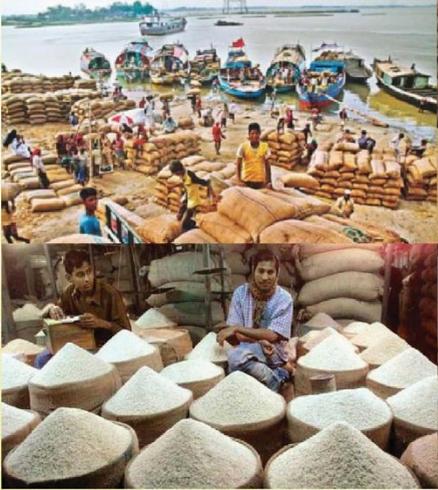


# Assessment of Foodgrain Procurement System in Bangladesh: Implications for Policy



**KRISHI GOBESHONA FOUNDATION**

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# **Assessment of Foodgrain Procurement System in Bangladesh: Implications for Policy**

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## Executive summary

Domestic foodgrain procurement serves the dual purpose of building stock for public foodgrain distribution system (PFDS) and providing income support to farmers. The success of foodgrain procurement policy depends on three factors: (i) price responsiveness of the farmers, (ii) procurement price compared to the market price and (iii) administration of procurement. Domestic procurement targets are generally set based on gross production prospects and distributional requirement. The purpose of providing incentives to farmers is better achieved if procurement is done directly from farmers in the form of paddy. Historically this policy has not been properly pursued because of reasons such as distance of the procurement centres from the farm, reported non-compliance by farmers of maintaining the required moisture content of paddy and unwillingness of the procurement personnel to buy paddy in smaller quantities, and also their mind set of favouring the millers, not the farmers.

Comparison of procurement price with domestic wholesale price and cost of production, revealed that although procurement price generally remained higher than the wholesale price and cost of production, in some years procurement price either fell below or remained marginally above the wholesale price and cost of production of Boro and Aman rice. These relationships are not likely to give adequate incentives to farmers to sell grains to the procurement agency. Growers generally retain stock of paddy or rice for consumption or delayed sale. According to one estimate, growers hold 11-31% of their gross output as stock in different months of the year. Private stocks of paddy by traders and growers were estimated at 15.33% and 31.33% respectively of production in the month of abundant rice supply in the year 2011. In view of the proportionately lesser stock held by traders, any effective market intervention by the government at traders' level may not yield good results. In the case of wheat, intervention would have to be mainly at traders' level.

The proportion of paddy in the total procurement needs to be increased drastically and arrangement needs to be made to buy paddy directly from the small and medium farmers. If necessary, procurement centres may be decentralized. Timing of procurement after harvest is a critical factor. Procuring at the beginning or middle stage of harvest may help the small and marginal farmers in getting reasonable price of the paddy. Provision of credit for the small and marginal farmers needs to be introduced to prevent them from making distress sale of paddy after harvest. In this context, the Shashwa Godam Reen Prokolpo (SHAGORIP) (Crop Godown Credit Programme) which was introduced in the early nineties by the Department of Agricultural Marketing, Ministry of Agriculture needs to be strengthened by involving more banks with provision of increased credit delivery through the programme.

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# **Assessment of Foodgrain Procurement System in Bangladesh: Implications for Policy**

## **1. Introduction**

Domestic foodgrain procurement serves the dual purpose of building stock for the public foodgrain distribution system (PFDS) and providing income support to farmers. Bangladesh being one of the disaster-prone countries, emergency food distribution is integrally linked to the government's overall food management policy. Three conditions can be identified for the success of the procurement policy in achieving its objectives (i) price responsiveness of the farmers (ii) procurement price compared to the market price (iii) administration of the procurement.

The quantity procured in any year is expected to depend on the level of production, the procurement price relative to the market price and the successful administration of procurement. Empirical analysis, however, failed to establish any relationship between quantity procured, level of gross production and the market-procurement price relatives (Islam et al. 1985). This is not unexpected, given the wide variations in the concepts and methods of procurement used in various years. The important relationship rather exists between the level of procurement and a host of other variables like the importance attached and efforts put by the government to the procurement, and the way the program is organized, i.e. administration of the program. However, the price incentive can work only if the procurement price is at a sufficiently higher level compared, not only to the cost of the production but also, to the wholesale price during the harvesting season. To achieve price stabilization through procurement policy, the government will have to be ready to purchase all the quantity that is offered at the given procurement price. The procurement program should also be able to cover the major surplus growing areas. If the conditions are not ensured, it will be difficult to prevent the sharp fall in the wholesale price during the harvesting season.

## **2. Food Security, Self-sufficiency and Self-reliance**

A major policy thrust of the government of Bangladesh is to ensure food security of its people. One way of achieving food security is to make food available through domestic production and import. However, experience has shown that increasing the supply of foodgrain through domestic production or import does not automatically lead to food security of all people. People can have access to food through their income or purchasing power or social access in the form of public distribution or private charity. Attaining food self-sufficiency has been a key objective of food planning of the government. The motivation has been both political (to reduce dependence on food imports) and economic (to exploit the country's comparative advantage in rice and wheat production).

Rapid growth in cereal production over the past years led to the attainment of self-sufficiency in rice production in the country in the normal years of harvest over the

recent past years. The definition of self-sufficiency for the purpose strategic food planning, according to some opinion, needs to be broadened to encompass the notion of ‘self-reliance’. The notion is grounded in the fact that the future pattern of demand for food in Bangladesh is expected to change with rising income and urbanization. The new pattern is expected to cause a relative shift of consumption away from rice to other high-value foods such as meat, fish, vegetables and fruits which could also be exported. Thus having self-reliance rather than self-sufficiency as a long term planning objective would allow Bangladesh to obtain the foodgrains it needs largely through domestic production, and also, to a limited extent, by import paid for by export of other high value commodities for which the country has comparative advantage in production (Clay, Jones, Rahman and Shahabuddin 1989).

**Table 1. Domestic rice production, availability, consumption and surplus deficit status** (figures are in ‘000 mt)

FY	Gross domestic prod <sup>n</sup>	Net domestic prod <sup>n</sup>	Import	Export	Availability	Requirement	Surplus/deficit
	1	2	3	4	2+3-4=5	6	2-6=7
1998-99	19108	17197	3064	105	20261	21641	-1379
1999-00	23067	20760	433	67	21193	21641	-447
2000-01	25085	22577	561	13	23138	21641	1497
2001-02	24299	21869	126	88	21995	21641	355
2002-03	25188	22669	1557	169	24226	20749	3477
2003-04	26190	23571	801	2322	24369	20749	3621
2004-05	25157	22641	1295	5270	23931	20749	3183
2005-06	26530	23877	532	21974	24387	20749	3639
2006-07	27318	24586	720	21899	25285	24038	1246
2007-08	28931	26038	2055	8887	28084	24038	4046
2008-09	31317	28185	603	7790	28780	24038	4742
2009-10	32257	29032	93	2129	29122	24038	5084
2010-11	33541	30187	1561	1511	31746	24038	7708
2011-12	33890	30501	523	73	31024	24038	6985
2012-13	33834	30450	29	10124	30469	24038	6431
2013-14	34357	30921	375	4140	31292	24038	7254
2014-15	34710	31239	1490	6479	32723	24038	8685
2015-16	34710	31239	257	4406	31492	24038	7453
2016-17	33804	30424	133	5396	30551	25723	4828
2017-18	36279	32651	3893	37939	36506	25723	10783

Source: 1. The production and export data are from BBS, import data are from Ministry of Food.

2. The requirement figures have been calculated from per capita consumption of various rounds of Household Income and Expenditure Survey (HIES). However, to avoid depicting lesser rice consumption over the recent past years, resulting in huge surplus of production, per capita daily rice consumption of 440 grams of the HIES 2005 has been allowed to remain constant for the subsequent years.

Table 1 shows the surplus/deficit situation of rice production in Bangladesh. While production, import, and export figures are relatively straightforward, consumption figures are critical and are shrouded with controversies. Consumption figures were obtained for per capita consumption of rice from various rounds of Household Income and Expenditure Surveys (HIES).

However, to avoid the notion of possible under consumption of rice, per capita consumption of rice of the 2005 HIES has been kept constant for the subsequent years. Even with this modification, Table 1 shows that except for 1998-99 and 1999-2000, the country had a large amount of surplus rice production up to the year 2017-2018.<sup>1</sup>

**Table 2. Production, import and availability of wheat in Bangladesh**

(figures are in '000 mt)

FY	Gross domestic production	Net domestic production	Import	Availability	Import as percentage of availability
	1	2	3	4=2+3	5=3/4
1998-99	1908	1718	2423	4141	58.52
1990-00	1840	1656	1671	3327	50.23
2000-01	1673	1506	981	2487	39.45
2001-02	1606	1445	1664	3109	53.52
2002-03	1507	1356	1652	3008	54.92
2003-04	1253	1128	1986	3114	63.78
2004-05	976	878	2078	2956	70.29
2005-06	735	662	2030	2692	75.41
2006-07	737	663	1701	2364	71.95
2007-08	844	760	1412	2172	65.02
2008-09	849	764	2426	3190	76.05
2009-10	972	875	3364	4239	79.36
2010-11	901	811	3752	4563	82.22
2011-12	995	896	1769	2665	66.38
2012-13	1255	1129	1862	2991	62.25
2013-14	1303	1173	2691	3864	69.65
2014-15	1348	1213	3784	4997	75.72
2015-16	1348	1213	4366	5579	78.25
2016-17	1311	1180	5690	6870	82.83
2017-18	1099	989	5881	6870	85.60

Source: BBS and FPMU, Ministry of Food, Government of Bangladesh

<sup>1</sup> According to some notions, the country's population is underestimated. Also, some people believe that production is quite often overestimated. One can easily rule out these notional things, but it is very difficult to explain the paradox of the existence of a huge surplus of rice (the difference between net domestic production and consumption) and import which reached about 4 million tons in 2017-18.

For wheat, the picture is different. Due to the prevailing and changing agro-ecological and agro-climatic conditions, there is a limit beyond which wheat area and production cannot be increased in Bangladesh. Historical evidence shows that wheat production reached a record high level of 1.9 million tons in 1998-99. From this level, total production decreased to 1.12 million tons in 2017-18. It is generally held that due to the effect of climate change and the consequent shortening of the winter season in the northern part of Bangladesh, wheat production may not be substantially increased in the country. On the other hand, due to population growth and rapid urbanization, the consumption of wheat and wheat products is rapidly increasing in the country. Table 2 shows that during the period from 1998-99 to 2017-18, import as a percent of total availability of wheat in the country ranged from 40% in 2000-01 to 86% in 2017-18. However, efforts are underway to increase wheat production through dissemination of the newly developed heat-tolerant wheat varieties as has been achieved to a considerable extent in India.

### **3. Procurement Targets and Achievements**

Boro rice constitutes a major source of domestic rice procurement. As has been mentioned, the success of procurement depends on factors like price responsiveness of farmers, procurement price relative to market price and administration of procurement, although some of the relationships have not always been proved through empirical evidence.

Domestic procurement targets are generally set based on gross production prospects and distributional requirements. Table 3 shows that the targets for boro persistently increased over the period from 1996 to 2018. The target ranged from the lowest of 250 thousand tons in 1997 to the highest of 1398 thousand tons in 2018. Although achievement in terms of actual remained very closer to the targets during the period under review, for three years target was either fully achieved or achievement marginally exceeded the target. In 2017, achievement fell far short of the target (27% only). This was due to early floods in the haor areas of the country resulting in lower than expected gross production.

**Table 3. Target of procurement and achievement of Boro rice**

Year	Procurement Target ('000'mt)	Actual Procurement ('000'mt)	Actual as % of Target
1996	420	417	99.29
1997	250	244	97.60
1998	400	264	66.00
1999	600	604	100.67
2000	600	600	100.00
2001	600	487	81.17
2002	700	629	89.86
2003	850	754	88.71
2004	800	747	93.38
2005	1000	931	93.10
2006	1200	1039	86.58
2007	1200	706	58.83
2008	1400	1168	83.43
2009	1198	1196	99.83
2010	1147	563	49.08
2011	820	819	99.88
2012	1000	1000	100.00
2013	1000	831	83.10
2014	1100	1064	96.73
2015	1100	1070	97.27
2016	1062	1028	96.82
2017	1262	338	26.78
2018	1398	1395	99.79

Source: Ministry of Food, Government of Bangladesh

#### **4. Paddy versus Rice Procurement: Issues and Constraints**

One of the purposes of domestic foodgrain procurement is to provide an incentive to farmers and this objective is better achieved if procurement is done directly from farmers in the form of paddy. However, historically this has not been properly pursued, particularly when it is the case of buying paddy from the small producers. The reasons include the distance of the procurement centers from the farm, reported non-compliance by the farmers of maintaining the required moisture content of the paddy, unwillingness of the procurement personnel to buy in smaller quantities and also their alleged rent-seeking behavior. There has been a significant change in the proportion of paddy procured as a percent of total procurement over the last 23 years (Table 4). For example, in 1992, paddy constituted 95% of total procurement (Alam, M. J. 2014). Immediately after 1992, paddy (rice equivalent) procurement as a percent of total rice procurement fell drastically.<sup>2</sup>

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<sup>2</sup> The fact that paddy procurement constituted 95% of total procurement need not be taken as a reflection of benefit accruing to farmers, because up to 1992, the system

**Table 4. Total procurement of boro and it's distribution according to paddy and rice**

Year	Total boro rice procurement ('000 mt)	Quantity of paddy procurement (rice equivalent)	Quantity of rice procurement ('000 mt)	Paddy (rice equivalent) as % of boro rice procurement ('000 mt)
	1	2	3	4=2/1
1996	417	33	384	7.91
1997	244	123	121	50.41
1998	264	50	214	18.94
1999	604	97	507	16.06
2000	600	87	513	14.50
2001	487	85	402	17.45
2002	629	53	576	8.43
2003	754	63	691	8.36
2004	747	25	722	3.35
2005	931	12	919	1.29
2006	1039	14	1025	1.35
2007	706	4	702	0.57
2008	1168	31	1137	2.65
2009	1196	62	1134	5.18
2010	563	6	557	1.07
2011	819	0	819	0.00
2012	1000	0	1000	0.00
2013	831	3	828	0.36
2014	1064	8	1056	0.75
2015	1070	46	1024	4.30
2016	1028	442	586	43.01
2017	338	3	335	0.89
2018	1395	15	1380	1.08

Source: Food Planning and Monitoring Unit (FPMU), Ministry of Food, Government of Bangladesh.

### **5. Procurement Price, Domestic Wholesale Price, and Cost of Production of Boro and Aman Rice**

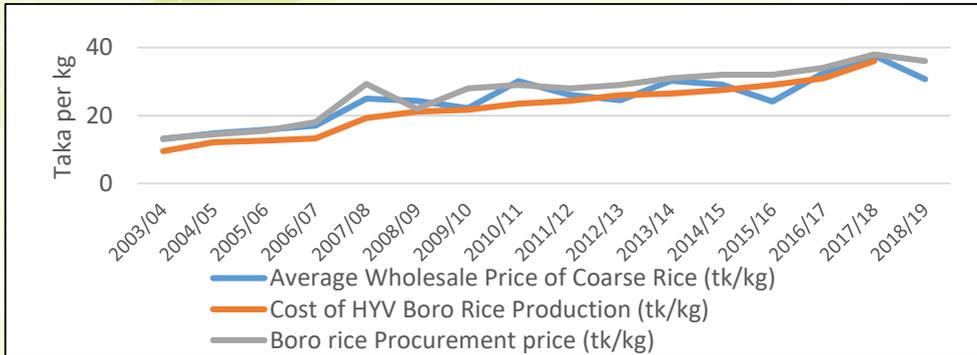
The major purpose of setting procurement price is to offer incentive price to farmers so that they are not affected by the frequent market price plunge during harvest. Although historical evidence shows that farmers seldom get the benefit of the higher

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was mill gate purchase of paddy through which rice millers purchased paddy through their agents. After 1992, the system was abolished and the new system of procuring rice from millers through contract was established.

procurement price for reasons known to all concerned, it is interesting to see how procurement price compares with the wholesale market price and cost of production of Boro and Aman rice in different years.

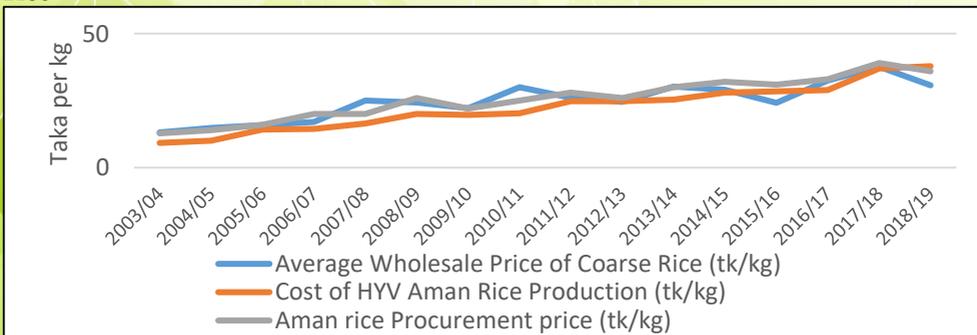
**Figure 1. Wholesale price, procurement price and cost of production of Boro rice**



Source: Based on data from DAM, Ministry of Agriculture and FPMU, Ministry of Food.

Figure 1 shows the movement of the three variables over the last decade for Boro rice. In 2008-09 procurement price almost became equal to the cost of production. While in 2012-13 and 2015-16 the wholesale price fell below the cost of production, in 2017-18 both wholesale and procurement price and cost of production almost converged, implying that produces were left with little incentives by selling rice/paddy either in the market or to the procurement agencies. The same was the situation for Aman rice in 2017-18. There was a tendency of convergence of Aman procurement price, wholesale price and cost of production in 2005-06 and 2012-13, and in 2015-16 the wholesale price even fell below the cost of production (Figure 2). This comparison has some limitations in that while the wholesale price is the annualized price, procurement price and cost of production are calculated on a seasonal basis.

**Figure 2. Wholesale price, procurement price and cost of production of Aman rice**



Source: Based on data from DAM, Ministry of Agriculture and FPMU, Ministry of Food.

## 6. Import of Rice and Wheat

Bangladesh is considered to have reached the level of self-sufficiency in rice production in the years of a normal harvest. Under conditions of natural disasters and the consequent poor harvest, the country has to resort to importing rice in varying magnitudes. Table 6 shows the picture of the import of rice and wheat during the last two decades.

**Table 5. Import of rice and wheat**

(figures are in '000 mt)

FY	Public import		Private import		Total import		Public import as % of total import	
	Rice	Wheat	Rice	Wheat	Rice	Wheat	Rice	Wheat
1998-99	404	1603	2660	820	3064	2423	13.19	66.16
1999-00	5	865	428	806	433	1671	1.15	51.77
2000-01	32	447	529	534	561	981	5.70	45.57
2001-02	8	493	118	1171	126	1664	6.35	29.63
2002-03	4	238	1553	1414	1557	1652	0.26	14.41
2003-04	4	302	797	1684	801	1986	0.50	15.21
2004-05	99	292	1196	1786	1295	2078	7.64	14.05
2005-06	34	263	498	1767	532	2030	6.39	12.96
2006-07	25	187	695	1514	720	1701	3.47	10.99
2007-08	374	177	1681	1235	2055	1412	18.20	12.54
2008-09	416	396	187	2030	603	2426	68.99	16.32
2009-10	56	501	37	2863	93	3364	60.22	14.89
2010-11	1270	934	291	2818	1561	3752	81.36	24.89
2011-12	464	587	59	1181	523	1768	88.72	33.20
2012-13	4	468	25	1393	29	1861	13.79	25.15
2013-14	3	925	372	1765	375	2690	0.80	34.39
2014-15	0	334	1490	3450	1490	3784	0.00	8.83
2015-16	1	416	256	3950	257	4366	0.39	9.53
2016-17	0	393	133	5298	133	5691	0.00	6.91
2017-18	886	505	3007	5376	3893	5881	22.76	8.59

Source: Food Planning and Monitoring Unit (FPMU), Ministry of Food.

Bangladesh enjoyed favorable rice growing conditions in 2012-13 and 2013-14, and due to bumper harvest, the country was declared to have reached the stage of self-sufficiency in rice production in 2012-13. There was virtually no commercial rice import by the government during these two years. However, the floods in the haor areas and sporadic flood in other areas in 2017 seriously affected rice production, and both public and private import of rice had to be geared up. Table 6 shows that the total import of rice in the 2017-18 fiscal year soared to the maximum level of 3.9 million tons.

As has been mentioned, due to agro-climate limitations, wheat production in Bangladesh cannot be augmented beyond a certain limit. On the other hand, due to population growth, rapid urbanization and an increase in consumption diversity, wheat consumption has been rapidly increasing in the country. This is reflected by an almost monotonic increase in wheat imports over the last two decades. Table 3 shows that wheat import increased from as low as 9.8 lakh metric tons in 2000-01 to as high as 58.8 lakh metric tons in 2017-18.

## **7. Public Stock, Private Stock, Procurement and Public Distribution of Foodgrains**

### **7.1 Public Stock**

Effective national food planning involves proper assessment of domestic production, import, domestic procurement, stock and public distribution needs. The need for distribution determine the need for stock and the need for procurement both from domestic and international sources. The size and composition of the public food distribution system (PFDS) changed significantly over the last two decades. The annual volume of food grain distribution remained more than 2.0 million tons over the past years. The government provides emergency relief during periods of natural disasters, to alleviate chronic food insecurity through targeted food distribution to the poor and intervene, when necessary, to stabilize market prices through OMS operations. Also, in view of increasing volatility of food prices and exposure of domestic market to external shocks, the role of PFDS has assumed increasing importance in the recent years.

Although with the implementation of the new National Social Security Strategy (NSSS), many of the food distribution programs will be replaced by life cycle based inclusive cash transfer, the need for emergency distribution and OMS operation for price stabilization will continue to persist, and therefore the need for emergency operation and regular distribution will continue to remain a reality. The government maintains food stock to: (a) provide emergency relief during periods of natural disasters, (b) alleviate chronic food insecurity through targeted food distribution to the poor and (c) stabilize market prices of foodgrains through OMS operations when necessary.

Since with the existing storage technologies rice can not be stored for more than six months by maintaining the quality, stocks have to be rotated over twice a year. The government has to maintain rolling stocks to meet the needs of PFDS distribution requirement, to maintain security stocks for emergency distribution in times of natural disasters and to stabilize prices through OMS operations. It has been assessed by the government that maintaining year round stock of more than 1 million tons of foodgrain is required as security stock. In addition to this, the government need about 1.5 million tons of grains for the food based safety net programmes, with another 0.5 million tons reserve for price stabilization through OMS.

Although the public foodgrain storage capacity is about 2.0 million tons, some of the facilities do not remain available and the effective storage capacity is about 1.8 million tons which is not adequate for year round storing of grains.<sup>3</sup>

## **7.2 Private Stocks**

Estimation of the volume and nature of private stock of foodgrains held by different actors is a very tricky issue. Credible estimates of private stock of foodgrains are necessary for the government to take timely decisions regarding procurement and distribution to maintain steady supply round the year. However, deriving reliable estimates of the private stocks of major foodgrains in different months of the year and at different levels is a tricky job.

### **7.2.1 Private Stock by Growers**

Growers tend to retain stocks of paddy or rice for consumption and delayed sale. According to BIDS estimate, growers hold 11 to 31% of their gross output as stock in different months of the year (BIDS 2012). On an average, 57% of gross output and 64% of net output is marketed by farmers. As boro constitutes the highest share in production and 59% of the boro rice is marketed, the major part of the marketed rice is boro. Generally, a large part of any crop is sold after the harvest. About 40% of the production of any variety of rice is sold within three months of the harvest.

### **7.2.2 Private Stock by Traders**

The estimation of total stocks held by different traders during different months of the year requires estimation of proportion of total availability involving inventory and purchase held as stock by the traders and the number of agents involved in the trade of the commodity. To get monthly estimate of private stock by traders, monthly marketed surplus of the crop as proportion of gross production needs to be estimated. Then the stocking behaviour of various traders is estimated by analyzing the available data. By utilizing the information on selling behaviour by different actors in the market, monthly private stock as a percent of gross production can be estimated. BIDS estimated private stock of paddy by traders and growers at 15.33% and 31.33% respectively of gross production in the month of Joisto, the month of abundance in rice supply. By taking account of the year round production of aus, aman and boro, and utilizing the stocking behaviour of growers and traders, BIDS estimated for the year 2011 the highest total stock of 167 lakh metric tons in the month of Joista and the lowest total stock of 44 lakh metric tons in the month of Choitra, the month of scarcity in rice supply. The stock of wheat varied from 6 to 11 lakh metric tons in different months of the year. For rice, most of the stock was held

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<sup>3</sup> In view of this shortage of storage facilities, the government has been constructing more than 0.5 million tons of storage facilities through a World Bank funded project called Modern Food Storage Facilities project.

by growers and for wheat, traders used to hold most of the stocks. Thus in the case of rice, effective market intervention by the government would have to take place mainly at the growers' level. In the case of wheat, interventions would have to be mainly at traders' level (BIDS 2012).

By utilizing the stocking behaviour identified and measured by BIDS, an attempt was made in this paper to estimate the private stock of rice using the production statistics of 2017-18. According to official statistics, total production of aus, aman and boro rice in 2017-18 were 27.10, 139.00 and 195.80 lakh metric tons respectively, leading to total rice production of 361.60 lakh metric tons for the year. Using the proportion of 15.3 and 31.2 respectively of the gross production held by traders and growers in the month of Joista, the corresponding total stocks held by traders and growers were estimated at 55.32 lakh metric tons and 112.82 lakh metric tons respectively, leading to total private stock of 168.14 lakh metric tons of rice in the month of Joista in 2017-18. In the lean month of Choitra, the stocks held by traders and growers were estimated at 8.61 lakh metric tons and 39.31 lakh metric tons of rice respectively, leading to total private stock of 47.92 lakh metric tons of rice in the month of Choitra in 2017-18.

## **8. Rice Procurement Policies at Home and Abroad: Review and Analysis<sup>4</sup>**

Food grain markets are characterized by government interventions in almost all countries and in some cases food prices are highly influenced by government interventions. In Bangladesh, rice procurement has its long history. Food operations were carried out by local government through local Food Committee with public servants and members of the public. Then government passed Foodgrain Enquiry and Control order in 1943, and the Department of Civil Supplies was set up. After independence of Bangladesh, the responsibilities were assigned to a full fledged Ministry, now the Ministry of Food. The Ministry is responsible for both domestic and external procurement of food, and for its distribution. The emergency relief works are handled by the Ministry of Disaster Management and Relief.

Domestic procurement of foodgrain is one of the central pillars of food management in Bangladesh. It serves the twin purpose of providing remunerative price to the farmers to encourage them to increase foodgrain production and ensuring an effective source of stock for public food distribution system (PFDS). Except in the years of severe crop failure, domestic foodgrain procurement has been contributing to the public stock for year round food distribution operations. Since independence in 1971, the aim has been to procure domestically as much food as possible for public food distribution, stabilizing food market and price trends by providing adequate incentives to farmers, building up adequate food reserve and supplementing imports for maintaining a balanced food sector in the country.

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<sup>4</sup> The contents of this section draw extensively from the works of Alam 2014

In this section, some best practices in other countries in respect of procurement and the main features of the programs are reviewed and analyzed. The experiences from India, Indonesia, the Philippines, Thailand, Vietnam and Sri Lanka are particularly used.

## **India**

The Essential Commodities Act of 1955 of India allows the Central and State governments to regulate and control the production, distribution and pricing of commodities listed as essential for consumers. The Agricultural Produce Marketing Committee Act regulates the marketing of agricultural produce act at the state level. Building of buffer stocks and targeted distribution of food to the poor consumers at subsidized prices are the other important instruments of government policy. Budgetary support is provided primarily for inputs and agricultural infrastructures. In brief, the following instruments are generally used:

- **Minimum Support Price (MSP)** for key products (26 commodities including rice, wheat, maize, soybeans): interventions take place when the market prices fall below the MSP, resulting in food procurement at the MSP.
- **Market Intervention Price (MIP) and Buffer Stock operation:** For commodities not covered by the MSPs, the government arranges for intervention at the request of the states for a specific quantity at a mutually agreed MIP.
- **Buffer Stock of Foodgrains:** Seasonally adjusted buffer stock requirements (buffer norms) constitute the basis for action to accelerate procurement, turn to imports or allow for foodgrain exports.

Although the central government is working for a nationally integrated market, in some states there are still regulations which limit the free movement of grains across state borders and allow for purchase at procurement prices from the grain surplus regions.

**Andhra Pradesh:** In the Andhra Pradesh, Commission for Agricultural Costs and Prices (CACP) fixes support prices to safeguard farmers and avoid distress sales. Food Corporation of India (FCI) is responsible for implementing MSP with the help of the states. Government is supposed to buy the entire paddy offered by the farmers for sale at the MSP. Procurement is operated by the millers. They purchase paddy from the farmers, then convert into rice and give it to the FCI. The millers are required to produce a certificate saying that they gave minimum support price to the farmers and gets reimbursement of MSP plus processing and transportation costs. Procuring paddy from farmers through women self help groups is also a well organized system in the state.

Although the system looks apparently performing well, there are some problems with it. The cost projections made by the Agricultural Costs and Price Commission

are often below the actual costs of production which seriously affects the returns of the farmers. Even the grass root level functionaries of agricultural marketing departments are not often aware about support prices. Again, only a small amount of paddy is marketed through regulated market yards and major part is sold through input dealers, local traders and village money lenders from whom farmers usually take credit under the obligation of selling products to them.

**Chhattisgarh:** In Chhattisgarh, the state government purchases paddy at minimum support prices (MSP). Procurement prices vary for quality i.e. lower price for common variety and higher price for grade A quality of paddy. This procurement takes place through 1333 Primary Agricultural Cooperative Societies spread over the state. Paddy is purchased from farmers nearly at door step, farmers do not have to travel more than 10 kilometers to sell paddy. No middlemen, trader or any other commission agents are allowed in the paddy purchasing process. Payments are made through computer generated cheques at the spot without any delay. The paddy is converted into rice and the milled rice is transferred to the fair price shops of the state civil supplies corporation for distribution under the public distribution system.

**West Bengal:** The Food and Supplies Department, Government of West Bengal manages the procurement of paddy/rice under MSP and it operates through Custom Milled Rice Agencies (CMRA) like NCCF (National Cooperative Consumers Federation of India Ltd.) and West Bengal Essential Commodities Supply Corporation Ltd. The CMRAs engage Cooperative Societies at the village level. There is tripartite agreement among the CMRA, Cooperative Society and the rice mill. The cooperative societies procure paddy directly from the farmers and give it to the rice mills. Farmers sell produce at 325 centralized procurement centres (CPCs) notified by Food and Supplies Department at Co-operative Society's camps or at self-help groups (SHGs) or farmer producer organizations (FPOs) camps organized by CMR agencies. In this system once any SHG accumulates paddy and informs the district office of Food and Supply Department, the officials collect the stock in the next 24 hours. The SHGs get Rs 31.25 as commission for each quintal. West Bengal introduced Scheme of Decentralized Procurement (DCP) in 1997-98 to ensure that MSP is passed on to the farmers.

## **Indonesia**

In Indonesia, the apex authority BULOG is responsible for procuring paddy-rice from farmers' cooperatives as well as from private traders. The farmers can sell paddy or rice to public sector or private sector. In the private sector, millers or traders act as collectors. Collectors are in competition, and in some cases they offer drying or storing facilities to farmers. Farmers are encouraged to form village cooperatives. Under BULOG, DULOG/sub DULOG procure paddy from farmers through village-based cooperatives called KUD. Farmers are not bound to sell crop to KUD, they can sell it to the private traders if they get better price than the floor price set by the public authority. DULOG pays the floor price plus a commission for the KUD's

services in purchasing from the farmers. If KUDs feel pressed beyond their capacity, DULOG task forces are prepared to buy directly from farmers. DULOG also purchases paddy or rice from the private traders at the floor price. The government-announced floor price requires certain quality standards including moisture content, percent of broken and discolored grains etc. If grain quality does not satisfy the specific standard, the BULOG's agents may adjust the buying price in the field according to the specified price list of BULOG.

### **The Philippines**

In the Philippines, National Food Authority (NFA) seeks to maintain price stabilization by maintaining stock throughout the country and maintains monopoly import and export of rice to influence domestic price levels. The purpose of the price stabilization programme of the NFA is to keep farmgate prices of rice reasonably high to provide incentives to farmers and retail prices reasonably low to ensure affordability to low income consumers. The NFA buys paddy from farmers and farmer organizations at a support price. On an average, the NFA procures only less than 3 percent of total paddy production. Procurement takes place twice in a year. The bulk amount is procured in the main harvest season and some amount is procured in the lean season. The paddy procured by NFA has certain moisture content. The price is low for higher (24 per cent) and high for lower moisture (14 per cent) content rice.

### **Thailand**

Rice pledging scheme which started in 2011 is an example of using the rice marketing system as a tool to increase farmer income. In this scheme, the Rice Policy Committee sets a guaranteed price for paddy. The Bank of Agriculture and Agricultural Cooperatives (BACC) lends to farmers at subsidized rates (3 percent paid by farmers and 5 per cent paid by the government) using the pledged paddy as collateral. Each farmer is allowed five months to redeem the pledged crop, failing which the crop is sold to BACC and the farmer's loan is paid off at the end of the pledged period. The government provides cost of storage, handling costs and the loss from selling the paddy at price lower than pledged price. Under the dual pricing system, the producers receive higher prices while consumers are charged lower prices and the government pays the difference. The support price system is costing the government a large amount of money which is not likely to be sustainable. The rice pledging programme encouraged over production and made Thai rice uncompetitive in the export market.

### **Vietnam**

Rice policy in Vietnam maintains a balance between ensuring food security and promoting rice exports. The country exports mainly medium and long grain rice because the moderate to intermediate quality rice commands lower export price than

in Thailand. The government gives credit subsidies for purchase and storage of rice by traders, in an attempt to lift prices. Procurement procedures vary from region to region. In Red River Delta, retailers procure their entire paddy from within a radius of 100 kilometers of their residence. In the North Mountains and Midlands, wholesalers cover about half of the procurement from within a distance of 100 kilometers. The amount of procurement is proposed by the Vietnam Food Association to stabilize national reserve, consumption and export.

### **Sri Lanka**

The Government of Sri Lanka operated the Guaranteed Price Scheme (GPS) from 1948. Under GPS, the government gave an assurance to farmers that market price would not drop below the guaranteed price level. When this would happen, the government would intervene by procuring paddy. Since 1972 it has been operated by the Paddy Marketing Board (PMB) which had the monopoly power to purchase paddy through authorized buyers consisting of a network of cooperative societies. The economic reforms brought out in 1978 attracted private sector into paddy procurement and the sector played dominant role in rice procurement. The functions of PMB in paddy procurement have been curtailed. Currently it operates as a floor price scheme. When market prices fall below certain level, the government maintains floor price for producers through the PMB. After procurement, the paddy is milled and transported to the warehouses of the Food Commissioner's Department for distribution. To protect consumers, the government also maintains a ceiling price of rice through PMB.

### **European Union (EU)**

The main instruments of the Common Agricultural Policy (CAP) of the EU include agricultural price supports, direct payments to farmers, supply controls and border measures. The policy has been reformed several times over the past years. The first reform of 1992 shifted farm support from prices to direct payments. The policy compensated farmers for lower prices with direct payments based on historical yields. The second reform in 2000 used direct payments to compensate farmers only for half of the loss from support price cuts and payments depended on production. The third reform of 2003 allowed for decoupled payments that do not affect production decision. This is also called single farm payments (SFP). To receive SFP, producers had to obey EU regulations regarding environment, animal welfare, food quality and safety. The CAP sets an intervention price at which government agencies are obliged to buy products offered by producers. This in effect is the floor price guaranteed by the EU. The intervention price is estimated as the target price less the transport cost from producing centres to the main market outlets.

## **United States (US)**

The US approach to support the price of agricultural product is to buy any quantity of the product offered by the farmers at the guaranteed 'support price'. This approach keeps the market prices at or near the support price. The operation is performed by the Commodity Credit Corporation (CCC). The CCC buys products at the support price, stores it and releases it in the market if the market price rises to a prescribed higher level. In this way they protect producers against the risk of low prices and consumers against high prices.

Currently, the US government practices a new approach of price support in the form of loan. During harvest, the CCC gives farmers nine-month loan equal to their production times the support price. The CCC accepts grains as collateral for the loan. If the market price rises above the support price during the term of the loan, farmers sell the grain in the market and repay the loan with interest. Price supports cause over production and lesser consumption since consumers buy less as price rises. To get rid of this problem, the agency combines income support with price support which is called deficiency payment. To receive this income supplement, a farmer has to place a prescribed fraction of his historical acreage planted in that crop to the county office of the USDA's Agricultural Stabilization and Conservation Administration.

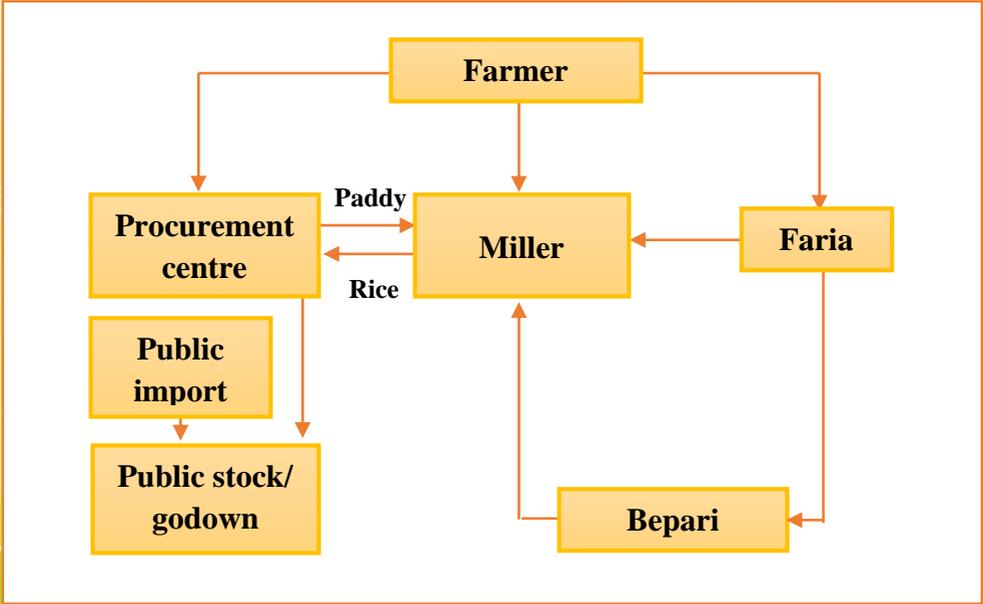
## **Bangladesh**

Domestic procurement of food grains is one of the central pillars of food management policy in Bangladesh. Except for the years of severe crop failure, domestic public procurement contributes more in public food management. The government maintains food stock to meet the requirement of: (i) minimum buffer stock for food security, (ii) operational stock to run the public food distribution operation and (iii) price stabilization stock to run the open market sale (OMS) operation. Public foodgrain procurement consists of three components: (i) internal procurement through incentive prices to farmers, (ii) public commercial import and (iii) food assistance/grants from abroad.

Farmers generally sell paddy to the Faria and Bepari at the local markets. They also sell directly to the millers or to the procurement centres. The millers purchase paddy from farmers, Farias and Beparies and after processing they sell rice to the procurement centres according to the contract signed between the millers and government procurement agency. The procurement centres purchase paddy from the farmers and rice from the millers. The paddy purchased from the farmers are supplied to the millers for converting into rice (Figure 3). For determining procurement price and quantity, cost of production, market price condition, storage capacity and public distributional needs are taken into consideration.

As has been mentioned, one of the objectives of domestic procurement is to provide support price to the farmers for maintaining production incentives. In reality, this objective has hardly been realized, mainly because of lack of opportunities for farmers to participate in the procurement programme. As has been observed in Table 4, except for the year 2016, the share of paddy constituted less than ten percent of total procurement of Boro during the last 17 years. The other reason is that the millers buy paddy from the traders and as a result farmers are deprived of the procurement price of paddy fixed by the government. The so called ‘trickle down effect’ usually does not take place because the millers possess greater bargaining power and they dictate the terms of procurement. However, procurement programme provides indirect price support to farmers to some extent by raising the market price of paddy. Because, in absence of the procurement programme, market price could have fallen further. Alam (2014) found that the quantity procured is inversely related to market price, implying that when the market price is lower, the government procures more which pushes market price up and farmers get the benefit of higher prices. Another issue is the timing of procurement, because delayed procurement does not support farmers due to the fact that the bulk amount of paddy is already sold out to the traders at lower prices.

**Figure 3: A typical foodgrain procurement system**



Also, setting procurement price well above the market price encourage rent-seeking behaviour and corruption among the public officials involved in the procurement system. To send an effective signal to farmers, procurement price needs to be announced before the planting season (BIDS 2009). Unsatisfactory performance of the domestic procurement programme in the past has sometimes been due to

excessive imports, particularly in years of good harvest<sup>5</sup>. This occupies warehouse spaces, restricting both public and private procurement during the next season.

Most of the findings of empirical investigations suggested that the current system of procurement was not an ideal one and suggested alternative options of procurement. Ahmed et al. (1993) suggested competitive bidding system to ease buying procedures through efficient millers. Although the system may help the government to procure grains easily, the poor farmers would not benefit from this system, unless the bidding process is transparent and efficient. In absence of transparency, the influential millers may be able to dictate the bid in their favour and thus the system may end up with increased market power by some agents rather than restoring competition.

Higher procurement price may not attract the farmers to participate in the programme, because they cannot often meet the standard of moisture content required to supply paddy to the procurement centres. Price support to farmers is also suggested in the form of cash subsidy or deficiency payment. This requires targeting the poor farmers. Deficiency payment with varying amounts based on farm sizes could be an option.

Providing credit to poor farmers immediately after harvest is considered to be an option. Farmers generally borrow from different sources to meet their production and consumption needs. They repay the loans immediately after harvest. One possible remedy could be providing subsidized credit to the farmers so that they do not have to make distress sale to repay the loans.

In this context, reference can be made to an innovative project developed and run by the Department of Agricultural Marketing under the Ministry of Agriculture from early nineties. The initiative was named Shashawa Godam Reen Prokolpo (SHAGORIP) (Crop Godown Loan Project). The initiative started as a project from 1992 to 2004. Subsequently, the initiative was run as a programme from 2004 to 2010 under revenue budget of the government. At a later stage, the initiative was internalized in the Department of Agricultural Marketing as its programme activity with necessary support staff.

Under the jurisdiction of the SHAGORIP programme activities, small and marginal farmers can keep their produce in the godown at nominal rent and collect receipt against the crop. They produce the receipt as collateral and obtain loan from the participating banks. Afterward, when the price of the product goes up, they can sell

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<sup>5</sup> This has happened in the recent past in the Boro season of 2019. Private traders took advantage of the lower tariff on rice import and resorted to massive import of rice which lowered the market price of paddy and rice, to the detriment of the interest of the small and marginal farmers who had to sell paddy at a precariously lower price.

the crop at remunerative prices and repay the loan. The godown committee collects Tk. 10 per quintal from the farmers to meet the cost of running the godown and for creating a godown fund. Farmers are allowed to keep the food crops for 6 months and seeds for 9 months during which crop/seed will have to be released from the godowns. In the event of failure to release the crop within the stipulated period, the relevant bank and godown committee will sell the crops in auction and after adjusting the loan the farmers will be paid the rest amount of money.

The SHAGORIB programme activities have remained operative with 81 godowns in 56 upazillas in 27 districts. Among the godowns 69 are the unused renovated godowns of the LGED and 12 are the own godowns constructed by the programme initiative. The storage capacity of the godowns is estimated at 18210 metric tons of crops. About 6.56 crore Taka is distributed annually to the farmers through different branches of Sonali, Rupali, Agrani, Janata, RAKUB and BKB (DAM 2019). All these evidences imply that there is good scope for expansion of the SHAGORIP activities for reducing the distress sale of farmers during harvest.

## **9. Conclusions and Policy Recommendations**

### **Conclusions**

One of the purposes of domestic foodgrain procurement is to provide incentives to farmers by purchasing paddy directly from them at the procurement price. However, historically this has not been pursued. The reasons include the distance of the procurement centres from the farm, reported non-compliance of maintaining the required moisture content of the paddy by the farmers, unwillingness of the procurement personnel to buy in smaller quantity and also their alleged rent-seeking behaviour. It has been observed in Table 4 that except for one year, paddy procured from farmers constituted less than 10% of total procurement over the last 17 years. Regarding fulfilment of the target of procurement, it has been observed that with minor exceptions the target have been generally fulfilled over the past years.

Comparison of the procurement price with wholesale price and cost of production revealed that although procurement price generally remained higher than the wholesale price and cost of production, in some years, procurement price even fell below the wholesale price and cost of production. Thus in general, farmers either did not benefit from the procurement price or received some marginal benefit. However, the comparison has some limitation in that while the wholesale price is the annualized price, procurement price and cost of production are calculated on seasonal basis.

Growers generally retain stock of paddy or rice for consumption or delayed sale. According to one estimate, growers hold 11-31% of their gross output as stock in different months of the year. On an average, 57% of the gross output is marketed by farmers. A large part of any crop is sold after harvest. About 40% of the production

of any variety of rice is sold within three months of harvest. Private stock of paddy by traders and growers was estimated at 15.33% and 31.33% respectively of gross production in the month of abundant rice supply in the year 2011. In view of the proportionally lesser stock held by traders, any effective market intervention by the government at traders' level may not yield fruitful results. In the case of wheat, intervention would have to be mainly at traders' level.

### **Policy Recommendations**

The proportion of paddy in the total procurement need to be increased drastically. The symbiotic relationship between procurement officials and millers centering rice procurement needs to be broken. If necessary, procurement centres may be decentralized. Also, farmers need to be educated about maintaining standards of grains offered for sale, particularly in maintaining the moisture content of paddy.

There can be variable prices for varying moisture content of paddy. This practice is followed in the Philippines. In following this system, strict measures will have to be taken so that the farmers are not harassed in the process of fixing the moisture content of the paddy. To avoid the inconvenience in selling and buying paddy in smaller quantities, formation of farmer groups or cooperatives may be encouraged. Farmers may assemble the grains at place convenient for both farmers and procurement agency and procurement can be made through the farmer groups or cooperatives. This system is followed in West Bengal and Chattisgarh States in India.

Timing of procurement after harvest is a critical factor. If larger proportion of paddy is procured either by millers or through millers' agents later in the harvest season, the small and marginal farmers may be selling their paddy during earlier period of the harvest to meet their immediate cash needs. Procuring at the beginning or middle stage of harvest may help the poor and marginal farmers in getting reasonable price of their paddy.

Provision of increased credit support for the small and marginal farmers has to be ensured to prevent them from distress sale of paddy after harvest. In this context, the paper has made reference to the SHAGORIP programme being run by the Department of Agricultural Marketing, Ministry of Agriculture. The programme is being run in a limited scale. This paper argues that there are enough scope to scale up the programme. If necessary, the government may consider hiring in warehouse space and encourage the participating banks to scale up their credit operations to strengthen the SHAGORIP programme for the benefit of the small and marginal farmers.

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