

BANGLADESH FOOD SECURITY BRIEF

Food availability and consumption situation in the country

Bangladesh has continued to demonstrate a steady increase in the domestic production of food grain since 1971. The production has increased from 11 million Mt in the 1970s to more than 20 million metric tons in the recent years, though the yearly food productions fluctuate by several hundred thousand to a million mt. After 2001 the food grain production declined by 8 and 7 hundred thousand mt for the two consecutive years, which revived in 2004 with a production figure of 24.7 mt (*table 1*). Due to damage of crops during the severe flood in 2004 net domestic production in 2004/2005 has again come down, which is projected to be about 24 million mt.

Table 1

Commodity	Net Production in million tons				
	2000/2001 (actual)	2001/2002 (actual)	2002/2003 (actual)	2003/2004 (actual)	2004/2005 (projected)
Rice production (with 10% loss count)	22.6	21.9	22.7	23.6	22.8
Wheat production (with 10% loss count)	1.5	1.4	1.3	1.1	0.9
Net Production	24.1	23.3	24.0	24.7	23.7
*Total imports (Govt, food aid & private)	1.5	1.8	3.2	2.8	3.3
Handling losses on imports (5%)	0.05	0.05	0.1	0.1	0.1
Net import	1.5	1.7	3.1	2.7	3.2

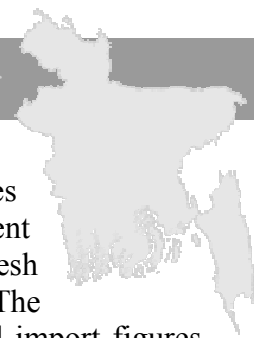
Source: Food Grain Digest, WFP, June 2005 & FPMU

The net domestic production is not sufficient to meet the requirement of cereals by the increasing number of population in the country. Every year the remaining food gap is met by import of food

grain (government commercial import, import under food aid and private import), which is gradually increasing.

A major problem in assessing the food availability situation in the country is, the estimates and figures on domestic production, number of population and food consumption pattern provided by government and private sector do not complement each other. The government figures try to portray Bangladesh as self sufficient or nearly self sufficient in food grain production despite of the increasing food grain imports. Moreover net availability of food grain is estimated after adjustment of 10 percent loss on animal feed and seed & wastage, which is often said to be lower than the actual loss. Due to the lower rate of loss calculation, the figures on yearly availability of food grain are over estimated.

The food grain requirement in a country depends on the dietary pattern, which also changes over time. Though the share of food grain in the daily diet has decreased in terms of weight and calorie over the years, it is still the principal source of food calorie and protein supply. According to Household Income Expenditure Survey (HIES) 2000 the calorie and protein intake from food grain was 78 and 58.5 percent respectively in 1995-1996; it came down to 75.4 and 58.3 percent in 2000. The non-cereals like potato, vegetables, pulses, meat, poultry, dairy, fish edible oil, condiment and spices etc. constituted about 20.5 percent of the total calorie intake in 2000 and 18.5 percent in 1995-96. The remaining calories were derived from fruits, sugar and miscellaneous items. Different consumption surveys in the country have estimated different figures on food intake. The Poverty Monitoring Survey (May 1999) estimated the average



national food grain intake at 477 gram/cap/day. When this estimate was disaggregated by poor and non-poor households, it was found that poor households consumed 439 gram/cap/day, whereas the non-poor households consumed 504 gram/cap/day. HIES 2000 estimated average food grain consumption of 486.7 gm\cap\day, which equals to per capita daily calorie intake of 1,737.

The Bangladeshi diet is very much carbohydrate based, lacking in sufficient amount of protein and micronutrients. Consuming a balanced diet is more a problem of access to food rather than availability of food for a nation where nearly half of the population are poor.

Food gap and self-sufficiency

The food requirement/demand estimates are usually based on the actual consumption pattern, which varies by income groups and urban-rural set-up. The United Nations World Food Programme calculated food grain requirement in 2003 (Food Security Brief, August 2003) using FAO/WHO recommended daily energy requirement of 2,400 Kcal per person per day¹. Applying this recommended energy requirement for Bangladesh, with 75.4 percent of the daily energy intake coming from cereals² and using a conversion factor of 3.57 Kcal/g³ the daily domestic food grain requirement can be calculated as:

$$(75\% * 2400 \text{ kcal}) / 3.57 = 504 \text{ gram/person/day}$$

The above estimate can lead to the calculation of food grain requirement and food gap in the country.

$$\text{Food grain requirement: Population} * 504 \text{ gm} * 365 \text{ days}$$

$$\text{Food gap: Requirement} - \text{Domestic production}$$

¹ This recommended level takes into account the composition of the population, size of individuals, physical activity level, climate, type of diet, disease level and distribution inequality .

² Report of the Household Income Expenditure Survey, 2000, BBS, p.34

³ The conversion factor is based on 10 percent of 3.34 Kcal/gram from wheat and 90 percent of 3.6 Kcal/gram of rice milled. The Kcal/gram values are derived from Food Composition Table, Food Balance Sheets - A handbook, FAO, Rome, 2001

Table 2 presents the figures on food grain requirement and food gap in Bangladesh for the last five years. The production, population and import figures are taken from government source like FPMU.

The population figures in the table are based on the annual growth rate of 1.47 percent, which equals to a growth of two million people per year, though FAO statistics estimates a population increase of 3 million every year.

Table 2

	Food grain quantities in million MT				
	2000/2001 (actual)	2001/2002 (actual)	2002/2003 (actual)	2003/2004 (actual)	2004/2005 (projection)
Net domestic production	24.1	23.3	24.0	24.7	23.7
*Population (million)	131	133	135	137	139
Total food grain requirement	24.1	24.5	24.8	25.2	25.6
Food gap	0	1.2	0.8	0.5	1.9
Net import	1.5	1.7	3.1	2.7	3.2
Net food grain availability (production+ import)	25.6	25.0	27.1	27.4	26.9
Per cap food grain available in grams	535	515	550	548	530

*Food Grain Digest, WFP, June 2005 & FPMU

The estimates in the table produce an average food gap of nearly 1 million metric tons since 2001.

In 2004, the Demographic and Health Survey reported a population figure of 140 million whereas the government estimated a figure of 137 million. Taking into account the surveyed population figure of 2004 the domestic food grain requirement and the food gap for the year 2004 are 25.7 million metric tons and 1 million metric tons respectively. Similarly the population estimate for the year 2005 is



approximately 142 million (with a yearly population growth of 2 million), which gives a domestic food grain requirement of 26.1 million metric tons and a food gap of 2.4 million metric tons.

Using FAO statistics on domestic production, import and population figures (table 3), the average food gap for Bangladesh from 2000 to 2004 stands out to be nearly 1.6 million metric tons.

Table 3

	FAO statistics on food grain quantities (in million)				
	2000	2001	2002	2003	2004
Net rice	22.8	22.1	24.1	24.9	23.9
Net wheat	1.6	1.5	1.4	1.4	1.1
Net Production	24.4	23.6	25.5	26.3	25.0
Population (million)	138	141	144	147	150
Food grain requirement	25.4	25.9	26.5	27.0	27.5
Food gap	1.0	2.4	1.5	0.7	2.5
Net import (with 5% loss)	1.9	2.6	2.4	3.4	NA
Net food grain availability	26.3	26.2	27.9	29.7	NA

Source: <http://faostat.fao.org/faostat>

Both the government and private sector estimates show an average net food grain availability (*net production+import*) of approximately 530 gram/cap/day, which is high above the required level of 504 gram/cap/day.

Self Sufficiency Ratio (SSR)

The self-sufficiency ratio⁴ expresses magnitudes of production in relation to domestic utilisation. It is another way of expressing the food deficiency in the country. SSR is defined as:

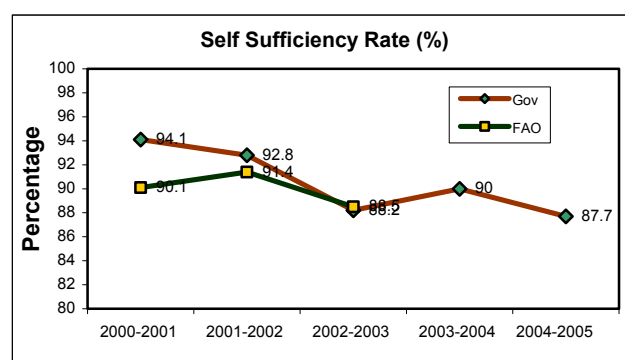
$$SSR = \frac{Production}{(production + imports - exports)} * 100$$

⁴ Food Balance Sheet- A Handbook, FAO, Rome, 2001

Based on the official and private food grain production and import figures the food grain SSR for Bangladesh is gradually declining (figure 1). The lowest self-sufficiency rate is found in 2005, which could be attributed to the crop damage during the severe flood in 2004.

Considering the estimates on food gap and self-sufficiency ratio it can be deduced that Bangladesh has a food gap of 1 to 2 million metric tons and an average SSR of about 90 to 91 percent.

Figure 1



Note: FAO statistics on import figures not available after 2003
For SSR calculation zero export has been considered

The estimated figures lead to the inference that food crisis in Bangladesh is an outcome of access and utilisation rather than availability. Though access to food is a common food insecurity issue throughout the country, a typical outcome of accessibility is reflected in the occurrence of seasonal food insecurity in the northern districts.

Seasonal food insecurity

Almost every year rural areas in Bangladesh are struck by a near famine situation before the annual harvest. This periodic food insecurity is more related to the traditional system of subsistence agricultural, feudal land tenure arrangements and exploitative loan and mortgage system in the rural credit market.

Natural calamities like river erosion, flood and drought just add to worsen such food crisis. In the

northern part of Bangladesh this severe food shortage situation is popularly known as *Monga*, whereas in other parts of the country *Akal* is a more known term; both bearing the same meaning i.e. severe scarcity of food, mainly rice.

Periods of food shortage

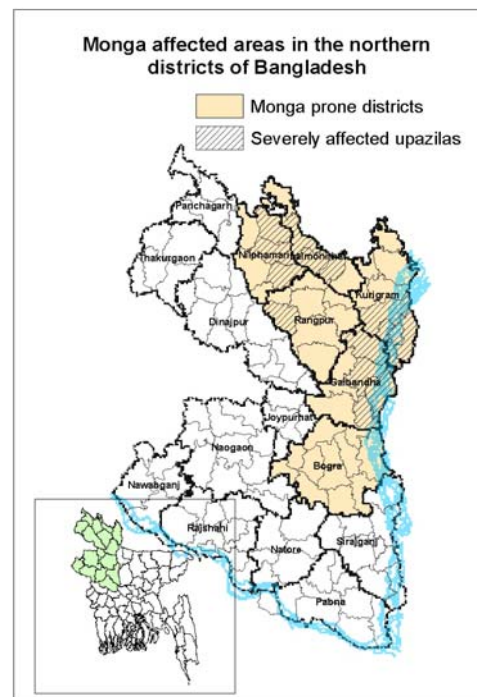
The pre-harvest period is the lean season in agricultural production. The agricultural lean period occurs twice a year lasting one to two months. The longest lean period starts in mid September and continues until mid November when the harvesting of Aman paddy starts. Another lean period, which is shorter in length, lasts from mid March until the harvesting of Boro rice in mid April.

Regions facing periodic food shortage

Previously the pre-harvest acute employment crisis was widely noticed in many parts of the country. With high yield variety (HYV) rice and vegetable cultivation agriculture has become more intensive. With the growth of rural market centers and improvement in rural-urban transport linkage, the agrarian population has to some degree been exposed to non-agricultural employment. Presently the seasonal food insecurity becomes more acute in the northern part of the country. The Assistant Field Officers of WFP Rangpur Regional office identified the districts of Kurigram, Lalmonirhat, Nilphamari, Rangpur, Gaibandha, Bogra and Serajganj as usually suffering from food shortage during the lean seasons (*figure 2*).

In the char areas along the Jamuna and Tista rivers, agriculture still remain traditional and less intensive. Prolonged floods and river erosion delay the plantation as well as the harvest of *Aman* paddy. Thus the agricultural lean period in the winter season is often extended upto mid December resulting in prolonged food shortage.

Figure 2



A typical lean season scenario in the northern districts is; crops are in the field waiting to be harvested, no employments in the agricultural fields, the household level food stock mostly consumed, inadequate supply of food grain in the market, the price of rice in the market is very high, the marginal farmers and the labourers run out of food and cash. Due to limited income earning opportunities in the non-farming sector, these vulnerable groups do not have any jobs to support their living as a result their purchasing capacity ceases to almost nil causing acute food shortage at household level.

Who are most at risk

Households most vulnerable to inadequate food intake include those depending on irregular income from daily wage labour and lacking productive assets. Occupational groups such as day labourers, fishermen, and beggars fall into this category. Within households, children, disabled, and pregnant and lactating women face the greatest nutritional risk.

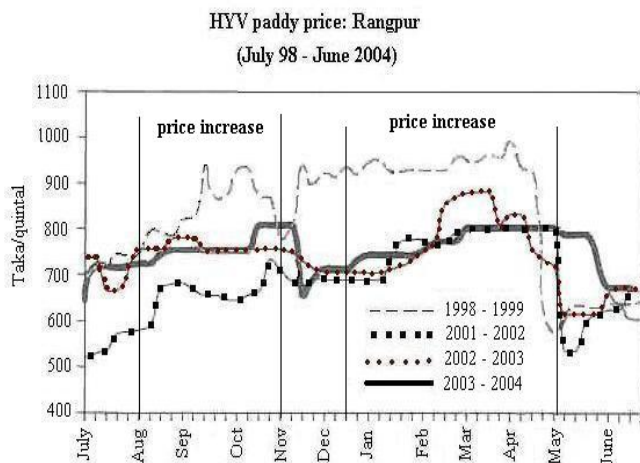


Although food insecure people can be found throughout Bangladesh, a higher concentration of seasonal food insecurity exist among people living on marginal lands, in areas affected by river erosion along the major river banks and chars.

Seasonal food shortage vs price of food grain

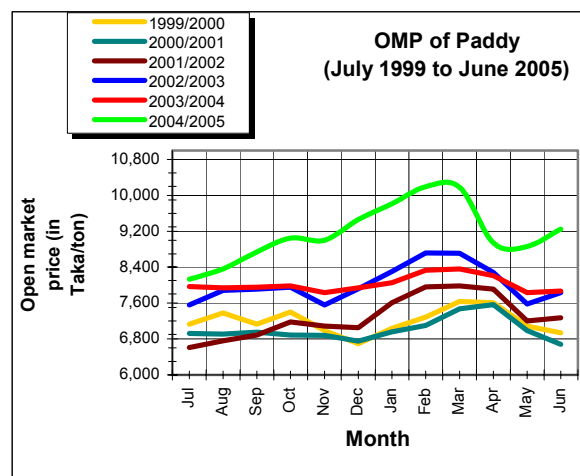
Generally availability of food in the market determines the prices of the food grain, which plays a vital role in achieving food security for the marginal and the poor. Within our agricultural seasonality both wholesale and retail price of rice usually increases before the new harvest. The yearly variations in the price hike is an outcome of complex interaction between natural calamities that damage crop and brings down the targeted crop production, artificial food crisis due to hoarding of food grain by the private traders, inadequate supply of food grain compared to requirement. The fluctuation trend in domestic price of paddy over several years in Rangpur (figure 3) one of the Monga prone districts shows that the price generally shoots up once or twice from August to the beginning of November. After that the price starts to decline having, supply from the *aman* harvest. The price again starts to increase from mid December and this trend continues upto mid March, after which it remains stable up to April and early May. With a good *boro* harvest the price again starts to fall from mid May and remains stable up to July and August.

Figure 3



paddy either remains stable or increases quite gradually. Mid January to mid March is the period when the price of the paddy is high. Thus, the lean seasons are always accompanied by a rise in the price of food grain. Besides the seasonal price hikes, the overall open market price of paddy from August 2004 till June 2005 was quite high compared to other years. According to FPMU Bulletin, April-June 2005 the paddy price in June 2005 was 25.5 percent higher than the price of June last year. Shortage in domestic production due to the flood of 2004 and higher price of rice in the international market generating high import cost could be the immediate causes of such upward trend in the OMP in 2004/2005.

Figure 4



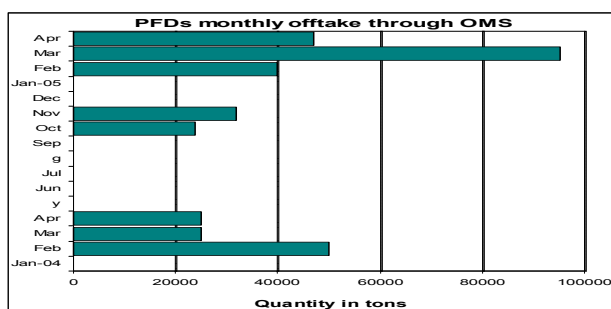
Tackling food insecurity

To combat food insecurity the Government of Bangladesh initiated the Public Food Distribution System (PFDS) to make food accessible for the vulnerable group through price subsidies and targeted food distribution programmes such as VGF, VGR, FFW, Test Relief and Gratuitous Relief. The PFDS is made up of 5 silos, 13 central storage depots and 578 local storage depots. Bangladesh maintains a national food reserve of around 800 thousand metric tons of food grains of which about 450 thousand metric tons are intended to meet the food crisis during emergencies. In the lean season the PFDS



becomes operational through open market sales (OMS), where the government seeks to prevent large fluctuations in rice prices as a means to enhance the overall food security status of the poor. The amount of food withdrawn from the PFDS during the lean periods is also an indication of the severity and extent of seasonal food shortage. From the following graph (figure 5) on off-take of food from PFDS for OMS it becomes evident that for the last two years the food crisis has been more acute during the month of February and March rather than in October and November. Under the PFDS the off-take of food was highest during FY 2004-2005, i.e. about 1.37 million mt, which was 39 percent higher than the PFD of the previous year.⁵

Figure 5



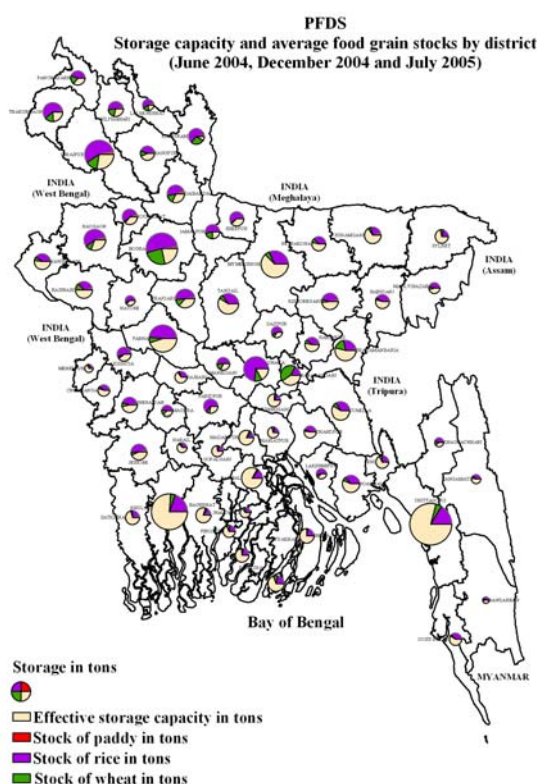
Source: Food Grain Digest, June 2005 WFP, FPMU

The total food stock and storage capacity in the Local Supply Depots (LSD) in different districts regulate the supply and price of the food grain in the markets. The food storage capacity and food stock in the local LSDs presented in figure 6 shows that effective storage capacities in the districts like Kurigram, Nilphamari, Lalmonirhat, Rangpur and Gaibandha that are prone to severe seasonal food shortage are comparatively smaller than other northern districts, though the overall food stock in Rajshahi division as well as in the respective *monga* prone districts is higher than other divisions and districts.

The quantity of food stocks in the LSDs very much depends on the procurement of food grain from the local farmers. The entire procurement system is beset with some problems. In the

existing procurement system farmers often sell their production to middlemen at a very low price to avoid the hassle and cost of transporting their production to LSDs. Moreover non-acceptance of paddy in the name of quality, delayed payments, poor price offered by the brokers prompt the producers to sell their production to the private traders rather than to LSDs.

Figure 6



Market failure often causes disruption and leads to non-availability as well as higher price of food. The wholesalers take advantage of this situation by hoarding food grains during the harvest season and selling them at a high price during the lean season. The marginal farmers become the ultimate victim as they sell their product at a low price and purchase their food at a high price during the lean seasons. A very dynamic market system including PFDS can enhance food security particularly during the agricultural lean periods and periods of natural calamity.

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⁵ Bangladesh Food Situation Report, FPMU, April-Jun2004