely and efficient resolution of disputes with regard to use of food bank (time, amount, quality and modalities)?
53. What are the commitments of the government to operationalise the regional food bank?
54. What other policy mechanisms can be introduced for the regional food bank to be able to access food for poor people in food-insecure remote, rural and vulnerable areas?
55. What measures Bangladesh, as an LDC, can suggest for developing countries of the region to ensure their poor and food insecure people's access to food in remote, rural and vulnerable areas/regions?

## Annex 5

### List of Consulted Persons

#### 6.1.1.1 Dr A M M Shawkat Ali

Former Advisor to the Caretaker Government

Ministries of Health & Family Welfare and Food & Disaster Management and  
Chairman

#### 7. Mr Naser Farid

Director General

Food Planning and Monitoring Unit (FPMU)

Ministry of Food and Disaster Management

Government of Bangladesh

Bangladesh Secretariat

#### 8. Dr Rezaul Karim Talukder

National Advisor

National Food Policy Capacity Strengthening Programme (NFPCSP)

Ministry of Food

#### 9. Dr Mostafa Abid Khan

Joint Chief (International Cooperation Wing)

Bangladesh Tariff Commission

#### 10. Dr Z Karim

Chairman

Centre for Agri Research and Sustainable Environment and Entrepreneurship

Development (CASEED)

#### 11. Dr Quazi Mesbahuddin Ahmed

Managing Director, PKSF

#### 12. Dr Quazi Shahabuddin

Former Director General

Bangladesh Institute of Development Studies

#### 13. Dr. Abul Kalam Azad

Director, SAARC Agriculture Centre &

Member Secretary, SAC Governing Board

BARC Campus, Farmgate, Dhaka 1215, Bangladesh

#### 14. Mr. Ilahi Dad Khan

Director and Focal point of SAARC Food Bank  
Directorate General of Food  
Food Division  
Ministry of Food and Disaster Management

15. Dr Selim Raihan  
Associate Professor  
Dept of Economics, Dhaka University and  
Chairman, SANEM