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Report No. 2761-BD

# Bangladesh: Food Policy Issues

December 19, 1979

South Asia Programs Department

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### CURRENCY EQUIVALENTS

On August 13, 1979, the Bangladesh Taka (Tk) was officially valued at 34.6868 (buying) and 34.7368 (selling) to the Pound Sterling. Since October 1979, the Taka has been pegged to a basket of major currencies, with the Pound Sterling as intervention currency. Consequently, the Taka-US Dollar rate is subject to change; this rate has averaged between 15 and 15.5 per US\$ during the last three years. A conversion rate of Tk 15.5/US\$ has been used throughout this report.

### WEIGHTS AND MEASURES

1 acre (ac)	= 0.405 hectares
1 cubic foot per second (cusec)	= 0.0283 cubic meters per second
1 tola	= 0.4114 ounces = 180 grains troy
1 chattak	= 58.322 grams
1 seer (sr)	= 16 chattak = 80 tolas = 2.057 pounds = 0.933 kilograms
1 maund (md)	= 40 seers = 82.286 pounds = 37.326 kilograms
1 (long) ton	= 2240 pounds = 1016.04 kilograms = 27.22 maunds
1 lakh	= 100,000
1 crore	= 10 million

### ADMINISTRATIVE STRUCTURE

Below the Central Government, there are five administrative tiers. From the top down, these are: Division (4), District (20), Subdivision (65), Thana (470) and Union (about 6,500). Each Union comprises 10 to 12 villages.

### FISCAL YEAR

The Bangladesh Fiscal Year (FY) runs from July 1 to June 30.

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### TERMS, ACRONYMS AND ABBREVIATIONS

Aman	-	rice planted before or during the monsoon (which begins in June) and harvested in November-January; B. Aman is broadcast Aman, T. Aman is transplanted Aman
Aus	-	rice planted during March-April and harvested during July-August
Boro	-	rice planted in winter and harvested during April-June
IRRI	-	high-yielding varieties of rice, developed by IRRI = International Rice Research Institute
Paddy	-	unmilled rice
Pucca	-	permanent, solid, good, ripe (usually applied to roads and buildings)
Thana	-	administrative unit comprising 10-15 Unions
Union	-	lowest administrative unit, generally comprising 10-12 villages
Union Parishad	-	Union Council, elected 9-member local government body
ADP	-	Annual Development Program
AGD	-	Approved Grain Dealer, acting as procurement intermediary for the Government
BADC	-	Bangladesh Agricultural Development Corporation
BBS	-	Bangladesh Bureau of Statistics
BKB	-	Bangladesh Krishi Bank, the agricultural development bank
BRRI	-	Bangladesh Rice Research Institute
BWDB	-	Bangladesh Water Development Board
CSD	-	Central Storage Depot, operated by the Ministry of Food and Civil Supplies
DTW	-	Deep Tubewell
FFW	-	Food-for-Work
FPMU	-	Food Policy Monitoring Unit
GOB	-	Government of Bangladesh
HTW	-	Hand Tubewell
HYV	-	High-Yielding Variety
IRDP	-	Integrated Rural Development Program
ITAP	-	Intensive Transplant Aman Program
LLP	-	Low-Lift Pump
LSD	-	Local Supply Depot, operated by the Ministry of Food and Civil Supplies
MO	-	Market Operations (a particular form of Government grain sales in the open market)
MOA	-	Ministry of Agriculture and Forestry
MoF	-	Ministry of Food and Civil Supplies
MOSTI	-	Manually Operated Shallow Tubewell for Irrigation
MR	-	Modified Rationing
OMS	-	Open Market Sales (of Government foodgrains)
SR	-	Statutory Rationing
STW	-	Shallow Tubewell
TCCA	-	Thana Central Cooperative Association
TPC	-	Temporary Purchasing Center, operated by the Ministry of Food for domestic grain procurement
WFP	-	World Food Programme
WQSC	-	Weight-Quality-Stock-Certificate, sales receipt for grain procured by the Ministry of Food

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BANGLADESH

FOOD POLICY ISSUES

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## Preface

### Background and Objectives of the Report

1. This report is a follow-up to the World Bank report entitled "Bangladesh: Food Policy Review" (Report No. 1764a-BD, dated December 12, 1977) which was distributed for the January 1978 special meeting of the Bangladesh Aid Group. The 1977 report and the January 1978 meeting focused on a particular set of foodgrain pricing and distribution issues: (i) domestic procurement and incentives to farmers; (ii) ration distribution and open market sales; (iii) stock and import policies; and (iv) food policy management.

2. The present report, which has a similar focus as its predecessor, has been prepared in the light of the following considerations. First, the issues mentioned above are themselves of such importance to Bangladesh as to warrant continuous monitoring and evaluation. Second, because the food problem of Bangladesh is fundamentally a production problem and because Bangladesh will soon launch a Second Five-Year Plan (for FY81-FY85) in which increased food production is expected to have highest priority, a brief review of factors bearing on production growth appears in order. Third, Bangladesh has just experienced a food crisis. There should be some benefits for the Government and the donor community in drawing the lessons of that experience. And fourth, even though the public food stock position at the end of 1979 appears adequate (owing to the nearly 2 million tons of food imported between July-December 1979), the near-term food supply outlook is by no means certain. Whereas the January 1978 Aid Group meeting took place during the harvest of the record 1977/78 aman crop, the January 1980 meeting is taking place in the aftermath of a drought which has been characterized as the worst in living memory. Bangladesh's food grain production in calendar year 1979 is estimated to have been 0.9 million tons less than in 1978 -- a 6.8% decline. <sup>1/</sup> The current (1979/80) aman crop is likely to be somewhat smaller than last year's, and the prospects for procurement from this crop -- in spite of a recent procurement price increase -- are not favorable. Hence, a basic purpose of this report is to consider what amounts of additional food imports and what changes in food policies appear to be needed to avoid food shortages in 1980 and to set Bangladesh's food management on a sounder footing.

3. The report is concerned mainly with the analysis of the instruments for food policy and their impact on food production and distribution, as distinguished from their repercussions on the economy as a whole. The report does include a detailed analysis of the food subsidy and its budgetary implications. But an analysis of the impact of recent food production trends and food policies on the inflation rate, the balance of payments and GDP growth has been left for the Bank's Country Economic Memorandum (to be distributed in early 1980) to consider.

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<sup>1/</sup> Taking population growth into account, per capita production was 9.1% below the 1978 level.

### Structure of the Report

4. Chapter 1 comprises a review of trends in food production and consumption. Attention is given to the incidence of malnutrition, the causes of slow growth of agricultural production in the past, and the physical requirements for moving towards food self-sufficiency.
5. Chapter 2 focuses on developments in food policy since the January 1978 Aid Group meeting. Attention is given to developments in domestic procurement, ration distribution, imports, and public stocks, especially during the food crisis of 1979.
6. Chapter 3 deals in more detail with the operations of the public procurement system. It analyzes the effectiveness of the system in providing farmers with a support price at harvest time and makes recommendations regarding the numbers, capabilities and accessibility of procurement points.
7. Chapter 4 deals with public food distribution and price stabilization. It discusses who are the beneficiaries of the present system and what are the costs of this system in terms of subsidies. It then goes on to recommend the introduction of a system of open market sales which, together with a strengthened procurement system, should be the basis of an integrated effort to stabilize prices.
8. The final chapter sets forth some projections of the prospective food gap over the next eighteen months and appraises the implications for Bangladesh's import and stock requirements through FY82.
9. The main report is supplemented by a number of annexes. Annexes 1 and 2 present the mission's recommendations on the organizational, functional and staffing requirements of the Food Policy and Monitoring Unit, with particular reference to the operation of an "early warning system" to better enable the Government to anticipate an impending food crisis and to take prompt corrective measures. Annexes 3 and 4 describe the structure and functions of the existing foodgrain procurement and distribution systems, respectively. Annex 5 presents an analysis of recent trends in foodgrain and fertilizer subsidies utilizing alternative concepts and definitions of the economic and financial impact of Government transactions in these accounts. Annex 6 indicates the extent of regional variation characterizing foodgrain production and consumption in Bangladesh and points out the importance of accounting for these substantial variations in the formulation of food policy. Annex 7 comprises an appraisal of Bangladesh's foodgrain stock requirements, both for operational purposes (i.e. to supply the public distribution and open market systems) and to provide for emergency needs. Annex 8 appraises in some detail present foodgrain storage and transport capacities, the utilization of these capacities and constraints thereto, and the potentialities and requirements for future development of Bangladesh's food handling capabilities. Annex 9 provides a map of areas liable to famine in Bangladesh. Annex 10 describes briefly the administrative structure and scope of responsibilities of the Ministry of Food.

10. Finally, it should be noted that a considerable volume of new information is contained in the Statistical Appendix to this report. Because of the short interval between the mission's visit to Bangladesh and the issuance of this report it was not possible to incorporate in the report an analysis of all the detailed regional and monthly data on available resources, input supplies, production, prices, procurement, public distribution, stock levels, and storage and milling capacities. The Bank intends to make use of these data in a follow-up analysis aimed at providing better answers to such key questions as levels of procurement and open market sales required to achieve price support and stabilization objectives and the desirable level and location of foodgrain stocks (and the implied storage requirements) to achieve both food security and price stability. The present report deals with these questions only in terms of national aggregates, whereas a fuller appraisal will require analysis of the disaggregated data.

## SUMMARY AND CONCLUSIONS

### An Overview of the Issues

i. This report is concerned with the persistent (and in some respects worsening) food problem of Bangladesh and with the policies needed to solve this problem. The experience of last year's food crisis has emphasized the need to redefine the objectives, evaluate and improve the instruments, and strengthen the implementation of food policy.

ii. The food problem is a most critical aspect of Bangladesh's struggle to achieve economic development. It is firstly a production problem, the solution of which requires a set of policies, programs and projects designed to accelerate the growth of food output, which has lagged behind population growth during the past two decades. Greater food production, however, is not sufficient. Ensuring adequate food supplies to the poor, the landless and near-landless also requires actions to increase their incomes, particularly actions to increase employment and production outside agriculture. A discussion of these issues, however, falls outside the scope of this report.

iii. Food policy plays a major role in shaping the economy. It bears upon the rate and structure of economic growth, income distribution, demographic trends, the balance of trade, and the Government's fiscal position. The chronic and growing foodgrain deficit has made the country dependent on large food imports, while the immediate exigencies of short-term food policy management have sometimes made it difficult for the Government to give adequate attention to long-term development issues.

iv. The Government's present involvement in the country's food problem is characterized by inherent contradictions. The central objectives of simultaneously increasing food output and achieving its equitable distribution are to some extent conflicting in the short run. The same resources, for example, cannot be devoted at the same time to investments aimed at raising production and to subsidizing distribution through the ration system. Similarly, procurement prices intended to provide incentives to producers cannot at the same time serve to minimize costs to consumers. And the same food supplies cannot go into security stocks as protection against tomorrow's floods and simultaneously provide food to those left hungry by yesterday's drought. Thus, while it may be evident that the best solution to the food problem requires a large increase in production, the existing scarcity situation has constrained the policy makers to devoting much of their attention to alleviating the worst symptoms of the problem. The experience of the past year has demonstrated anew that food policies aimed at coping with short-run supply needs are generally unsuited to achieving the longer-run objectives of food self-sufficiency, price stability, equitable food distribution, and efficient allocation of financial and manpower resources.

v. In attempting to reconcile these sometimes competing objectives, an appropriate medium-term set of food policies should be established in the context of an overall long-term development strategy. Defining this context

will be among the functions of the forthcoming 1980-2000 Perspective Plan and the FY81-85 Second Five-Year Plan. The scope of this report, however, is limited to a consideration of various food policy instruments and their impact on food production and distribution. In this respect, its purpose is similar to that of the preceding World Bank report on this subject ("Bangladesh: Food Policy Review", December 12, 1977). Its recommendations are aimed at bridging the apparent short-run conflict between the objectives of providing producer incentives and consumer satisfaction. They relate to the design and implementation of those policies geared to render government procurement an effective instrument to support prices received by farmers, expand open market sales to stabilize food prices, reduce the coverage of the ration system and make it more an instrument for achieving equity and employment objectives, reduce the food and fertilizer subsidies, build up and maintain adequate security stocks to cope with natural disasters, and strengthen overall food policy management and coordination.

vi. The policies outlined above constitute an integrated package to ameliorate Bangladesh's food problem. The particular recommendations on food-grain procurement, distribution, imports and stock build-up are designed to be consistent with each other and intended to assist in improving food production and distribution. A farm price support program to ensure an adequately high producer price involves a certain cost to consumers and the Government, at least in the short run. Production incentives, however, are important in achieving productivity improvements. The report therefore recommends the strengthening of government procurement of foodgrains with the emphasis placed on making an adequate floor price effective for the majority of farmers at harvest time. The cost to consumers and to the Government of producer price support can be contained through market sales of grains when prices begin to rise during the lean seasons. The report recommends such open market sales (instead of the present ration distribution) of most public stocks -- particularly of the more costly cereal, namely rice -- to enhance the Government's impact on stabilizing consumer prices and to lower the cost of doing so. To meet the requirements of those with low purchasing power, public distribution of wheat will need to continue. (The use of wheat rather than rice for this purpose will enable the Government to feed more people at the same cost). Open market sales to achieve price stabilization can be effectively carried out only if sufficient grain stocks are at the Government's disposal. Thus, over the next two and half years, large imports will be needed to build up and maintain stocks at levels that will facilitate this policy reform.

#### Production Issues

vii. Since FY70, Bangladesh's foodgrain production has increased at an average annual rate of only 1.7% -- far below the population growth rate of 2.7%. Foodgrain imports, meanwhile, have grown from less than 600,000 tons in the early 1960s to an average of about 1.8 million tons during FY78-FY80. Despite these increased imports, however, average per capita foodgrain availability declined over 9% -- from 17 ounces per day in FY61 to 15.4 ounces per day in FY78.

viii. Foodgrain production is constrained by scarcity of cultivable land in the aman season, climatic hazards, the needs for irrigation in the dry

season and for improved drainage and flood protection in other parts of the year. Notwithstanding these physical constraints, much higher growth rates should have been possible. The slow growth of agricultural output is largely attributable to weaknesses in agricultural support services, inadequate provision of input supplies, and constraints stemming from the agrarian structure. Inadequate allocation of public funds for agriculture and inefficient implementation of agricultural projects and programs have also been significant factors. The overall performance of the various Government agencies and departments responsible for agricultural input deliveries and support services has been disappointing. Repeated breakdowns have occurred in the supply of fertilizers, HYV seeds, diesel fuel, and repair and maintenance services for irrigation pumps and tubewells. Furthermore, the foodgrain procurement effort has not been fully effective in maintaining incentive prices for farmers.

ix. Despite this rather disappointing record, food self-sufficiency is an achievable target. The main potential sources of increased production would be accelerated adoption of HYVs, coupled with increased fertilizer use, improved cultivation practices and better utilization of existing and construction of new irrigation facilities. The unexploited potential is large, as yields are among the lowest in Asia, cropping intensity is low, and fertilizer use is still modest. There are signs, moreover, that the environment is now ripe for a significant expansion in the use of HYV technology. Wheat production has caught on fast, and there appears to be a large unsatisfied demand for irrigation and fertilizer. The Second Five-Year Plan's Guidelines have targeted a doubling of food output within five years. But in light of the above-mentioned constraints -- physical, financial, managerial, and institutional -- it remains to be determined precisely how rapidly food and other agricultural output can be boosted in the short run. The final report of a joint GOB/World Bank team on a Medium-Term Crop Production Plan for Bangladesh should soon shed more light on this matter. In any event, even to replace present imports and to feed the rapidly growing population will require a significant breakthrough in food production.

#### The Food Crisis of 1979

x. Whereas the January 1978 Aid Group meeting took place during the harvest of the record 1977/78 aman crop, the January 1980 meeting is taking place in the aftermath of successive crop failures caused mainly by a drought characterized as the worst in living memory.

xi. Three poor crops in a row -- the 1978/79 aman and boro and the 1979/80 aus crops -- have resulted in an estimated 7% decline in domestic food production in calendar year 1979. Combined with a serious slippage in food aid arrivals, this led to a drop in per capita food availability and soaring rice prices. Meanwhile, low domestic foodgrain procurement, combined with high offtakes under the ration system, led to declining public food stocks. In contrast to the targeted level of one million tons, stocks fell to the dangerously low level of 209,000 tons at the end of June 1979.

xii. In recognition of the impending food crisis, Government authorities at the highest level took charge of the situation in the spring and

directed an all-out effort to mobilize, import, and distribute the massive volume of foodgrains needed to supplement the reduced domestic crops. The goal was to avert widespread food shortages in the July-October 1979 lean season. This effort has been remarkably successful. Almost 2 million tons of food, both aid-financed and commercially purchased, were imported between July and December 1979. This put a heavy burden on the country's ports and other transport facilities and on the public administration. Nevertheless, this unprecedented volume of foodgrains was unloaded and distributed in a minimal amount of time, enabling offtakes to be stepped up and stocks to be restored to a more comfortable level. By the beginning of September 1979, rice prices began to decline and the worst effects of the food crisis were averted.

xiii. As of December 1979, the short-term food supply outlook remains problematic. The end-1979 stock position is as strong as the previous year's because of the imports received between July and December 1979. But the current aman crop appears unlikely to be much better than last year's, and to avert a repetition of the 1979 situation, considerable amounts of additional imports will be needed during the coming 18 months. The extent of these projected import requirement for the remainder of FY80 and through FY82 is indicated below.

#### Recent Policy Developments and Recommendations

xiv. The January 1978 Aid Group meeting focussed on the need to strengthen food policy planning, improve the procurement system and rationalize public distribution. Developments since the meeting and recommendations for the future are reviewed in the following paragraphs.

xv. Strengthening Food Policy Planning. The Government agreed in principle with the recommendation of the January 1978 meeting that a permanent and adequately-staffed food policy unit should be established to: (a) monitor and project food production, prices, stocks, offtakes and imports on a continuing basis, (b) devise an "early warning system", and (c) analyze food policy issues in order to advise the Government on needed reforms. A consultant's report on the organization and operation of such a unit was submitted to the Government in November 1978. In the spring of 1979, after it became clear that the nation faced an impending food crisis, a cabinet-level Council Committee on Food (headed by the President) was reconstituted, and a Food Planning and Monitoring Unit (FPMU) at the Secretaries' level was newly established. These bodies proved effective in coping with the 1979 crisis. But as of December 1979, no full-time food policy secretariat had been created and much remained to be done to improve the Government's forward planning and food policy coordinating capacities.

xvi. Procurement. The 1978 meeting recommended that procurement be used to assure that farmers receive prices which encourage greater use of high-yielding varieties, fertilizer and irrigation equipment, and that it not be used primarily for the purpose of obtaining grain for the ration system. Since that meeting the Government has taken several steps to strengthen procurement along the lines of the recommendations discussed at that time. Procurement prices of both rice and wheat have been increased substantially:

from Tk 84 per maund for paddy, Tk 132 per maund for rice, and Tk 84 per maund for wheat as of January 1978 to Tk 110 per maund for paddy, Tk 170 per maund for rice and Tk 110 per maund for wheat as of December 1979. To the extent that these prices are actually received by farmers, they offer adequate incentive for most farmers to use HYVs, fertilizers and irrigation. The Government's early announcement of these prices, i.e., well in advance of the relevant crop seasons, has also been a favorable factor.

xvii. Nevertheless, in normal crop years village market and wholesale prices have been well below procurement prices at harvest time. Price differentials have been well in excess of normal trading margins which means that the procurement system is still far from effective in providing farmers with an assured minimum return for their inputs and efforts. Apparently, the procurement system is still unable to absorb all the grain offered to it by potential sellers. Procurement is subject to three constraints, namely:

- (a) The number of purchasing centers is inadequate. To the majority of farmers, the distance to the nearest purchasing center is too great. In many areas, new procurement points appear to be needed; greater efforts should be made to buy grains directly from farmers' cooperatives.
- (b) The inadequate capacity of the existing purchasing centers is a stumbling block. Existing centers lack adequate storage and transport capacity needed to handle increased quantities of grain, and they do not have the staff and equipment needed for quick and businesslike transactions. An important issue is the ability of the procurement system to buy grains from the aus, boro and wheat crops. Aus and boro procurement would be greatly helped by drying equipment. A large increase in the procurement of wheat is required if the promising trend in wheat production is to receive adequate support. The procurement effort would also be helped if farmers were to be immediately paid for their purchases in cash rather than by checks.
- (c) Access to purchasing centers is dominated by a relatively small number of Approved Grain Dealers (AGDs) who, although pledged to buy from farmers at the procurement price, actually buy at going market prices and thus enjoy a considerable profit on their deliveries to the purchasing centers. With a view to making the procurement price an effective support price, it is recommended that the AGD system be phased out and greater participation and competition fostered among private grain traders and between those traders and the Government. Anti-hoarding regulations make it difficult for the grain trade to fulfill its competitive function and should, therefore, be relaxed.

xviii. Public Food Distribution and Price Stabilization. The public distribution system now serves 22-25% of the population and distributes about 1.8 million tons of grains annually. About 75% of this is obtained through imports, mostly financed by concessional aid, while 25% is procured from domestic production. To a limited extent, the system serves to help feed the poor. But in practice it has mainly helped to provide Government workers and the urban middle class with payments in kind, protecting them against the adverse effects on their income of seasonal and year-to-year price fluctuations. In urban areas, the chief beneficiaries are the two-thirds of the residents of statutory rationing cities who have ration cards. Employees of the Government, the military, public enterprises and of most large private entrepreneurs living elsewhere also receive similar benefits. Only just over half of the total amount of grain distributed is made available to the rural areas, although these areas account for some 90% of the population. That the rural poor are not the target of the present distribution system is clear from the fact that the average rural resident received perhaps 28 pounds of foodgrains per year through various forms of public distribution, including Food for Work, compared with about 212 pounds per year for each resident of an urban area and 321 pounds per year for each adult statutory rationing cardholder. If complaints of villagers about failure to receive modified ration grain allotted to their villages are true, the per capita benefit to the rural poor is even less.

xix. The operation of the public foodgrain distribution system has been very costly to the Government. It has been carried out at subsidized sale prices, currently Tk 120 per maund for rice and Tk 100 per maund for wheat. In comparison, the domestic procurement prices are higher by Tk 50 per maund for rice and Tk 10 per maund for wheat. A major part of the public distribution -- particularly the wheat component -- represents aid-financed imports, whose sale even at subsidized prices represents a positive contribution to the Government budget. Nevertheless, the Government incurs a sizeable subsidy on account of its overall foodgrain operations. Part of the subsidy also stems from ration sales of domestic foodgrains purchased at minimum guaranteed prices under the Government's farm price support program. The Government has justified the subsidy in terms of its distributional objective of ensuring that relatively low-cost food is made available to certain segments of the population.

xx. In spite of these subsidized grain sales (and the implied loss of Government revenue), a positive financial impact may be provided by the overall foodgrain operations due to aid-financed imports. If a value is imputed for the Government's grain distribution under Food for Work (FFW), the imputed impact is generally positive and large. If the imputed value of FFW is ignored, the financial impact may or may not be positive. Thus, excluding FFW, the Government's financial surplus was about Tk 1 billion in FY79, largely as a result of low cash imports, low domestic procurement and substantial sales from carryover stocks. In contrast, the estimates for FY78 and projections for FY80 (excluding FFW) show the opposite, viz. large cash imports, relatively large domestic procurement, and stock accumulations. In these years, therefore, a financial loss was (or will be) experienced in spite of a large volume of aid imports.

xxi. While the financial impact may be favorable, the "opportunity loss" due to foodgrain subsidies remains large -- the size of the loss depending on how the value of aid imports is measured. If imports are valued at world market prices, large differences between the subsidized sale prices and the cost of foodgrain purchases are obtained. These differences, however, do not necessarily indicate what resources the Government could have earned if it sold foodgrains at or near domestic market prices instead of at subsidized prices. Calculated on the latter basis, the subsidy amounted to over Tk 1 billion, or roughly Tk 25 per maund of foodgrain sales in each of the last two years.

xxii. As presently operated, public foodgrain distribution entails heavy costs but fails to benefit the majority of the poor. A large part of these costs could be avoided if instead of distributing grains at subsidized prices to broad categories of the population, the Government used its grain stocks to achieve a greater degree of price stability through open market sales (OMS) at times of rising prices. A high degree of price stability -- with seasonal variations in the rice price limited to 20% -- would eliminate the need to provide food security to public sector workers and the urban middle class. The ration system could be restructured to serve only the needs of the poorest. Limiting seasonal variations in food prices to about 20% will require that the Government operate an effective procurement system at a support price level and conduct substantial open market sales of rice (and perhaps also of wheat) during the months of short supplies and rising prices.

xxiii. Essentially the mirror image of the procurement system, operation of a system of open market sales requires the release during periods of rising prices of sufficient quantities of grains from public stocks to keep the price from rising above a certain ceiling. In good crop years, considerable procurement may be possible at harvest time at procurement prices, which will give the opportunity to replenish public stocks; in such years there might be a carryover of stocks to the next year. In poor crop years, procurement at harvest time will tend to be small but releases during the lean season large; the system should then draw on stocks carried over from good years and on imports financed by aid or the Government's own cash resources.

xxiv. In practice, OMS will require supervision and management by a small operating cell which acts on the basis of information supplied by the Secretariat of the Food Policy Monitoring Unit within agreed guidelines. It will also require free operation of a competitive private grain trade, which is more important and efficient than the Government can be in holding, transport and financing the country's food stocks.

xxv. Introduction of a system of open market sales aimed at a 20% seasonal rice price variation requires a large volume of stocks to draw on. Taking account also of the need for adequate emergency stocks and stocks needed for distribution to the poor, overall stock requirements are estimated at 1.5 million tons of foodgrains on July 1 and 1.2 million tons on November 1. In view of the present low stock position, it will not be

possible to start the 1980 lean season with this amount of stocks; hence, it will be necessary to envisage more limited open market sales and perhaps a higher level of price fluctuations during the first year.

xxvi. Under conditions of sub-optimal stock levels, open market sales should start late in the lean season when prices may already have risen significantly and should aim at mitigating the price peak rather than at slightly influencing the behavior of prices throughout the lean season. Release early in the lean season of such limited stocks is likely to be relatively ineffective; traders and households might hoard most of whatever is offered and secure for themselves a profit which the Government could have earned by waiting till a later date.

xxvii. Even when public stocks have been built up to a level which is closer to the optimum required for full-fledged open market sales, the Government should be cautious about releasing grains too early in the lean season. This is particularly so since private traders and households may want to stockpile grain against the possibility that the Government will later have to curtail its sales and permit prices to rise, perhaps sharply. Thus, it is important that Government stocks at the time it decides to enter the market should be adequate to persuade traders and households that its stabilization efforts will be sustained. Also, available stocks must be allocated over the entire period until the next harvest and never be allowed to fall to levels where the Government would have to stop selling while demand still exceeded market supply from other sources.

xxviii. As public stocks are built up with the help of aid donors, the Government will be able to enter the market earlier in the lean season and achieve a greater degree of price stability. Simultaneously, the public will become aware that market prices have become more stable, and it will then become easier to phase out the existing ration system and to reserve subsidized food distribution for the neediest.

xxix. To be fully effective, policies regarding procurement, storage and open market sales should be attuned to the large regional differences which exist in Bangladesh in production and consumption of foodgrains. The food problem viewed at the national level conceals some extreme regional deficits in food availability. With respect to production, only six out of the 20 districts usually produce more food than their own requirements for "minimum" consumption, the remaining districts relying on private marketing and public distribution of grains to reduce or remove their deficits. Consumption differences are also significant, but much less than production differences, given the considerable amount of grain trade. The larger consumers of grains are not necessarily the production surplus districts. In fact, consumption levels in the production surplus districts often fall below the minimum requirements presumably as a result of the rather skewed income distribution and inadequate purchasing power in these districts.

xxx. Regional differences in production and consumption have serious implications for the design of food policy. For instance, expansion of procurement and storage facilities should take place in production surplus areas, where harvest prices are particularly likely to decline. However, public

distribution on a larger scale than at present may be required in some of the very same production surplus districts, where a relatively large part of the population have inadequate income to buy grains.

#### Food Aid Requirements

xxxii. Notwithstanding Bangladesh's unprecedented rate of food importation in the first half of FY80 and the assumption that a relatively rapid growth of production can be achieved following the current aman crop, Bangladesh will still need to import an estimated 850,000 additional tons between January and June 1980 and perhaps 1.8-2.0 million tons during FY81 in order to raise public foodgrain stocks to 1 million tons at the end of FY80 and to 1.3-1.5 million tons at the end of FY81. Import requirements are projected to decline thereafter. If foodgrain production were to increase by 4-5% per annum, import needs could decline by 100,000 to 250,000 tons per year in succeeding years, after allowing for higher per capita demand. The mission has recommended that the Government adopt the above-mentioned food system reforms and end-year stock targets; it recommends to the donors that sufficient food aid be provided to meet the correlated food import requirements.

xxxiii. The projections of import requirements for FY81 and FY82 are based upon assumptions that average or better weather conditions, together with greatly-improved implementation performance, will result in a relatively rapid growth in food output in these years, and that the Government will implement the policy recommendations of this report. The recommended high level of imports through FY82 is seen to be supportive of the objective of raising stocks so that provision is made for meeting seasonal and emergency needs while, at the same time, an environment of greater price stability and food security will be created within which more flexible and more rational food policies can better be pursued. Such increased stocks would facilitate in particular the increased reliance on open market sales to stabilize grain prices and in turn the reduction of subsidized distributions through the ration system.

xxxiiii. The build-up of stocks through the recommended increase in aid imports should be accompanied by a time-bound program to rationalize food policies through improvements in the procurement system, the large-scale introduction of open market sales and the elimination of subsidized food distribution except for the poorest. As the procurement system becomes effective in providing an effective support price to farmers, the Government should also phase out the fertilizer subsidy, which presents a rapidly increasing financial burden to the Government.

CHAPTER 1: FOOD PRODUCTION AND CONSUMPTION

A. Introduction

1.01 Whereas Bangladesh is the eighth largest country in the world in terms of population and the fourth largest producer of rice, it is also the largest importer of rice and the largest recipient of food aid. Nearly 60% of its GDP is generated in the agricultural sector. Agriculture also accounts directly for about 70% of employment and, directly and indirectly, for over 90% of merchandise exports. At the same time, the sector is characterized by very high ratios of population and labor force to land, a high and growing rate of landlessness among the predominantly (90%) rural population, and low and virtually stagnant cropping intensity and yield rates; these factors underlie the malnutrition suffered by at least 60% of the population.

1.02 Bangladesh's chronic shortage of foodgrains developed since the 1950s. Food imports averaging 1.8 million tons have been needed in recent years to keep the average availability of grains near the Government's estimate of minimum nutritional requirements of 15.5 ounces a day per person. These imports, mostly financed by concessional aid from abroad, have been the mainstay of the public foodgrain distribution system. Only in the last five years has the distribution system also benefited from a significant volume of grains procured from domestic production. Because of the subsidies involved, the public distribution system also has important consequences for Government finances.

1.03 Within agriculture, foodgrains -- primarily rice and wheat -- account for about two-thirds of production. Foodgrains are the main food consumption item in Bangladesh, accounting for about 60% of average household expenditure and 85% of total calorie intake. Thus, foodgrain production is also a major determinant of the level of nutrition. Crop failures and resulting food shortages cause acute deprivation to the country's poor. To the small and marginal farmers they mean below normal food stocks on the farm, greater recourse to costly open market purchases, and reduced food consumption. For the landless they mean reduced employment opportunities, lower wages and possible starvation. At the national level, the crisis atmosphere accompanying crop failures diverts much of the planning and administrative effort away from the long-run developmental priorities and into short-term crisis management.

1.04 Despite the large volume of food aid, malnutrition has been a severe problem and one which appears to have become more serious over the last decade. This is particularly true for rural Bangladesh, which has drawn relatively less benefit from public food distribution than the urban areas. There have been two nutrition surveys of rural Bangladesh, one in 1962-64 and the other

in FY76. 1/ The first survey indicated that 45% of all rural families had calorie intakes below the recommended daily minimum of 2,120 calories. According to the second survey this percentage had grown, in somewhat over a decade, to 59% of rural families. The second survey also showed that 25% of all children were severely undernourished and another 50% were moderately undernourished. Since the first survey, the per capita availability not only of foodgrains but also of pulses and fish appears to have declined. As a result, the average daily energy intake in rural areas dropped by about 150 calories.

1.05 Many of those suffering from malnutrition in rural Bangladesh are small and marginal farmers or landless laborers and their families. The most important step that can be taken to reduce malnutrition among these groups is to mount an effective program to increase food production -- provided the production increase also extends to small farmers and is accompanied by increased employment for landless laborers in food production or related activities. Increased per capita supplies would also tend to lower food prices which also should benefit the poor. At the same time, lower food prices would not need to lower production incentives so long as a sharp drop of prices at harvest time can be avoided through the provision of supportive procurement prices, and the use of improved seeds and farming practices leads to lower production costs. Yield-increasing changes in technology make it possible to lower prices to consumers and simultaneously to maintain or improve incentives to producers. The nature of these yield-increasing changes is crucial, however, in determining the chief beneficiaries of such changes. If small farmers are to participate, they must have access to credit and commercial inputs at no more than market prices. 2/ Employment of landless laborers will increase most if the improved practices require additional labor (e.g., weeding) and if agricultural mechanization is of the sort that increases employment (irrigation) rather than decreases it (mechanization of harvesting).

1.06 Increased food production alone, however, will not be sufficient to remove poverty and malnutrition from rural Bangladesh. About 50% of the rural households own less than one-half acre of agricultural land and are therefore considered functionally landless, 3/ and a large number of farm households are seasonally unemployed or underemployed during part of the year.

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1/ Pakistan, Nutrition Survey of East Pakistan, March 1962-January 1964, U.S. Department of Health, Education and Welfare, Public Health Service, 1966, and Nutrition Survey of Rural Bangladesh 1975-76, Institute of Nutrition and Food Science, University of Dacca, December 1977.

2/ In some areas where demand for inputs has exceeded supplies, small farmers have had to pay 40 to 60% or more above the official (BADC) sale prices to purchase improved seeds and fertilizers. Many larger farmers, however, did not have to pay more than the official prices.

3/ Bangladesh Bureau of Statistics, "Summary Report of the 1978 Land Occupancy Survey of Rural Bangladesh", December 1978.

Employment can be expected to grow considerably with increased crop production, but even extremely high growth rates of food production and related activities could not absorb all of the unemployed or underemployed. To create effective demand for increased food output, it will be necessary to create additional non-agricultural employment opportunities, mainly through promotion of rural works and development of the industrial sector. Discussion of measures to develop these employment and income-generating activities, however, falls outside the scope of this report.

1.07 Plans to raise rice production have important implications for jute, <sup>1/</sup> which is the main cash crop in Bangladesh. Within an overall declining production trend, jute output levels have fluctuated considerably during the past decade. One underlying reason for year-to-year changes in output has been the significant variation in jute acreage, of which part is suitable for aus cultivation as well. In the past, jute acreage has responded sharply to changes in the jute-paddy price ratio. When, for example, this ratio fell to less than unity in FY75, jute acreage declined drastically to an all-time low of 1.28 million acres in FY76 and cultivators sowed aus on a record 8.45 million acres. Since FY76, the jute/paddy price ratio improved in favor of jute, exceeding 2 in FY78. This was a major factor contributing to the farmers' decisions to increase jute acreage to about 2 million acres in FY79. The close relationship between rice and jute prices and acreage underlines the need to consider the implications of rice production targets and accompanying incentive price policies on the prospects for jute cultivation. A discussion and analysis of the appropriate balance between incentives for rice and for jute production, however, is beyond the scope of this report.

#### B. Review of Past Performance in Food Production

1.08 The fundamental causes of Bangladesh's food problem have been the sluggish growth and high variability which have characterized foodgrain production over the past two decades. Since 1960, foodgrain production has increased at an annual rate of only 1.7% -- well below the estimated population growth rate of 2.7%. Foodgrain imports have grown from less than 0.6 million tons in 1960/61 to an average of about 1.8 million tons during FY78-FY80. Despite increased imports, however, there has been a decline of over 9% in average per capita foodgrain availability in the country -- from about 17 ounces per day in FY61 to 15.4 ounces per day in FY78. These figures on national average consumption obviously hide wide differences in foodgrain availability between different parts of the country. An estimation of the magnitude of such differences is attempted in Annex 6, while Annex 9 provides a graphic illustration of the varying degree of famine vulnerability of different regions.

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<sup>1/</sup> With its coverage of nearly 20% of total cropped area during the aus and jute growing season and its high labor intensity (about 120 man-days per acre), jute cultivation is a major source of employment and cash income for cultivators and landless laborers. Jute is also the basic raw material -- accounting for about 50% of production costs -- for the country's most important manufacturing and export industry. Jute fiber and jute goods exports together provide over 70% of Bangladesh's foreign exchange earnings every year.

1.09 This sluggish overall performance masks substantial variations over time as well as among crops. During the 1960s, foodgrain production grew at a moderate 2.4% with expansion in the use of high-yielding varieties, fertilizers and irrigation. A setback was experienced in the early 1970s because of unsettled economic and political conditions as well as adverse weather, and production remained below the levels achieved in FY70. By FY75 production had recovered again to the FY69 level with the aid of greater use of modern inputs and generally favorable weather conditions. Foodgrain production in FY76 set a record of 12.8 million tons. Although in the following year production declined to 11.8 million tons again, that was still a good crop by past standards. A new record was set in FY78, amounting to 13.1 million tons. In FY79, another setback due to a prolonged drought may have reduced production to about 12.7 million tons, although the official estimate is 13.0 million tons. 1/

1.10 Among the various grain crops, boro and wheat have been by far the best performers. Boro did well from 1960 to 1971; since then, however, its output has shown no positive trend. Growth of wheat was particularly rapid in the last four years, when it averaged 43% a year. In contrast, production of aman, the main rice crop, has remained practically stagnant, and aus production has grown at a modest 2% per year. Because of these differences in growth rates, boro and wheat now account for almost 20% of total foodgrain production compared to less than 5% in 1960. An unfavorable accompanying development has been the decline in the production of pulses, which as yet have not benefitted from technical improvements.

1.11 With virtually all arable land already under cultivation by 1960, production increases have depended on improvements in cropping intensities and yields. In the sixties, much of the growth came from expansion of the boro area through increased irrigation. Since 1970, yield increases resulting from the adoption of HYVs and increased fertilizer application have been the dominant factor. Nevertheless, weather conditions have been, and for the foreseeable future will continue to be, the principal determinant of year-to-year fluctuations.

#### C. Reasons for Slow Growth

1.12 The use of improved grain varieties and fertilizers complemented by appropriate farming practices and (where feasible) irrigation, was introduced in Bangladesh since the mid-sixties. The spread of the new technology has been rather slow, however, particularly for aus and aman crops where HYV cultivation covers only about 10% and 15% of the potential areas respectively. Fertilizer use, although growing at 17% per annum, remains much below optimal levels. Despite large investments in major water control works over the past

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1/ Official crop statistics indicate that the overall size of the three rice crops harvested in calendar year 1979 (1978/79 aman, 1979 boro and 1979 aus) was 1.044 million tons below the combined output of these three crops in calendar year 1978. Since the 1979 wheat crop was 143,000 tons above the level of 1978, the overall foodgrain production decline in calendar year 1979 was 901,000 tons.

two decades, the irrigated area from these schemes is barely 150,000 acres. The vast potential for groundwater development also has remained largely untapped with the current installed capacity being less than 5% of the potential. Installed irrigation capacity remains underutilized. Minor irrigation (DTW, STW, LLP and HTW) has a particularly important role to play. Its value is not limited to increasing the area of boro and rabi cropping. Minor irrigation facilities should also be used during the early weeks of the aus crop and during the ripening stages of aman crop, especially when the monsoon rains end early. Furthermore, minor irrigation facilities can be used to advantage during the pre-planting and early growth stages of the jute season and for retting of the jute crop after harvest.

1.13 Foodgrain production in Bangladesh is constrained by scarcity of cultivable land, limited potential on part of the cultivated land, climatic hazards, need for irrigation during the dry season, and need for drainage and flood control during the rainy and flood season. A large part of the constraints are due to lack of water control: in part of the year and part of the country there is too much water and the problem is lack of drainage, flood protection, etc.; in another part of the year and other parts of the country there is lack of water and need for irrigation. Even with these physical constraints, however, much higher growth should have been possible. Slow growth can mostly be attributed to weaknesses in agricultural support services and in the provision of input supplies, and to the socio-economic characteristics of rural Bangladesh. Inadequate resource allocation to agriculture as well as inefficient resource use have also been constraining factors.

1.14 Agricultural Support Services. Adoption of the HYV technology critically depends upon adequate and timely supplies of farm inputs, relevant technical advice, and suitable marketing, processing and storage facilities. The Government has been taking a number of actions to improve the performance of the various agencies and departments responsible for these services which to date have been unsatisfactory. Limited planning and administrative capabilities in many government agencies have been overstretched by rapidly increasing workloads. Support services have also suffered from cumbersome administrative procedures as well as lack of trained staff at all levels. The extension programs have generally lacked focus and the extension staff, poorly trained and motivated, have not had much success in gaining farmers' confidence. Institutional credit channels have remained clogged with massive default problems and the coverage has remained limited to less than 10% of the farm population. Due to inadequate and delayed resource allocations as well as poor planning and program monitoring, there have been repeated breakdowns in the supplies of inputs such as fertilizers, HYV seeds, diesel fuel, and repair and maintenance services for irrigation pumps and tubewells. Timely resource allocation, including timely availability of foreign aid, providing for stable, reasonable growth would eliminate much of the problem of uncertainty and would have a dramatic and rapid impact on production growth.

1.15 To a considerable degree, the weaknesses in support services reflect simply the excessive reliance on the bureaucracy and the failure to utilize private sector initiative. The Government is now moving toward much greater

reliance on the private sector to relieve such bottlenecks. Fertilizer distribution at the retail level has been opened to the private sector in three of the four divisions. The distribution of pesticides is also in the process of being opened to the private sector, but trade is being hampered by a high import duty. Private workshops for the maintenance of pumps and tubewells are being encouraged.

1.16 Incentive Pricing. In the absence of an effective foodgrain procurement effort, post-harvest prices received by farmers, especially small farmers in surplus areas have often been below the procurement price by substantially more than the conventional marketing margin. The adverse impact of weaknesses in procurement can hardly be overemphasized. After a record crop in FY76, market prices for rice in many surplus areas fell below the official support prices by as much as 20%; the decline of over 20% in the number of low-lift pumps fielded during the next boro season was at least partly due to this decline of the open market prices.

1.17 Socio-economic Characteristics. There are some 9 million farm households in Bangladesh, 90% of which operate 5 acres or less. Official figures indicate that at least one-third of the cultivators are tenants or owners-cum-tenants and that at least one-quarter of the agricultural land is cultivated under tenancy arrangements. <sup>1/</sup> Although even the "large" landowners in Bangladesh are small by international standards, they wield considerable power vis-a-vis the majority of the rural population due to their generally higher educational levels, better access to government institutions and services, and effective control of scarce agricultural inputs such as irrigation. Patron-client relationships of various shades pervade the agrarian structure of Bangladesh; the land-owning, money-lending, labor-hiring class are the patrons, while the small farmers, sharecroppers and landless laborers are the clients. Many of the big farmers are also money lenders, pump group managers, fertilizer dealers and managers of cooperatives. The most common sharecropping arrangement is that the landowner and the sharecropper each receive 50% of the harvest, with all inputs being paid for by the sharecropper. This arrangement obviously reduces the incentive for tenants farmers to buy the inputs needed for the application of the new HYV technology.

1.18 Patron-client relationships and linkages often evolve into rival factions and groups competing for the control of human and material resources in the rural areas. Such factionalism and group competition have an important bearing on activities such as the formation and functioning of irrigation groups and village level cooperatives, fertilizer distribution and access to institutional credit. Numerous cooperatives and irrigation groups are essentially little more than convenient vehicles for the influential to lay claim to scarce government inputs and services. Inter-group rivalries and competition often make it difficult to organize several competing patron-client groups into a single irrigation group or credit cooperative. Thus, if an irrigation pump is too big to be fully utilized by one patron-client group, underutilization is almost certain. Divisibility of inputs, such as can be provided through smaller pumps, can be of crucial importance -- as can full-cost

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<sup>1/</sup> Bangladesh Bureau of Statistics, op. cit.

pricing in helping to ensure improved capacity utilization. Heavy Government subsidies on inputs such as fertilizers, irrigation and credit have largely served as strong incentives for monopolization and resale by the larger farmers.

1.19 Too little attention has been paid to these socio-economic aspects of agricultural development in Bangladesh. For example, in so far as scarcity and uncertain availability of agricultural inputs tend to reinforce existing patron-client relationships, adequate and timely supplies of farm inputs are of critical importance for overcoming them and thus helping to accelerate the growth of Bangladesh agriculture.

1.20 Inadequate resource allocation. The Government's stated priority for food self-sufficiency and rapid agricultural growth has not been reflected in past development budgets. The decline in allocations in the past few years has been alarming; between FY73 and FY79 the share of agriculture and rural development, excluding the fertilizer subsidy, has declined from 33% to 17%. Due to the prevailing regime of controls, private sector investment in agriculture has been practically non-existent. For the economy as a whole less than 20% of total development expenditure has gone to agriculture since independence. This is an unjustifiably small share considering agriculture's importance to the economy and the need for its rapid growth. One manifestation of the inadequate capital formation has been the long implementation periods for most development projects due to local currency shortages and administrative bottlenecks.

1.21 Over the past two decades, much of the development effort and expenditure for the agricultural sector has gone for large scale gravity irrigation and flood control projects such as the Dacca-Demra, Ganges-Kobadak, Chandpur and Coastal Embankment projects. Most of these projects have had extremely high unit costs as well as long gestation periods, and benefits have generally been much below expectations. The need to redirect the water development program towards low-cost, quick-yielding minor irrigation and drainage works was emphasized again during the joint GOB/Bank review of the BWDB portfolio in 1978. The agreed priorities are, however, still to be reflected in the Government's development programs.

#### D. Medium-Term Prospects

1.22 Notwithstanding the rather disappointing past performance, food self-sufficiency is an achievable target for Bangladesh, provided the Government and the people can come to grips with the socio-economic constraints and devote adequate financial and manpower resources to this task. The principal factors in achieving increased production would have to be an accelerated adoption of HYVs coupled with increased fertilizer use, improved cultivation practices and better utilization of existing and construction of new irrigation facilities. The unexploited potential for all of these is large. Some 85% of the potential area suitable for HYV cultivation is still being cultivated with local varieties. Current fertilizer use is still very low and scope exists for a manifold expansion in fertilizer use, particularly if the adoption of HYVs is accelerated. The scope for additional irrigation is also

enormous. Irrigation water supplies -- mainly from groundwater -- are adequate for well over 10 million acres, compared to some 3 million acres currently under irrigation. Opportunities to improve aus and aman yields by drainage and minor flood control are also considerable.

1.23 To provide a perspective on input and investment requirements, an illustrative scenario for producing 18 million tons of foodgrains by FY85 (adequate to feed the projected population of 101 million at 15.5 ounces per capita per day) is described in Table 1. Most of the growth would have to come from yield improvements. Under the scenario, the area under HYVs would expand by 150% -- from 3.3 million acres in FY78 to about 7.5 million acres. Wheat would appear to offer the best prospects for growth, with production increasing to five times the benchmark production in FY78. Irrigated area would have to be doubled with major emphasis on groundwater development. Fertilizer use throughout the country would have to more than double, from 715,000 tons in FY78 to 1.6 million tons in FY85. <sup>1/</sup>

Table 1: AN ILLUSTRATIVE SCENARIO FOR PRODUCING 18 MILLION TONS OF FOODGRAINS IN 1984/85

		<u>AREA, YIELD AND PRODUCTION OF CROPS</u>					
		<u>Benchmark (FY78)</u>			<u>Target (FY85)</u>		
		<u>Area</u>	<u>Yield</u>	<u>Production</u>	<u>Area</u>	<u>Yield</u>	<u>Production</u>
		<u>(M ac)</u>	<u>(Tons/ac)</u>	<u>(M Tons)</u>	<u>(M ac)</u>	<u>(Tons/ac)</u>	<u>(M Tons)</u>
<u>A. Rice</u>							
Aus	- Local	6.86	0.32	2.21	6.00	0.37	2.20
	- HYV	0.93	0.93	0.87	2.00	1.10	2.20
	Sub-total	<u>7.79</u>	<u>0.40</u>	<u>3.08</u>	<u>8.00</u>	<u>0.55</u>	<u>4.40</u>
Aman	- Broadcast	4.17	0.41	1.70	4.20	0.45	1.89
	- Transplant (local)	9.53	0.54	5.16	7.10	0.60	4.26
	- HYV	0.57	0.99	0.56	3.00	1.00	3.00
	Sub-total	<u>14.27</u>	<u>0.52</u>	<u>7.42</u>	<u>14.30</u>	<u>0.66</u>	<u>9.15</u>
Boro	- Local	1.25	0.60	0.75	0.90	0.60	0.54
	- HYV	1.45	1.02	1.49	1.90	1.15	2.18
	Sub-total	<u>2.70</u>	<u>0.83</u>	<u>2.24</u>	<u>2.80</u>	<u>0.97</u>	<u>2.72</u>
<u>Total Rice</u>		<u>24.76</u>	<u>0.51</u>	<u>12.74</u>	<u>25.10</u>	<u>0.66</u>	<u>16.27</u>
<u>B. Wheat</u>							
	- Local	0.08	0.29	0.02	0.20	0.50	0.10
	- HYV	0.39	0.82	0.32	1.60	1.00	1.60
	Sub-total	<u>0.47</u>	<u>0.72</u>	<u>0.34</u>	<u>1.80</u>	<u>0.94</u>	<u>1.70</u>
<u>C. Coarse Grains</u>		<u>0.12</u>	<u>0.50</u>	<u>0.06</u>	<u>0.12</u>	<u>0.50</u>	<u>0.06</u>
<u>Total Foodgrains</u>		<u>25.35</u>	<u>0.52</u>	<u>13.14</u>	<u>27.02</u>	<u>0.68</u>	<u>18.03</u>

<sup>1/</sup> The Government has several more ambitious scenarios calling for 2.0 and 2.2 million tons of fertilizer use by FY85.

1.24 Realization of such a scenario would represent a sharp break with past performance and would require substantially increased development allocations to agriculture, reordering of investment priorities within agriculture, and above all a greatly improved capacity for planning, monitoring and implementing programs for supplying the various supporting services to the farm population. In particular, the Government should strive for a dramatic improvement in the volume and timely distribution of inputs and irrigation water at the farm level. A major imponderable will be the constraining role of socio-economic factors. Table 2 compares the historical and illustrative future growth rates in grain production, irrigated area, fertilizer use and HYV area.

Table 2: HISTORICAL AND ILLUSTRATIVE FUTURE ANNUAL GROWTH RATES  
(Percent)

	<u>FY61-FY78</u>	<u>FY78-FY85</u>
<u>Production</u>		
Aus	1.3	5.2
Aman	0.7	3.0
Boro	9.9	2.8
Total Rice	1.7	3.6
Wheat	14.1	26.0
<u>Total Foodgrains</u>	<u>1.7</u>	<u>4.6</u>
<u>Commercial Fertilizer Use</u>	17.2 <u>/a</u>	12.2
<u>Irrigated Area</u>	4.8	10.7
<u>HYV Area</u>	14.2 <u>/b</u>	13.0

/a Base year: FY66.

/b Base year: FY71.

1.25 The required acceleration in growth is particularly large in the case of the aus and aman crops: most of this increase will have to come from increased cultivation of HYVs which is still constrained by the scarcity of suitable varieties and water control. The required expansion in the area under irrigation also deserves mention; the annual increase in the irrigated area implied in the scenario of 485,000 acres compares to average annual increases in recent years averaging only 100,000 acres since FY70 -- but virtual stagnation since FY75 (see Appendix Table 2.2). Consideration of these facts should make it clear that achievement of the highly desirable goal of food self-sufficiency in the medium term will require dramatic increases in the resources made available for grain production.

1.26 The Government has assigned top priority in its "Guidelines" for the Second Five-Year Plan (beginning July 1, 1980) to controlling population growth and to increasing food production. The priorities deserve the full support of aid donors. At the Government's request, the Bank is assisting GOB in preparing a Medium-Term Crop Production Plan for the country. This Plan will, inter alia, examine the implied requirements for achieving various production levels in the medium term and discuss a program of investments and the associated policy and institutional changes required for achieving higher production levels.

CHAPTER 2: EVENTS SINCE THE JANUARY 1978 FOOD POLICY MEETING

2.01 This chapter reviews developments in foodgrain production, imports, stocks, and food policies since the January 1978 food policy meeting of the Bangladesh Aid Group.

A. Recent Developments in Foodgrain Production, Imports and Stocks

2.02 Since the 1978 Aid Group meeting, Bangladesh has experienced a food crisis arising from a prolonged drought and delays in food imports. Well-coordinated Government action and prompt donor response, however, made it possible to maintain the volume of marketed grain at near normal levels and to arrest the increase in rice prices. Since the public distribution system reaches only a small proportion of households in rural areas, however, it was not possible to avoid a reduction in food availability among many of the rural poor.

2.03 Foodgrain supplies and stocks were comfortable and prices quite stable during FY78 and the first half of FY79. Domestic procurement from the FY78 aman crop amounted to a record 501,000 tons of rice and procurement for all crops during FY78 totalled 550,000 tons (rice equivalent). Government foodgrain stocks on January 1, 1979, were about 850,000 tons, compared to about 715,000 tons one year earlier. Thus, in January 1979 the outlook for the second half of FY80 still seemed favorable. The Government's "Memorandum for the Bangladesh Aid Group, 1979-80" stated that "the overall food situation during the year, despite adverse weather conditions, seems to be satisfactory." The Memorandum noted that the aman crop had suffered heavily from floods and drought, but that part of the loss had been recouped by late sowing and accelerated input distributions, and that special programs would be undertaken for boro and wheat to further compensate for the loss in the aman crop. Unfortunately, however, the drought that had begun in October 1978 persisted until late June 1979, and the boro and aus crops were also adversely affected; only wheat production increased substantially (from 343,000 tons the previous year to 486,000 tons).

2.04 At the time the Government's Memorandum was written, 1/ public food-grain stocks were expected to amount to 875,000 tons on June 30, 1979. The actual level at that date, however, turned out to be only 209,000 tons, a dangerously low level in view of the normal offtake at that time of the year of more than 150,000 tons per month. 2/ This came about for several reasons. Procurement in FY79, which the Memorandum had projected at 550,000 tons, reached only 355,000 tons. The FY79 procurement program had begun aggressively with 77,000 tons of milled rice equivalent procured during July-September 1978, compared to about 2,000 tons for the same period in each of the two preceding years. Procurement in November 1978 was still close to targeted levels, but in the critical months of December and January, procurement fell far short of the targets. Higher than expected market prices, caused by the small size of

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1/ In October/November 1978.

2/ For a discussion of minimal necessary or "dead stocks" levels, see para. 4.30 and Annex 7, para. 4.

the aman crop, were a major factor in the procurement shortfall. Rising prices in January 1979 also reflected growing consumer concern about future supplies, as the drought -- which had adversely affected the aman crop -- was by then discouraging farmers from planting boro rice. Chronic problems such as inadequate Government procurement and storage facilities, especially in surplus producing areas, also contributed to the procurement shortfall -- but the main cause was the poor size of the aman crop.

2.05 Unanticipated delays in food aid imports exacerbated the shortfall in supplies. The Government's Memorandum to the Aid Group had noted that 550,000 tons of pledged food aid still remained to be negotiated. The projection of the end-FY79 stock level of 875,000 tons was based on the assumption that these negotiations would be completed expeditiously and the grains imported before the end of the fiscal year. In fact, 440,000 tons of these anticipated grain imports were not received during the fiscal year.

2.06 As the drought continued and the food aid agreements were not concluded, it became clear that a food crisis was threatening. In April 1979 the Government sent out urgent appeals for immediate food aid and undertook commercial purchases as well. As a result, more than 1.9 million tons of foodgrains arrived in Bangladesh ports during July-December 1979 -- twice as much as during the corresponding period in the previous year.

Table 3: FOODGRAIN IMPORTS JULY-DECEMBER 1979  
( '000 tons)

	<u>Total Imports</u>	<u>Grants and Concessional Loans</u>	<u>Commercial or Barter Terms 1/</u>
Rice	656	211	445
Wheat	<u>1,284</u>	<u>995</u>	<u>329</u>
Total	<u>1,940</u>	<u>1,166</u>	<u>774</u>

1/ These imports were partly paid for by a \$50 million grant from Saudi Arabia.

2.07 The unprecedented arrival of 1.35 million tons of foodgrain at Chittagong and Chalna in the three months from July-September was handled well. While about 270,000 tons were riding at anchor at the outer anchorage at the end of September, unloadings averaged more than 400,000 tons per month over the July-September period. Emergency storage facilities constructed at the ports did not have to be utilized, and relatively short delays were encountered in moving foodgrains up-country. This successful movement of foodgrains was also facilitated by seasonal floods (which provided maximum opportunity for moving grains by boat), coordinating the arrival of ships, giving top priority to the movement of foodgrains on government transport modes, making needed increases in trucking rates to the private sector, and hiring mini-bulkers.

2.08 While the movement of foodgrains was carried out expeditiously, it was not without cost; six mini-bulkers were hired to help carry out the lighter-  
ing at Chittagong and -- occasionally -- to carry grain to inland ports; some  
other products could not be moved because of the priority given to transport  
of foodgrains; and general cargo ships experienced waiting time of up to  
twenty-two days. As a result, demurrage charges were high and conference  
lines increased their rates on goods moving into or out of Bangladesh ports.  
However, since the crisis came at a time when fertilizer stocks were high,  
the priority given to food unloading did not disrupt the fertilizer supply.

#### B. Developments in Food Policies

2.09 The January 1978 Aid Group meeting focused particularly on the need  
to (a) strengthen food policy planning, (b) make effective use of the procure-  
ment system to support farmgate prices at an incentive level at harvest times;  
and (c) adjust the ration system and policies concerning the private market  
(including Government open market sales) to better meet the needs of the  
poor.

2.10 Food Planning and Monitoring Unit. The Bank's December 1977 report  
recommended that a food policy unit be established with a full-time profes-  
sional secretariat to (a) monitor and project food production, prices, stocks,  
offtake, procurement and imports, (b) devise and operate an early warning  
system, (c) analyze food policy issues, and (d) advise the Government on  
needed policy reforms. These recommendations were endorsed by the partici-  
pants in the January 1978 meeting. The Government reviewed some follow-up  
proposals for implementing the recommendation, but took action only in the  
spring of 1979 when it became clear that the nation faced a serious shortage  
of foodgrain stocks for the approaching lean season. The President then  
reconstituted the cabinet-level Council Committee on Food, with himself as  
Chairman and with the Minister of Planning as Coordinator. 1/ He also set up  
a Food Planning and Monitoring Unit (FPMU) at the Secretaries' level with the  
Minister of Planning as Convenor. 2/ During the crisis period in the summer  
of 1979 the Council Committee met twice-weekly with the President to review  
import schedules and arrivals, and to plan and coordinate the movement and  
distribution of food through the public distribution system, including orga-  
nizing the manpower, transport and other resources required, and identifying  
areas of special need for modified rationing, Food-for-Work and relief dis-  
tribution. The Council Committee and the FPMU facilitated the importation  
and distribution of grain and, thus, reduced substantially the severity and  
duration of food shortages. More should be done, however, to improve the

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1/ The other members are the (1) Prime Minister, (2) Deputy Prime Minister  
and Minister for Water, Power and Irrigation, and the Ministers for (3)  
Agriculture, (4) Food, (5) Finance, (6) Foreign Affairs, (7) Commerce,  
(8) Ports, Shipping and Inland Water Transport, and (9) Railways,  
Roads, Highways and Road Transport.

2/ Other members are the Secretaries of the Ministries of Food, Agriculture,  
Finance (ERD), Planning (Statistics Division), and the Member for Plan-  
ning of the Planning Commission.

capacity to monitor and forecast prospective supply and demand conditions and to analyze food policy issues. It is urgently necessary that the Government establish a secretariat to the FPMU, with adequate technical staff, as described in Annex I to this report.

2.11 The Government has recently stated that it is preparing a Project Proforma that will outline the functions and staffing of a food policy secretariat. Several existing staff of the Ministry of Agriculture and Forestry and of the Planning Commission worked together on a part-time basis to provide some in-depth analysis to the FPMU in the summer of 1979, but no progress was made toward developing an early warning system. The Bank mission that visited Dacca in October 1979 prepared recommendations on the proposed staffing and functions of the secretariat and on the development and operation of an early warning system; these are attached as Annexes I and II of this report.

2.12 Procurement. The major recommendations of the Bank's 1977 report and the January 1978 Aid Group meeting concerning procurement were: (a) that the procurement price should provide adequate incentives to encourage greater use of high yielding varieties (HYV), fertilizer and irrigation; (b) that the procurement price should be made an effective support price by government purchases of all grain of specified standards offered to it at that price; (c) that access to procurement centers should be easier for small farmers; and (d) that the procurement price should be based upon more accurate data from periodic surveys of farm costs and returns. Some significant actions have been taken in each of these areas.

2.13 The procurement prices of rice and wheat have been increased substantially since January 1978 and, to the extent they are being received by farmers, offer substantial incentives to them to use HYVs, fertilizer and irrigation. Procurement prices for paddy and wheat were raised in stages from Tk 74 in November 1977 to Tk 110 per maund in November 1979. <sup>1/</sup> The procurement price of Tk 110 per maund for paddy corresponds to Tk 170 per maund for rice, or about \$300 per ton -- about equal to world market f.o.b. prices for comparable varieties and far higher than domestic prices in most other major low-income rice-growing countries. Cost of production studies support the conclusion that these prices provide adequate incentives to the average farmer, even though such costs have risen substantially since these studies were made. The procurement price would also lead to high profitability of HYV cultivation for the average farmer in terms of returns to family labor (which include the implicit return to land). While the available data suggest that procurement prices are at an adequate incentive level for average farmers, sharecroppers and marginal farmers may still be discouraged from HYV cultivation. Sharecroppers receive less than half the return to family labor achieved by owners, and while HYV cultivation usually gives greater returns even under sharecropping arrangements, the added costs and risks plus limited access to credit and commercial inputs discourage many sharecroppers from HYV cultivation.

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<sup>1/</sup> All prices quoted to include the transportation bonus paid by the procurement centers to sellers of Tk 4 from February 1977, and Tk 5 from November 1979.

Small (marginal) farmers face the same limitations on access to credits and inputs, and to the extent their land is of below-average quality, they may also have a higher production cost per unit of output.

2.14 Procurement prices, to the extent they are actually received by farmers, are also adequate to provide substantial incentive to use purchased inputs, mainly fertilizer and irrigation. Benefit-cost ratios for fertilizer and water use have remained high even though fertilizer prices were increased by 28% in August 1979. Data on fertilizer-response ratios for various crops and locations are very limited but suggest that at current prices the benefit-cost ratios for fertilizer is at least 3 and often more. This ratio compares with rule of thumb generalizations that farmers will increase fertilizer use to the point that the marginal benefit-cost ratio is 2.5 to 2.0.

2.15 Low-lift pump and tubewell irrigation project appraisal estimates show internal rates of return of about 25 to 50%, with all costs calculated at economic rather than subsidized levels. Not surprisingly, farmers have expressed eagerness to buy low-lift pumps and shallow tubewells even at non-subsidized prices.

2.16 The procurement system still suffers from various shortcomings. In normal crop years, post-harvest prices have been well below procurement prices, and farmers could not be confident that they would receive the procurement price for their crops. In spite of recent expansion of the system, the Government does not yet have the number of procurement points, storage and transport capacity, or manpower and financial resources necessary to buy all the grain of standard quality that farmers would want to sell at that price. The Government has issued regulations to: (a) give growers first priority in procurement center purchases; (b) remove lower limits on the size of individual purchases; (c) relax moisture and other purchase standards and discounts; and (d) bar Approved Grain Dealers from buying grain within or near procurement centers. These changes may make relatively little difference in the extent to which any but large-scale farmers will sell at procurement centers, since most farmers would not find it worthwhile to go to a procurement center to sell a few maunds of rice. It is physically impossible for procurement agents to purchase the quantities needed for the procurement system primarily in small lots. Nevertheless, all farmers -- large and small -- will benefit if everyone is free to sell at the procurement centers and if government purchases are large enough to keep market prices from falling below the procurement price.

2.17 The Ministry of Agriculture and Forests has begun to carry out farm budget studies of the type required to estimate incentive price levels and the structure of farm costs. More extensive and recurrent studies of this sort, as well as much more field-trial research on physical input-output ratios for use of fertilizer, irrigation and improved practices, are important related tasks.

#### Ration System and Open Market Sales

2.18 Recommendations concerning the ration system at the January 1978 meeting focussed on (a) reducing the subsidy element in ration system operation; (b) directing a greater proportion of the ration distribution to the

poor; and (c) using government rice stocks for open market sales to reduce seasonal and annual market price fluctuations rather than for the ration system.

2.19 The per unit cost and the total cost of operating the ration system remains large, mainly due to the difference between foodgrain procurement prices and handling and storage costs on the one hand and the ration issue prices on the other. The 1979 increases in the procurement price for the current aman crop (first to Tk 158 and then to Tk 170 per maund) urgently require a greater per maund increase in the ration shop price in the immediate future in order that the per unit and total costs of the foodgrain ration may be lowered to more prudent levels.

2.20 Little has been done to increase the portion of the ration distribution going to the poor. The Government has rejected the proposal in the December 1977 Bank report that families in the upper 50% of the income distribution (i.e. with incomes of over about Tk 600 per month in 1977) be removed from the ration rolls. Rather, it announced that those with incomes in excess of Tk 1,600 per month would be removed from the ration rolls, though no action has yet been taken. Ministry of Food officials have estimated that the ration rolls would be reduced only 2-3% by enforcing the Tk 1,600 ceiling, that the savings would not be worth the administrative costs, and that it would be difficult to identify those other than government and large corporation employees whose income exceeds the limit.

2.21 The Government started increasing the modified ration (rural food distribution) and relief portions of the foodgrain ration in June 1979, in response to rising prices and local supply shortages. Efforts were also begun to increase Food-for-Work activities during the summer and fall of 1979 when such activities usually are at a low level. These ration categories go primarily to families at the lower end of the income distribution, and the quantities involved vary in light of availabilities and needs. This action was taken to meet a temporary crisis and does not appear to reflect a basic policy change. In fact, in FY79, the distribution of foodgrains through the modified ration system was 12% lower and through Food-for-Work was 15% lower than in the previous year. Relief distribution rose slightly in FY79, but amounted to only 3,700 tons per month nationwide, or about 2.5% of the total ration offtake. Moreover, some of the grain allocated for the modified ration never reaches its nominal beneficiaries, but rather is diverted and sold for private benefit at local levels. To a lesser extent, the same fate appears to befall some of that portion of Food-for-Work wheat allotted to local initiative projects.

2.22 The Government has taken a few actions to limit the overall growth of the ration system. Since 1974, no ration cards have been issued to persons moving into statutory rationing areas (six cities) from non-statutory (mainly rural) areas, except for government employees being transferred. This affects many poor people migrating from non-statutory rationing areas to these cities, and may have been adopted to slow such migration. Another action has been to limit to six the number of ration cards that can be issued to families in statutory rationing areas, though those who had earlier qualified for more are allowed to keep them unless their family size declines.

2.23 It was proposed at the January 1978 meeting that the ration distribution be limited to wheat or other non-rice grains such as sorghum, and that domestic rice procurement and open market sales be used to limit the seasonal rice swing of the rice price between harvest-time lows and summer peaks to about 20%. In December 1977, the Government reduced the proportion of rice in the statutory (and priority categories) to one-half rice and one-half wheat, from its previous level of two-thirds rice. 1/ The modified ration distribution is one-third rice, two-thirds wheat.

2.24 The Government has been selling a limited amount of wheat through what it called "open market sales". Under an agreement with the United States, the PL480 (Title III) wheat is sold to flour mills and dealers at Tk 87 per maund, while the market price in the summer of 1979 was over Tk 150 per maund. As a result, these sales have been equivalent to another category of the ration system, distributing limited quantities of grain at far less than the market price.

2.25 As will be discussed in Chapter 4, true open market sales to curtail seasonal price swings will require sales at flexible quantities and prices designed to influence market prices in desired directions and to maintain orderly market conditions. Achievement of the Government's price stabilization objectives will require more freedom of action for the private trade and major administrative changes concerning foodgrain operations.

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1/ From early October to early December 1979, for the statutory rationing area of Dacca only, the cereal quota was changed to two seers of rice and one of wheat to help lower rice prices. It then reverted to 1.5 seers of each.

CHAPTER 3: DOMESTIC PROCUREMENT

3.01 In the years since independence, procurement of domestic foodgrains by the Government has grown substantially. Until FY75, government procurement had been minimal. In that year of famine the Government compulsorily obtained some 128,000 tons. In the following four years, however, domestic grain procurement averaged 400,000 tons a year. The large jump is mainly due to a more competitive Government procurement price and greater procurement effort. For FY75 through FY79, the procurement volume averaged 25% of the offtake from the public distribution system. As a share of the marketed portion of domestic foodgrains, procurement is more modest but substantial, roughly 10% of the total. 1/

3.02 The driving force behind the procurement increase of recent years has been the desire of Government and donors to reduce the dependence of the public distribution system on imports. It has also been recognized that procurement can be an important food policy tool for the Government to support its efforts to raise food production by guaranteeing farmers a harvest-time price sufficiently high to induce the increased use of modern inputs associated with high-yielding technology. These grains could then be used to help achieve consumer price stabilization by permitting lean season sales from public stocks large enough to even out excessive variations in the market price of foodgrains.

3.03 There is no conflict between these production and price-stabilization objectives in good years, since -- when crops are good -- an attractive procurement price will result in a large quantity of grain being offered to the Government which it can then inject into the market again during the lean months. 2/ It is important to note, however, that in poor crop years what may have appeared to be an attractive procurement price at planting time may result in relatively little grain being offered at harvest time, because overall supply is short and prices in the market exceed the Government's procurement price. If this procurement price has been initially set at an attractive level and has been maintained as a support price

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1/ Total cash sales on the basis of several small samples appear to be about one-third or more of total rice output. Earlier estimates of 10-20% may have referred only to major wholesale markets.

2/ Incentives for increasing rice production may have important implications for the prospects of jute production, as pointed out in para. 1.07 above. In the past, the Government has considered a price ratio between rice and jute of about 1.3 as appropriate for balancing the incentives for farmers to allocate acreage to both jute and aus in the desired proportion; the paddy/jute price ratio implicit in this relationship, thus, was roughly 0.87. While the continued acceptance of this particular single price ratio as a primary policy determinant may be questioned, there can be no doubt that considerations concerning changes in the procurement prices for paddy and rice must take into account the potential reverberations for jute acreage and production and, therefore, the desirability and/or need for the Government to support jute prices at certain levels as well.

to farmers, no further increase in the procurement price should be enacted merely to reach any quantitative procurement target. Instead, if and when domestic procurement is low, the stabilization of consumer prices during the subsequent lean season must be accomplished by releasing previously accumulated stocks or, if necessary, by mobilizing additional imports. Raising the procurement price during the harvest may keep up the share of domestic grains in the public distribution system but will do nothing to alleviate the food shortage; raising the procurement price for a crop already grown merely transfers grain from private to public stocks. An increased procurement effort from a short crop will worsen the food shortage for poor consumers outside the ration system who will have to pay higher prices as a result of the increased procurement price.

3.04 The assurance of attractive farm prices for a majority of producers is an important ingredient of production policy in a country striving for food self-sufficiency. In the Bangladesh context of wide seasonal price swings and sharp declines in farmgate prices of rice and wheat following good harvest, the Government's preparedness to offer an adequate support price is an essential component of enhancing farmer confidence in the expansion of modern input-based production techniques. Thus, the Government's domestic procurement of rice and wheat at a guaranteed minimum price is consistent with production goals and is likely to involve a sizeable financial outlay, particularly during good crop years. The nature of sales of foodgrains by the Government has also a bearing on the provision of production incentives. In the context of ensuring attractive farmgate prices, government sales ought to take place primarily in the lean seasons or lean years when prices tend to rise. In the lean periods, the Government's impact on prices would be greater if sales were at market prices. This is in contrast to the current practice of subsidized year-round public distribution. It is not implied, however, that government sales in lean periods would provide low cost cereals to those with low purchasing power. To meet this objective, public distribution of the lower cost cereal viz. wheat, is called for, obviously at some financial cost to the Government. This cost, however, would be lower than that incurred on year-round rice sales as at present, much of which, according to available evidence, does not reach the poor anyway. Therefore, the objectives of attractive farm prices and low cost food to the poor can be achieved at a lower financial cost to the Government than under the present public distribution system. The relationship of lean-season open market sales and the existing public distribution system to the procurement effort is discussed in greater detail in Chapter 4. The present chapter is devoted to a review of the adequacy of the procurement effort to serve as a price support mechanism. In the light of the foregoing, the main criteria of the procurement program in years of normal or better production is its effectiveness and success in maintaining village and wholesale market prices close to the procurement price during and immediately after the harvest, and by the cost efficiency with which that is achieved, rather than by the quantity of grain procured.

3.05 The procurement price announced before planting time should be a support price which is set at a remunerative level. Farmers must be confident they can sell their crop at approximately that price or a higher one. Only when this is the case will they be willing to accept the risk involved in purchasing the modern inputs required for high-yielding technology. A very

large share of marketing by farmers, and especially by those with less than 5 acres, takes place during the harvest season. The profit farmers receive will be determined, therefore, by the price they can realize at harvest time. For various reasons (e.g., lack of storage capacity, need to repay old debts, need to obtain cash to buy other consumer goods and commercial inputs for the next crop) the majority of farmers are unable to hold on to all the grain they need for their own consumption needs, and at some time during the lean season they will have to buy back -- at a higher price -- part of the grain which they sold at harvest time. Seasonal price stabilization is, therefore, of great importance not only for the urban and the rural landless consumers, but for the real income position of most farmers as well.

3.06 The effectiveness of the procurement system in strengthening farmers' incentives depends on the extent to which farmers at harvest time are able to receive the equivalent of the procurement price (adjusted, as needed, for farm-to-market transportation costs). While information on farmgate prices is sketchy, the Ministry of Food regularly compiles information on wholesale prices in 64 large market centers, which also have purchasing centers, and on village market prices. These latter are used by the Government as a proxy for growers prices. In reviewing this evidence it may be assumed that small differences between village and procurement prices probably reflect the economic cost of transportation. Any substantial difference, however, would suggest that either transport costs are unusually high -- which in turn would suggest the need for more conveniently located procurement centers or improvements in the transportation system -- or that there are non-transportation obstacles such as oligopsonistic powers of traders or bureaucratic red tape in the procurement centers, or that the size and impact of the procurement program is too small to achieve its support price objective. A separate enquiry would be needed to determine the cause of such price differences. Any significant differences between wholesale and procurement prices, however, are generally due to factors other than transportation costs, since the procurement centers are all located in market towns.

3.07 Available evidence indicates that the difference between village market and wholesale market prices in most districts is small in normal crop years. This in turn suggests that local grain markets function fairly well and that local transport in most of the country does not pose great difficulties for the grain trade. Village market prices usually average Tk 1 or Tk 2 per maund less than wholesale market prices in a normal crop year, though in a few districts these differences may reach Tk 4 to Tk 6.

3.08 By contrast, there have been large differences between village and wholesale prices on the one hand and procurement prices on the other, and this suggests the existence of serious imperfections in the operation of the procurement system. In December 1976, village market prices of aman paddy averaged roughly Tk 50-55 per maund in the surplus producing districts and averaged Tk 60 nationally, although the procurement price had been set at Tk 74 per maund. Wholesale market prices were even somewhat lower relative to procurement prices than indicated by these data because of differences in the definition of a maund and because of the discount commonly imposed by

procurement officers on the grounds of quality adjustments. <sup>1/</sup> These large differences between village and procurement prices go well beyond conventional marketing margins including the cost of transport from one market to the other and suggest that the procurement program has been inadequate to make it an effective price support program.

3.09 The same conclusion follows from a comparison of wholesale and procurement prices. Wholesale aman paddy prices in December 1975 and December 1976 were substantially below government procurement prices; in December 1976 they averaged Tk 53-58 per maund in eight surplus producing districts and about Tk 59 nationwide, although the official procurement price was Tk 74 per maund for three years. In December 1977, a good crop year, wholesale aman paddy prices came closer to the procurement price, averaging Tk 78 per maund, against a procurement price of Tk 84. (The FY78 aman procurement, not coincidentally, was the most successful in history, totalling 500,000 tons of rice equivalent).

3.10 Village and wholesale prices were much closer to procurement prices in FY79, the last full year on record. It appears, however, that this was not so much due to improvements in the procurement system, but mainly to the fact that the procurement price had remained unchanged at Tk 84 despite inflation that was adding to production costs and market demand while the market price was increasing in the face of crop failures. Drought adversely affected the aman crop and by late December was affecting the planting of boro.

3.11 Data also show that it is primarily in the surplus production areas that harvest prices are consistently below the procurement price. Annex 6 implies that procurement has varied considerably among regions; this does not always seem to be fully explained by price and production differences. Thus, there appears to be considerable room for strengthening procurement, especially early in the harvest season, in the surplus production districts.

3.12 It must be concluded from the foregoing that in past seasons the procurement price has not been a support price to the majority of farmers. The procurement price will only become an effective support price if the procurement system is able to absorb at all times all the grain offered to it

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<sup>1/</sup> Price comparisons between private markets and procurement centers are somewhat inexact because of differences in units of weights used; these result in an overstatement of private market relative to procurement prices. The standard maund used in all government transactions consists of 40 seers of 80 tolas each and weighs 82.286 pounds. In local markets, a maund varies by location but is usually 40 seers of 82 tolas to 85 or 86 tolas per seers. This weight difference means that the same nominal "per maund" price may actually be 2.5% to 7.5% higher at a government procurement center than in a private market. Grain dealers report this difference in weights as one of their reasons for selling grain to procurement centers. On the other hand, most grain at procurement centers is purchased at discounts that in the last two years have averaged about Tk 2 per maund because of moisture content, impurities, etc.

without too much effort and loss of time on the part of sellers. Government efforts to improve the system must deal with at least three major problems: (i) purchasing centers are relatively few in number; (ii) purchasing centers do not have the staff, equipment and storage capacity to absorb smoothly all the grain that is offered; (iii) access to purchasing centers has been largely limited to a small group of specially licensed traders (the Approved Grain Dealers) who have paid other traders and farmers considerably less than the procurement price. These shortcomings are discussed in the following paragraphs.

(i) The number of purchasing centers

3.13 The number of procurement points has increased rapidly in recent years, but is still insufficient. At present there are about 570 procurement points: 322 Local Supply Depots (LSDs) and roughly 250 Temporary Purchasing Centers (TPCs). Related to the country as a whole this means that each procurement point serves about 115 villages and about 95 square miles. Given lack of transportation facilities, the distance to the nearest procurement point is too great for the vast majority of farmers and even most small traders. Therefore, additional procurement centers are called for. In many other areas, however, establishment of new purchasing centers would be difficult since they cannot be reached by all-weather road. In such regions, the best solution may be to send procurement officers with trucks or boats into village markets on regularly scheduled days to buy all grains of suitable quality that is offered at the procurement price. Another possibility -- and one that should be strongly encouraged -- is to involve farmers' cooperatives directly in the procurement effort by advising these groups well in advance that procurement trucks will come to their village or the nearest market on a given day to purchase grain from them in any available quantities.

(ii) The capacity of purchasing centers

3.14 In addition to the need to increase the number of purchasing centers it is also necessary to expand their capacity to handle grains: this requires more storage and transport capacity, equipment and staff. Storage capacity, as well as the potential to transfer grain quickly to other storage facilities, is a weak point of the present procurement system. The 322 LSDs have about 525,000 tons of storage capacity which works out to an average of 1,600 tons per center. This should be sufficient to absorb a substantial offer of grain at harvest time. The 250 TPCs have an average storage capacity of only about 100 tons each. That inadequate storage and transport capacity is a problem is evident from a study <sup>1/</sup> in which 40% of the procurement agents interviewed reported that they had had to refuse to purchase rice because of insufficient storage space at some time during the FY78 aman season.

3.15 Procurement agents, moreover, often lack equipment to measure moisture content (now measured by chewing the grain) and foreign matter and other imperfections (now measured by visual examination). Such equipment would help speed up purchasing transactions and end disputes over quality standards. The

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<sup>1/</sup> Payment Study Group, World Bank, Second Foodgrain Storage Project.

Food Ministry also lacks the staff (and the budgetary resources) to keep the TPCs open at all times of the year at which grain may be offered. Farmers, many of whom are handicapped by illiteracy, complain that procurement officers often do not at the time of purchase (but only several hours later) fill out the quadruplicate copy Weight-Quality-Stock Certificate (WQSC) which the seller must take to a specified bank in order to be paid. Furthermore, the bank will not make payment until its own copy of the WQSC has been sent to it by the procurement officer. Therefore, farmers commonly spend one day selling their grain to a purchasing center and must go to the bank for payment the following day. Procurement officers also have reported a number of problems with the payment system, including that some banks will not make payments against WQSCs after 1 p.m. Some officers reported that the value of their daily purchases during the 1977/78 aman season exceeded the cash limit of the paying bank office, further delaying payment to some farmers because no cash was on hand and requiring additional trips to the bank. Moreover, the time schedule for formulating the Government's policy paper on procurement, getting the required Cabinet approval, announcement of the line of credit for procurement purposes by the Ministry of Finance, and the allocation of credit to individual banks by the Central Bank, has not always been followed in a sufficiently timely fashion for the commercial banks to arrange to have the necessary cash on hand in the appropriate branches. 1/

3.16 An important issue is the ability of the procurement system to buy grains from the aus, boro and wheat crops. Until FY78, about 90% of total government procurement of foodgrains was from the aman crop. Boro, wheat and aus and are all harvested during the April-October rainy season, and the two rice crops are, therefore, more difficult to store because of the rainy and humid conditions during that time of the year. Transport in most rural areas is also greatly impeded during this time of rains and floods. During FY79, however, the Government tripled its procurement of non-aman foodgrains, to 80,000 tons of boro, 50,000 tons of wheat, and 19,000 tons of aus. Given the relatively low level of aman procurement, these three together, therefore, accounted for 42% of 1978/79 procurement.

3.17 With the rapid growth of wheat production in the last several years, however, it is vitally important that the Government be prepared to procure much larger quantities of wheat if this most promising trend is to be maintained. Some observers suggest that the supply of wheat to the procurement system could amount to several hundred thousand tons this year. If the wheat price were allowed to decline to a level substantially below the procurement price in major producing areas, it could result in a sharp set-back to efforts to continue the rapid growth of wheat production. While the projected future growth of boro and aus production is much less, it is also important that their post-harvest farmgate prices be supported at incentive levels to encourage further growth (which will be dependent on additional irrigation and use of purchased inputs). Such price support operations for all four foodgrain crops will also increase the likelihood that the Government will have some domestically produced stocks for open market sales or other uses, since procurement can draw on temporary post-harvest excess stocks from all four crops rather than having to rely solely on the aman harvest. The Government has indicated

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1/ Ibid.

that it is giving high priority to expanding the capacity of the procurement system to support harvest prices for all rice crops and for wheat. This involves special difficulties, however, because of the high moisture content of these other crops harvested during the rainy season.

(iii) Access to purchasing centers

3.18 Merely setting up additional procurement points and expanding storage and transport capacity, however, will not assure that the procurement price will become an effective support price. The fact that village market and wholesale prices have been well below procurement prices in good crop years indicates that farmers face other obstacles and difficulties in selling to purchasing centers. Sales to the Government are primarily a domain of the Approved Grain Dealers (AGDs), who -- in return for a special license and a commission fee -- pledge to sell grain only to purchasing agents during the specified harvest season, to pay farmers the official procurement price, and to support the government's procurement drive by collecting grain from areas substantially removed from the purchasing points. <sup>1/</sup> The evidence is conclusive, however that the AGDs do not fulfill these functions. AGDs usually pay farmers or others from whom they buy grain "the going market price" and not the official procurement price, and they buy most of their grain in locations close to the purchasing centers.

3.19 Farmers complain about widespread collusion between AGDs and procurement officers. By bringing in large quantities, the AGDs help procurement officers meet their designated targets, in turn for which the officers give preference to the AGDs. Clearly the system is vulnerable to corruption. The Government modified and simplified several procurement regulations prior to the FY80 aman harvest that nominally should satisfy farmer concerns, including giving priorities to farmers when there is a queue of sellers. As noted in para. 2.16, small farmers should not need to actually go to procurement centers to benefit from these changes. However, it is important that it be possible for small farmers to be able to make sales to purchasing centers on the same basis and ease as larger dealers. While contrary to official regulations, it has been common practice to give priority to those who offered large amounts for sale, usually 50 maunds or more. It is much easier, quicker and more efficient (per maund procured) to check quality and moisture and issue the payment certificate for a large amount than a small. As a result, those with small lots have had to wait at peak periods until those with larger lots have completed their transactions. Farmers have frequently complained that they were also treated unfairly in judging the quality of grain and in the assessment of discounts or outright refusal to purchase on grounds of inferior quality.

3.20 Farmers' complaints gain credibility from the findings of a recent study of some purchasing centers which showed that AGDs bought 22% of all the grain they sold to the Government within the center's compound itself, and that

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<sup>1/</sup> Roughly 30 such AGDs are commissioned per purchasing center, although there may be 100-120 licensed grain dealers per Thana.

other dealers bought 9% at the purchasing centers. <sup>1/</sup> It is most unlikely that any farmer would sell to a dealer within the procurement compound except under considerable duress since then the dealer rather than the farmer receives the Tk 4 (now Tk 5) per maund transport bonus for delivering the grain to the procurement point. The new government regulations, effective with the current aman harvest, ban AGDs from operating within or near purchasing centers, but it is not clear how this measure can be enforced without substantial improvements in the ability of the staff operating these centers to deal with farmers and small traders and their small grain quantities.

3.21 Although free access of farmers and farmers' groups to the procurement system is of great importance for its effective functioning, the bulk of sales to the Government should be expected to be from private traders. It is very important, therefore, that the present oligopoly power of the AGDs be terminated and that all traders have equal access to the purchasing centers. Competitive functioning of the private grain trade is the best guarantee that farmers will receive the near-equivalent of the procurement/support price without oligopolistic profits being realized by a relatively small group of traders. The existing anti-hoarding regulations and a tendency to blame periodic high prices or shortages on the traders do nothing to improve the efficiency of the private grain trade, however, and probably hinder it. More beneficial would be measures to assure freedom of entry and competition (such as phasing out the category of AGD), to increase the flow of information (through, for example, radio broadcasts announcing prices and quantities traded in representative wholesale markets), standardization of weights and measures, increased harvest-time credit for farmers and small traders, and improvements in rural transportation. Such measures should add considerably to the efficiency of grain marketing throughout the country. The importance of a large, active and well-functioning private grain trade to reduce the volume of transactions required to be carried out by the Government is also discussed in Chapter 4 in connection with the public distribution system and government open market sales.

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<sup>1/</sup> From the first draft of a study of procurement centers being carried out by Dr. Jasim V. Ahmed et al. at Bangladesh Agricultural University with Ford Foundation Support, Table 16 and text (passim).

## CHAPTER 4. PUBLIC FOOD DISTRIBUTION AND CONSUMER PRICE STABILIZATION

4.01 The Bangladesh Government distributes a large amount of foodgrains at subsidized prices each year. While the system has served to help feed some of the poor, its major effect has been to provide Government workers and the urban middle class with a payment in kind protecting them against the erosive effects on their real income of seasonal and year-to-year fluctuations in food prices. The system is costly in administrative and in financial terms. Sizeable financial resources are foregone through foodgrain sales below purchase and market prices. As recommended earlier, the Government should move as quickly as possible to the greater use of open market sales as a means to achieve a reasonable degree of price stabilization and to direct what remains of the ration system exclusively towards the poor.

### A. The Present Distribution System

4.02 The public food distribution system (PFDS) started during the Bengal famine of 1943 has expanded rapidly since 1971. During the latter half of the seventies, it handled almost twice as much foodgrains as during the latter part of the sixties. At present, 13-15% of all foodgrains consumed in the country pass through this system and about 22-25% of the population are served by it in one form or another. Currently about 1.8 million tons of foodgrains a year are required to serve the system. As pointed out in Chapter 3, the major part of this -- about 75% -- is obtained through imports, which are mostly financed by concessional aid, and only 25% is procured from domestic production. 1/

4.03 Currently, the PFDS distributes foodgrains to consumers through ten operational categories: (1) statutory rationing, (2) essential priorities, (3) other priorities, (4) employees of large industrial establishments, (5) flour mills, (6) modified rationing, (7) Food-for-Work, and (8) relief, with relatively small quantities of wheat released occasionally for (9) market operations and (10) open market sales. 2/ All recipients pay essentially the same prices for their rations, but they do not all receive the same quantities. Statutory rationing now goes to about two-thirds of the residents of six cities 3/ and accounts for about 23% of total public distribution (FY79). 4/ Thirty-one percent goes to members of priority groups and employees of large enterprises. The essential priorities category includes members of the armed services, the Bangladesh Rifles, police, jail inmates and hospital patients, residents of student hostels and orphanages, and rural and reserve police; the other priorities category pertains to employees of government,

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1/ PFDS also distributes other food items (salt, sugar, edible oil), but these fall outside the scope of this report.

2/ See Annex 4 for a fuller description of these categories.

3/ Table 10.8.

4/ Table 10.4.

semi-government and autonomous bodies, educational institutions, railways, nationalized banks, BWDB, BADC, rural development workers, and employees of flour mills. The large enterprise allocation goes to employees of other establishments employing 50 or more persons (through the employers). Modified rationing goes mostly and entirely to rural areas. Relief distribution is primarily reserved for assistance in natural disasters.

4.04 At present, recipients of statutory rationing and members of priority groups receive grains at a subsidized price well below the market price. Currently, they are entitled to buy 1.5 seers of rice per week at a price of Tk 120 per maund (or about two-thirds of the late October 1979 market price) and 1.5 seers of wheat at Tk 100 per maund. <sup>1/</sup> Employees of large enterprises outside the statutory rationing areas receive 35 seers per month per family, normally consisting entirely of wheat. The proportion of wheat and rice in the ration has varied according to the relative availability of these grains in Government stocks. In December 1977, the Government established the proportion at equal quantities of rice and wheat in statutory areas. Outside statutory areas the proportion is two-thirds wheat and one-third rice.

4.05 Modified rationing allocations are determined according to estimated need outside the statutory rationing areas and according to government grain stocks. Modified rationing usually follows a marked seasonal pattern; most distribution takes place from June through November. The determination of eligibility for modified rationing is made by the Union Parishads, <sup>2/</sup> which are the lowest tier of Government. Residents in the rural areas are classified into four income (i.e., tax-assessment) categories, and distribution is usually limited to those in the lowest, tax-free income category. At times the second lowest income group has been included in the distribution, and in 1976 when grain supplies exceeded storage capacity all income categories were temporarily eligible. Villagers in many areas claim, however, that modified rationing is only rarely received in their villages and that most of the grain allotted to their Unions is sold for the personal profit.

4.06 The Union Parishads also control the distribution of grains under relief and Food-for-Work schemes that support work projects carried out under local initiative. Food-for-Work distributions are made for each day's work; males are required to move 70 cubic feet of earth per day and females 50 cubic feet, with some reductions for particularly difficult circumstances; for this they receive 3 seers of wheat, which under average circumstances usually amounts to about two-thirds of the daily wage for farm labor.

#### Public Distribution and the Poor

4.07 The public food distribution system is not primarily designed to reach the poor. Substantial beneficiaries of the system are those roughly two-thirds of the residents of the six statutory rationing cities who have ration cards, plus those employees of the government, the military, and public

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<sup>1/</sup> These quotas are for adults; children under eight and a half years are entitled to half this quota.

<sup>2/</sup> Union Councils.

and large private enterprises who are eligible for priority rationing. The majority of people in these categories are obviously not among the poor. In fact, the two chief concerns of food aid donors about the ration system have been (i) that it serves primarily the middle class and special interest groups rather than the poor, and (ii) that the subsidy involved is a serious drain on government budget resources that could be used to finance development. In FY76 only 55% of the total amount of grains distributed was made available to the rural areas, although these account for some 90% of the country's population. That the rural poor are not the target of the present distribution system is clear from the fact that the average rural resident received perhaps 28 pounds of foodgrains per year through the various forms of public distribution including Food for Work, compared with averages of about 212 pounds per year for each resident of a statutory rationing area, and 321 pounds per year for each adult statutory rationing card holder. If complaints of villagers about failure to receive modified ration grain allotted to their Union Parishads are true, the actual per capita benefit to the rural poor is even less.

4.08 It is likely that the present rationing system is also increasingly failing to reach the urban poor. As noted earlier, the Government stopped issuing ration cards to persons moving into statutory rationing areas after 1974 except in the case of public employees being transferred to these areas. A substantial majority of other migrants to these cities are rural poor looking for jobs. Since they must buy their foodgrains and other rationed items at open market prices, the proportion of the subsidized ration distribution going to the upper half of the income distribution has undoubtedly risen. 1/ The ratio of statutory ration card holders to total population in these six cities is estimated to have declined from about 77% in 1976 to 63% in 1979. 2/

#### Public Distribution and Foodgrain Subsidies

4.09 A major part of food imports -- particularly the wheat component -- is received on aid terms, whose sale even at subsidized prices represents some positive contribution to the Government budget. Nevertheless, on its overall foodgrain operations, the Government incurs a sizable subsidy -- a loss in terms of resources foregone. Part of the subsidy under the current ration system also stems from the fact that ration prices are far below the procurement price for domestic foodgrains. Some of the orders of magnitude of the financial implications of the Government's foodgrain and fertilizer operations are set out below.

4.10 Financial Impact. The revenues realized from sales of aid-financed foodgrain imports constitute a positive contribution to the Government's financial position. In spite of subsidized sales and the implied resources

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1/ Upper income families may resell the ration rice or wheat to buy other varieties and grades or use it to supplement the incomes of their servants, but they still benefit from the ration. Some poor families also sell part of their ration to buy other foods or make other expenditures.

2/ Table 10.8.

resources thus foregone, therefore, a positive financial impact may result from the Government's foodgrain operations as a whole even without imputing any value for the distribution of foodgrains under FFW. This was the case in FY79 -- in contrast to FY78 and the likely outcome for FY80 -- when the Government made a gain of about Tk 1 billion (without imputing any value for the distribution of foodgrains under FFW). This positive impact of foodgrain operations in FY79 was largely a result of low cash imports, low domestic procurement and substantial sale out of the previous year's carryover stocks.

4.11 Full Economic Subsidy. While the financial impact may be favorable or not, the opportunity loss due to the foodgrain subsidies remains large. Annex 5 describes in detail some of the problems encountered in defining and measuring the extent of these losses. If all aid imports are valued at world prices (c.i.f.), the overall losses are very large indeed. <sup>1/</sup> They range from about Tk 1.7 billion in FY78 to Tk 2 billion in FY79 and could be considerably higher in FY80 unless there is a further ration price increase. The subsidy per unit of sales of foodgrains, thus calculated, has been about half of the ration price; it increased from Tk 35/md in FY78 to Tk 47/md in FY79 and is expected to rise to over Tk 70/md in FY80. The increase in the unit subsidy thus measured is due to the faster increase in the imputed per unit cost of foodgrain acquisitions (domestically and from abroad) compared to the ration price increases. These figures are indicative of the large differences between domestic sale prices under the existing ration system and the "full economic" cost of foodgrain purchases; they do not necessarily indicate, however, that the Government might have been able to capture these differences. A calculation on the basis of domestic market prices provides a more realistic estimate of the opportunity loss on subsidized foodgrain sales. The opportunity loss thus measured was over Tk 1 billion in each of the past two years, which implies a loss of roughly Tk 25/md for wheat and rice combined. The opportunity loss on rice has been one-third and on wheat one-quarter of the ration price (see Annex 5).

4.12 Loss on Sales of "Own-Resource Purchases". The Government itself estimates its cash losses on the sale of foodgrains bought with its own resources (i.e. domestic procurement plus cash purchases from abroad) at roughly Tk 1 billion annually since FY74. In the years since FY77, this loss has been about 10% of Central Government current expenditures. The per unit rate of loss for rice and wheat combined was Tk 56/md in FY78; it increased by about 7% to Tk 60/md in FY79, mainly due to an expansion of the sales of rice, which has a larger unit subsidy. The recently announced increases in domestic procurement prices will imply further increases in the unit subsidy in FY80, unless ration prices are also revised upwards or rice sales through the ration system are replaced by open market sales. More than half of the loss on sales of "own resource purchases" is usually attributable to the subsidized sale of domestically procured grains. The rate of loss on sales of domestically procured grains in the past two years was about Tk 63 per

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<sup>1/</sup> The use of world prices to value aid imports overstates the extent of the foodgrain subsidy because "world prices" generally refer to better quality grain than that received under aid.

maund for rice and Tk 28 per maund for wheat. In FY80, these unit losses are projected to increase, the magnitude of the increment depending on the extent to which ration prices are increased during the year.

#### B. Recommended Changes in the Public Distribution System

4.13 The public distribution system as presently operated entails heavy costs, but fails as a system to benefit the majority of poor. The rural poor, who at best receive only a small portion of their foodgrains from Food for Work or other public distributions, the urban poor outside the statutory rationing areas who do not receive priority or large enterprise employee allocations, and those urban poor in statutory rationing areas who do not have ration cards, receive little or no benefit from the ration system. In view of many constraints it is unfeasible, however, to restructure this system in such a way that it would reach all of the poor, particularly those in rural areas. The administrative and budgetary resources that would be required to do this are not available and furthermore it is not cost effective to rely on food policy as the sole instrument to solve the poverty problem.

4.14 All consumers including the poor, however, would benefit to some extent if the variations in rice prices between aman harvest lows and summer peaks were limited to about 20%. High peak prices are especially difficult to bear for the poor. Greater stability of food prices would minimize the need to provide food security for public sector workers and the urban middle class through the ration system. Limiting seasonal variations in food prices to about 20% will require that the Government operate an effective procurement system at a support price level and conduct substantial open market sales of rice (and perhaps also of wheat) during the months of short supplies and high prices.

4.15 Once such a system of open market sales is fully operative, there will be no need for subsidized food sales or distribution to any but the neediest. Since open market sales would take place at or near market prices when they are rising, most of the financial losses of the present ration system would be eliminated. This would be true even if present statutory and priority ration holders were to be compensated for the loss of the benefit they now derive from the existing system through a salary or wage increase, provided the basis for the compensatory increase were annual average rather than peak prices.

#### C. Requirements of a System of Open Market Sales

4.16 The operation of a system of open market sales is simple in principle, constituting essentially the mirror image of the procurement system as discussed and recommended in Chapter 3. It requires the release during periods of rising prices of sufficient quantities of grains from public stocks to keep the price from rising above a certain ceiling. In good crop years, considerable procurement may be possible at harvest time which will give the opportunity to replenish public stocks; in such years releases during the lean season might be relatively small and there might be a carryover of stocks to the next year. In poor crop years, procurement at harvest time will tend to

be small, but releases during the lean season large; the system should then draw on stocks carried over from good years and on imports financed by aid or the Government's own resources.

4.17 In practice, the requirement for effectiveness of a system of open market sales is essentially the availability of sizeable stocks and the Government's commitment to operate such a system and the free functioning of the private grain trade. The system should be backed up by the proposed professional secretariat of the Food Policy Monitoring Unit. Substantially more stocks are required than have been available to date; donors and Government should work together to build up stocks as well as needed storage and transport capacity according to an agreed time schedule.

(i) Management of Open Market Sales

4.18 The Secretariat recommended for the FPMU, with the role of monitoring food production prospects and import schedules, should collect and analyze the prospective supply and demand information upon which the forward planning of a price stabilization program would have to be based. The actual conduct of open market sales would take place on the basis of information available to the FPMU Secretariat and should be carried out by a small group of officials, perhaps three or less, who will work within agreed guidelines. Such an operating cell would need to be in existence year round, even though sales might be limited to a few months in most years. The period of those sales is not easily predictable.

4.19 The chief difficulty of establishing an operating cell could be the conflict between desires of the political leadership and senior officials for some degree of control, and the necessity to delegate authority for the conduct of open market sales. One possibility would be to have an open market sales committee that would meet periodically to establish general guidelines for prices and volumes. Such a committee might include members of the FPMU, the FPMU Secretariat, and the operating cell itself.

(ii) Private Grain Trade

4.20 Successful large-scale open market operations require the free operation of the private grain trade within whatever basic controls are necessary to assure that no cartel or group of traders acting in concert is able to manipulate or control prices. Such a competitive market will serve a vital public function in buying up food stocks in periods of relative plenty and soft prices and holding them for sale in times of lesser availability and somewhat higher prices, and in shipping grain from areas with excess stocks to those with short supply. Numerous private traders making their own business judgments and operating with low overhead costs can do this more flexibly, quickly and at lower real cost to the economy than can a large government enterprise or bureau.

4.21 Tens of thousands of private grain dealers and traders now operate in Bangladesh. Relatively little is known about their business, partly because of anti-hoarding laws. Under these, private traders are subject to fines for

hoarding if they hold more than 500 maunds (about 18.5 tons) if they are wholesalers or more than 50 maunds if they are retailers, if they hold grain for more than 20 days, or if they hold grain in one location for more than seven days. These highly restrictive provisions essentially force all large traders and many smaller ones to break the law every day, make them secretive about their operations, and open them to blackmail. The larger traders and brokers play an important role in holding, transporting and financing food stocks, however, and the Government would have to shoulder a significantly heavier financial, administrative and economic burden if it were the only holder of off-farm stocks except for small village dealers and retailers. Other than traders, only the Government and the largest farmers (who are also de facto traders) have the physical and financial capacity to hold stocks for extended periods. If the Government were to have to store all but personal consumption stocks, such a massive operation would be much more costly (including budget subsidies and capital costs) than if it were largely handled by private traders, and the system would be less flexible and much more likely to result in at least local shortages. Also, the costs of a government miscalculation of supplies or requirements would be of much more tragic and monumental proportions if there were not also sizable private traders' inventories.

(iii) Introduction of Open Market Sales

4.22 Once the Government has sufficient stocks and knowledge of market trends and market behavior, it will be able to utilize its buying and selling policies to keep price fluctuations within a limited range of, say, 20%. At that time it should be possible to dispense with subsidized grain distribution to all but the neediest. The Government would release grain in adequate quantities and sufficiently early in the lean seasons to achieve its price stabilization targets until the next harvest eases the pressure on consumer prices. This is clearly the first best solution. In the immediate future, however, stocks are likely to be insufficient to sustain the volume of open market sales needed to achieve this degree of price stability. In view of the limited volume of stocks likely to be on hand in the summer of 1980, initial open market sales will have to be relatively modest in size and therefore the ration system can be reduced only gradually during the next year. To be most effective, open market sales when stocks are still below optimum should start later in the lean season -- aiming at mitigating price peaks rather than at slightly influencing the behavior of prices throughout the lean seasons. Release of small quantities early in the lean season would probably be ineffective; traders might pick up and hoard much of what were offered and secure for themselves a profit which the Government itself could have earned by waiting till a later date.

4.23 As public stocks are built up to the optimum level, open market sales could be stepped up and extended over a larger part of the lean season, and the ration system could be gradually redirected to only the neediest. Even then, however, the Government should be cautious about releasing grains too early in the lean season. This might be particularly important in the first year or two of substitution of open market sales for ration distribution, because private traders and households may be skeptical that the Government has the necessary stocks to maintain stable and moderate price levels.

If traders and the public have such doubts, they may want to stockpile grain against the possibility that the Government will eventually have to curtail its sales and permit prices to rise, perhaps sharply. It is important, therefore, that Government stocks be adequate to persuade traders and households that the Government's stabilization efforts will be successful. To avoid the market-psychology dangers of a failure to keep prices below a precise previously-announced target, it should not be specific about its target price. Rather, it should stress the substantial quantities of grain on hand and in the import pipeline, and its general price stabilization strategy of domestic procurement at harvest time and open market sales in the lean season. Also, available stocks must be allocated over the entire period until the next harvest and never be allowed to fall to levels where the Government would have to stop selling while demand still exceeded other market supplies. As public confidence grows in the Government's ability to stabilize grain prices through procurement and open market sales, it will become easier to reduce the ration system and to reserve food distribution at subsidized prices for the neediest.

4.24 Open market sales could be conducted from the existing LSDs and CSDs, as each depot could also be an open-market sales outlet, provided it had sufficient stocks to make sales worthwhile. Little or no additional auditing or surveillance of stocks and transactions would be necessary beyond those now in effect, though the volume of Government purchases and distribution would probably be greater. There would be no need to pressure any dealers in a specific location to buy from the Government: if the Government offered to sell grain when the market price reached a point where sales were judged appropriate, the market price could not rise much above that price without numerous purchasers coming forward.

(iv) Stock Requirements

4.25 Accurately estimating the quantities of foodgrains required to operate open market sales as an effective price stabilization mechanism for prolonged periods throughout the year under various ration system and policy alternatives, and of the stock levels required for such operations, requires more detailed analysis than has been possible for this report. If the ration system were considerably reduced, as recommended in this and the December 1977 Bank report, however, then stocks required for its operation would be correspondingly reduced while those necessary to operate open market sales would increase. As one possible example, if the ration distribution were limited only to wheat (or other non-rice grains), statutory and priority rationing were halved (perhaps 1.5 seers of wheat per week), and flour mills had to buy all their grain on the open market, but modified rationing and Food-for-Work continued at least at historic levels and more of the urban poor were reached, total offtake might fall to 1.2 million tons annually, or an average of about 100,000 tons per month. With projected import needs of, say, 1.5 million tons to help meet consumption and stock replenishment needs in FY82 (see Chapter 5, Table 5) and domestic procurement of perhaps 900,000 tons (out of projected production of 15.1 million tons), open market sales might need

to total 1.2 million tons. 1/ As shown in Table 5, this would provide total availabilities of nearly 16 ounces of grain per day per person and should keep market prices at fairly stable levels throughout the year. Actual sales might need to be less or more to follow a particular set of monthly price targets chosen so as to encourage farmers and private traders to continue to be willing to store grain, but also to limit the seasonal swing between harvest low and lean season peak prices for rice to about 20%.

4.26 Insofar as such open market sales might involve both rice and wheat, estimates of the relevant cross elasticities are also needed -- but not readily available. In the absence of such information, only rough estimates are possible indicating no more than a likely range for each relevant parameter and quantity. Since the main objective is to stabilize lean-season rice rather than wheat prices, sales of a given amount of rice will, of course, have a greater effect than sale of the same amount of wheat. Also, the same amount of rice sold into the market will lower prices more than would the same amount distributed through the ration system at subsidized prices, since subsidized prices also have income and substitution effects which encourage additional consumption of the subsidized commodity.

4.27 A rough calculation, which is more fully elaborated in Annex 7, suggests that during the July-October lean season, the Government should have sufficient stocks at hand or in the assured import pipeline to convince traders that monthly releases from its stocks of as much as 300,000 tons (for all categories of offtake combined) are clearly feasible--and likely if the traders curtail their own marketing in order to wait for better prices later during the lean season. 2/ It may not be necessary to actually release this much every month, but it will certainly be necessary to show such a strong position to the grain traders and the public. Including the usual provision for losses, therefore, public operational stocks in hand (exclusive of 600,000 tons of emergency reserves) on July 1 should be on the order of 950,000 tons -- with assured imports of at least 750,000 tons scheduled for arrival during the July-October period. If the assured import pipeline is larger, operational stocks could be somewhat lower, but less than 800,000 tons of operational stocks on July 1 could make it difficult to persuade grain traders and the public that the Government's resources were sufficient to operate open market sales on a scale large enough to limit seasonal price increases to 20% above post-harvest lows.

4.28 Underlying these estimates is the recommendation that routine off-takes from government stocks through traditional channels should eventually be restricted to a maximum of about 100,000-120,000 tons of wheat per month even during the lean season -- mainly for Food-for-Work, direct relief where

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1/ If Government stocks are to remain unchanged, then imports plus procurement must equal distribution through the ration system plus open market sales plus storage and handling losses.

2/ This would be in addition to the public stocks required to cope with emergencies.

necessary, and other rationing categories aimed at the lowest-income groups -- while a minimum of 100,000 tons and possibly as much as 200,000 tons of rice and wheat should be sold monthly in the open market during lean season peaks. The somewhat greater uncertainty concerning the quantities to be released through open market sales -- compared to the relative certainty of forecasting traditional ration offtake -- cannot be avoided since open market sales, by definition, cannot be targeted to specific recipients whose number and consumption needs are known. While this introduces an element of uncertainty, it is in fact one of the chief advantages of open market sales compared to targeted quantitative distribution of foodgrains, because it will help spread the benefits of increased overall grain availability to all parts of the population instead of only to those groups specifically included in the ration system's various categories. In addition, effective stabilization of consumer prices for rice will certainly imply the stabilization of daily average consumption levels above the present minimum target of 15.5 ounces per person for the year as a whole, thus indicating the need for greater total grain supplies than in past years. Stabilizing consumer prices and directing more wheat distribution to the poor will increase overall consumption because of the elasticity of demand by low income groups. This additional demand could be met by increased private sector production and sales, or by greater government purchases of domestic or imported grain and additional open market sales.

4.29 It is recommended then that when the system of open market sales is in full operation, only wheat be used for distributing the perhaps 100,000-120,000 tons of grains required per month to operate the traditional ration system. The entire available stocks of rice should be utilized for open market sales. Sales of wheat in the open market should be undertaken if necessary (i) to stabilize wheat prices and/or maintain a reasonable price differential between rice and wheat so as to encourage the shift from rice to wheat consumption throughout the country, and (ii) to increase the overall availability of foodgrains in the market and -- relying on the cross elasticity between rice and wheat -- thereby support the rice sales program if and when the available rice stocks are insufficient to hold the rice price below the target ceiling.

4.30 The stocks required for price stabilization through open market sales should be seen as part of the country's total requirements for public foodgrain stocks. Stocks are required for four purposes: (i) to operate the established public grain distribution system -- this requirement should decline when public distribution is limited to the neediest; (ii) to operate an effective system of open market sales; (iii) to meet emergency requirements -- emergencies can be general, country-wide and to some extent foreseen (such as crop failures) or geographically limited and unforeseen (such as floods and cyclones); the implications for stock requirements are different; and (iv) to maintain at all times a certain minimum level of stocks in the system (dead stocks) -- because of transport and administrative constraints, the system cannot effectively operate when stocks fall below a certain minimum. Needs arising from these various requirements are reviewed in Annex 7 of the report. It will be clear

that there is some overlap between the different stock requirements and that they are, therefore, not fully additive and that calculation of stock requirements demands some judgments about the degree of protection that is desirable to guard against the effects of certain chance occurrences. In the following table, the aggregate level of public stock requirements is estimated for July 1 and November 1, just before the aman harvest.

Table 4: AGGREGATE OPENING STOCK REQUIREMENTS  
( '000 long tons)

	<u>July 1</u>	<u>November 1</u>
1. Operational stocks <u>/a</u>	950	550
Ration and priorities	(600)	(400)
Open market sales	(350)	(150)
2. Security stocks	600	600
3. "Dead stocks"	150 <u>/b</u>	150 <u>/b</u>
<u>Subtotal</u>	<u>1,700</u>	<u>1,300</u>
- Adjustment for overlap <u>/c</u>	<u>-200</u>	<u>-100</u>
<u>TOTAL</u>	<u>1,500</u>	<u>1,200</u>

/a As the system shifts increasingly from direct ration distribution to OMS operations, the allocation requirements for the two categories of operational stocks will shift in favor of OMS.

/b Absolute minimum.

/c See para. 4.30 and Annex 7, para. 39-40 for detailed explanation.

4.31 The 1.5 million stock target is unlikely to be met, of course, by July 1, 1980. Given the severely depleted state of public grain reserves at the beginning of the current fiscal year, the unfavorable prospects for internal procurement from the 1979/80 aman crop, the mission projects that approximately 850,000 tons of grain would have to be imported during January-June 1980 in order for closing stocks on June 30, 1980, to be on the order of 1 million tons. It is necessary that negotiations proceed quickly in order for these and additional imports to arrive before June 30 or slightly thereafter. Falling short of the estimated overall stock level required, however, should not stop the Government from initiating open market sales on a limited scale during the lean season of calendar year 1980. The scale of these operations will, of course, depend on the firm commitments and the firm scheduling of additional grain imports that can be obtained from food donors to guarantee the steady replenishment of the Government's in-country stocks throughout the entire lean season. If the levels of domestic procurement and food imports are as recommended in Chapter 5, the Government of Bangladesh will be able to initiate the proposed shift from subsidized distribution and crisis management to a system in which the objectives for production and consumption are integrated into a consistent and rational food policy. With sufficient cooperation from donors and determination on the part of the Government, it should be possible to approach the target stock level of 1.5 million tons by July 1, 1981, and to complete the change-over to the new system by that date.

### Steps for Rationalizing Food Policies

4.32 If donors are prepared to make available the necessary imports to permit building up stocks to the levels necessary to substitute open market sales for much of the existing ration system, then the Government of Bangladesh should be prepared to adopt a timetable for changes in its public foodgrain distribution system. Elements in such a timetable might include specific dates by which:

- (a) the procurement system will be made an effective support price mechanism;
- (b) open market sales to limit price increases will begin;
- (c) ration shop prices for rice and wheat will be raised so as to narrow the subsidy per unit of grain (but keep the ratio of rice to wheat prices at a level which will encourage wheat consumption);
- (d) the rice component of the ration system will be reduced substantially and wheat, sorghum or other coarse grains be substituted, eventually eliminating rice altogether;
- (e) those in the top half of the income distribution scale will be removed from access to foodgrain ration. (If rice is fully eliminated from the ration system and the subsidy reduced, this step may become less important because of reduced purchases from the relatively better-off);
- (f) once public confidence in price stabilization capability has been well established, and the difference between ration shop and market prices has been progressively reduced, the ration shops may be operated as welfare shops serving only the poor or the ration system be eliminated entirely, but other programs (such as Food-for-Work and relief) be strengthened to help meet the nutrition needs of the poor.

4.33 A further complementary step in the rationalization of food policies concerns the subsidies on inputs, particularly fertilizer. Given the traditional nature of Bangladesh's agriculture, the Government has assumed leadership in the propagation of the use of modern inputs, selling fertilizer as well as other modern agricultural inputs at substantially subsidized prices. Although the sale of aid-financed fertilizer imports makes a positive contribution to the Government's budget, the subsidized sale of fertilizer -- like that of grains -- on the whole implies a sizeable amount of foregone financial resources to the Government. With the growth of fertilizer consumption, the full economic subsidy borne by the Government on account of fertilizer sales has grown rapidly, in spite of increases in the retail price. For FY80 it is estimated at Tk 1.1 -1.3 billion, or between 17% and 21% of the Government's development expenditures in the agricultural sector.

4.34 The objective of the fertilizer subsidy has been to stimulate the use of this input in order to raise foodgrain production. As discussed in

the Bank's most recent economic report, <sup>1/</sup> however, the objective of raising foodgrain production can probably be reached at far lower cost by maintaining adequate producer prices for output. Moreover, since fertilizer supplies have been insufficient to cover all of the demand, it appears difficult to justify the heavy strain which the present subsidy level puts on the budget. By most accounts, particularly the smaller farmers in many areas have had to pay much more than the subsidized price, with the margin benefiting traders (often large farmers themselves). And finally, in view of the projected rapid growth of fertilizer consumption and the increase in domestic production, the full cost of the subsidy and the financial impact is bound to become an increasingly heavy burden. There seems to be ample reason then for the Government to consider a phasing out of fertilizer subsidies as part of a program aimed at rationalizing food policies and increasing investment in agriculture and irrigation.

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<sup>1/</sup> Bangladesh: Current Trends and Development Issues (Report No. 2245-BD), December 15, 1978.

CHAPTER 5: SUPPLY AND DEMAND PROSPECTS, FY80-82  
IMPORT AND POLICY IMPLICATIONS

5.01 This chapter sets forth some projections of the prospective "food gap" through FY82 and appraises their implications for import requirements and to a limited extent for other possible means of donor support for Bangladesh's food policy objectives.

5.02 Notwithstanding the unprecedented rate of food importation in the first half of FY80 and the assumption that a relatively rapid growth of production can be achieved following the current aman crop, Bangladesh will still need to import an estimated 850,000 additional tons between January-June 1980 and perhaps 1.8 - 2.0 million tons during FY81 in order to raise public food-grain stocks to 1 million tons by June 30, 1980, and to 1.3-1.5 million tons at end FY81 as recommended in Chapter 4. These estimated requirements also constitute this report's recommendation to the Aid Group concerning the value of food aid that should be provided. Import requirements are projected to decline to about 1.5-1.7 million tons in FY82. If foodgrain production were to increase by 4-5 percent thereafter, import needs could decline by 100,000 to 250,000 tons annually in succeeding years, after allowance for growth of incomes and consumption. Some vagaries around these trends are to be expected, of course, given the variability of weather and other uncertainties. The above estimates are based upon two premises: (a) that weather conditions during the projection period will be no worse than average; and (b) that the high priority now being given to food production in Government planning will be accompanied by real improvements in implementation capacity, particularly with respect to the delivery and fuller utilization of inputs on the scale described in Chapter 1.

5.03 Future import requirements will depend not only on production but also on the speed and extent to which public stocks are rebuilt and increased. The experience of FY79 illustrates how quickly stocks can be depleted even without a sudden disaster such as a cyclone. As discussed in Chapter 4 (and analyzed in more detail in Annex 7), the Government's new stock target of 1.5 million tons on June 30 of each year seems appropriate in light of the objectives of simultaneously meeting seasonal and emergency needs and of creating an environment in which modifications in the public distribution system can be implemented. In the following projections, it has been assumed that it will not be feasible to achieve the 1.5 million ton stock target before the end of FY81 and possibly not before the end of FY82, depending upon the speed with which new storage facilities can be installed and existing ones improved.

5.04 Table 5 presents an indicative scenario of how Bangladesh's food situation and public foodgrain operations might evolve over the coming thirty months. Some of the underlying assumptions have been indicated in para. 5.02; others are noted in footnotes to the table and in the text which follows. An appendix to the chapter provides somewhat greater detail, on a year-to-year basis concerning the assumptions underlying the projected behavior of each of these variables.

5.05 It may be useful to note some of the salient characteristics of the trends portrayed. A first point to be recognized is that the current year, FY80, has to be appraised in the context of the FY79 drought, which had such adverse effects on the FY79 aman and boro and the FY80 aus and (projected) aman crops. The extent of this impact is readily seen by comparing the FY80 production figures with the figures in the left-hand column showing the highest levels previously achieved. It remains to be seen, of course, what the FY80 levels of boro and wheat production will be. But even if record levels are achieved for both these crops, it still appears that 2.8 million tons of food imports (about the level of the previous record) will be required during the current fiscal year in order to permit the stock level to be raised to one million tons by June 30, 1980. <sup>1/</sup> Of this total projected import requirement, about 1.94 million tons had arrived (or were scheduled to arrive) between July and December 1979, leaving a gap of about 850,000 tons to be filled between January and June 1980.

5.06 In spite of the great volume of imports already secured, the public stock position at the beginning of 1980 is not much different from that of the year before. The poor FY80 aman crop will limit the extent to which domestic procurement can be pressed, while a relatively high level of offtake will have to be maintained for the remainder of the fiscal year even to achieve an average per capita consumption level of only 15 oz. per day -- i.e., 0.5 oz. below the traditional minimum target of 15.5 oz. per day. In sum, the likely FY80 scenario may be characterized as one of depressed production and consumption, moderate procurement, high offtake, and large import requirements.

5.07 In the presentation of Table 5, the level of imports constitutes a residual item which balances projected foodgrain sources and uses. In other words, the level of required imports is projected as a function of assumed levels of domestic production, procurement, offtake, and stock targets for each of the years FY80-82. These variables are, of course, not independent of each other. An important point to be noted in this respect is that the public distribution offtake figures shown in the table are not just for the ration system but also include substantial open market sales of rice recommended for FY81 and FY82. Domestic procurement is essentially a function of domestic production of individual crops, whereas the level of public distribution (including OMS) is a function of procurement, import availabilities, and minimum per capita consumption levels to be ensured. Thus, the required (and recommended) import levels are defined not in terms of the traditionally-defined "gap" between minimum consumption requirements and domestic availabilities, but rather in terms of what is needed for the Government to meet the dual objectives of (a) operating its grain distribution and open market sales successfully, and (b) building up its end-year stocks to the levels deemed necessary and sufficient both to stabilize market prices and to meet minimum nutrition requirements for the population in subsequent years.

5.08 It follows from this approach that per capita (apparent) consumption would rise somewhat above 15.5 oz. per day in FY81 and FY82. This is

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<sup>1/</sup> This was the stock level target recommended by the World Bank report entitled "Bangladesh: Food Policy Review", December 1977 (1764a-BD).

**Table 5: FOODGRAIN PRODUCTION, IMPORTS, PROCUREMENT, DISTRIBUTION, CONSUMPTION AND STOCKS, FY80-FY82**  
(in '000 long tons, unless indicated otherwise)

	Highest Level To-date	FY80	FY81 (Proj.)	FY82 (Proj.)
<b>Production: /a</b>				
Aus	3,288 (FY78)	2,650	3,400	3,500
Aman	7,422 (FY78)	7,100 (est.)	7,500	7,700
Boro	2,286 (FY76)	2,400 (proj.)	2,500	2,600
Wheat	486 (FY79)	800 (proj.)	1,100	1,300
<b>Gross Production</b>	<b>13,107 (FY78)</b>	<b>12,950</b>	<b>14,500</b>	<b>15,100</b>
Less 10% feed, seed, wastage	1,311 (FY78)	1,295	1,450	1,510
<b>Net Production</b>	<b>11,796 (FY78)</b>	<b>11,655</b>	<b>13,050</b>	<b>13,590</b>
Domestic Procurement /b	550 (FY78)	500	700	900
Public Distribution (incl. OMS)	2,618 (FY73)	2,300	2,000	2,200
Apparent Consumption /c - total	...	13,455	14,350	14,890
" " - oz/cap/day	17.11 (FY70)	15.0	15.7	15.9 /f
<b>Stocks</b>				
Opening Stocks, July 1	...	209	1,000	1,300(-1,500)/e
(+) Domestic Procurement	551 (FY78)	500	700	900
(-) Public Distribution	2,618 (FY73)	2,300	2,000	2,200
(-) Storage and Handling Losses /d	...	200	165	170
(+) Required Imports	2,825 (FY73)	2,791	1,765(-1,965)	(1,470-)1,670
Closing Stocks, June 30	...	1,000	1,300(-1,500)/e	1,500

... = Not applicable.

/a Assumes good growing conditions from December 1979 onwards, and that the availability of production inputs steadily improves.

/b Estimated procurement if the procurement price is maintained in real terms and as an effective support price.

/c May be calculated as net production plus public distribution minus procurement, or alternatively as net production plus imports minus the change in public stocks and stock losses.

/d Calculated as approximately 3.6 percent of turnover of public stocks, defined as imports plus procurement plus distribution.

/e Depending on limits imposed by storage capacity.

/f Successful OMS will imply and, in fact, require stabilizing average consumption levels above the traditional minimum consumption target of 15.5 oz/day/person.

Source: BBS, and mission projections.

because the operation of OMS on a scale sufficient to stabilize market prices within a band of 20% throughout the year would imply and require increased average consumption levels during the lean season. In the recent past, the lean-season consumption rate has been well below the 15 oz. level. 1/

5.09 These considerations are relevant to interpreting the behavior of public distribution offtakes as projected in Table 5. The high level of offtake in FY80 reflects mainly the stepped-up distribution during the past lean season, when the 1979 boro and aus production levels were very low and domestic rice prices very high. The projected offtake decline in FY81 reflects mainly the presumption that FY81 production will be much improved and that, with consequently lower rice prices, the need for ration system distributions will be substantially reduced -- thus permitting a net reduction in total offtakes despite a projected increase in OMS. For FY82, the projected increase in total public distribution presumes that OMS will continue to expand, facilitated by a higher rate of procurement which will in turn be facilitated by further growth in foodgrain production.

5.10 With respect to the projections of food production, wheat production in particular is expected to continue to increase rapidly. Whereas only a modest increase is shown in FY81 boro production over the projected FY80 level, the recovery of aus and aman production in FY81 would contribute to a very substantial increase (11%) in FY81 gross foodgrain production above the depressed FY80 level. This might at first appear so great an increase as to be unattainable. But it should be noted that this would represent only a 4.2 percent increase over the levels of aus and aman previously attained plus the levels of boro and wheat expected in FY80. The projected further increase in gross production in FY82 (4.1 percent above the projected FY81 level) would be along the production growth path outlined in the illustrative scenario described in Chapter 1.

5.11 Finally, it will be seen that -- notwithstanding the substantial growth expected in production and procurement in FY81 and FY82 -- import requirements are projected to remain quite high into FY82. This high level of imports is to be seen as supportive of the objective of raising stocks, so that a more flexible and rational food policy can be pursued. After 1982, a steady decline in food import requirements would result from continuing gains in production. 2/ Year-by-year details of the assumptions underlying the projections, as well as a further discussion of some of the policy implications, are provided in the Appendix to this chapter.

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1/ In FY80, the July-December average per capita consumption level has been estimated at only at 14.7 oz. per day (see Appendix Table 14.3). It should also be noted that 15.5 ounces of rice or wheat is the equivalent of only 1,570 calories, and that average per capita grain consumption in FY70 (the last year before independence) was 17 oz. per day.

2/ The precise rate at which future import requirements would decline will depend on the extent to which the rate of production growth exceeds the rate of population growth, accounting also for a positive income elasticity of the demand for food.

5.13 In the event, of course, the actual values of the variables described in Table 5 will undoubtedly differ from the values projected. The projections are "normative" and indicative, rather than "positive" forecasts. This distinction is important, since the scenario is meant to focus attention not so much on "what is expected to happen" as on the issue of "what needs to be done" in order to achieve a desired set of interdependent objectives.

5.14 Preceding chapters have provided a rationale, and have set forth various recommendations to the Government of Bangladesh, for defining the objectives, improving the design, and strengthening the implementation of food policy in Bangladesh. Underlying the scenario described in Table 5, therefore, is the premise that Bangladesh can and will succeed in the coming months and years to raise food production, increase procurement, expand OMS to stabilize food prices, rationalize the ration system and make it more of an instrument for achieving equity objectives, reduce subsidies, and strengthen overall food policy management and coordination. The domestic resources and support and policy instruments that must be brought to bear to achieve these ends have already been discussed. But it is obvious that considerable foreign resources and support will also have to be mobilized. The present chapter has given an indication of the volume of food aid which may be required. It is beyond the scope of this report to consider specifically which other modalities of foreign assistance will need to be mobilized. It is obvious that, insofar as Bangladesh's food problem is a production problem, considerable project aid and complementary technical assistance will be needed to enable Bangladesh to approach food self-sufficiency. Similarly, foreign assistance will be needed to support the rehabilitation and construction of foodgrain storage facilities required to hold the recommended stock levels.

5.15 There are obviously many other components of a better food security system -- ranging from improved agricultural statistics to more adequate transportation facilities -- that may call for foreign project and/or technical assistance. This report (including its Annexes) has identified a number of areas in which better information and further analysis is warranted. Program (non-project) aid will also be needed in substantial quantities to finance imports of fertilizers, pesticides and other intermediate inputs. And finally, looking ahead to the time when growing domestic production will permit a steady and substantial decline of food aid, donors may temporarily wish to share with the Government -- through increased program aid and/or local currency financing -- the burden of generating those counterpart funds which food aid now provides through sales of aid-financed food.

5.16 The questions of Bangladesh's overall aid requirements and the relative priorities of aid needs are, of course, matters to be considered at regular Aid Group meetings. It is envisaged, however, that the Government's Memorandum to the January 1980 Aid Group meeting, which will state the Government's priorities and programs for food policy development, will also indicate those areas in which particular forms of foreign assistance are most needed.

Appendix to Chapter 5: ASSUMPTIONS UNDERLYING THE PROJECTIONS IN TABLE 5

1. This Appendix provides greater detail, on a year-by-year basis, of the assumptions underlying the projected behavior of the variables described in Table 5.

The FY80 Projections

2. The aus production figure is the official estimate for the 1979 harvest. The aman harvest now underway is currently projected at only 7.1 million tons because of considerable losses in the broadcast aman crop and low yields from transplanted aman, the latter due to reduced tillering which in turn was the result of late transplanting. Boro and wheat production projections are high in comparison with historical experience, amounting to a 24% increase for boro over the very low FY79 output and a 65% increase for wheat above the FY79 level, although both projections shown are below Government targets. These two crops compete for land. Wheat production has risen rapidly, while boro output has been virtually stagnant in the last several years. Since wheat is more drought resistant and requires only one-third to one-half as much water as rice, farmers take much less risk in growing wheat. These are also the two crops for which the most suitable HYVs have been developed. Boro production nearly quadrupled and yields nearly doubled between FY65 and FY75, but both yields and production declined moderately thereafter. In FY79, boro production declined to an estimated 1.9 million tons, equivalent to about 15 percent of annual rice production. Wheat has grown at a 43 percent annual rate in the last four years, from 115,000 tons in FY75 to 486,000 tons in FY79. Last year's boro production was adversely affected by drought and by shortages of irrigation pumps and diesel fuel to operate the pumps. If the weather remains satisfactory and adequate supplies of inputs are provided on time, output of both crops could rise sharply this year. The continuation of high market prices due to the poor current aman harvest, together with the higher procurement prices announced in November 1979, will also stimulate production. 1/

3. Domestic procurement has been projected at only 500,000 tons for FY80, reflecting the lack of procurement from the aus crop and the expected relatively low procurement from the small aman crop. If the boro and wheat harvests reach the levels indicated, however, considerable procurement of boro and of wheat may occur. As emphasized earlier in the report, the level of procurement should not be considered a quantitative target, but rather should be the result of how much farmers and traders want to sell at the procurement price. In view of the great uncertainty of production estimates even after crops have been harvested, procurement operations cannot be based on accurate estimates of physical supplies. Rather, market prices are the more reliable indicators of current availabilities. It must be recognized, however, that prices are a function not only of supply but also of effective demand, and the latter is in turn partly a function of expectations about public distributions (whether

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1/ For the month-by-month projections on which the annual projections are based, see Table 14.3 in the Statistical Appendix.

through the ration system or OMS) from official stocks. The Government procurement target for FY80 had been set at 700,000 tons, and the increase in procurement prices announced in November 1979 was intended to help achieve that goal in the face of prospects of a small aman crop. The only remaining feasible step the Government can take that might add to the amount procured would be to facilitate the ease with which farmers and traders can sell to the Government in order to make the procurement price an effective market support price, especially in surplus districts. 1/

4. The public distribution forecast of 2.3 million tons in FY80 reflects the need for imports to supplement low domestic production and to increase consumption levels. Unless they go into stocks, all imported grains (and domestic procurement) must now pass through the public distribution system, which includes open market sales and Food-for-Work programs as well as ration offtakes. Other sections of this report include recommendations that the ration offtake should decline over time as a percentage of the total until the ration system becomes truly a relief-for-the-poor operation. During July-September 1979, public distribution was over 670,000 tons (77% higher than a year earlier), primarily because of expanded modified rationing and food for work distributions. Offtakes under other rationing categories also increased because of the very high market prices. It has been recommended (Chapter 4) that a progressively larger share of public distribution over time should be used for open market sales at appropriate market-determined prices. This would benefit all concerned, including those not reached by expansion of Food-for-Work and modified rationing. It would also be a more efficient and lower-cost operation. Moreover, since sales at market prices do not provide the opportunities for corruption inherent in reduced-price distribution, OMS would not be as subject to the abuses that appear to be substantial in modified rationing and perhaps also in locally controlled Food-for-Work programs. Such sales would also mark a beginning toward reducing seasonal price swings.

5. Imports for FY80 have been projected at 2.8 million tons. This is the estimated requirement to meet bare minimum consumption needs and to build stocks to one million tons by June 30, 1980. While consumption has been projected at only 15.0 ounces daily per capita for the year, it has been projected at about 15.3 ounces per capita per day for November through July. This reflects historical seasonal patterns, with consumption levels lowest during July-October. Imports from July to December 1979 are now estimated at 1.94 million tons. As noted in Chapter 5, to reach the 2.8 million of imports and one million ton stock level target previously endorsed by the Aid Group, imports of about 850,000 tons will be required during the period during January-June 1980. Whether all that tonnage arrives by June 30 or some spills over into July is not as important as the necessity for traders and the public to know that ample supplies are assured and that there is no need or incentive to stockpile more than normal seasonal amounts. If the slippage into July or

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1/ As described in Chapter 3, various recent changes in procurement regulations have been intended to serve this purpose.

thereafter is too much, however, the problem of delays in unloading ships and of strained domestic transport capacities could reoccur. Failure to achieve ample stocks and an ensured pipeline by June 30 could once again trigger increases in market prices and regional food shortages, unless it were known that the assured import pipeline were ample to prevent further substantial declines in stocks.

6. The timing of import arrivals must take account of not only the capacity of efficient unloading of ships and up-country dispatching of imports but also of seasonal patterns in (a) domestic procurement and offtake from the public distribution system, (b) demands on the domestic transport system (e.g., for transport of fertilizer, cement, jute and domestic grains), and (c) milling capacity for domestically procured paddy. Timing and other logistical problems of handling and processing arising from these inter-relationships deserve further analysis (see below).

#### The Projections for FY81 and FY82

7. FY81. Production has been projected to increase by 11% in FY81 over the depressed FY80 level on the assumptions of favorable weather conditions and success in improving the availability of inputs. Procurement has been estimated at 700,000 tons, though it might well be more or less. Imports have been projected at 1.85 million to 2.05 million tons, this being the volume required to raise consumption to more adequate levels (15.7 ounces per person per day) and to raise June 30, 1981, stocks to the targeted 1.3 million to 1.5 million ton level, depending upon the adequacy of storage.

8. FY82. Production has been projected to grow by a further 4.1% in FY82 on the basis of assumed continuing satisfactory weather and Government efforts to boost production through improved availability of agricultural inputs and services. Part of the additional production is assumed to be used to raise consumption levels to just under 16 ounces per capita per day in line with rising real income levels and some decline in foodgrain prices, as supplies increase more rapidly than demand. The rest of the additional production would reduce demand for imports. If stocks were to reach the 1.5 million ton level at the end of FY81, then no further buildup of stocks would be called for in FY82 and imports of roughly 1.47 million tons would be needed in this scenario to maintain end-FY82 stocks at the 1.5 million tons level. If an additional 200,000 tons of imports were needed to raise end-FY82 stocks to 1.5 million tons, the imports of about 1.7 million tons would be required. Thereafter, of course, a steady decline in food import requirements would result from production increases to the extent that those increases were above the rate of population growth (and depending upon the income elasticity of the growth of food demand).

ANALYTICAL AND POLICY AGENDA AND STAFFING RECOMMENDATIONS FOR A  
FOOD PLANNING AND MONITORING UNIT (FPMU) 1/

I. Introduction

1. The two main outstanding issues for consideration are:
  - (a) What should be the broad functions of the Food Planning and Monitoring Unit?
  - (b) What should be the staffing pattern of the Secretariat to be attached to the Unit?

On both these issues the 1977 Food Policy Mission presented its preliminary views. These issues are further examined below in light of the 1979 Mission's views on how Bangladesh can better come to grips with its food problems over the next several years and begin the process towards higher production.

II. Functions of a Food Planning and Monitoring Unit

2. The main reason for establishing a Food Planning and Monitoring Unit (FPMU) is to provide a locus and framework for a comprehensive overview and continuing analysis of the food problem, both short-term and long-term, with its many interrelated facets, which can effectively serve food policy formulators and planners. The primary responsibility of the Unit would, therefore, be to undertake analyses designed to develop and spell out food policy options and to suggest concrete solutions for fundamental food policy problems (including production issues, movement, distribution, financial aspects, price stabilization, marketing, etc.). Other functions of the FPMU would include: monitoring the effectiveness of food policies and programs as they are implemented; establishing an "early warning system" to anticipate shortfalls in basic food supplies; and building two-way information and consultation links with other operational and statistical agencies.

3. Selected important activities to be undertaken under each of these functional categories are listed below. The list is not exhaustive and may have to be modified depending upon the situation prevailing from time to time.

A. Analytical Exercises Leading to the Formulation of Food Policies

4. (i) Determining the appropriate level of procurement prices so as to provide adequate incentive to producers to increase production. Other important considerations to be kept in view are: maintaining appropriate relationships between aus and jute prices to yield desired output of each; obtaining sufficient quantities of grain for the ration system and for

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1/ This annex was prepared by Ram Saran.

open market price stabilization; minimizing hardship to consumers; and avoiding wastage of resources. Such an exercise will, inter alia, involve studies on costs and returns, supply (including marketed supply) response to prices, potential income effects for different categories of farmers, and budgetary effects of the procurement price proposed.

- (ii) Estimating quantities likely to be procured. This will involve early estimation of crop output and providing forecasts of growers' and market prices at harvest time.
- (iii) Determining the inter-relationship between ration (including modified ration) distribution, Food-for-Work, relief operations and open market sales with a view to assigning respective roles to each of them so that prices are contained within reasonable levels and requirements of vulnerable population groups are met adequately. The exercise would need to be extended to the consideration of modifications in the ration system with the object of reducing the budget subsidy and restricting ration sales to vulnerable groups. Studies required for undertaking such an exercise would have to consider:
  - (a) the likely effect on market prices of releasing a certain quantity of grain through alternative distribution systems;
  - (b) the market dependence of different sections of the population (including small farmers and agricultural laborers) for meeting their grain consumption requirements;
  - (c) potential employment and income effects; and
  - (d) budgetary effects.
- (iv) Determining appropriate levels of operational and security stocks to be maintained. This will, inter alia, call for an analysis of intra-seasonal and inter-seasonal variations in supplies and prices, costs of holding stocks, finances involved in holding stocks, and storage capacity available.
- (v) Estimating import requirements. On the supply side, this will essentially involve the forecasting of crop production. On the demand side, the factors to be taken into account would be the requirements of the ration system, Food-for-Work and relief operations, open market sales, and security stocks. An important consideration in determining the quantity of imports needed would be the need to maintain consumption levels and prices within suitable range limits.

- (vi) Scheduling imports. The aim will be to make optimum use of available ports, inland transport and storage facilities and at the same time to obtain supplies in time for distribution. A study of the seasonal pattern of prices and demand will be helpful in this context.
- (vii) Projection of requirements of storage facilities, port utilization and transportation capacities. This will, inter alia, involve making projections of district-by-district production, procurement and demand, and of inter-district shipments and of imports.
- (viii) Assisting in the formulation of fertilizer policies. The Government intends to establish a ministerial level fertilizer coordination committee, probably by expanding the terms of reference of the existing Council Committee on Food, in order to initiate long-term planning for the fertilizer sector and for the domestic and external procurement of fertilizer supplies, and to coordinate short-term supply and pricing policies and fertilizer logistics of BADC and the concerned Ministries. The FPMU could assist the ministerial committee in its work by carrying out analyses on issues relating to price policy for fertilizers, particularly in the context of procurement prices for rice and wheat, and estimating fertilizer import requirements.

B. Evaluating the Effectiveness of the Implementation of Food Policy Measures

5. Managing food policies requires an evaluation from time to time of the implementation of food policy programs and instruments, with a view to removing any constraints and ensuring that the stated objectives are achieved. For example, the procurement system may fail to achieve the objective of providing a support price for farmers if it is affected by such operational difficulties as inadequate storage facilities near the collection centers, transportation difficulties, absence of immediate payment and WQSC cashing facilities or possible misuse of the power entrusted to procurement officers to deal equitably with all categories of buyers. Likewise, there may be operational difficulties, including those arising out of misuse of power and corrupt practices, in the effective functioning of the ration system, or of Food-for-Work and relief operations, which also need to be evaluated regularly. Whether projected import schedules are likely to cause port congestion or strain on the internal transport system or to interfere with domestic procurement by pre-empting storage facilities also needs to be monitored continuously. To ensure that agricultural producers have access to needed supplies of fertilizers in required quantities and at the right time, it will also be necessary to organize a system to monitor the logistics of arranging supplies of imported and domestic fertilizers, and their marketing, distribution and storage.

6. The basic data required for operational or concurrent evaluation need not be collected directly by the FPMU secretariat but can be assembled

by the Food Ministry or other concerned ministries through their field staff. A reporting system should be devised for channeling the needed intelligence to the FPMU on a regular basis. From time to time special teams can also be assembled to study the situation on the spot. The role of the FPMU would be to ensure that such evaluations as may be necessary are carried out and that reports thereon are received for its use and analysis.

C. Early Warning System on Basic Food Supplies

7. An early warning system on food supplies at the country level involves development of pre-harvest forecasts of the likely foodgrain output and a continuous study of other indicators of the emerging food situation. Such a system is of vital importance for managing food programs and policies. The Government can use such information for considering mid-season corrective measures, if required and if feasible, in regard to crop management, pest control operations, stepped-up supply of crucial inputs, etc., and for planning development activities, formulating import requirements and schedules, and ensuring the availability of sufficient foodgrains and their equitable distribution throughout the country.

8. An early warning system for food must, in so far as possible, be established within the framework of the overall agricultural statistical system existing in the country. Unfortunately, the data base is weak in Bangladesh, even though a number of organizations are engaged in the collection and compilation of agricultural statistics. A proposal for the establishment of an early warning system for food supplies, based on a continuing analysis of available information collected from these organizations, is outlined in Annex 2.

D. Building Links with Operational and Statistical Organizations

9. In order to undertake both analytical and monitoring exercises, the FPMU will depend heavily for meeting its data requirements on several other organizations in the Government. Apart from arranging for the regular flow of available and relevant data, it will have to make a detailed review of the contents, quality and timeliness of these data with a view to pinpointing deficiencies therein. It will also be necessary to indicate additional data needs, which may then be met by special surveys, enquiries, studies or regular arrangements for obtaining the information from available records. Expeditious arrangements will need to be made for obtaining regularly such information as acreage sown/planted, fertilizer sales and demand, climatological data, farm-gate prices, prices received and prices paid by farmers, wages of agricultural laborers, stocks held by producers and traders, and marketed surplus.

III. Staffing Pattern of the Secretariat to be Attached to the Unit

10. Proposals for the staff to be provided to the FPMU secretariat are already under consideration by the Government. Since the FPMU itself is mainly a coordinating agency and will heavily depend on other organizations for data and advice, the size of its secretariat should be moderate. The 1977 food policy mission recommended that it be manned by an agricultural economist, a

general or agricultural economist, an analytical statistician and a number of research assistants. Since certain additional functions are now being contemplated for the Unit, some additions to the staff would be warranted. The following staffing is therefore recommended:

- (i) an experienced agricultural economist to analyze and monitor production, procurement and incentive policies;
- (ii) an experienced agricultural or general economist to cover policies relating to imports, ration distribution and open market sales, public grain stocks, prices and food subsidies;
- (iii) an experienced agricultural or general economist to look after fertilizer policies (if the Government decides to entrust this function to the FPMU);
- (iv) an experienced agricultural economist to develop and monitor an early warning system on basic food supplies;
- (v) an experienced analytical statistician to arrange for the assembling of needed data and to perform the necessary statistical analyses required for sound decisions;
- (vi) a number of research assistants.

11. The Government may wish to consider obtaining external assistance in the formative stage of the Unit, calling in an expert or experts with experience in price support policies and programs and related activities, and in generating needed new data. The Government may also wish to invite technical assistance for the establishment of an early warning system.

OUTLINE OF THE PROPOSED EARLY WARNING SYSTEM ON BASIC FOOD SUPPLIES 1/

1. An early warning system on food supplies involves development of early forecasts of crop production as well as the continuous monitoring of other indicators relevant to the emerging short- and medium-term food situation. Such a system could contribute significantly to a better understanding of the current food situation and short-term outlook and facilitate the timely appraisal and advance planning of import, procurement and stockholding requirements in order to ensure the availability of sufficient foodgrains and their equitable distribution throughout the country. Timely information about damage to crops by natural factors could also make it possible to consider mid-season corrective measures in regard to soil, water and crop management.

A. Pre-Harvest Forecasting of Area and Yield

2. Objective methods of pre-harvest forecasting of crop production are based on early reporting of acreage and forecasting of yield rates on the basis of biometrical observations, such as plant density and development. Efforts should be made to collect and compile estimates of area under a crop soon after planting has been completed. Such estimates could be based on sub-samples of the currently-used sample of 5,000 area grids and should be collected by the Bureau of Statistics by specific dates. However, for forecasting yields on the basis of biometrical observations, an important prerequisite is the determination of relationships between independent and measurable variables and yields at different stages of plant growth. For this purpose, empirical data are needed. Moreover, such a procedure of forecasting requires field-level agronomic knowledge, which is still relatively scarce in Bangladesh. The development of objective methods of pre-harvest estimation of yields, based on biometrical observations, can be taken up in the present circumstances, therefore, only as a research project.

3. In the early stages of making production forecasts it will be necessary to collect and analyze data on all factors influencing crop output and make the best possible judgment. These factors may be broadly grouped as follows:

- (i) weather;
- (ii) pest attack and other natural factors; and
- (iii) progress of implementation of development programs, particularly the use of inputs like water, fertilizers, improved seeds, pesticides, etc. and with regard to the area planted.

4. Weather. For studying weather data in relation to crop output, the following steps appear necessary:

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1/ This annex has been prepared by Ram Saran.

- (i) Available information on temperature and rainfall for selected stations representing different agro-climatic regions, river water levels, and advance information on floods and cyclones should be consolidated and analyzed systematically throughout the season. The common method of analyzing the rainfall information is to determine the adequacy of actual precipitation in the sowing period and at different stages of crop growth, and in the event of abnormal tendencies in the rainfall pattern to assess their impact on acreage and production, initially on the basis of knowledge provided by agricultural experts.
- (ii) In order to render early estimates of crop production increasingly reliable, an attempt should also be made to ascertain the statistical relationships between precipitation (and temperature) and agricultural output at different stages of crop growth.
- (iii) Throughout the vegetative cycle, water supplies available to the main cereal crops should be monitored and water balances prepared, taking into account the water requirements of each crop. <sup>1/</sup> This would make it possible to identify areas where water supplies may be insufficient and give early warnings of likely production shortfalls.

5. Pest attack. There is a proposal to set up a Pest Surveillance, Forecasting and Warning Service to collect and disseminate advance information on potential pest attacks. Until such a service is established, however, it will be necessary to be guided by whatever information becomes available from the districts. The effect of pest attacks on crop output should be assessed on the basis of expert advice.

6. Development programs. Continuous monitoring is required on the usage of agricultural inputs, particularly fertilizers, HYV and other improved seeds, and irrigation water. In the absence of information on actual usage of inputs by farmers, data on distribution of fertilizers and improved seeds, progress of irrigation projects, and consumption/distribution of pump fuel can be utilized for this purpose. To determine the likely increase or decrease in crop production over previous years due to the usage of fertilizers and improved seeds, information on these inputs for the corresponding period of previous years will also be needed. In addition, yardsticks need to be established with regard to the additional yield expected from an additional unit of an input used; these yardsticks may be expressed either in terms of individual inputs or be expressed as composite yardsticks for different inputs taken together. They may be based on data obtained from field experiments at the farm level or, in the absence of such data, on advice given by agricultural experts.

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<sup>1/</sup> Such a system has been established by the FAO in the Sahel countries of Africa.

7. Institutional arrangements for making early assessments of crop output. In order to assess the overall effect on crop production of weather, pest attack, input supply and utilization, and development programs, and to prepare early estimates of crop production, the following arrangements should be made:

- (i) The Food Planning and Monitoring Unit (or until such a Unit is firmly established, another unit in the Bureau of Statistics or the Ministry of Agriculture and Forests) should identify the organizations which collect and compile information on acreage, crop conditions and likely output of cereals and on any factors that influence the crop production and arrange for regular and speedy exchange of relevant information among all these organizations, as well as its dissemination to those organizations that may have the capability to analyze this information. The mission tentatively identified the following organizations collecting and utilizing such data:
  - (a) Bureau of Statistics (BBS): for district-level early forecasts of acreage, production and crop conditions of rice and wheat. As suggested earlier, BBS could also develop early estimates of the area under rice on the basis of information collected for a sub-sample of the presently-used sample of 5,000 area grids;
  - (b) Directorate of Agriculture (Extension and Management): for district-level early forecasts of acreage, production and crop conditions for rice and wheat;
  - (c) Ministry of Food: for grain prices, procurement and distribution quantities, stock levels, import arrivals, etc.;
  - (d) Ministry of Agriculture and Forests (Director of Rice Research Institute and other concerned offices): for reports of the Task Force constituted to study the progress of the Intensive Transplant Aman Program (ITAP) or other similar programs, and also reports of teams of senior supervisory officers and District level implementation committees;
  - (e) Meteorological Department: for data on rainfall and temperature for 39 selected stations and advance information on floods and cyclones;
  - (f) Bangladesh Water Development Board: for data on rainfall, river water levels, and discharge rates;
  - (g) Bangladesh Agricultural Development Corporation: for data on the distribution of inputs such as fertilizers,

irrigation pump fuel, HYV and other improved seeds, and pesticides, as well as on the progress of its irrigation projects (deep tubewells, shallow tubewells and low-lift pumps);

- (h) Bangladesh Krishi Bank: for information on the progress of its shallow tubewells project;
  - (i) Directorate of Plant Protection (Ministry of Agriculture): for information on pest attacks; and
  - (j) Bangladesh Bank: for consolidated information on agricultural credit advanced by various agencies.
- (ii) The FPMU secretariat (or some other unit in the Government) should analyze the information received from different organizations -- where necessary in cooperation with agricultural experts -- and establish institutional arrangements for discussing and making pre-harvest assessments of acreage and production of rice and wheat crops for the country and for each district and for identifying particularly those areas where production prospects may be poor. For this purpose, it may convene a regular monthly meeting (of representatives of organizations referred to above) to consider all the relevant data, so that it can take an overall view of the different factors affecting the crops and make the best possible judgment about their likely size. These meetings should be held from the commencement of the sowing season until firm estimates of production become available.

8. The above method of making early forecasts of crop output involves subjective judgment of the evaluators. But these evaluators would be experts in the respective fields, and their judgment would be based on an appraisal of various factors affecting the crop. Moreover, their conclusions regarding individual factors would be brought together and considered simultaneously, and a final composite judgment developed. The discussions at the monthly meetings would bring into focus the main issues, thus providing an effective basis for needed corrective actions.

#### B. Analysis of Other Indicators Relevant to the Food Situation

9. Other important indicators relevant to the emerging food situation which need to be studied continuously are:

- (i) the behavior of prices;
- (ii) the pace and pattern of market arrivals; and
- (iii) levels of procurement, imports and stocks held by the Government as well as in the private sector.

Since foodgrains are the main subsistence crops in Bangladesh, a large part of total output is retained by producers for the consumption of their families, as well as for seed and feed purposes; only a relatively small part is marketed for cash. Fluctuations in output may, therefore, be reflected in amplified fluctuations in marketed surplus and, hence, in prices. Consequently, whenever the crop suffers, the level of prices, the pace and patterns of market arrivals, the quantum of stocks held by producers, traders and Government agencies, and expected procurement and imports become important factors for assessing the overall food situation and prospects.

10. Data on prices and market arrivals could provide early signals for food shortages. The Directorate of Agricultural Marketing in the Ministry of Agriculture, the Ministry of Food, the Bureau of Statistics (and UNICEF) collect and compile regularly data on wholesale or retail prices for different foodgrains for their own operational purposes. The Directorate of Agricultural Marketing also collects data on market arrivals for about 60 different markets. A regular analysis of the price behavior and pace and pattern of market arrivals, based on the data for a selected number of markets, would help to focus attention on those regions where market supply and price positions may be deteriorating and where particular attention on the part of the Government may be required.

11. The information on government procurement, imports and public distribution, as well as on stocks held by the Government, is readily available within the Ministry of Food. On the basis of information supplied by the Ministry and the food aid suppliers, the Bangladesh Office of the World Food Programme makes forecasts every month on imports and expected arrivals at the ports for the coming year. It also prepares a balance sheet of likely supplies and disposition of foodgrains for both the current and ensuing year.

11. Information relevant to the above indicators, which should flow regularly to the FPMU secretariat, will have to be analyzed quickly and yet carefully. The results of such analyses, as well as early forecasts of area and production of cereals (which will have to be prepared right from the time of planting all through the growth period) will provide insights into the current food situation and the short-term outlook. In this way, an institutional arrangement will have been established both to consider and monitor all the factors affecting the food situation and to identify emerging problems so that corrective action can be initiated in time and on a scale commensurate with the anticipated difficulties.

THE DOMESTIC FOODGRAIN PROCUREMENT SYSTEM

1. This Annex comprises a short description of the procurement system. It is intended as a background for understanding the procurement issues discussed in the main body of the report, especially Chapter 3.

A. Structure of the System

2. The Food Directorate of the Ministry of Food and Civil Supplies (MoF) <sup>1/</sup> operates the domestic foodgrain procurement system within the guidelines and the financial limits determined by the Government. Through its procurement officers, it intervenes in the domestic rice and wheat markets during and after the grain harvests by purchasing grains from farmers and traders. This program has two basic objectives: (i) to procure foodgrains for the public foodgrain distribution system (at present mainly for the ration system, which is intended to assure sufficient foodgrains for various segments of the population); and (ii) to maintain an incentive farmgate floor price for foodgrains at harvest time, when prices in the open market tend to decline sharply.

3. The system is characterized by two basic features:

- (i) The announcement, prior to the planting/sowing of each grain crop, of a certain procurement price at which the Government offers to buy all grains of acceptable quality offered to its agents; this price is presumably set at a level which provides sufficient incentive to cultivators to grow foodgrains with a reasonable expectation of obtaining fair prices for their crops after the harvest; and
- (ii) The operation of government grain purchasing centers in all parts of the country during and after the harvest.

4. Mandatory procurement, practiced during some years in the past, is no longer used. Quantitative targets for procurement are set primarily for indicative planning purposes (such as lining up transport and storage capacity and funds for payment). The amount actually procured is, therefore, dependent primarily on the relationship between the official procurement price and the open market price at harvest time as well as on the physical ability of MoF to procure. If the procurement price is attractive enough, and handling, bagging, checking, drying, payment, transport and storage capacity sufficient, the quantity procured may be large.

5. The procurement price is fixed by the Government at a level meant to assure not merely a recovery of the farmers' input costs but also a fair return on their output. At the same time, it is set at a level intended to

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<sup>1/</sup> See Annex 10 for a description of the structure and functions of the Ministry of Food.

balance the relative incentives for growing jute and rice, at a point where these crops are grown in amounts deemed by the Government to be the optimal combination.

6. In principle, any and all farmers and traders are free to offer grains to the Government's procurement agents. Discounts from the official procurement price are deducted for certain deviations from minimum standards of quality determined and announced by the Government prior to the procurement drive. A transportation bonus -- recently raised from Tk 4 to Tk 5 per maund -- is paid to those bringing grain for sale to the procurement points.

7. All Local Supply Depots (LSDs) and Central Storage Depots (CSDs) of the Ministry of Food serve as grain purchasing points. In addition, so-called Temporary Purchasing Centers (TPCs) are established throughout the country during the procurement season, in order to broaden the access of farmers and traders to the Government purchasers. When prospects for procurement are improving during the season, additional TPCs may be opened in the course of an ongoing procurement drive.

8. The Government buys all the grain (paddy, milled rice, and wheat) offered to its procurement agents if the grain meets minimum quality standards announced prior to the procurement season. These quality and moisture standards are prescribed primarily to reduce the risk of subsequent losses in the Government's often poor storage facilities. Starting with the 1979/80 aman procurement, there will be no restrictions or minimum requirements concerning the quantity of grains any single supplier must offer for sale to the procurement agents.

#### B. Operation

9. The Ministry of Food currently operates 4 silos, 12 Central Storage Depots, and 322 Local Supply Depots throughout the country. Except for the 4 silos, all these facilities also serve as purchasing points during the procurement season. In addition, the Ministry's Directorate of Procurement operated 259 TPCs in the 1978/79 aman procurement season. There will be a similar number in operation in FY80. Considerably fewer TPCs operate during the aus, wheat and boro seasons.

10. Since there are 469 Thanas in the country, however, there is an average of only about 1.2 procurement points per Thana, or about 115 villages per purchasing point. Alternatively, with a total area of roughly 55,000 square miles in Bangladesh, each procurement point must theoretically serve an average area of about 95 square miles. Even considering that many areas may not produce sufficient rice or wheat to warrant setting up purchasing centers (on either procurement quantity or price-support grounds), this still represents an extremely thin coverage. As a consequence, most grain growers have to travel at least three miles with their produce (head load or bullock cart) to reach the nearest procurement point. Given the transport difficulties faced by most farmers (lack of roads, lack of vehicles of any type) -- which makes a 5-8 mile round-trip to a TPC a full-day task -- this constitutes an enormous obstacle, particularly during the wet season when wheat, boro and aus are harvested.

11. If the procurement system is to be made fully effective, it must be expanded physically to permit access by far more grain growers and traders. This may be done by opening more TPCs at harvest time (in school houses, police stations, union council headquarters, etc.) and/or by dispatching mobile procurement teams with trucks or boats (similar to mobile clinics or milk-can collection trucks as operated in other countries) to village markets and "hats" on market days, or to farmers' cooperatives on pre-announced days, to buy grains directly from the farmers.

12. Most LSDs and TPCs are manned by a single purchasing officer assisted by a laborer for bagging, weighing and stocking. Since these procurement officers cannot, under existing conditions, go to every village and farm to see if farmers wish to sell grains to the Government, MoF makes use of the established grain dealers and traders. Based upon recommendations from local authorities (Union Council chairmen, etc.), the Ministry authorizes certain licensed grain dealers to act as official intermediaries in the procurement effort. These dealers, so-called Approved Grain Dealers (AGDs), are pledged to purchase grains from farmers at the official procurement prices (minus applicable quality discounts) and to deliver this grain to the Government's purchasing centers. The AGDs are required to furnish purchase contracts for the grain they have bought on behalf of the procurement agents, showing amounts purchased and prices paid. Upon delivery to the MoF depots, the AGDs are paid the transportation bonus of Taka 5 per maund in payment for their effort of transporting the grain to the center. In addition, they receive an official commission of Paisa 75 per maund, for which they are expected to dry and clean (winnow) any grain requiring this. It is estimated that for each purchasing center some 25 to 30 AGDs are licensed during each procurement season; approximately 100 licensed grain dealers operate in each Thana on average.

13. Nominal preference is given to growers over traders in procurement transactions. But the highly peaked seasonality of procurement operations, and the pressure on the procurement agents to procure as much grain as possible in a short time, combine to make it virtually inevitable that AGDs and other dealers and intermediaries with large lots for sale are given preference over small farmers who have only small quantities to offer. It is considerably more efficient for purchasing officers to conduct a few large transactions than many small ones -- each involving quality, admixture and moisture checking, weighing, and the issuance of so-called WQSCs (see para. 14 below) in four copies. Moreover, small farmers generally do not bring their grains in standard bags and standard-size lots, thus necessitating laborious re-bagging. 1/

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1/ The frequent lack of sufficient empty gunny bags is a major problem impeding the Government's procurement effort, as is the scarcity of moisture and quality testing equipment, of paddy drying equipment and of suitable storage facilities at many TPCs.

14. Payment for grains sold to the Government is made at a branch office of a nearby bank or at a special payment booth set up by the bank designated by MoF to service a particular purchasing center. The seller takes his copy of the Weight-Quality-Stock-Certificate (WQSC) -- which the purchasing officer has to fill out at the time of the sale -- to the bank or payment booth where it is checked against the bank's copy of the WQSC before payment is made. This process is often ineffective and always very time-consuming, frequently requiring a second visit by the grain seller on the next day to receive his cash. This is because the bank branches have limited working hours, their copy of the WQSC is often not received in time, or they have insufficient cash on hand.

THE PUBLIC FOODGRAIN DISTRIBUTION SYSTEM 1/

1. The public foodgrain distribution system includes ten functional categories: statutory rationing, modified rationing, essential priorities, other priorities, employees of large enterprises, flour mills, Food-for-Work, relief, market operations, and open market sales.

Statutory Rationing (SR)

2. In principle, Statutory Rationing is extended to all the people living in six cities -- Dacca, Narayanganj, Chittagong, Khulna, Rajshahi and Rangamati. The ration consists of specified quantities of rice, wheat, sugar, edible oil and salt, and is provided weekly through licensed dealers at prices fixed by the Government. 2/ The ration issue price for coarse rice, which was less than one-half of the free market price during 1972-76, fluctuated between two-thirds and three-fourths of the free market price during 1976-79. The SR system accounted for about 23% of the foodgrains distributed through the public distribution system in FY79 and reached about 3.7 million people. Though officially the issue of new ration cards in SR areas was stopped in 1974 (except for civil servants being posted to these six cities), the number of such cards increased by about 18% during the last four years. This was due to the inclusion of Rajshahi in April 1975 and Rangamati in October 1976 and to some changes in the delineation of the statutory rationing areas. By conservative estimates, the population of the SR areas increased by one-third during 1975-79. The coverage of the SR system in the defined areas, therefore, declined from about 77% of their total population in 1976 to 63% in 1979. Many of those excluded in SR areas are likely to be at the lower end of the income distribution scale, since a considerable part of the increase in population has been due to the migration of people from the rural areas.

3. The substantial difference between the ration price and free market price has led to many abuses, including the issuance of false ration cards and the diversion of some stocks intended for distribution through the ration system to the open market. 3/

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1/ This annex was prepared by Om Nijhawan.

2/ The quantity and mix of foodgrains provided under the system has varied over time (see Table 10.3). The current quota is three seers of foodgrains per week, per adult cardholder. Children under eight and one-half years of age are entitled to half the adult quota. Other entitlements per adult per week are: three chattaks of sugar, four chattak of vegetable oil (maximum of one seer per family), and four chattaks of salt. Occasionally, soap or other essential commodities may be supplied through the ration system when market supplies are short.

3/ Imported wheat and rice from the ration system were being sold in several open markets visited by mission members.

'Essential' and 'Other' Priorities

4. Essential priority groups include members of the armed forces and of the Bangladesh Rifles, police, jail and hospital inmates, residents of orphanages, and rural and reserve police who do not live in the defined statutory areas. 'Other' priorities pertain to employees of Government, semi-Government, and autonomous bodies, educational institutions, railways, nationalized banks, BWDB, BADC, rural development workers and employees of flour mills. Members of these categories are given the full SR ration amount.

5. Employees of large establishments (i.e., those employing 50 or more persons) who live outside statutory rationing areas are usually entitled to buy 35 seers of wheat per month regardless of family size, though occasionally this becomes 15 seers of rice and 20 seers of wheat. In addition, flour mills receive about 10% of the wheat for milling and distribution to bakeries as a matter of priority. These four categories combined (i.e., 'essential' and 'other' priorities, employees of large enterprises, and flour mills) accounted for about 45% of the distribution of foodgrains through the public distribution system in FY79, and comprised about 5.7 million people. The share of these groups plus statutory rationing increased rapidly from 30% of total public distribution before and immediately after independence to over two-thirds in the past three years.

Food-for-Work (FFW)

6. The Food-for-Work program has been expanding and now accounts for about 12-14% of all grains distributed through the public system. This program generally entails earth work for canals, dikes, roads, etc. Male workers are paid three seers of wheat for a daily task of moving 70 cubic feet of earth; women get the same wages for moving 50 cubic feet of earth. Daily wages are fixed at a level considered sufficient to provide the energy requirements of an average family of five. These wages are equivalent to about two-thirds of average agricultural wages. The program makes an important contribution towards moderating rural underemployment during the dry season and provides food to perhaps the most needy.

Relief

7. A small minority continues to receive food free of charge under the Relief category. These allocations constitute only 1-2% of the total public distribution. Distribution is made by the Ministry of Relief and Rehabilitation under master rolls prepared by Union Parishad officials.

Modified Rationing (MR)

8. The "Modified Rationing System", which functions outside the statutory rationing areas, is meant to benefit primarily the rural poor. The population in these areas is classified into four income (or tax-paying) categories. In principle, only the lowest income groups are entitled to benefit from the Modified Rationing system. Rations are one-half the size of

those received by the residents of statutory rationing areas and members of priority categories. In practice, however, distribution under the system is subject to the availability of grains after the requirements of priority categories have been satisfied. Thus, there has been a considerable fluctuation in foodgrains distributed under this category -- from a high of 68% of total public distributions in FY70 to a low of 17% in FY79.

9. About 10% of the allocations under Modified Rationing goes to small towns. Ration cards for the MR system are issued by the Union Councils, and food is distributed on the basis of special master rolls prepared by the chairmen of the Union Councils. Data on the number of people benefitting from the system are not available. Based on the quantities allocated under the MR system and on per capita allowances, however, MR should have reached nearly 4.7 million people in FY79. The distribution of MR seems to be more or less at the discretion of local leaders (chairmen and members of the Union Councils). The local-level Government machinery to administer the MR system is weak. Considerable quantities of MR grain reportedly are diverted for sale in the open market and do not therefore reach the rural poor.

#### Market Operations (MO) and Open Market Sales (OMS)

10. Market operations entail sales of limited quantities of grains through ration shops at somewhat higher than ration prices; ration eligibility is not required to purchase such grains. Open market sales are also sales, as hitherto executed, at a controlled price both to flour mills and to some traders in rural areas under joint Union Parishad and Ministry of Food supervision. The dealers are pledged to resell at nominal profit, and to allow not more than two seers per customer per purchase.

#### Conclusions

11. In recent years, the public distribution system has become increasingly oriented towards the priority groups who are either urban dwellers or employees of the Government and the modern sector. Excluding allocations for Relief and Food-for-Work, nearly 80% of the distribution through the public system is accounted for by the recipients of statutory and priority rationing and large enterprises employees, though these constitute less than 15% of the country's population. Thus the public food distribution system bypasses most of the rural poor and, as pointed out above, an increasing proportion of the urban poor. Except for FFW and Relief operations, the subsidized public distribution system is mainly geared towards the relatively privileged groups.

12. In a crisis situation, when supplies dwindle and prices rise, the dual price system and the pressure for meeting the needs of priority groups puts the greater part of the burden of the food shortage on the most vulnerable segments of society -- the urban and the rural poor. In bad years, open market prices for foodgrains may be two to three times higher than the ration prices. Outright relief in small quantities and MR and FFW programs do reach

some of the rural poor, but in practice there are substantial leakages 1/ from the system into rural markets for sale at prices often higher than the poor can afford.

13. The Government has recently made some adjustments in the ration system. The ration shop prices of rice and wheat were increased by 20 percent and 25 percent, respectively, in May 1979. The wheat/rice mix for statutory rationing has also changed, from 1:2 to 1:1. 2/ For modified rationing, the ratio is 2:1. The number of ration cards that can be issued to families in statutory rationing areas has been limited to six, although those who had earlier qualified for more are allowed to keep them.

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1/ Leakages are generally estimated at 15-20%, though some non-Government sources estimate them to be as high as 30-40% of the offtake under these categories.

2/ In October 1979, the ration mix for Dacca was changed to two seers of rice and one seer of wheat to help lower market prices in Dacca, but it reverted back to the previous 1:1 mix again in early December.

FOODGRAIN AND FERTILIZER SUBSIDIES 1/

I. Introduction

1. One consequence of Bangladesh's chronic food shortage has been an extensive involvement by the Government in the marketing of foodgrains, particularly in the urban areas, and in the maintenance of security foodgrain stocks for crisis situations. Total government distribution of imported and domestically procured grains has varied roughly between 1.5 and 2.0 million tons of rice and wheat annually, or between 13% and 15% of the annual foodgrain consumption in the country in recent years. The Government has carried out this foodgrain distribution at subsidized prices, currently at Tk 120/md for rice and Tk 100/md for wheat. Domestic procurement prices are higher, currently Tk 170/md for rice and Tk 110/md for paddy and wheat. 2/ A major part of imports, on the other hand (particularly wheat), is received on aid terms, and its sale -- even at subsidized prices -- represents a positive contribution to the Government's overall financial position. Nevertheless, on the whole the Government incurs a sizeable subsidy on account of its overall foodgrain operations.

2. Given the traditional nature of Bangladesh agriculture, the Government has also assumed leadership in the propagation of the use of modern inputs. Chemical fertilizers, first introduced in 1958, began to spread rapidly after the establishment in 1962 of the East Pakistan Agricultural Development Corporation, which later became the Bangladesh Agricultural Development Corporation (BADC). Since 1966, distribution by BADC of fertilizer -- over 50% of which is imported (predominantly aid-financed) and the rest domestically produced -- has increased at an annual rate of about 17%. BADC sells various types of fertilizers (as well as other modern agricultural inputs) at substantially subsidized prices, which at present average about Tk 85/md. Although aid imports of fertilizer represent a positive budgetary contribution, the subsidized sale of fertilizer (like that of grains) implies a sizeable amount of foregone financial resources to the Government. As in the case of foodgrains, the Government seeks to further some of its economic and social policy objectives through this subsidy program: subsidized fertilizer distribution is intended to stimulate the use of this input and to raise foodgrain production and perhaps also to redistribute some income to the farm sector.

3. Significant resources have been tied up in the Government's policies of foodgrain and fertilizer subsidies, representing resources foregone for alternative uses. The purpose of this Annex is to set out the broad orders of magnitude and recent trends in these costs, revenues and subsidies under alternative definitions and concepts.

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1/ This Annex was prepared by Vinod Thomas, with assistance from Syed Nizamuddin. Helpful comments were provided by Armand van Nimmen and Götz Schreiber.

2/ These procurement prices became effective in November 1979. A corresponding increase in the ration prices, to restore the original proportionality between these sets of prices, is expected to be enacted in the near future.

4. A recent Bank study 1/ discussed the rationale for, and the differences between, some alternative methods of calculating the size of the Government's subsidy on foodgrains and the total cost and financial impact of its involvement in foodgrain marketing in general. Similar considerations are relevant for the Government's fertilizer marketing. Without entering into the debate on the relative merits of different concepts and calculating approaches, estimates of the basic orders of magnitude of costs and subsidies as calculated under three different approaches are presented in this Annex. The choice of the subsidy or cost concept then depends on the purpose for which it is to be used. The principal difference between the three concepts and methods discussed here lies in the extent to which aid-financed imports of foodgrains enter into the calculation of costs incurred and revenues obtained. The second methodological difference is that cost estimates may be based either on the quantity of grains sold during the year or on the overall quantity handled, i.e., acquired and sold.

5. The first definitional concept is that used by GOB to show the (approximate) value of the subsidy it provides to foodgrain growers 2/ and consumers out of its own financial resources. According to this concept, the subsidy -- or, more aptly, the Government's financial loss -- is calculated only with reference to the grains bought -- both internally and from abroad -- with the Government's own resources and sold during the fiscal year in question. (It is possible to separate the loss involved in the procurement and sales of domestically produced grains alone.) The revenues, actual and potential, that are or could be generated by selling grains imported on aid terms and the actual and imputed costs incurred by the Government on account of such aid imports are entirely disregarded in this calculation. This concept of subsidy on the sale of foodgrains purchased with the Government's own resources will be referred to below as the "GOB-financed subsidy" on grain sales. Since the Government does not apply this method in its own calculation/presentation of the fertilizer subsidy, however, this will also not be done here.

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1/ Bangladesh: Report on Domestic Financial Resource Mobilization, Report No. 1919-BD; April 26, 1978 (Appendix 1).

2/ The subsidy on domestically procured foodgrains sold at below-cost prices to consumers arises as the result of two separate and distinct government interventions in the domestic grain market: (i) the purchase of grains from producers at support prices higher than farmgate prices prevailing in the open market, and (ii) the sale of these grains at below-cost and below-market prices to specific consumer groups. The subsidy incurred through these transactions accrues, in part to the domestic grain cultivators (and/or traders; see Chapter 3) and in part to the beneficiaries of the public grain distribution system. The subsidy on aid-financed grain imports transferred by the Government to consumers, on the other hand, is strictly a consumer subsidy benefitting a relatively small segment of the population (see Chapter 4).

6. The second calculation method seeks to determine the overall net impact of all of the Government's grain purchases and sales on its financial (budgetary and debtor) situation. This calculation of the overall financial net impact of the Government's grain operations includes the revenues generated by the sale of aid-financed imports (which are excluded in the first concept elaborated above), but no value is imputed for these aid imports on the cost side. All incidental and handling costs arising from the Government's acquisition and sale of aid-financed food imports are included, however. In as far as this measure involves the costs and revenues arising not only from the sale of grains but also from their acquisition, this financial impact calculation implicitly includes the cost of accumulating grain stocks or, alternatively, the revenues generated by selling previously accumulated stocks; neither the first concept, elaborated in para. 5, nor the third, discussed in para. 7, contain this element, because both are calculated with regard to grain quantities sold only. The second measure, therefore, is useful for determining the impact of the Government's overall grain operations on its budget and/or on its need for extra-budgetary domestic financing. In the subsequent discussion, this will be referred to as the measure of the overall "financial impact" of the Government's foodgrain operations. The same calculation method can be applied to the fertilizer purchases and sales by the Government and is discussed in Part III of this Annex.

7. The third concept attempts to provide a value estimate of the subsidy granted to grain growers 1/ and consumers with all grains sold during the year valued at their full and true -- if necessary, imputed -- cost. 2/ This, therefore, includes two components: (i) the GOB-financed subsidy on the sale of grains acquired with its own resources as defined in para. 5 above; and (ii) the transfer of part of the external food aid received by the Government to grain consumers in the form of a consumption subsidy. The second component, which may be termed a "transferred subsidy", arises due to the sale of aid-financed imported grains at less than their true value or opportunity cost. This value, however, may be calculated on the basis of three different price assumptions: (a) at donor's invoice or contract prices, (b) at world c.i.f. prices, or (c) at potential domestic market prices. 3/ This third concept will be referred to below as the "full economic subsidy" measure on all government grain sales. This concept applies to fertilizer operations as well and will be discussed in Part III of this Annex.

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1/ See para. 5, footnote 2.

2/ No interest on capital tied up in grain stocks held is, however, imputed and included in these calculations, although it would clearly be an important cost item.

3/ These imports should not be valued at full actual domestic market prices because their sale in the market (as opposed to ration distribution) would reduce the level of grain prices in the internal market somewhat, the exact magnitude of this price-dampening effect depending on the price elasticity of demand. It is this price dampening and stabilizing effect of grain sales by the Government in the open market that underlies the recommendation to replace large parts of the existing ration system with open market sales (see Chapter 4).

8. The subsidy estimates are presented first for foodgrains and then for fertilizers. Under foodgrains, the GOB-financed subsidy estimates (source: Food Ministry) are given first. In addition, the losses on domestic foodgrain procurement and sales are separately shown. Next, calculations of the overall financial impact of the Government's foodgrain operations are presented, followed by a final set of estimates of the full economic subsidy on all sales of grains. Similarly the government's estimates of the "full economic subsidy" on fertilizer (source: BADC) and the financial impact estimates according to the second definition are developed.

## II. The Foodgrain Subsidy

### A. The GOB-financed Subsidy

9. GOB's measure of the subsidy is intended to represent the losses incurred on estimated sales of grains that are bought by the Government with its own resources. It represents estimated losses as a result of sale prices being kept lower than procurement prices plus distribution costs, but does not cover the concomitant realizable loss of resources on total foodgrain procurement and sales. 1/

10. The estimate of the loss on this basis, however, is not strictly on a cash basis. First, the average cost per maund is calculated for both imported and domestically procured rice and wheat. To this is added an estimate of the likely cost per maund of freight, handling, bagging, storage, insurance, interest on bank loans, storage and handling losses and deterioration (and, in addition, port charges and insurance in the case of cash imports) to arrive at the so-called "pooled price". This "pooled price" is the sum of the average purchase cost of grain plus average "incidental" charges per maund. The financial loss per maund is determined by subtracting the selling price (issue price ex MoF godown) 2/ from the "pooled price". Multiplied by the number of maunds sold for each type of foodgrain (and with the separate results added), this yields the total loss.

11. The estimate thus obtained is no more than an approximation of financial losses on the quantities of cash-purchased foodgrains sold. 3/ First, it leaves out the quantities distributed free of charge under relief operations. Second, the average incidental charge applied is not based on the actual cash outlay during the relevant accounting period; the total cash cost of the distribution network is likely to be greater than what is usually

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1/ This estimate -- after adding the subsidies on salt and edible oil -- appears in row 6, Statement VII of the Budget Summary Statements.

2/ Issue prices ex MoF godown are lower than ration shop prices by a few Taka representing permitted dealer's margins.

3/ The estimates of cost do not seem to include any imputed interest charges on tied-up capital or other costs of storage such as spoilage (see para. 20).

estimated, owing mainly to the use of average charges based on data of earlier years. Third, it is difficult to determine the exact quantities of each category of grain sold that could reasonably be assumed to have originated from "own-resource purchases". The most important point to bear in mind while using the GOB subsidy estimate, however, is that aid imports, which represent the bulk of foodgrain distribution through the rationing system, are excluded from the measurement.

12. Table 11.1 in the Statistical Appendix sets out the estimated loss on the basis of the GOB method. The first row shows the Government's estimate of what was sold out of self-financed domestic and foreign procurement. The second row -- unit cost -- gives the estimated "pooled cost" of purchases inclusive of all incidental costs. The difference between the third row -- issue price (*ex godown*) -- and the second is the unit loss (fourth row). The product of unit loss and quantity sold (out of those acquired with own resources) gives the total loss (fifth row). This estimate of loss, adjusted for the subsidies on salt and edible oil, should correspond to the budget estimate of food subsidies.

13. How much does the Government lose on account of subsidized sales of foodgrains bought with its own resources? A comparison of the three years shown in Table 11.1 indicates that the loss per unit of rice based on the GOB method is estimated to have declined from Tk 65.3/md in FY78 <sup>1/</sup> to Tk 63/md in FY79 (i.e., 4%); for wheat it increased from Tk 23.6/md <sup>1/</sup> to Tk 29/md (i.e., 23%). On the whole, the weighted average unit loss for foodgrains <sup>2/</sup> increased by 7% from Tk 55.7/md to Tk 59.7/md, mainly because of the increase in the share of rice in total sales out of "own resource purchases". The total loss is estimated to have declined, however, from Tk 982 million in FY78 to Tk 915 million in FY79 (i.e., 7%) because of the decrease in total sales of foodgrains bought with GOB's own resources. Based on price changes made by GOB thus far, the unit loss in FY80 is expected to increase by about 24% and 31% for rice and wheat, respectively, mainly as a result of the recent increase in domestic procurement prices relative to the ration prices. The overall unit loss, consequently, is projected to increase from Tk 59.7/md to Tk 66.4/md (i.e., about 11%; see Table 11.1). The total loss is projected to increase by about 38% to about Tk 1,270 million, i.e., more than the unit subsidy in percentage terms because of the projected increase in sales of foodgrains bought with own resources. (Table 11.1 also shows alternative estimates of smaller increases in losses in FY80 based on the assumption that ration prices will be increased in the middle of that year to Tk 140/md for rice and Tk 110/md for wheat.)

14. Table 5-1 shows the historic trend in estimated losses (per unit and total) on account of subsidized sales of foodgrains and food bought with

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<sup>1/</sup> As a weighted average of the sales made before and after the mid-year price change (see Table 11.1).

<sup>2/</sup> Average, weighted by the share of rice and wheat sales.

with the Government's own resources. The relatively high levels of losses (in absolute terms) reached in FY78 and projected for FY80 are mainly due to the relatively high levels of domestic and foreign cash purchases of foodgrains (and, hence, sales out of them) in those years. These losses on account of the food subsidy have amounted to roughly 10% of Central Government current expenditures in recent years.

Table 5-1: ESTIMATES OF THE GOB-FINANCED FOODGRAIN SUBSIDY  
(million Taka)

	Foodgrains		All Foodstuffs	
	Total	Per Unit of Sales (Tk/md)	Total	As % of Central Government Current Expenditure
FY73	n.a.	n.a.	783	27
FY74	n.a.	n.a.	963	22
FY75	n.a.	n.a.	916	16
FY76	n.a.	n.a.	1,006	15
FY77	n.a.	n.a.	760	9
FY78	982	55.7	1,060	10
FY79 (estimated)	915	59.7	952	8
FY80 (projected)	1,270	66.4	1,320	11
	(1,100) /a	(57.8) /a	(1,150) /a	(10) /a

/a The figures in parentheses assume mid-FY80 increases in ration prices (see Table 11.1).

Source: Ministry of Food, and mission estimates.

15. Loss on Domestic Procurement Alone. As stated earlier, GOB's subsidy estimates include losses on both domestic and external procurement financed with its own resources. Table 11.2 shows the loss on domestic procurement alone. Line 1 gives the volume of domestic procurement, while line 2 gives an estimate of what may have been sold out of the procured total in a given year. This estimate is made assuming that sales from domestic procurement are equal to total sales of all foodgrains multiplied by the ratio of domestic procurement to total procurement. Food-for-Work (FFW) is assumed to be entirely out of imports. The third line shows the procurement prices for rice and wheat. Adding the incidental costs (based on rough calculations), the unit cost estimates in line 4 are obtained. Subtracting the issue prices (ex godown) in line 6, the unit loss estimates given in line 7 are determined. According to these estimates, the unit loss has not changed significantly in these three years.

Table 5-2: LOSS ON DOMESTIC FOODGRAIN PROCUREMENT

	Unit Loss (Tk/md)			Total Loss (million Taka)	
	Rice	Wheat	Average /a	On Domestic Procurement	On Estimated Sales from Domestic Procurement
FY78	63	27	62	932	651
FY79 (estim.)	63	29	58-60	562	799
FY80 (proj.)	81 (71) /b	41 (36) /b	73-74 (64-65) /b	992 (869) /b	553-560 (484-491) /b

/a The lower figure is an average, weighted by the volume of procurement; the higher figure is an average, weighted by the estimated volume of sales out of domestic procurement (see Table 11.2).

/b Assuming mid-year increases in ration prices as in Table 11.1.

Source: Table 11.2.

#### B. Financial Impact

18. While the GOB approach measures both the costs of foodgrains bought with own resources and the receipts from their sale, the financial impact calculation measures the cost of quantities purchased <sup>1/</sup> and the receipts for quantities sold. Calculations according to this concept attempt to ascertain the size of the net improvement or deterioration of the Government's overall financial position on account of foodgrain purchases (and handling of aid imports) and sales; this includes both any direct budgetary impact as well as the possible net change in the Government's need to obtain extra-budgetary financing. Consequently, only the actual payments in a year are included in the cost, while the opportunity cost of aid imports are ignored. However, the incidental and distribution costs of all imports (including aid imports) are accounted for. All sales of foodgrains are, of course, included under receipts.

19. Table 11.3 presents the estimated net financial impact for FY78, FY79 and FY80. (A summary is given in Table 5-3). The estimates are presented in two parts. The first measure given in line 10 is the financial impact without imputing any value for grains distributed under FFW. Line 11, on the other hand, includes a value for FFW: the equivalent payment to the FFW workers would be necessary if the Government did not distribute the grains. GOB had a relatively large financial surplus on its foodgrain operations in FY79. In FY78 and FY80, relatively large deficits are involved if the value of FFW is ignored. The main reasons for the financial gain in FY79 are the low level of domestic procurement and the large volume of grain sales from the previous year's carryover stocks. The deficit projected for FY80 (i.e., excluding the value of FFW) will be primarily due to the large cash imports, the increase in the unit subsidy, and the projected increase in domestic procurement. Table

<sup>1/</sup> Including incidental cost borne by the Government for aid imports.

11.3 gives a range for the projected financial loss (excluding the value of FFW) for FY80, the higher figures corresponding to prices announced so far, and the lower figures assuming mid-year increases in ration prices. Including an imputed value for FFW, all years show positive financial contributions from the foodgrain operations.

Table 5-3: FINANCIAL IMPACT OF FOODGRAIN OPERATIONS  
(million Taka)

	Excluding FFW	Imputing Value for FFW
FY78	- 357	+ 201
FY79 (estim.)	+ 1,009	+ 1,348
FY80 (proj.)	- 580	+ 195/+ 669
	(- 241) /a	(+ 573/+ 1,074) /a

/a Assuming mid-year ration prices increases.

Source: Table 11.3.

### C. Full Economic Subsidy

20. This section attempts to estimate the "full economic subsidy" incurred on the total distribution of all foodgrain. As in the case of the Government-financed subsidy, the subsidy in this section is estimated on the distribution (or offtake) of foodgrains, ignoring the cost and potential receipts of any stock build-up. 1/ (Alternatively, the value of stock changes could be measured too.) The difference, however, is that in the present case receipts and costs of all offtakes (including FFW and relief) are accounted for, while the GOB-financed subsidy measure deals only with the sale of foodgrains bought with the Government's own resources. Under the full economic subsidy calculation, an imputed cost is ascribed to the amount of foodgrains distributed out of aid imports. Aid imports could either be valued at donors' prices or at world c.i.f. prices. In the Government's Food Budget an estimate is provided of the value of imports received through foreign assistance, which could be a basis for a measure of the full cost of aid imports based on donors' invoice or contract prices. These estimates (line 1, Statement VII, Summary of Food Budget, Budget Summary Statements) may be added to the cost of cash imports to obtain measures of the full cost of all grain imports. Alternatively, imports may be valued at world c.i.f. prices to estimate their full imputed cost. Neither measure, however, necessarily gives the true opportunity loss to Bangladesh of the subsidy on imported grain, because neither donors' prices nor world c.i.f. prices necessarily correspond to domestic market prices at which such grain could have been sold (see para. 23). Hence, subsidy estimates based on imputed cost of imports at donors' or world prices

1/ These calculations do not take into account certain other costs such as the cost of imputed interest on tied-up capital and cost of spoilage which are relevant even if there is no stock build-up in a given year. Such costs should ideally be included also in the subsidy measure.

should only be interpreted as showing the difference between imputed full cost and full receipts from foodgrain distribution. As before, a basic difficulty encountered in the calculation of the cost is how to determine the amounts that are sold out of imports and out of domestic procurement, respectively. In the present estimates, sales from domestic procurement and from imports are estimated by multiplying the total sale quantity by, respectively, the ratio of domestic procurement to total procurement and the ratio of imports to total procurement. 1/

21. Table 11.4 estimates (or projects) the full cost of purchases of all foodgrain distributed in FY78, FY79 and FY80 using world c.i.f. prices to value all imports. In most instances these prices overstate the cost to Bangladesh of importing foodgrains on aid terms, because world prices usually refer to higher quality grain than that received under food aid. Donor's prices were not used in the calculation given in Table 11.4, because these data for FY80 were not available at this writing. However, some comparisons based on donors' prices are given in a footnote in Table 11.4. Large variations in these cost estimates are possible depending on how aid imports are valued. In Table 11.4, total receipts are also calculated on the sale of all foodgrains distributed (as in the case of the financial impact measure). The differences between cost and receipts are given in line 12 and repeated in Table 5-4 below. According to the estimates, the full economic subsidy increased between FY78 and FY79 in spite of a decline in the volume of sales, reflecting the increase in the imputed cost of purchases compared with receipts. In FY80, a further increase in the loss is projected, its magnitude depending on what is assumed about further ration price increases and increase in offtakes. Line 13 shows the full economic subsidy expressed as a fraction of the volume of sales. These estimates are lower than the estimates of the GOB-financed subsidy (Table 11.1) -- except in FY80 -- because of the larger volume of wheat in the former calculations.

Table 5-4: ESTIMATED FULL ECONOMIC SUBSIDY ON FOODGRAIN SALES /a

	Per Unit			Total		
	<u>Rice</u>	<u>Wheat</u>	<u>Average</u>	<u>Rice</u>	<u>Wheat</u>	<u>Total</u>
	-----Tk/md-----			-----million Taka-----		
FY78	80.4	13.1	34.8	1,305	445	1,750
FY79	66.6	41.3	46.9	1,019	1,275	2,294
FY80	136.8	49.7	77.7	2,514	1,929	4,443
	(126.8) /b	(44.7) /b	(71.1) /b	(2,330) /b	(1,735) /b	(4,065) /b

/a These estimates overstate the subsidy because imports are valued in this table at world prices which usually pertain to better quality grains than those received under food aid.

/b Assuming 2.1 million tons offtake; the smaller figures assume mid-year increases in ration prices as given in Table 11.1

Source: Table 11.4.

1/ See Table 11.4 for details.

22. For FY79, estimates of "full" cost based on donors' prices of imports can also be developed (paras. 20 and 21). Using GOB's budget figures for the value of imports from foreign assistance, the import prices are estimated at Tk 4,334/ton for rice and Tk 2,344/ton for wheat in FY79. On this basis, the full economic subsidy would be Tk 476 million less in FY79 than indicated in Tables 5-4 and 11.4.

23. Table 11.4 does not necessarily show the opportunity loss to the Government on account of the subsidies (para. 20). In other words, line 12 in Table 11.4 may not be a measure of what the Government could possibly have earned additionally through its foodgrain operations. Table 11.5 shows estimates of the maximum prices at which the Government could possibly have sold the grains; these prices have been assumed to be somewhat below the domestic market prices to account for the effect of Government sales in the open market -- as opposed to distribution through the ration system -- on open market price levels. <sup>1/</sup> Multiplying the volume of sales by this price, estimates are obtained for total potential sale receipts (line 4). The differences between potential receipts and actual receipts (as calculated in Table 11.5) are measures of the opportunity loss on account of subsidized foodgrain sales. Obviously, these give lower subsidy estimates than those shown in Table 11.4. This alternative "subsidy" measure is summarized in Table 5-5.

Table 5-5: ESTIMATED "OPPORTUNITY LOSS" ON SUBSIDIZED FOODGRAINS SALES

	Per Unit (Tk/md)			Total (million Taka)		
	Rice	Wheat	Average	Rice	Wheat	Total
FY78	33.1	19.1	23.6	537	650	1,187
FY79	40.0	23.0	27.0	611	712	1,323
FY80	38.0	33.0	34.6	698	1,280	1,978
	(28.0) /a	(28.0) /a	(28.0) /a	(514) /a	(1,086) /a	(1,600) /a

/a Assuming 2.1 million tons offtake; the lower figures assume mid-year increases in ration prices as in Table 11.1.

Source: Table 11.5.

### III. The Fertilizer Subsidy

#### A. The GOB Estimate of the Full Economic Subsidy on Fertilizer Sales

24. In the case of fertilizer, the Government estimates the full economic subsidy on sales of fertilizer bought domestically and from abroad with cash and on aid terms. In its calculations, aid-financed imports are valued at the donors' invoice or contract prices. As in the case of foodgrains, subsidy measures for fertilizer based on such a valuation procedure need not necessarily indicate the actual opportunity loss to the Government; the latter depends on the market price at which such fertilizer could be sold. Unlike in

<sup>1/</sup> See Table 11.5 for details.

the case of foodgrains, however, adequate information concerning the "market-clearing" prices for fertilizer is not available. If the market-clearing price for fertilizer is below the estimated cost, the calculations presented here would overstate the opportunity loss incurred by the Government through its subsidized fertilizer sales.

25. Tables 11.6-11.8 present GOB's subsidy calculations for FY78, FY9 and FY80. The unit subsidy in FY78 was Tk 1,659/ton (or Tk 60.9/md), which increased to Tk 1,775 per ton (or Tk 65.3/md) in FY79, primarily due to larger increases in the overall procurement cost than in sales prices. In FY80, however, the unit subsidy is expected to decline to Tk 48.4-48.7/md, mainly due to a nearly 30% increase in sales price. The subsidy in FY78 was Tk 1,183 million, which increased to Tk 1,301 million in FY79, both due to the higher unit subsidy and the slightly higher level of sales. In FY80, the subsidy is projected to be Tk 1,061-1,317 million, depending on the volume of sales. The effect of the unit loss decline on the overall amount of the subsidy is projected to be partly offset by an increase in the volume of fertilizer sales in FY80.

26. Table 5-6 presents the changes in the unit and total subsidy on fertilizer sales. The subsidy on fertilizer sales increased sharply both in absolute terms and as a percentage of agricultural development expenditure in the ADP. Due to a 30% budgeted increase in the allocation to agriculture, the subsidy as a percentage of development expenditure for agriculture is projected to decline further in FY80.

Table 5-6: GOVERNMENT ESTIMATES OF "FULL ECONOMIC SUBSIDY" ON FERTILIZER SALES

	Per Unit of Sales (Tk/md)	Total (million Taka)	% of Dev. Exp. in Agricultural Sector
1973/74	n.a.	28	2
1974/75	20.45	150	9
1975/76	40.22	485	16
1976/77	46.48	644	19
1977/78	60.95	1,183	30
1978/79	65.21	1,301	25
1979/80 (proj.)	48.7	1,062	17
	(48.4) /a	(1,317) /a	(21) /a

/a The figures in parentheses correspond to BADC's target offtakes of one million tons, the other estimates are based on the mission's projections for offtakes of 800,000 tons.

Source: BADC.

#### B. Financial Impact

27. Analogous to the financial impact calculations for foodgrains in Table 11.3, the effect of fertilizer operations on the Government's financial position is estimated in Tables 11.6-11.8. According to these calculations,

there was a loss of Tk 70.7 million in FY78 and of Tk 223.2 million in FY79. The main reason for the increased financial loss was the 41% increase in fertilizer purchases in FY79. In FY80, the Government is expected to make a net gain ranging from Tk 327.7 million to Tk 661.2 million, however, mainly due to the envisaged increase in receipts resulting from the fertilizer price increases announced earlier this year.

Table 5-7: FINANCIAL IMPACT OF FERTILIZER OPERATIONS

	<u>Financial Impact</u> (million Taka)
1977/78	- 70.7
1978/79	- 223.2
1979/80 (proj.) /a	+ 327.7/+ 661.2

/a The lower figures assume offtakes of 800,000 tons, the higher of one million tons.

Source: Tables 11.6-11.8.

REGIONAL DIFFERENCES IN FOODGRAIN PRODUCTION AND DISTRIBUTION 1/

1. FY78 was a relatively good crop year for Bangladesh. With domestic production estimated at 13.1 million tons and imports of 1.64 million tons, per capita availability was around 15.4 ounces per day. The overall food situation deteriorated in FY79 when domestic production was perhaps as low as 12.7 million tons (compared to official estimates of about 13.0), while arrivals of imports declined to about 1.1 million tons. The national average per capita availability in FY79 was consequently well below the previous year's level even after including the drawdown of government stocks. These national average figures, however, are crude and they hide considerable regional and urban/rural differences. Even in a relatively good crop year such as FY78, wide spatial differences in consumption levels existed. In FY79, with crop failures and low imports, such differences probably worsened. Regional and urban/rural differences in food production should have implications for public foodgrain operations both in relatively good crop years and in times of distress. This Annex sets forth some rough estimates of regional differences in foodgrain production and availability for FY74 and FY78 and indicates what changes may have taken place in FY79. Among other things, the discussion relies on: (i) estimated differences in production and consumption for FY74 ("adjusted" for discrepancies), the only year for which regional data for both these categories are readily available; (ii) estimated regional production differences and estimates of consumption for FY78; and (iii) estimated shortages in production by regions in FY79.

The Approach

2. A comparison of regional production levels with foodgrain "requirements" gives a rough indication of the regional production gaps, thereby identifying the "surplus" and the "deficit" districts. A comparison of actual consumption levels with foodgrain "requirements", on the other hand, reveals what the real foodgrain availability gaps are. The differences between the production gaps and availability gaps for each region and district provide a crude measure of the effect of imports, private marketing and public grain procurement and distribution on foodgrain availability. At this stage, given the data limitations, these comparisons are made only in per capita terms. It should be noted that, given the weakness of the data base, the purpose of putting these data together is not to estimate exact differences, but rather to illustrate broad orders of magnitude and directions of change in regional foodgrain availability.

3. Appendix Tables 12.1 through 12.6 give the production and availability gaps for the four divisions and 19 districts of Bangladesh. 2/ The production estimates used are those published by the Bangladesh Bureau of Statistics (BBS); the population estimates are by BBS and IBRD; the foodgrain requirement estimates are based on GOB's estimate of a minimum per capita

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1/ This annex has been prepared by Vinod Thomas.

2/ Jamalpur is included in Mymensingh district throughout this discussion.

requirement of 15.5 ounces per day. The consumption estimates for FY74 are based on a nationwide survey by BBS; those for FY78 are "guesstimates," based on estimates of total consumption for Bangladesh for FY78, and the same regional shares as estimated for FY74; this is obviously the weakest part of the analysis.

Main Results for FY74 and FY78

4. The main points that emerge from an examination of the district data are presented in Tables 6-1 to 6-4. According to Tables 6-1 and 6-2, all four divisions showed production deficits in FY74 and FY78. Dacca and Khulna divisions had large production deficits, 80 and 85 lbs/cap./year, respectively, in FY74 and 86 and 46 in FY78. Interestingly, while the per capita availability gap was eliminated in the country as a whole and in Chittagong and Khulna divisions in FY74, it was only reduced in Dacca division; in Rajshahi division, however, it increased by 14% in per capita terms over the production gap. In FY78, grain imports and public distribution did not suffice to fill the gap between requirements and availability for the country as a whole, but the difference between the production and the availability gap in each division was in the same direction as in FY74. Perhaps one should not draw any more conclusions for FY78 about the orders of magnitude of the changes, given the unreliability of the consumption estimates for that year.

Table 6-1: REGIONAL GAPS IN PER CAPITA FOODGRAIN PRODUCTION AND AVAILABILITY, 1973/74 (SUMMARY)

<u>Divisions</u>	<u>Per Capita Production Gap (lbs/yr)</u>	<u>Per Capita Availability Gap (lbs/yr)</u>	<u>Apparent Effect of Marketing and Distribution</u>
Rajshahi	- 7	- 8	Increase p.c. deficit by 14%
Khulna	- 85	+ 16	Reduce p.c. deficit by 119%
Dacca	- 80	- 1	Reduce p.c. deficit by 99%
Chittagong	- 10	+ 9	Reduce p.c. deficit by 190%
<u>Bangladesh</u>	- 45	+ 3	Reduce p.c. deficit by 107%

Source: Table 12.1.

Table 6-2: REGIONAL GAPS IN PER CAPITA FOODGRAIN PRODUCTION AND AVAILABILITY, 1977/78 (SUMMARY)

<u>Divisions</u>	<u>Per Capita Production Gap (lbs/yr)</u>	<u>Per Capita Availability Gap (lbs/yr)</u>	<u>Apparent Effect of Marketing and Distribution</u>
Rajshahi	- 9	- 21	Increase p.c. deficit by 130%
Khulna	- 46	+ 6	Reduce p.c. deficit by 115%
Dacca	- 86	- 9	Reduce p.c. deficit by 90%
Chittagong	- 17	+ 2	Reduce p.c. deficit by 115%
<u>Bangladesh</u>	- 41	- 6	Reduce p.c. deficit by 85%

Source: Table 12.2.

5. Going from a divisional breakdown to a disaggregation by districts, sharper regional differences surface (as shown in Tables 6-3 and 6-4). These results are based on the data presented in Tables 12.5 and 12.6 in the Statistical Appendix. The difference between columns (3) and (4) as presented in column (6) in Tables 12.5 and 12.6, indicate the production surplus and deficits relative to consumption requirement for each district. The same information, converted to a per capita basis, is given in Tables 12.3 and 12.4, which permit the direct comparison of the relative order of "abundance" or shortage in these districts. Only the northern districts of Dinajpur, Mymensingh, Bogra and Sylhet showed production surpluses in both FY74 and FY78. In Rangpur, Tangail, Patuakhali and Noakhali the situation was different in the two years investigated -- showing a surplus in one year and a deficit in the other. The production deficits are pronounced in the central and some southern and western districts -- some of which contain the larger cities.

6. Comparisons of columns (4) and (5) in Tables 12.5 and 12.6 in the Statistical Appendix give the spatial picture of apparent consumption compared to requirements. The same information is given on a per capita basis in Tables 12.3 and 12.4. Comparing the per capita production gap and availability thus derived, the apparent effect of marketing and imports on the production surplus districts is seen to vary: it may provide more surplus, reduce the surplus, or even cause a deficit in availability. The effect on deficit districts ranges from providing a surplus to increasing the deficit. By and large, per capita availability in the central and southern districts is improved through grain trade. In contrast, per capita deficits appear to result, in spite of relatively high production levels, in the northern districts of Dinajpur, Rangpur, Bogra and Mymensingh (See Tables 6-3 and 6-4).

### Conclusion

7. Given the tentative nature of the estimated consumption data, caution is advisable concerning the drawing of policy conclusions from the analysis presented above. Nevertheless, the following general results and certain broad implications emerge.

Table 6-3. REGIONAL DIFFERENCES IN PER CAPITA FOODGRAIN CONSUMPTION AND PRODUCTION, 1973/74

<u>"Surplus" Production Districts</u> /a				<u>Deficit Production Districts</u> /a			
District	Per Capita Production Gap(lbs/yr)	Per Capita Availability Gap(lbs/yr)	Apparent Effect of Marketing and Public Distribution	District	Per Capita Production Gap(lbs/yr)	Per Capita Availability Gap(lbs/yr)	Apparent Effect of Marketing and Public Distribution
Sylhet	+ 43	+22	Reduce "Surplus"	Dacca	-194	+22	Create "Surplus"
Rangpur	+ 36	+ 3		Faridpur	-145	+ 5	
Bogra	+ 27	+ 2		Tangail	- 95	+39	
-----				Chittagong	- 41	+10	
Mymensingh	+ 77	-39	Create Deficit	Rajshahi	- 50	+18	
Dinajpur	+129	-25		Comilla	- 34	+15	
-----				Barisal	- 40	+17	
-----				Patuakhali	- 60	+71	
-----				Kushtia	-137	+41	
-----				-----			
-----				Pabna	-175	-63	Reduce Deficit
-----				Khulna	- 44	- 2	
-----				Jessore	- 80	0	
-----				-----			
-----				Noakhali	- 7	-22	Increase Deficit
-----				-----			
-----				Chittagong			No change
-----				H.T.	0	0	

/a + indicates "surplus".  
- indicates deficit.

Source: Table 12.5

Table 6-4. REGIONAL DIFFERENCES IN PER CAPITA FOODGRAIN CONSUMPTION AND PRODUCTION, 1977/78

<u>"Surplus" Production Districts</u> <sup>/a</sup>				<u>Deficit Production Districts</u> <sup>/a</sup>			
<u>District</u>	<u>Per Capita Production Gap(lbs/yr)</u>	<u>Per Capita Availability Gap(lbs/yr)</u>	<u>Apparent Effect of Marketing and Public Distribution</u>	<u>District</u>	<u>Per Capita Production Gap(lbs/yr)</u>	<u>Per Capita Availability Gap(lbs/yr)</u>	<u>Apparent Effect of Marketing and Public Distribution</u>
Tangail	+ 17.5	+29.6	Increase "Surplus"	Dacca	-193.6	+ 5.5	Create "Surplus"
				Faridpur	- 16.6	+ 7.2	
				Kushtia	-108.0	+16.8	
				Comilla	- 68.1	+11.9	
				Barisal	- 43.9	+12.3	
-----				-----			
Patuakhali	+104.8	+54.9	Reduce "Surplus"	Khulna	- 86.7	-11.4	Reduce Deficit
Sylhet	+ 38.5	+11.9		Pabna	- 84.9	-69.4	
				Chittagong	- 59.1	- 3.8	
				Rajshahi	- 35.6	- 2.2	
				Jessore	- 35.4	-11.2	
				Chittagong			
				H.T.	- 11.4	0.0	
-----				-----			
Mymensingh	+ 42.1	-43.4	Create Deficit	Rangpur	- 5.8	- 9.4	Increase Deficit
Dinajpur	+ 70.1	-41.0					
Noakhali	+ 51.0	-28.0					
Bogra	+ 40.1	- 6.0					

<sup>/a</sup> + indicates "surplus".  
- indicates deficit.

Source: Table 12.6

- (i) The advantages of going from aggregate and average analysis to a regional disaggregation of the foodgrain sub-sector seem to be substantial.
- (ii) The northern districts of Dinajpur, Bogra, Mymensingh and Sylhet show sizeable production "surpluses" on a per capita basis. Production deficits, on the other hand, are particularly pronounced in the central districts of Dacca, Faridpur and the southwestern districts of Kushtia and Pabna.
- (iii) The large regional variations in per capita production are considerably evened out through inter-district trade and procurement and distribution of grains by the Government.
- (iv) "Surpluses" or deficits even at district level do not tell the whole story. The possibility that some surplus production districts may be in deficit in terms of per capita availability and that some deficit production districts are even more in deficit in terms of availability suggests that considerable differences exist further down at the subdivisional and Thana levels. It is possible that the income distribution in some foodgrain exporting districts is particularly skewed. As a combined effect of the usually inelastic food demand of higher income groups and the low purchasing power of the majority of the population, such districts might export grain to other districts even to a point where their average per capita consumption levels fall below "minimum" needs.
- (v) Government grain procurement and distribution policies should take into account some of these regional differences. <sup>1/</sup> Where farm prices are particularly depressed, procurement should be expanded. Although, in general, one would expect prices to be depressed in true "surplus" districts, low purchasing power can also be a cause for low prices. It is possible therefore, that government procurement to support prices in some districts with relatively low harvest prices may reduce per capita availability of foodgrain below "requirements". In such districts (e.g., Rangpur in FY78) greater than normal levels of food-for-work and public distribution of foodgrains will be called for during the lean season. To minimize transport and storage costs, it is conceivable that intra-district procurement and distribution are advisable in such surplus districts.

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<sup>1/</sup> Tables in sections V, VI and X of the Statistical Appendix present data on procurement, storage and public distribution by districts. These could and should be interpreted also in the context of regional production surpluses and deficits, consumption and price differences and be used to determine suitable policy actions.

Table 6-5: PRODUCTION AND PROCUREMENT OF WHEAT  
(in long tons)

<u>Division/District</u>	<u>Production</u>		<u>Procurement</u>	
	<u>1977/78</u>	<u>1978/79</u>	<u>1977/78</u>	<u>1978/79</u>
<u>Rajshahi</u>	<u>136,048</u>	<u>211,660</u>	<u>4,962</u>	<u>21,857</u>
Dinajpur	25,097	47,936	914	6,648
Rangpur	15,712	56,775	112	2,995
Bogra	27,802	29,504	1,729	6,639
Rajshahi	32,505	37,812	874	3,910
Pabna	34,932	39,633	1,333	1,665
<u>Khulna</u>	<u>91,967</u>	<u>136,335</u>	<u>4,898</u>	<u>8,226</u>
Kushtia	64,195	90,520	1,576	2,438
Jessore	23,379	31,360	3,312	5,222
Khulna	4,286	13,230	10	563
Barisal	107	1,225	-	3
Patuakhali	.	.	-	-
<u>Dacca</u>	<u>64,618</u>	<u>71,781</u>	<u>403</u>	<u>4,499</u>
Jamalpur /a	3,754	... /a	... /a	12
Mymensingh	8,020	11,426	42	108
Tangail	14,202	23,200	219	380
Dacca	14,082	11,675	72	3,381
Faridpur	24,560	25,480	70	618
<u>Chittagong</u>	<u>49,867</u>	<u>66,451</u>	<u>770</u>	<u>15,478</u>
Sylhet	2,131	3,158	53	491
Comilla	47,438	62,786	717	14,987
Noakhali	210	466	-	-
Chittagong	36	21	-	-
Chittagong Hill Tracts	52	20	-	-
<u>TOTAL</u>	<u>342,500</u>	<u>486,227</u>	<u>11,033</u>	<u>50,060</u>

. = less than 1 ton.

/a In 1978/79, production included in Mymensingh.  
In 1977/78, procurement included in Mymensingh.

Source: BBS.

### Production Differences in FY79

8. According to most accounts there was a considerable rice production shortfall in 1979. This was unevenly spread across the country. Crop failures of the FY79 aman were particularly severe in the northern districts. Mymensingh, Bogra and Rangpur districts are estimated by some observers to have produced 21, 22 and 26%, respectively, less than in FY78. The main reason was drought. Boro production in the northern districts was also reduced due to inadequate rainfall and fuel and power shortages that affected irrigation facilities. Rangpur was particularly hard hit, because its aus and jute cultivation in 1979 also suffered from the drought. The 1979 aus and broadcast aman crops fell short of the previous year's levels in Pabna, Rajshahi, Kushtia, Jessore, Faridpur, Dacca and Bogra.

9. Wheat Production. In FY79, the output of wheat was 486,000 tons, some 42% higher than in FY78. The increase in production was unevenly spread -- about 270% increase in Rangpur (which produced about 12% of the total crop in FY79), 88% increase in Dinajpur (10% of the total crop), 40% increase in Kushtia (19% of the total crop), and 32% increase in Comilla (13% of the total crop). Procurement of wheat also rose sharply between FY78 and FY79 -- from 112 to 2,995 tons (about 2,500%) in Rangpur, from 914 to 6,648 (about 585%) in Dinajpur, from 1,576 to 2,438 (about 118%) in Kushtia and from 717 to 14,987 (about 2,000%) in Comilla. As Table 6-3 shows, the rise in wheat production was combined with an increase in wheat procurement across districts and the country as a whole. The same effort needs to be followed up to sustain production incentives and production expansion of wheat in coming years.

### Conclusion

10. The data examined in this Annex indicate that regional and sub-regional differences in grain production and consumption in Bangladesh are considerable and have not been static over time. The changes in agricultural production trends in recent years, for example, did not take place uniformly throughout the country's regions. The widely different rates of decline in FY79 rice output and the latest production gains in wheat among districts are cases in point. Major reasons for such spatial variations include, of course, the differing impact of climatic conditions and trends as well as differences in land suitability from district to district. Differences in sociological and basic infrastructure conditions have influenced the distribution and application of modern agricultural inputs and, thus, of agricultural technology improvements and productivity gains unevenly. Overall population density in Bangladesh is so high that the possibility of spatial adaptation of the population to any sharp changes in the relative fortunes of particular districts or regions is virtually precluded -- despite the significant variations in population pressure on land across the country as a whole and even within districts. It is important, therefore, that development strategies and programs take into account the already existing regional differences and the possibility, or even likelihood, that uniformly applied policy measures may have widely differing implications and results in different parts of the country.

11. Some additional, and striking, indications of regional differences are spotlighted, for example, in the map included in Annex 9. Others are evident from the map of cropping patterns which is attached to this report. Finally, many of the tables in the Statistical Appendix provide glimpses of further differences -- e.g., the tables on fertilizer distribution, on crop production and procurement, on storage facilities, and particularly Table 1.1 which shows population and land resources.

FOODGRAIN STOCKS REQUIRED FOR OPERATIONAL AND EMERGENCY PURPOSES 1/

A. Introduction

1. Given the Government's multiple objectives in foodgrain policy, estimates of public foodgrain stock holdings required must necessarily take into consideration several distinct factors. Most important among them are (i) stock levels required to operate the established public grain distribution system; (ii) stocks required to meet emergency needs, and (iii) stocks needed to conduct open market sales if and when these are finally initiated. In addition, there is the question of so-called "dead stocks" to be considered. In a multiple-facility system such as that operated by the Government, 2/ over-all stocks throughout the system as a whole should never fall below a certain minimum level below which the uneven distribution of these stocks would effectively prevent the distribution system from functioning. "Dead stocks", therefore, are effectively unavailable for meaningful foodgrain operations. On the other hand, there are also constraints on stock holding capability that must be taken into account. One is the capital and operating cost of large grain stocks and extensive storage facilities. Within a given level of facilities, then, the two primary constraints are (i) physical limits to the Government's capacity, which are determined by the capacity of available storage facilities and by requirements to store commodities other than foodgrains; and (ii) the need to keep a certain percentage of this (theoretically) available capacity free for receiving imports, handling new procurement, permitting transit shipments throughout the system, and allowing proper stock roll-over and stock management operations. 3/

2. Other factors affecting the level of overall stocks that can be held within the Government storage system include the capacity of the country's transport system to shift grains from one location to another -- in terms of both volume and time -- and the time required to negotiate, import and distribute foodgrain supplies from external sources.

3. A final important point is that all foodgrain stocks held by the Government are held concurrently and within the same single storage system (although consideration is being given to establishing some storage capacity in disaster-prone areas that would be used exclusively for storing emergency relief stocks). 4/ Stock requirements for one particular type of operation or

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1/ This annex has been prepared by Götz Schreiber. Helpful comments were provided by Vinod Thomas.

2/ The Government presently operates over 330 permanent storage facilities throughout the country -- and over 250 temporary ones during large parts of the year for procurement purposes (see Annexes 3 and 8).

3/ A detailed discussion and quantitative assessment of storage capacity and constraints is provided in Annex 8.

4/ See Annex 8, para. 48.

emergency should not be regarded as strictly and exclusively earmarked for this sole purpose. Rather, stocks are fungible -- and stock requirements estimated for particular purposes are not necessarily additive, but at least partly complementary and overlapping. This is particularly the case with stocks earmarked for regular ration distribution and for open market sales, but also with those for emergency relief and for open market sales. Thus, overall minimum stock reserve requirements will be somewhat lower than the sum of the requirements for each of the specific purposes described in the following sections.

B. "Dead Stocks"

4. As noted above, a certain minimum of stocks must be held at all times within a multi-facility storage system in order to keep the distribution system operating. If overall stocks within the system fall below this minimum level, their uneven distribution among the various individual facilities comprising the storage system makes it impossible to keep the public foodgrain distribution system operational throughout the country. This absolute minimum is generally referred to as "dead stocks". For the present storage system of the Ministry of Food, with its over 330 widely scattered storage facilities, the "dead stocks" level is probably at least 150,000 tons and possibly as high as 200,000 tons. 1/ During the crisis of 1979, the system came dangerously close to its "dead stocks" level when, as of June 30, stocks had fallen to only 209,000 tons and there were reports of famine conditions in isolated parts of the country which the system could no longer supply effectively and continuously. 2/ Given the very high rates of offtake during July through October 1979, it took massive quantities of imports and an enormous effort on behalf of the Administration and the internal transport system to keep the food distribution system operating and to build up public grain reserves to more comfortable levels.

C. Operational Stock Requirements for Routine Foodgrain Distribution

5. The Government's foodgrain distribution system channels foodgrains to particular consumer groups through ten different operational categories. This system has in recent years supplied between 115,000 and 248,000 tons per month to consumers. The average monthly offtake from the system has been around 150,000 tons, for an annual total of about 1.8 million tons. By far the greatest part has been distributed through various categories of the ration system, with only small quantities released as direct emergency relief or through so-called "open market sales" and/or "market operations". Offtakes are higher during the "lean season" months and lower during and immediately after the rice and wheat harvests. The major lean season falls between

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1/ With improved internal communications and transport capacity it could be reduced in the future, although probably not much below the 150,000 ton level.

2/ Even at 200,000 tons, the system is already subject to regional break-downs, and it may be said that stocks did in fact touch the "critical threshold" in the summer of 1979.

the aus and aman harvests, i.e., August through October. In addition, there are two minor lean seasons, one preceding the wheat and boro harvests (March and April) and the other prior to the aus harvest (June). In good crop years, these minor lean seasons are less important as the supply of non-cereals is seasonally high and substantial aman grain stocks are available in the private sector to sustain consumption. The major lean season, however, by September/October often brings severe foodgrain shortages which affect primarily the poorer segments of the population.

6. In a "normal" year, monthly routine offtake during the main lean season is likely to average 180,000 tons between July and October. The Government should be prepared to operate at this level for at least three months without risk of reducing its own stocks to unmanageable levels. 1/ Including provisions for the (inevitable) grain losses during storage and distribution (which losses have ranged from 10,000 to 20,000 tons per month in "normal" times), 2/ the Government should therefore hold a minimum of 600,000 tons of operational foodgrain stocks at the beginning of the main lean season, i.e., on July 1 of each year, just to be able to operate its standard grain distribution system without disruptions during the July-October period.

7. The second annual "benchmark" date is November 1, i.e., just prior to the aman harvest and procurement season. The aman crop, by far the largest and most important of the three annual rice crops, is harvested between November and February. This crop is so large that the private sector is able to build up sizeable grain stocks during this period. Moreover, the requirement for farm labor is very high during the harvest, and many landless meet their consumption needs directly from wages received in cash or in kind during these months, making them less dependent on grains supplied by the public distribution system. 3/ Finally, the arrival of such a large crop on the market in a very short time tends to depress market prices considerably below the average price level for the year, thereby reducing the demand for grains from government stocks. Monthly offtake from the government system during a good aman harvest tends to be as low as 120,000 tons. Even if it were as high as 150,000 tons per month, the simultaneous inflow of domestically procured aman paddy and rice into the government warehouses (which may total between 200,000 tons in a bad crop year and 500,000 tons in a good year between November and February) lowers the minimum opening stock level required to operate the distribution system during the November-February period considerably below the

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1/ It has at times been argued that a four months' reserve would be the minimum. This seems excessive, however, since public grain stocks can be replenished during this lean season by imports and in normal years by some procurement of aus.

2/ See Annex 8, paras. 17 and 18, for a brief discussion of stock losses.

3/ The rural poor, of course, are not the major beneficiaries of the present system. They are served only by modified rationing, Food-for-Work schemes, and by outright relief operations (see also Annex 4).

level required on July 1. Allowing again for losses in storage and transit, only about 400,000 tons of routine operational stocks should be necessary on November 1 to facilitate normal operation of the public grain distribution system.

8. A significant portion of the overall storage capacity must be kept free when the major procurement drive begins in November of each year to permit the purchase and storage of up to 750,000 tons of aman paddy (i.e., 500,000 tons rice equivalent) from the private sector.

D. Security Stocks Required to Cope with Natural Calamities or Major Crop Failures

9. To safeguard the country's population against famine and starvation in the event of a natural disaster (such as a cyclone, major flood or tidal wave, or a massive crop failure), the Government seeks to maintain a foodgrain reserve sufficient to carry out massive emergency relief operations in the affected areas, at least until additional food supplies can be mobilized and brought in from abroad. 1/ To determine the magnitude of the security stockpile required, two disaster scenarios are depicted below. Case A involves a major sudden calamity affecting a large part of the country. Case B involves a major crop failure affecting all or most of the country, but becoming obvious to the farmers and the Government more gradually and with more advance indication than would a sudden calamity. In addition, the experience of 1979 is cited as Case C.

Case A: Natural Disaster

10. Bangladesh is very prone to major natural calamities such as cyclones, floods and tidal waves. While such disasters often affect only relatively small parts of the country, the possibility of a major catastrophe striking a large part of Bangladesh is always high. A possible "worst case" scenario, for which the Government should be prepared, presumes that up to 15 million people would be affected by a single large disaster (or by the simultaneous occurrence of different calamities in different parts of the country) and that their grain stocks as well as their standing crops would be destroyed or lost.

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1/ It generally takes about four months from the date of purchase and delivery contract for standard commercial foodgrain imports to arrive in Bangladesh ports. This time may be cut somewhat in the event of a major calamity. For example, emergency procedures and priority shipments may be adopted and grain-carrying ships already loaded or on the high seas may be diverted to Bangladesh. Depending on the distance of the affected areas from the point of import -- usually the ports of Chittagong and Chalna, but possibly any border crossing point with India -- and on the capacity and post-disaster state of the local transport and distribution system in the affected areas, the delivery of imported foodgrains to the final distribution points may take up to 30 additional days.

If the government is to provide sufficient foodgrain supplies to these people to ensure minimum nutrition levels for a period of at least 75 days (until further relief supplies from external sources can be delivered to the affected regions), this would require almost 440,000 tons of grains just to provide a daily quota of 14 ounces to each individual in the disaster areas. Adding a 5% contingency for losses in transit and distribution, the total security stock requirement would come to at least 461,000 tons.

11. Taking into account that most other food supplies (except possibly fish and some tree crops, if in season) might also be lost in the disaster area and that 14 ounces of foodgrains represent only 1,467 calories, it could be argued that every effort should be made to supply more than this bare minimum to the stricken population. For each additional ounce provided per day and person, the security stock requirement would increase by over 31,000 tons (including losses) for a 75-day period. At a daily per caput quota of 15 ounces, some 494,000 tons of security stocks would be needed; at 16 ounces per caput per day this would rise to 527,000 tons. By the same token, providing for only 75 days of relief operations might err on the low side. If provisions were made for 90 days, for example, the stocks required would increase by 20%, from a bare minimum of 555,000 tons to a more comfortable level of over 632,000 tons.

12. Another consideration bearing on the size of the required security stock is the limit imposed by the country's transportation system <sup>1/</sup> on the Government's ability to deliver massive relief supplies to millions of people steadily and over a period of several months. This problem has been cited as placing a de facto ceiling on the size of the security stocks the Government should even attempt to hold. Given the limited network of primary and all-weather secondary roads, the relatively small number of trucks operating in the country (currently estimated at only 10,000), the railways' poor capacity and performance, and the numerous river crossings that both trucks and trains must make by ferry, this problem is certainly a very real one. It is likely to be particularly serious in the aftermath of a major cyclone or flood when bridges may be destroyed and roads and rail beds washed out. The inland water transport system also has only limited carrying capacity and it, too, is subject to damage -- both to vessels and to loading and unloading facilities -- in the event of a major natural disaster.

13. These problems should not be interpreted as meaning that the government should not aim at providing effective and immediate relief to the entire affected population. Instead, they suggest that every effort should be made: (i) to remedy as quickly as possible the infrastructural bottlenecks which might delay or even prevent effective relief measures in parts of the country -- particularly in the low-lying districts in the South and in the flood-prone areas along the Jamuna, Tista, Meghna, Padma and Old Brahmaputra rivers; and (ii) to locate sufficient storage capacity and foodgrain stocks in (or at least near) these most vulnerable areas so that delivery problems and response

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<sup>1/</sup> See Annex 8 for details.

time can be minimized. 1/ While the build-up of the country's transport system is a longer-range proposition, the strategic location of security grain stocks should be undertaken immediately insofar as present storage facilities permit. Where necessary, new facilities to store supplies for immediate relief should be constructed (or rented until new warehouses could be put in place). 2/ Such a strategic decentralization of security stocks would, of course, increase the overall quantity required for emergency preparedness above the level required were all security stocks to be held in a central location. The additional quantity required in a decentralized security stocks system could be held to a minimum, however, if only part of the total were held in the likely disaster areas (a supply of, say, up to 30 days), with the remainder kept in a few strategically located central facilities, from where it could be moved to stricken regions before supplies already stored there were exhausted.

14. Given these considerations, the overall security stock requirement might be as much as 150,000 tons larger than estimated in the base-case scenario. Storing grains to supply 15 ounces per day over 30 days for 30 million people in various disaster-prone parts of the country 3/ would require over 395,000 tons (including a 5% allowance for losses). Moreover, storing enough foodgrains to supply 15 ounces daily to 15 million people for an additional 45 days (after the locally-stored supplies were exhausted) would mean a further 297,000 tons to be held in more centralized locations. Altogether, therefore, the security stock reserve would have to reach roughly 700,000 tons. If the internal transport system were judged capable of moving grains from unaffected calamity-prone regions to the affected regions (before the stocks stored in the stricken areas and in the central locations were run down), this total could be about 100,000 tons less, as the centrally stored security stocks would have to be sufficient for about 30 days only.

15. Summing up, then, Bangladesh's security foodgrain reserves should probably total around 600,000 tons in all -- of which up to two thirds should

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1/ Encouraging and supporting the construction of storage facilities and the holding of security stocks by local bodies and farmers' cooperatives, (particularly in disaster-prone areas having communications and transport problems) would be an important complementary policy in support of the Government's own efforts.

2/ For a discussion of existing and recommended storage facilities and their location, see Annex 8.

3/ This might require the construction of additional storage facilities in these areas. Disaster-prone areas where security stocks should be held include the districts of Rangpur, Jamalpur, Bogra, Tangail (all prone to flooding and erosion from the Tista and Jamuna rivers), Faridpur, parts of Dacca, parts of Comilla (all subject to flooding by the Padma), Khulna, Barisal, Patuakhali, Noakhali and parts of Chittagong (all potential cyclone areas), Mymensingh, parts of Sylhet and parts of Dacca (all frequently flooded by the Old Brahmaputra, the Upper Meghna and their tributaries). See also Annex 9.

be stored in or near the areas most likely to suffer from natural disasters, while the rest should be held in a few large and strategically located central facilities.

Case B: Major Country-Wide Crop Failure

16. A rather different type of disaster -- and one that has happened not infrequently in the history of Bangladesh -- is a serious crop failure caused by the following events: prolonged drought; large-scale pest infestation of standing crops; untimely and widespread flooding (possibly compounded by the occurrence of a disaster such as discussed under Case A above). While the likelihood of a major regional or country-wide crop failure generally becomes obvious relatively early during the crop season, the extent of the crop shortfall may not become known until fairly late, or even only at the time of the harvest itself. 1/ Some lead time exists for the Government to read and interpret the signals pointing towards a crop failure and to initiate its response. This response would include securing foodgrain imports from abroad to arrive in time to prevent widespread famine and starvation and readying the country's transport and distribution system to move the available grains to the most seriously affected parts of the country.

17. As the aman crop is the largest of the three annual rice crops, a "worst case" scenario would involve a massive shortfall from its "normal" levels. A shortfall of about 20%, for example, from the trend level projected for 1980/81 (7.5 million tons), would imply an overall output of only 6 million tons (rice equivalent). 2/ This shortfall of 1.5 million tons would -- after deducting 10% for seed, feed and waste -- correspond to a net shortfall of 1.35 million tons from the normal level.

18. Under these circumstances, the Government would not be able to -- nor should it attempt to -- procure anything out of such a very short crop. Compared to a normal procurement from the aman crop of about 400,000 tons, there would be a direct negative impact on the Government's grain stock position of 400,000 tons. The actual net shortfall in the private sector would be reduced, therefore, from 1.35 million tons to only 950,000 tons, because the Government would absorb the other 400,000 tons of the overall shortfall by not procuring.

19. Given such a foodgrain deficit, no stock build-up would be possible in the private sector; net production plus routine offtake from the public grain distribution system would not be sufficient to cover the overall minimum

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1/ If, as discussed in Annex 2, a properly functioning "early warning system" were operating, not only the likelihood but also the probable extent of a crop failure could become known relatively early. Minimum in-country stock requirements might then be reduced somewhat.

2/ The aman crop has been this poor several times in recent history: 1962/63, 1966/67, 1970/71 through 1972/73, and 1974/75.

consumption requirement of the country's population for the six months from November through April until the next grain crops (i.e., wheat and boro) are harvested. At 15.5 ounces per day per person, aggregate consumption requirement for these six months would exceed 7 million tons, while the net availability from the aman crop would be only 5.4 million tons. Normal offtake from the public distribution system during this six month period would only add a further 900,000 tons to the quantity available for consumption. The consumption availability gap would amount to at least 700,000 tons.

20. As the aman harvest comes at the end of the main "lean" season, private stocks would already be at low levels, so that only minor quantities could be withdrawn from this source to supplement the grains available from the short crop and the Government system. Under these precarious circumstances, most of the landless and other poor would be compelled to reduce their foodgrain consumption sharply, and even the smaller farmers would have to make their small harvest last longer than usual. Overall foodgrain consumption per caput, therefore, would likely remain at the very low lean season level, averaging merely 15 ounces per day or even less. At 15 ounces per person per day, aggregate consumption requirements for the six months would be about 6.8 million tons, leaving a final foodgrain deficit of about 500,000 tons still to be met by additional distribution of grains from the Government's security reserve. Allowing again for 5% losses, the total quantity of additional public stocks to be distributed under these circumstances would be over 500,000 tons. As this would be in addition to the "normal" offtake of about 150,000 tons per month during this period, 1/ the combined offtake for routine and for emergency relief operations (including 5% losses) would average about 250,000 tons per month from November through April when the wheat and boro harvests would ease the situation. Cumulative offtake from the Government's stocks, thus, would amount to neat 1.5 million tons (losses included) between November and April. 2/

21. The combined impact of missed procurement (400,000 tons), regular ration distribution (900,000 tons), relief operations (about 500,000 tons) and losses incurred in distribution and storage (70,000 tons) aggregates to about 1.9 million tons. This would have to be covered entirely through almost immediate mobilization of food aid and/or cash purchases from abroad if the Government's grain stocks were to be returned to their pre-crisis level in time for the next "normal" lean season on July 1. Compared to a normal year, when routine offtake from public stocks during this period of about 900,000 tons (plus losses of about 45,000 tons) would have been partly offset by domestic procurement of about 400,000 tons, about 1.3 million tons of imports

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1/ Roughly 120,000 tons each for December, January and February, and some 150,000 to 200,000 tons per month in November, March and April.

2/ If, in the interest of price stabilization and maintenance of nutritional standards, the Government were to aim at providing 15.5 ounces per day to every person, this would require an additional 238,000 tons of distribution during the six months.

would be needed above the roughly 550,000 ton level of imports which would have sufficed in a normal year to restore stocks to the original level prior to this six-months period.

22. It must also be taken into account that the offtake from the public system would likely remain at higher than normal levels for several months more, because the disastrously small aman crop would not permit the usual build-up of stocks in the private sector (which could be carried over into the wheat and boro season in normal years to help meet consumption needs). In the scenario outlined above, the foregone private sector stock build-up would eventually have to be balanced either by increased public distribution, reduced private consumption, or by a better-than-average crop a few months hence.

23. The question remains: How much public security stocks must be held by the Government in order to cope with the situation described above? This question holds particular importance because the crisis depicted -- clearly a "worst-case" scenario -- occurs after the major lean season when public stocks are customarily already rather low. Clearly, considerable imports would have to be mobilized to fill the domestic supply gap. The most important problem, therefore, would be to determine as early as possible the probable size of the crop shortfall. If imports were contracted for as early as November or early December, they could begin arriving in the country by February or early March -- thus reducing the period during which the Government would have to meet the consumption-availability gap entirely from its own in-country stocks. Failure to recognize the impending crisis and to mobilize sufficient external supplies, on the other hand, would be costly: it would mean either a total exhaustion of Government stocks before the crisis were over and/or severe and widespread food shortages and famine among the rural poor. Mobilizing additional supplies from abroad too late would only barely -- if at all -- prevent these consequences, but would entail great costs as grains would have to be purchased and moved in great haste, with other important economic activities being curtailed or postponed until the crisis were over. The experience of 1979 is fresh enough to serve as a reminder of this possibility.

24. Under normal circumstances, imports of foodgrains should probably range between 50,000 and 100,000 tons per month during the November-April period. <sup>1/</sup> Even if the crop failure were not recognized early, therefore, the Government could still count on 200,000 to 300,000 tons of imports between November and February to supplement its own reserve stocks. Assuming that an additional 200,000 tons should normally arrive in March and April, and that by April the first sizable emergency imports could reach Chittagong and Chalna ports, the in-country stocks would have to be large enough to meet the internal supply deficit for about four to five months. This would mean that in

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<sup>1/</sup> Official statistics indicate a decline of 96,000 tons from the 1977/78 aman crop only; several independent experts, however, agree that the crop shortfall was more serious than these data indicate -- possibly as much as 10% below the level achieved in 1977/78.

addition to the quantity required to operate the normal distribution system at up to about 150,000 tons per month, roughly 400,000 tons of security stocks would be needed. With an estimated combined routine and emergency offtake of about 244,000 tons per month and likely import arrivals of about 75,000 tons on average per month, the overall draw-down of public grain reserves would average about 170,000 tons per month from November through March. To operate the system under the conditions described above from November until and into March (when relief imports would become available) would require opening operating and security stocks of at least 800,000 tons -- assuming that regularly scheduled imports arrived at a rate of about 75,000 tons every month during this period. With import scheduling unfortunately not under the direct control of the Government, and because of the possibility of internal transport and distribution bottlenecks, a considerable safety margin should be added to this minimum requirement. A reasonably safe opening level of operational and security stocks on November 1, therefore, would be on the order of 1,000,000 tons. Of this, some 600,000 would be security stocks held in addition to the roughly 400,000 tons of operational stocks needed to operate the ration system during a "normal" aman season.

Case C: The Experience of 1979

25. Massive shortfalls in any of the other grain crops (i.e., aus, boro, or wheat) would be smaller in absolute terms than such an aman failure, thus requiring relatively less additional grain supplies to be provided by the Government to the consumers. However, should two consecutive crops fall far below their normal trend output levels -- as happened in 1979 with the boro and subsequent aus crops -- the combined impact on foodgrain availability for consumption would be comparable to a major aman failure. During the spring and summer of 1979, the combined gross output of the boro and aus crops was some 950,000 tons below the comparable figure for calendar year 1978, and these two bad harvests followed an already disappointing aman crop. <sup>1/</sup> Although wheat production was up by about 143,000 tons, the food shortage was serious and the Government's in-country stocks (about 850,000 tons on January 1, 1979) were insufficient when imports failed to arrive at the times and in the amounts expected.

26. Each of the disaster scenarios explored, therefore, indicates the need for about 600,000 tons of security stocks to be held within the country at all times. These scenarios also suggest that import schedules should be firmed up for at least six months in advance, to permit the Government to operate with a reasonable degree of confidence in its ability to respond to food crises of the kinds described.

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<sup>1/</sup> Official statistics indicate a decline of 96,000 tons from the 1977/78 aman crop only; several independent experts, however, agree that the crop shortfall was more serious than these data indicate -- possibly as much as 10% below the level achieved in 1977/78.

E. Operational Stock Requirements for Effective "Open Market Sales"

27. It has been recommended in the past -- and the Government has agreed in principle -- that an increasing quantity of public foodgrains distributed should be injected into the market through so-called "open market sales" (OMS) rather than through the various categories of the established ration system. This recommendation is strongly endorsed by the mission, and -- stock levels permitting -- open market sales of foodgrains from Government stocks should begin to be carried out on a scale sufficiently large to stabilize consumer prices during the lean months as early as possible, but not later than in the first half of FY81.

28. More detailed analysis will be needed to make an accurate estimate of the quantities of foodgrains required to operate such a price stabilizing mechanism effectively for prolonged periods throughout the year. The lack of reliable information concerning the quantities of foodgrains marketed each month and the price and income elasticities of demand for foodgrains, for example, are major obstacles to determining the optimal size and timing of open market grain sales. Insofar as open market sales might involve either rice or wheat or both, meaningful estimates of the relevant cross-elasticities are also needed, but these are not readily available. In the absence of such information only rough estimates are possible, indicating no more than a likely range for each relevant parameter and quantity.

The "Start-up Threshold"

29. Grain traders and the general public may initially be unconvinced that the Government is really capable of sustaining open market sales on a scale large enough and over a period long enough to prevent prices from rising above a certain ceiling. This point is of particular importance during the initial months of open market sales. Private grain traders are likely to be rather sceptical of the Government's determination and ability to sustain a massive and prolonged OMS effort, particularly if they believe the Government's stocks to be insufficiently large to last until the end of the lean season. Traders and households may attempt to store some or all of the grains sold by the Government, and wait for these sales to cease and market prices to continue to rise to yet higher levels. This would be particularly easy for traders during the lean months when farmers and traders both are low on stocks and high on free storage space -- and when the Government's open market sales should take place.

30. It is important, therefore, that the Government have sizeable grain reserves which can be utilized in this initial start-up operation when high thresholds of scepticism must be overcome. Moreover, without any prior experience in such sales, there is considerable uncertainty about the quantities that may be needed (in any given time period) to hold market prices below the ceiling aimed for. This, too, implies the need for holding sufficient quantities of grains in reserve to inject into the market if the amounts sold earlier prove to be insufficient. After a year or so of operating with such a "safety margin", the experience gained should permit a more accurate assessment of the various parameters involved.

Quantity Requirements

31. In recent "normal" years, offtake from the public grain reserves through the ration system has averaged between 1.5 and 1.8 million tons, for a monthly average of about 150,000 tons. Despite this additional infusion of supplies into the market, average consumption levels have generally remained somewhat below the Government's minimum target of 15.5 ounces per person per day, and seasonal price fluctuations in the free market have been very large. Average per caput grain consumption during the lean seasons has probably fallen to 14.5 or even 14 ounces per day, as supply has been insufficient to meet consumption needs and as higher-income consumers have bid up the price of grains and effectively pushed low-income consumers (particularly the rural poor) partly or totally out of the market.

32. A simplistic way to estimate the grain quantities needed to stabilize consumer prices would be to postulate that merely making up the entire food gap during the lean months by supplying additional quantities to the consumers from Government stocks would suffice to stabilize prices throughout the year. If grain availability were to equal the annual average in each month, prices would remain rather stable throughout the year. Under these assumptions, a combined ration and open market distribution from Government stocks of about 1.9 million tons would be required in 1980/81 <sup>1/</sup> to balance supply and consumption at exactly 15.5 ounces per day and person. Of this, some 100,000 tons per month should probably continue to be distributed through established channels such as Food-for-Work and other crucial categories of the existing ration system, while the other 700,000 tons should be sold in the open market -- perhaps 400,000 tons during August-November and the rest in the two minor lean seasons in March-April and June. (If the domestic grain crops were to fall short of the projected amounts underlying this scenario, the combined distribution through ration, relief and open market sales would and should be correspondingly higher).

33. The main shortcoming of this approach lies in its implicit assumption that domestically-produced foodgrain supplies enter the consumers' market in roughly equal amounts every month throughout the year and that the Government will have to meet only a relatively minor supply deficit even during the lean months. With four different grain crops (of widely different size) being harvested at different times of the year, however, this assumption is -- unfortunately -- untenable. In an average year, in fact, over 50% of the entire domestic grain production (i.e., the aman crop) is harvested between November and January, another 25% (the wheat and boro crops) being harvested between March and June, and the remaining 25% (the aus crop) primarily in July and August. February, September and October, by contrast, are months when much less grain is harvested. Given this pattern of production, the pattern of marketing seasonality is necessarily also very uneven, although larger

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<sup>1/</sup> This is based on the assumption of the following crop sizes:  
aus - 3.3 million tons; aman - 7.5 million tons; boro - 2.4 million tons;  
wheat - 1.3 million tons (all gross and in rice equivalent).

farmers and private traders with the capacity to hold grains in storage or marketing during the lean months (as well as the Government through its procurement, storage, and distribution operations) obviously help to spread the quantities marketed more evenly over the seasons than the harvesting pattern would dictate. Nevertheless, the large wholesale and retail price fluctuations during the year suggest that there are considerable variations in the grain quantities marketed from month to month.

34. The Government should therefore begin the operation with a grain reserve sufficient to persuade primarily the grain traders and households that ample stocks are available to maintain stable prices. This suggests that during the July-October lean season, the Government should have sufficient stocks at hand (or in the assured import pipeline) to convince traders that monthly releases from its stocks of as much as 300,000 tons (for all categories of offtake combined) are clearly feasible. <sup>1/</sup> It will probably not be necessary to actually release this much every month. But it will certainly be important to show such a strong position to traders and households. Including the usual provision for losses, therefore, public operational stocks in hand on July 1 should be on the order of 950,000 tons -- with assured imports of at least 750,000 tons scheduled for arrival during the July-October period. If the assured import pipeline is larger, the operational stocks might be somewhat lower, but less than 800,000 tons of in-country stocks on July 1 might make it very difficult to persuade the grain traders that the Government's resources are sufficient to operate open market sales on a scale large enough to influence the market price significantly.

35. Underlying these estimates is the recommendation that routine off-take from Government stocks through traditional channels should be restricted to a maximum of about 120,000 tons per month (primarily, if not exclusively, of wheat) even during the lean season -- mainly for Food-for-Work, direct relief where necessary, and other ration categories aimed at the lower-income groups. The monthly amount of open market sales required to stabilize market prices during lean seasons might well be 100,000 tons and possibly 150,000 tons or more, mostly of rice. The somewhat greater uncertainty concerning the quantities to be released under open market sales -- compared to the relative certainty of forecasting traditional ration offtake -- cannot be avoided since open market sales, by definition, cannot be targeted to specific recipients whose number and consumption needs are known. As stated elsewhere in this report, this is in fact one of the chief advantages and attractions of open market sales compared to targeted quantitative distribution of foodgrains; OMS will help spread the benefits of increased overall grain availability to all parts of the population, instead of only to those groups specifically included in the ration system's various categories. The proper operation of open market sales requires responding to an initially relatively unpredictable market indicator (i.e., price) with total flexibility as concerns the quantity needed at any point in time and over any period of time.

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<sup>1/</sup> This would be in addition to the security stocks required to cope with any unexpected calamity.

Wheat or Rice?

36. Some consideration will also have to be given to the question whether open market sales should be carried out with wheat or with rice, or both. Sales in limited quantities have been tried in the last two years using exclusively wheat. In these largely experimental sales, however, the evidence concerning the price cross-elasticities of demand between rice and wheat was somewhat disappointing, although very sketchy and inconclusive. Only two points can be made about this issue: (i) the experience gained in these very limited -- and not properly executed -- open market sales of wheat in a few parts of the country during a very brief period last summer is hardly sufficient to permit drawing definitive conclusions about the effectiveness and advisability of open market wheat sales to bring down rice prices; and (ii) no experiments are needed to prove that open market sales of rice would be far more effective than sales of wheat -- particularly in a society with a strong traditional preference for rice -- to stabilize market prices of rice. A particular quantity of rice sold in the market would serve the intended purpose of stabilizing the rice price far more effectively, therefore, than would the sale of the same (or even a somewhat larger) quantity of wheat during the same time period.

37. Inasmuch as the relative subsidy per unit of rice distributed through the existing ration system is considerably greater than the unit subsidy for wheat, 1/ moreover, the Government would greatly reduce the budgetary burden of its foodgrain operations if it sold its rice stocks in the open market -- at a price more realistically set somewhere near the open market price meant to be the actual ceiling price 2/ -- and used its wheat reserves primarily to operate the traditional ration system, than if it sold wheat in the open market and distributed rice at greatly subsidized prices through the ration system. In this manner, the sale of rice in the market during the lean months would not only help spread the benefits of increased foodgrain availability more equitably throughout all segments of the population, but the revenues generated through these sales would largely offset -- and probably exceed in the near future -- the cost of operating the Government's foodgrain operations in general and the subsidy granted to the poorer consumers who would continue to depend on the distribution of wheat through food-for-work and statutory and modified rationing. If open market sales, in conjunction with the domestic grain procurement program, were operated vigorously and effectively along the lines recommended, even the implications on the Government budget of gradually decreasing revenues generated through the sale of foodgrains

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1/ For a discussion of the foodgrain subsidy question, see Annex 5.

2/ So-called "open market sales" effected at a price virtually identical with the heavily subsidized ration issue price (as has been done on a relatively small scale during the past two years) are de facto simply another form of ration distribution, virtually guaranteeing large wind-fall profits to the grain dealers involved in the program.

imported under concessionary aid terms could be partly offset by the rising revenues generated by these purely internal operations. 1/

38. The mission's recommendation then, is to use only wheat for distributing the roughly 120,000 tons of grains required to operate the traditional ration system during the lean season months and to utilize the entire available stocks of rice for open market sales. Sales of wheat in the open market should be undertaken, if necessary (i) to stabilize wheat prices and/or maintain a reasonable price differential between rice and wheat so as to encourage the shift from rice to wheat consumption throughout the country; and (ii) to increase the overall availability of foodgrains in the market and -- relying on the cross-elasticity between rice and wheat -- thereby support the rice sales program if and when the available rice stocks are insufficient to hold the rice price below the target ceiling.

#### F. Summary Stock Requirement Estimates

39. Foodgrain stocks required for a particular purpose are not necessarily strictly additive to those required for other purposes, but are to some degree fungible and overlapping. All grain distribution from Government stocks (regardless of the terminology applied to it) will help meet the food deficit. Differences lie primarily in the targeted recipient groups, and thus in the ultimate social benefits and costs and in the budgetary implications for the Government. The Government's injection of additional grain supplies into the private sector during normal, non-calamitous years, may take place through traditional channels of the ration and priority system, through open market sales, or through a combination of both. Stocks needed to operate the former, therefore, can be utilized to carry out the latter, and vice versa. Similarly, during disaster periods, the foodgrain deficit can be met through increased distribution of grains through the ration system, through greater OMS activity, or through direct and massive relief operations -- or again through a combination of any or all of these. While stocks to support the normal ration system -- particularly if scaled down in size as recommended in this report -- are relatively fixed in size, grain reserves needed for large-scale OMS and emergency relief are to a significant extent interchangeable rather than strictly additive. The ultimate determination of overall stock

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1/ Some governmental foodgrain distribution categories should probably be transferred from the accounts of the Food Ministry (where they are presently subsumed -- or hidden -- within the overall ration and priorities system) to the ministries concerned: this would involve particularly the foodgrain distribution to military personnel, the police, school teachers, hospital and jail employees and inmates, and Government employees. Foodgrains provided to these categories of consumers should be shown as grain sales at full cost prices from the Food Ministry to the ministries responsible for these categories of consumers; the provision of these grains at subsidized prices to the final recipients should then be shown as entries in the budgetary accounts of the army, the police, the health and education departments, etc.

levels required, therefore, should be based on the assessment of probable overall needs for all individual categories and purposes combined and is, therefore, somewhat smaller than the sum of the parts.

40. Table 7-1 presents, in summary form, the estimated stock-in-hand requirements for Bangladesh on July 1 and on November 1, 1980 -- irrespective of both the likelihood of reaching these stock levels by the time indicated and the existing constraints imposed on these desirable target levels by the available storage capacity.

Table 7-1: AGGREGATE OPENING STOCK REQUIREMENTS, 1980 /a  
( '000 long tons)

	<u>July 1</u>	<u>November 1</u>
1. "Dead stocks"	150 /b	150 /b
2. Operational stocks /c	950	550
Ration and priorities	(600)	(400)
Open market sales	(350)	(150)
3. Security stocks	<u>600</u>	<u>600</u>
<u>Subtotal</u>	<u>1,700</u>	<u>1,300</u>
- Adjustment for overlap	-200	-100
<u>Total</u>	<u>1,500</u>	<u>1,200</u>

/a Irrespective of limits imposed by available storage capacity and of likelihood to meet the targets shown.

/b Absolute minimum.

/c As the system shifts increasingly from direct ration distribution to OMS operations, the allocational requirements for the two categories of operational stocks will shift in favor of OMS.

41. The aggregate stock target shown for July 1, 1980, is most unlikely to be met, of course, given the short time in which to rebuild the Government's severely depleted opening FY80 stocks, the unfavorable prospects for internal procurement from the 1979/80 aman crop, and the fact that relatively few additional imports (beyond those already contracted for) are likely to arrive in Bangladesh prior to June 30, 1980. The mission projects that closing stocks on June 30 may be on the order of 1 million tons -- based on the assumptions that (i) domestic procurement of boro and wheat during April-June may be large enough to compensate for only moderate procurement of Aman, with aggregate procurement for the current fiscal year totalling some 500,000 tons; and (ii) additional food imports will be committed by donors to bring the total of foodgrain imports for FY80 to around 2.8 million tons. 1/

1/ See also Chapter 5.

42. A shortfall in the estimated overall stock level required, however, should not stop the Government from initiating the open market sales recommended. These OMS operations should start during the lean season of calendar year 1980 on the scale proposed, but this will require firm commitments and the firm scheduling of additional grain imports from food aid donors to guarantee the steady replenishment of the Government's in-country stocks throughout the entire lean season and to permit, in addition, the further build-up of these stocks to the 1.5 million ton level recommended for July 1, 1982 at the latest. Without such firm commitments from food donors, both as regards the quantities to be shipped and the timing of shipments, it would be imprudent to initiate open market sales during the coming lean season for the reasons outlined above. If the donors are willing to guarantee that the additional stocks required are, de facto, available in the form of firmly committed and scheduled imports, the Government of Bangladesh can more confidently and quickly initiate the proposed shift in its foodgrain distribution policies and redirect its attention and efforts in food policy from distributional crisis management to production-cum-distribution oriented long-term developmental policies and programs.

#### G. Storage Capacity and Constraints

43. Recommended levels of foodgrain stocks can only be held if the necessary storage facilities exist and are available for this purpose. Annex 8 analyzes the existing storage capacity, its weaknesses, and the demands placed on it by the various objectives it is required to serve. This analysis shows that the system is currently capable of storing close to 1.1 million tons of foodgrains (expressed in rice equivalent) just prior to the major lean season (July 1) and just over 900,000 tons on November 1 when the main procurement season begins. With additional foodgrain storage facilities now being constructed and with considerable warehouse space undergoing rehabilitation under several donor-supported projects, the capacity to hold grain stocks will increase substantially during the course of the next two years. To be able to store 1.5 million tons of stocks, however -- the target aimed for by GOB and endorsed by the mission -- further expansion of the storage system must be required.

FOODGRAIN STORAGE CAPACITY, CONSTRAINTS, POTENTIAL, AND REQUIREMENTS 1/

A. Introduction

1. The location and capacity of foodgrain storage facilities operated by the Ministry of Food and Civil Supplies (MoF) should be determined primarily by the objectives the Government is seeking to meet through its involvement in foodgrain operations. These objectives have, over time, increased in number, grown more complex and occasionally become blurred. Briefly summarized, they are the following: (a) provision of a steady and secure supply of foodgrains to segments of the population judged to be particularly vulnerable or crucial (through the continuous issue of ration quotas); (b) improvement of nominal salary and wage levels and stabilization of real incomes of selected portions of the labor force through indirectly administered payments in kind (i.e., issue of foodgrains at stable and subsidized prices); (c) maintenance of a sufficiently large foodgrain reserve to provide insurance against possible regional or countrywide famine and starvation in the event of natural calamities and crop failures; (d) maintenance of incentive producers' prices for foodgrains through intervention in the foodgrain market (i.e., purchasing large quantities at guaranteed prices during and after the harvest seasons in order to increase production levels); (e) stabilization of consumer prices throughout the year through the release/sale of foodgrains from public stocks during lean, high-price periods; (f) guarantee of minimal nutritional requirements for the most vulnerable segments of the population (through distribution of foodgrains from public stocks to the poor and to victims of calamities); and (g) reduction of inter-regional variations and fluctuations in relative supply and in prices of foodgrains (through timely and geographically targeted purchases and sales of foodgrains).

2. In addition to these primary objectives, various considerations of practicability, natural and infrastructural conditions, and economic and socio-political factors are further determinants of the distribution and size of storage facilities. These considerations include: (a) heavy dependence on foodgrain imports to meet domestic demand; (b) severe vulnerability to natural calamities such as cyclones, floods, droughts, etc.; (c) considerable regional disparities in respect of foodgrain production, population density, incidence of natural disasters, etc.; (d) climatic conditions and variations; (e) a weak, fragmented and unbalanced transport system; (f) an under-developed system of communications as well as of collection and analysis of crucial information concerning foodgrain supply prospects; (g) insufficient and unevenly distributed capacity of facilities and services ancillary to foodgrain production and distribution (e.g., mills, paddy dryers, etc.); (h) highly imperfect market mechanisms; (i) sharp seasonality of domestically produced foodgrain supply; and (j) socio-political circumstances and developments.

3. Given these multiple objectives and considerations, not all of the existing MoF storage space can serve each of the policy objectives equally

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1/ This annex has been prepared by Götz Schreiber.

well. Rather, many individual facilities serve primarily or even exclusively only one particular objective and are only marginally or indirectly relevant for the achievement of others. Given the distinct demarcation of (relative) foodgrain surplus and deficit regions, the substantial difficulties of inter-regional transportation, the fact that most "surplus" areas are in surplus only during several months each year, and the highly skewed distribution of rice milling capacity between the major foodgrain production and consumption areas, most storage space is in fact utilized for one or two specific purposes only (such as procurement, transit handling, or distribution).

## B. MoF Storage Capacity

### Overview

4. The Ministry of Food owns and operates an extensive system of grain storage facilities throughout the country (see Foodgrain Storage Map). Within this system, there are three major categories of storage facilities:

- (a) 12 relatively large depots called Central Storage Depots (CSDs), administered by the Ministry's Directorate of Movement and Storage;
- (b) 322 smaller depots called Local Supply Depots (LSDs), administered by the Directorate of Supply and Distribution; and
- (c) 4 foodgrain silos, administered by the Directorate of Silos.

In addition, MoF utilizes warehouse space leased from other public sector agencies or from the private sector. 1/

5. Strictly temporary facilities are set up by the Ministry (and administered by its Directorate of Procurement) for the duration of the domestic foodgrain procurement drives during and after each harvest. During the 1978/79 aman procurement season, 259 such Temporary Purchasing Centers (TPCs) were operated by MoF, 2/ generally in police stations, schools, other public buildings and in facilities rented from other agencies or private sources for this purpose. Total storage capacity at these TPCs amounted to no more than 22,000 tons; this space is suitable only for very short-term storage until

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1/ Some MoF grains are also stored at the major rice mills where domestically procured paddy is milled under contract for the Ministry. These mills have a combined nominal storage capacity of about 126,000 tons. (see Table 6.12).

2/ Compared to only 132 in 1976/77.

transport space can be made available to move the procured foodgrains to MoF's permanent facilities. 1/

6. Table 8-1 provides a summary of the permanent storage facilities owned and operated by the Ministry of Food. (Rented facilities are not included in this table.) MoF commands a gross nominal storage capacity of just under 1.2 million tons in silos and warehouses. The theoretically possible maximum storage capacity of this system, however, differs from the nominal capacity because of the considerations set out below (paras. 38-40). The system is estimated to be capable of holding about 0.94 million tons of paddy or 1.21 million tons of rice/wheat if all facilities are loaded to short-term capacity (3-4 months of storage duration). Loading every facility in the system to its maximum potential for temporary storage (up to 4 weeks) would increase its effective overall capacity to about 1.05 million tons of paddy or 1.27 million tons of rice/wheat. Table 6.7 in the Statistical Appendix contains detailed information concerning effective loading capacities for different facilities, time periods and grains; Tables 6.1 through 6.6 provide details and location of all MoF storage facilities.

Table 8-1: MoF STORAGE FACILITIES (APRIL 1, 1979)

	<u>Central Storage Depots (CSDs)</u>	<u>Local Supply Depots (LSDs)</u>	<u>Silos</u>	<u>Total</u>
Number of Depots	12	322	4	338
Number of Silos	-	-	4	4
Number of Warehouses	494	1,055	3 <u>/a</u>	1,552
Nominal Capacity (long tons)	401,900	525,869 <u>/b</u>	234,564	1,162,333 <u>/c</u>

/a Warehouses at silo sites.

/b In 1978, GOB agreed with IDA on assistance to finance the construction of 165,000 tons of additional storage capacity to be completed by the end of FY81. Discussions between GOB and other aid donors (EEC, ADB, Yugoslavia) are currently underway concerning the construction of additional facilities.

/c During 1979, MOF completed the construction of 300,000 tons of strictly temporary storage sheds in Chittagong port to help receive import shipments. This is not included here.

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1/ In fact, many TPCs have become virtually permanent institutions, as the individual procurement drives have been progressively lengthened in duration and are now effectively overlapping with those for the preceding and the subsequent grain crops. All LSDs and CSDs also function as purchasing centers.

Bulk Storage Capacity

7. The four silos currently operated by MoF were constructed during the late 1960s and completed by 1971. (A fifth, at Khulna/Chalna port, was planned but never built; plans for a 50,000 ton silo at Chalna are currently being discussed by GOB and the Government of Yugoslavia for possible aid financing.) These silos are modern, well-equipped and -- after some initial difficulties were overcome -- generally well-managed. They comprise bulk storage and transit-handling facilities which range in capacity from 25,000 tons (Santahar) to 100,000 tons (Chittagong). Their sites were chosen primarily with the intention of improving the overall handling and trans-shipment capabilities of the MoF storage and distribution system as a whole. The silos have in fact become cornerstones of this system performing the functions of: receiving import shipments; permitting rapid unloading and loading of grain shipments in bulk; facilitating optimal transfer from bulk to bag transport; providing vital linkage services at transfer points from one mode of transport to another (e.g., barge to truck or rail, rail to barge or truck, meter gauge rail to broad gauge rail); serving as important security stock depots; and helping reduce grain losses due to spoilage, pilferage and rodent and bird invasion.

8. The Chittagong silo (100,000 tons) serves as the country's main receiving and transit facility for imported foodgrains; the silo planned for Khulna/Chalna had been intended to serve the same purpose there. The Narayan-ganj and Ashuganj silos (50,000 tons each) are important transit points for grain arriving from Chittagong en route to the Dacca region and the Northern and Northeastern districts. The silo at Santahar (25,000 tons) in Bogra district is situated at a railway terminal linking the broad and meter gauge systems in the Northwest through which domestically procured grains pass on their way South and grain shipments for these Northwestern districts during the lean season are transshipped on their way from Khulna to the North. Aggregate nominal capacity of the four silos is 233,064 tons (design capacity 225,000 tons). Allowing for the fact that some of this nominal capacity is in the form of transit, weighing, and moisture and admixture control bins rather than in actual storage bins, the silos are operative at full capacity.

Sack Grain Storage Capacity: Nominal and Actual

9. The CSDs and LSDs consist of a number of individual godowns for bag storage; these number between 12 and 87 in the case of the CSDs, and generally between 1 and 5 for the LSDs. <sup>1/</sup> There are two broad categories of godowns: (i) pucca godowns with concrete floors and brick or concrete walls; and (ii) non-pucca warehouses made mainly of iron or tin sheets and generally considered to be not very suitable for foodgrain storage. The so-called "Dacca-Type" godown, which is the most common, and its variants, "Twin Dacca" and "Calcutta Shed", belong in the pucca category, while the "Lahore Shed", the "Twin Nissen

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<sup>1/</sup> A few LSDs are considerably larger.

Hut", and the "Shell-Type" belong to the non-pucca or "tin hut" category. 1/ About 70% of all MoF warehouse capacity is in pucca godowns, and about 90% of the pucca godowns are Dacca-Type. 2/

10. The capacity of a storage facility is a function of various factors, some of which are fixed and others variable; among the variables, some are subject to manipulation and control, while others are not -- or only with difficulty and at considerable cost. A failure to take these factors into account or failure to qualify listed capacity ratings accordingly may cause confusion in the analysis of required capacity of any particular storage system. The fixed factors determining the actual storage capacity of a warehouse include its size (i.e., its interior volume, which is a function of floor space and height) and floor strength (i.e., weight-carrying capacity). The variable factors include the general characteristics of the commodities being stored and their condition when going into storage (weight/volume ratio or "bulk", requirements for periodic inspection and turnover, moisture content, vulnerability to spoilage and other forms of quality deterioration and losses, etc.), the duration of storage, the physical condition of the storage facility itself, and the climatic conditions inside and outside the facility during the storage period.

11. Considerable confusion has been generated in past analyses of MoF storage capacity because capacity ratings of godowns were not adequately qualified and the classifications were applied ambiguously. The main problems lie in the definitional concepts of gross, net, nominal and effective capacity -- the last being the most important but also most indeterminate variable because of variations in duration of storage and types of commodity being stored. There are three basic ways to define the capacity of a MoF godown:

- (a) Nominal capacity = officially rated capacity, often used interchangeably with gross capacity (which should be termed gross nominal capacity): for a standard Dacca-Type godown with 100 x 40 feet floor space and 18 foot height = 500 tons of foodgrains (bulk weight), stacked to a height of 12-14 layers of standard gunny bags.
- (b) Net capacity (which should be termed net nominal capacity is a concept used by MoF to denote the space effectively available

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1/ There are also a few other types of godowns, although in very small numbers, such as the "Assam Type" (a hybrid of pucca and non-pucca godown, of which only 2 were reported by MoF as being still in use), prefabricated godowns with concrete floors and steel walls and roofs, and a variety of non-standard godowns (particularly among those leased by MoF from the private sector).

2/ Pucca godowns and modern prefabricated foodgrain warehouses are commonly grouped together as Class 1 warehouses, all other types comprising Class 2.

for foodgrain storage after deducting the space requirements for godown equipment, empty grain bags, weighing machines, insecticides, other commodities being stored (salt, sugar, edible oils, etc.); MoF defines this to be 75% of officially rated capacity: for a Dacca-Type godown = 375 tons of food-grains (bulk weight).

- (c) Effective capacity = actual capacity = loading capacity denotes the quantity of foodgrains that can in fact be stored in the godown; this varies with the duration of storage and the type of grain being stored. For a Dacca-Type godown = 650-850 tons of paddy or 750-1,000 tons of milled rice or wheat, stacked to a height of about 18 layers of standard bags.

12. The standard Dacca-Type godown in the MoF depots has a floor space of 100 x 40 feet and a height of 18 feet and is rated by MoF at a gross nominal capacity of 500 tons bulk weight of paddy/rice/wheat (based on a stacking height of 12-14 layers of standard gunny bags). Depending on the duration of storage, it is estimated that actual loading capacity may be up to 750 tons of paddy and up to 950 tons of rice or wheat, as grain bags can be -- and frequently are -- stacked to a height of 18 layers. 1/ The effective loading capacity is roughly 25% greater for milled rice and wheat than for paddy because one standard bag holds 2 maunds of paddy or 2.5 maunds of milled rice or wheat. Even with 18-layer stacks, there is sufficient free space around and above these stacks for inspection and pest-control operations. For strictly temporary storage, particularly during the dry season when requirements for pest-control operations and spoilage inspection are relatively minimal, the free space between and around stacks can safely be utilized for temporary storage of about 100 additional tons of paddy awaiting transshipment to more permanent storage; this increases the effective loading capacity of the godown for very short periods to 850 tons of paddy. 2/ The floors of pucca godowns can carry this weight without suffering any damage.

13. With increased loading over extended periods, on the other hand, losses tend to increase disproportionately because the reduced space between and above sack stacks impairs the ability to inspect stocks for spoilage and to undertake pest-control operations and fumigation treatments. 3/ It also

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1/ This is possible even with woven polypropelene bags which are more difficult to stack than the more common jute gunny bags.

2/ For temporary storage, a Dacca godown may hold up to 1,000 tons of milled rice or wheat.

3/ Since most of the older MoF godowns cannot be sealed air-tight (due to cracks under doors, missing vent covers, etc.), fumigation treatment of stocks requires covering entire sack stacks with plastic sheets for fumigation purposes, which in turn requires space to operate between stacks.

hinders proper roll-over of stocks. To minimize spoilage and losses, stock management should always be on a "first in - first out" basis, which is more difficult with higher bag stacks and reduced free space. Handling costs also increase with higher loading factors, though savings can be realized in capital costs per unit stored as storage capacity is more fully utilized.

14. Based on an analysis of the trade-off between increased losses and handling costs attributable to overloading on the one hand and relative savings in capital costs on the other, it is recommended that the standard Dacca-Type godown be loaded up to the effectively loading capacity ratings indicated in Table 8-2.

Table 8-2: NOMINAL AND EFFECTIVE LOADING CAPACITY FOR DACCA-TYPE GODOWN  
(in long tons)

	<u>Very Short-Term</u> (under 4 weeks)	<u>Short-term</u> (3-4 months)	<u>Medium-term</u> (4-6 months)	<u>Long-Term /a</u> (over 6 months)
Gross nominal capacity (MoF)	----- 500 -----			
Net nominal capacity (MoF)	----- 375 -----			
(IBRD)	----- 400 -----			
Effective loading capacity (IBRD)				
- Paddy	850 /b	750	650	500
- Rice/wheat	1,000 /c	950	850	750

/a For long-term grain storage, proper stock roll-over and inspection require more free space.

/b In procurement areas, it is recommended that godowns be loaded with up to 850 tons of paddy awaiting transshipment.

/c For temporary storage of grains awaiting transshipment.

### C. System Constraints and Limitations

15. The MoF storage system must function within an environment of under-developed transport and communication infrastructure, weak and less-than-optimally distributed ancillary service facilities, and of limitations from within and without. Among the internal difficulties which impede the system's capacity are: its historical locational bias towards largely urban distribution points, the run-down condition of many of its individual facilities, the multiplicity of purposes it is required to serve, lack of adequate transport and operating equipment, poor maintenance, lack of spare parts, insufficient staff in crucial categories (e.g., motor vehicle technicians, pest control specialists), low salaries for essential technical staff such as maintenance engineers, and often inadequate security provisions to prevent pilferage.

pilferage. External constraints on the system include: the weak domestic transport system, the uneven distribution of rice milling capacity throughout the country, the monsoon climate which for some eight months during the year threatens massive spoilage of grains, the scarcity of paddy drying equipment in the villages (and at MoF storage facilities), and the highly seasonal nature of foodgrain production which creates very uneven demand on transport, drying, milling and storage capacity. Some of these issues are discussed briefly in the following paragraphs.

#### Condition of Godowns

16. Many godowns are dilapidated and require substantial repair. Some have outlived their useful life and warrant demolition. In 1977, it was estimated that 64% of MoF godowns (i.e., 730 pucca and 165 non-pucca godowns out of then 1,408) were in various stages of dilapidation; it was recommended that most of the dilapidated non-pucca godowns (including 77 Twin Nissen Huts at the Khulna CSD and 18 at the Tejgaon CSD) should be demolished at once. <sup>1/</sup> Country-wide rehabilitation of Dacca-Type godowns is being financed by a UK-ODM program begun in December 1976. IDA's Foodgrain Storage II project, whose main component involves the construction of new godowns at approximately 170 sites (with a total nominal capacity of 165,000 tons), also includes a component for the rehabilitation of some 50 non-pucca godowns with a combined capacity of about 25,000 tons. Once rehabilitated, most of the pucca godowns will be useable for safe foodgrain storage for a number of years. The dilapidated non-pucca godowns are considered suitable only for short-term foodgrain storage; after rehabilitation, most of them would be usable, however, to help meet short- and medium-term peak storage requirements or to store foodstuffs other than grains (salt, sugar, edible oil, etc.) which currently take up between 10% and 20% of MoF storage space.

17. Dilapidated or defective warehouses are a major factor contributing to the high incidence of spoilage and losses of stored grains. Leaky roofs through which rain seeps into the godowns and onto the grains are a major problem, especially if tarpaulins and plastic sheets to cover grain bags are not available. Cracked walls and floors make insect control difficult and lead to excessive insect infestation of grains, even when the bags are stored on pallets. Poorly fitting or damaged doors and defective thresholds permit rodents to enter the godowns. Sidewall vents with missing or defective screens/grills allow rodents and birds -- or even thieves -- into the warehouses, and missing weather hoods over such vents permit rainwater access. All of these problems contribute to increased losses and spoilage. MoF is engaged in a program to remedy these defects. But many of the existing godowns -- particularly the older and Class 2 warehouses -- eventually will need to be replaced by more solid and suitable grain storage facilities.

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<sup>1/</sup> As of July 1, 1979, these 95 godowns at Khulna and Tejgaon (with a total nominal capacity of 76,000 tons) were still in use.

18. In Bangladesh, conditions foster the rapid growth of insects and fungi for 7 to 8 months each year. This poses a serious pest and spoilage control and prevention problem for MoF, a problem further aggravated by the sub-standard condition of many godowns. As a consequence of the greatly increased domestic grain procurement effort, inspection and control operations have become particularly crucial during the last five years and will become more important in the future. Large quantities of domestically-procured paddy must now be held in storage at widely dispersed locations for several months, while MoF grain stocks consist overwhelmingly of dry imported wheat and rice held mainly at the few large CSDs. MoF has initiated a considerable expansion and intensification of its inspection and fumigation operations, carried out by its Directorate of Inspection, Control and Training. This effort will need further expansion and improvement, however, as procurement of domestic grains gradually replaces imports as the main source of MoF grain stock replenishment and as additional storage facilities are set up throughout previously neglected parts of the country. Stock losses caused by insect infestation, mold and fungi have in the past been substantial -- and costly -- and efforts must be made to reduce such losses by upgrading the quality of storage facilities and increasing the frequency of inspection and fumigation. 1/

#### Transport

19. The transport system in Bangladesh is extremely weak, and it is very difficult to move large volumes of foodgrains from procurement areas

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1/ Accounting for handling and storage losses in MoF stock accounts is currently done in a rather unsatisfactory manner. Following a physical inventory on or about June 30 of each year, which gives the actual opening stock level for the next fiscal year, accounts are then kept by merely adding all new arrivals into, and deducting all distribution from, the opening stock level. Adjustments for losses are made only once or twice per year by simply deducting 3.5% of the total quantity of grains that has entered the MoF system during the period (i.e., opening stocks, imports, and domestic procurement). Month-by-month stock level records, therefore, fail to take into account the losses incurred during each month. This failure became very important during the rapid stock draw-down experienced by MoF in the spring and summer of 1979: the official "book" stock estimates were quite misleading towards the end of the fiscal year when cumulative losses for the year as a whole were already exceeding the 100,000 ton mark, but were not yet recorded by MoF in its stock accounts. It is strongly recommended, thus, that deductions for estimated stock losses be made every month and that the assumptions underlying these loss estimates be revised and made more realistic: instead of arbitrarily assuming a loss rate of 3.5% of all grains stored during the year, loss estimates (prior to periodic physical inventories) should be based on historically observed loss rates. Tentative calculations by the mission indicate that losses have ranged from 2.6% to 4.1% of total turnover of the system (i.e., imports plus domestic procurement plus total distribution) in recent years.

to distribution areas at the peak of the harvest/procurement season or from storage depots to the stricken areas in the event of a major natural disaster. This difficulty is compounded by frequently inclement weather which makes it difficult to keep the grain dry while in transit. Over 50% of the country's area is less than 25 feet above mean sea level and up to two thirds is prone to severe seasonal flooding. For prolonged periods, therefore, the transport system is ineffective at the local level -- except for boat traffic -- particularly during the monsoon season. It has been estimated, for example, that it may take up to 30 days to move grains from Chittagong into the Northwestern districts of Rangpur and Dinajpur.

20. An inventory of railway rolling stock in April 1979 showed 77 broad gauge and 202 meter gauge locomotives operational (with a further 29 and 108, respectively, undergoing or awaiting repair), servicing a network of 599 miles of broad gauge and 1,187 miles of meter gauge track. Wagons are in high demand by competing sectors of the economy, 1/ and a high percentage of wagons; is unsuitable for hauling grains. 2/ In the outlying areas, shipping delays of several weeks caused by the lack of locomotives and wagons are not uncommon. Rail movement and wagon turn-around are slow. Among the causes for this poor performance are (i) the relative disrepair of both locomotives and wagons, (ii) the poor state of rail beds and tracks; (iii) lack of railway bridges over the many large rivers and the dependence on ferries for river-crossings; (iv) the existence of two separate rail systems (meter gauge and broad gauge) which requires frequent transshipment; 3/ and (v) inefficient management. In the peak procurement period which coincides with the major harvest, the problem of large-scale foodgrain movement is much more severe because the system is already over-burdened. The Government is undertaking various efforts to rehabilitate its railways (with assistance from several aid donors). But the large unsatisfied present demand for transportation, the projected increase in such demand, and the investment requirements for rehabilitation and expansion of tracks and rolling stock are such that major improvements in rail transport capacity available to move increased quantities of foodgrains without major shipping delays cannot be expected in the near future.

21. The road transport situation is not much better although in recent years a major road building program has been initiated. The main road network -- in this country of 55,600 square miles -- consists of only 2,700 miles of paved roads, 70% of which are less than 12 feet wide, and 1,500 miles of fair-weather roads. 4/ These are not well maintained. There are few bridges,

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1/ This demand is probably somewhat overstated because rail freight tariffs are uneconomically low.

2/ At present, for example, only 68 hopper wagons (operational) carry grains in bulk from Chittagong to Ashuganj (3 days) and Narayanganj silos (4 days turn-around time).

3/ The silo and CSD at Santahar in Bogra district are situated at a linkage terminal so as to permit quicker cross-over from one rail system to the other.

4/ See map of transport network.

and crossing of the major rivers is time-consuming because of the dependence on ferries. The country's total fleet of trucks is estimated at about 10,000, most of which have a carrying capacity of less than 5 tons and are concentrated around Dacca and Chittagong. MoF itself owns a fleet of 309 trucks (as of September 1, 1979), of which only 113 are operational and a further 55 judged "repairable". The rest have been (or are about to be) "condemned" and auctioned off. Most of the MoF trucks still operating are extremely old. Private trucking contractors, who are used extensively by MoF, also often have difficulties in fulfilling their contractual obligations because of the run-down condition of the national trucking fleet. These contractors nevertheless performed exceedingly well -- and were paid more than in the past -- during the massive foodgrain import period in the summer and fall of 1979.

22. The inland water transport system consists of approximately 1,000 powered vessels (of which about 60% are passenger vessels) and 300-400 barges, operating on 2,300 miles of waterways navigable during the dry season; this system expands to 3,300 miles in the monsoon season. 1/ In the inland areas, cargo-carrying "country boats" (approximately 90,000), powered manually and/or by sail, provide the bulk of the transport service; most carry less than 5 tons. Given their slow movement, total movement capacity is low.

23. Most movement of paddy and rice marketed through private channels is by country boat -- with bullock carts second in importance, particularly for shorter hauls. Movement by either mode is slow, and the scale of movement (20-30 maunds per bullock cart, and 100-200 maunds per country boat) is inefficient. Moisture pick-up during transport is a major problem. Bullock cart traffic is exposed to rainfall for some eight months of the year, and grains moved by country boat absorb considerable moisture while they are moving on the rivers. As a consequence, subsequent storage losses are very high because private grain traders do not generally have the physical facilities or the technical manpower and/or knowhow for efficient storage. Although reliable estimates of handling and storage losses in the private marketing system are not available, agents involved in the chain admit to losing between 2% and 5% of the grains under their custody. Cumulatively, this loss is estimated to be in the range of 10-20% of throughput. Losses of similar magnitude are incurred also in the grain stocks retained in the rural areas (by growers and village traders), where substantial stocks must be carried for up to eight and even twelve months until the next grain crop is harvested (since over 55% of the cultivated area is single-cropped only). 2/

#### Milling Capacity and Location

24. Paddy has to be milled into rice before consumption. Most milling is done in small lots in the farmers' households, generally by women in

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1/ Excluding sea routes and tidal creeks.

2/ This implies that the commonly-used estimates of "apparent consumption" of foodgrains may significantly overstate the actual level of consumption; conventional calculations deduct merely a flat 10% for seed, feed and waste from estimated gross production to obtain net production.

wooden manual huskers ("dhekis"). The larger farmers use small husking machines, powered either electrically or with diesel fuel. There are approximately 7,500 of these husking machines in the country, with an aggregate capacity of 16,000 tons per 8-hour day.

25. Milling for the Government is done by 169 major rice mills (see Table 6.12) with a combined milling capacity of about 2,850 tons per 8-hour day. 59% of this capacity is concentrated in seven northern districts (Dinajpur, Rangpur, Bogra, Rajshahi, Jamalpur, Mymensingh, and Sylhet) where most of the domestic foodgrain procurement takes place (see Tables 5.2-5.8); almost all the rest is located in Dacca (13%), Chittagong (16%) and Khulna (8%) districts which contain the country's major urban agglomerations. As a result, most of the foodgrain stocks procured by MoF needs to be held in the procurement areas until milled, so as to avoid having to bring it back again later for milling.

26. Even after conversion to rice, however, it is not desirable to transport all procured stocks to the primarily distribution-oriented CSDs. This is because the so-called "surplus" areas have considerable offtake claims themselves on the public foodgrain distribution system during the lean season (July-October). Some public grain stocks should be kept in these regions, therefore, particularly if the Government intends to increase the scope of Food-for-Work activities in these districts and to undertake effective price stabilization operations there during the relative shortage periods by means of open market sales of grains. These stocks would also serve to reduce considerably the Government's response time in the relief distribution of grains after a natural calamity. Some of the major grain producing/procurement districts are among the most calamity-prone (e.g., Rangpur, Patuakhali, Barisal).

#### Storage Location

27. The present location of MoF storage facilities clearly reflects past emphasis on distribution (see Table 8-3). <sup>1/</sup> Six major foodgrain procurement districts (Dinajpur, Rangpur, Bogra, Rajshahi, Mymensingh and Sylhet), which together accounted for 62% and 68% of total MoF grain procurement in 1977/78 and 1978/79, respectively, (but for only about 22% and 24% of public system offtake in these two years), have only 24.4% of total MoF storage capacity (including silos, but excluding leased godown space). Three other districts (Dacca, Chittagong and Khulna), which together accounted for only 8% and 7% of overall grain procurement during the last two years (but for 59% and 48% of total distribution from the MoF system), have about 46% of the existing storage capacity. Even if the silo at Chittagong (which serves essentially as a receptacle and transit facility for grain imports) is excluded, these three districts still account for 37% of all MoF storage capacity.

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<sup>1/</sup> See also map of foodgrain storage facilities.

Table 8-3: RELATIVE LOCATION OF STORAGE CAPACITY

Division/District	Storage Capacity <sup>/a</sup>		Food-grain Procurement <sup>/c</sup>	Popu-lation <sup>/d</sup>	Public Grain Distri-bution <sup>/e</sup>
	incl. Silos	excl. Silos <sup>/b</sup>			
<u>Rajshahi</u>	<u>20.97</u>	<u>23.44</u>	<u>43.02</u>	<u>24.31</u>	<u>14.88</u>
Dinajpur	4.42	5.55	16.25	3.63	1.84
Rangpur	2.41	3.02	9.34	7.60	4.09
Bogra	6.19	4.93	4.85	3.11	1.92
Rajshahi	3.56	4.46	11.85	6.04	4.33
Pabna	4.39	5.50	0.74	3.93	2.69
<u>Khulna</u>	<u>22.20</u>	<u>27.81</u>	<u>20.21</u>	<u>19.86</u>	<u>17.77</u>
Kushtia	1.56	1.95	0.40	2.69	2.52
Jessore	2.04	2.55	1.42	4.73	3.19
Khulna	12.69	15.90	2.73	5.08	7.27
Barisal	3.97	4.97	5.51	5.31	3.50
Patuakhali	1.94	2.43	10.16	2.05	1.29
<u>Dacca</u>	<u>23.13</u>	<u>23.36</u>	<u>16.41</u>	<u>29.83</u>	<u>41.61</u>
Jamalpur	1.05	1.32	..	2.79	..
Mymensingh	5.01	6.28	} 15.69 /f	7.61	} 4.72
Tangail	1.10	1.37	0.28	2.86	1.84
Dacca	13.46	11.24	0.31	11.05	31.11
Faridpur	2.51	3.15	0.13	5.52	3.94
<u>Chittagong</u>	<u>33.70</u>	<u>25.40</u>	<u>20.36</u>	<u>26.00</u>	<u>25.75</u>
Sylhet	2.45	3.07	7.23	6.57	5.10
Comilla	8.57	5.15	3.45	7.97	5.73
Noakhali	2.10	2.63	4.13	4.45	2.89
Chittagong	19.96	13.76	4.70	6.32	11.35
Chittagong H.T.	0.63	0.79	0.84	0.69	0.68
<u>TOTAL</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>

- /a Nominal storage capacity, excluding hired facilities.  
 /b Silos are primarily transit handling and storage facilities serving more than a single district.  
 /c Total FY78 grain procurement, in terms of rice equivalent.  
 /d BBS estimates for population on January 1, 1979.  
 /e Total foodgrain distribution in FY78.  
 /f Including Jamalpur.

Source: Appendix Table 6.6.

28. Even within the important procurement districts, MoF storage facilities tend to be concentrated in and near major urban centers, while the grain-producing rural areas are comparatively neglected. This is particularly true -- and significant in the context of the drive for foodgrain self-sufficiency -- for the major boro and wheat growing regions, where much of the potential for future growth in grain production lies. As of April 1979, 171 out of 469 Thanas were without any permanent MoF storage facilities; 81 of these were Thanas in the major grain production/procurement districts (Dinajpur-1, Rangpur -16, Bogra-2, Rajshahi-13, Barisal-12, Mymensingh-15, Sylhet-14, and Comilla-8). 1/ This scarcity of storage facilities in the procurement areas represents a major obstacle to improving the performance and effectiveness of the Government's procurement effort. The procurement points and storage facilities located too far from the majority of the grain producing villages and farms to attract more sellers to the Government's purchasing centers. It is reported that even at the existing procurement points, operations often have to be temporarily stopped until transport space becomes available to remove accumulated stocks to more permanent storage locations.

29. The lack of storage capacity in the major production and procurement districts, therefore, results in:

- (a) difficulties in procurement and farmgate price support operations;
- (b) excessive losses due to storage of procured grains in marginal facilities or even in the open;
- (c) unnecessary strain on the transport system caused by significant double-and triple-shipping as paddy is (i) hauled back to the procurement areas for milling and/or for local distribution and consumption during the lean season and (ii) not infrequently shipped back out to the large consumption areas again for final distribution; 2/ and
- (d) longer-term difficulties in getting grain growers to rely on the MoF procurement system to support post-harvest grain prices.

30. The lack of storage capacity in areas prone to natural disasters, prolonged droughts or seasonal flooding may result in unnecessarily long response time for relief actions, and the spreading of famine conditions before counter-measures can be taken.

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1/ See Table 6.5.

2/ Apart from the considerable (unnecessary) cost incurred through such multiple cross-country shipments, this also increases losses due to multiple handling and pilferage during transit.

### Capacity Utilization

31. Capacity utilization <sup>1/</sup> of the entire MoF storage system averaged 55% in 1976; this rate was 68% in 1975 mainly because of the much higher level of imported stocks on hand. Disparities between capacity utilization at CSDs and LSDs stem from the highly peaked demand for local transport. LSDs in Mymensingh district, for example, were loaded to 110-125% of nominal capacity during February-July 1976, but the large Mymensingh CSD (25,000 tons) utilized only 45-50% of its capacity during that time. Only at the peak of the distribution season in October did this CSD show a more reasonable 79% utilization. However, procurement area LSD godowns showed an average utilization of 95%.

32. Throughput or turnover at individual CSDs and LSDs, on the other hand, is remarkably high. CSDs average a turnover of stocks of about 2.5 and LSDs have a turnover rate ranging from 1.5 at the procurement points up to 15 at some major urban centers. The system as a whole, however, achieves a turnover of only slightly above 1.25, reflecting the extent of multiple handling and internal movement.

### D. System Potential

33. Evaluating the potential of the MoF storage system requires a separate analysis for each of the several specific and distinct purposes the system is expected to serve. These include domestic grain procurement, grain distribution, and security stocks storage. The requirements for foodgrains to be held by the Government to facilitate the operation of its regular distribution and security stocks systems are discussed and quantified in Annex VI. The practical limits imposed on the size of Government grain stocks by the size of its storage system, by the geographic distribution of the individual facilities, and by the need to utilize this storage system for purposes other than buffer stock storage and grain distribution, remain to be further investigated.

### Non-Foodgrain Storage

34. MoF needs to store various other commodities besides foodgrains in considerable quantities throughout its entire storage system. These commodities include salt, edible oils, sugar and operational equipment such as empty gunny bags, fumigants and the like. The space required for these purposes is estimated to average between 10 and 20% of all warehouse space throughout the system, thus reducing the nominal storage capacity available for foodgrain operations from 1.16 million tons to only 975,000 tons.

### Maximum Utilization

35. As noted above, capacity utilization and stock turnover vary considerably throughout the system and particularly from season to season as procurement-oriented warehouses are more fully (in fact, often over-) utilized

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<sup>1/</sup> Calculated with respect to gross nominal capacity.

during the height of the domestic procurement drive but remain relatively underutilized the rest of the year, while facilities used primarily for grain distribution operations near urban centers tend to have a more even and generally higher overall utilization rate. By the same token, capacity utilization at the Chittagong and Khulna facilities depends largely on the timing of import shipments. Given the fairly high incidence of transit handling and the need for frequent stock roll-over to prevent excessive spoilage through the high degree of humidity during most of the year, the system as a whole should probably not exceed a capacity utilization rate of about 80% at any given time, although individual facilities may temporarily be loaded considerably above rated capacity. This constraint is the obverse of the so-called "dead stocks" problem discussed in Annex 7. If the system as a whole is loaded to more than 80% capacity, transshipment and proper stock management become difficult (and virtually impossible at particular crucial points) and the system threatens to break down.

#### Import Handling

36. For the foodgrain silos, the problem of import does not arise. These bulk storage facilities are designed to minimize the incidence of spoilage and losses, and the principle of "first in-first out" is built into their grain receiving, storage and dispatch mechanism. There is, however, a further limitation on storage capacity effectively available for foodgrain storage: viz the requirement to keep a certain amount of space free at all times to receive arriving imports. This is estimated to require the full 100,000 tons capacity of the Chittagong silo and some 25,000 tons of nominal capacity in the CSDs near Khulna. Effectively available foodgrain storage is therefore only just over 700,000 tons of nominal capacity in Government-owned silos and warehouses.

#### Rented Facilities

37. In April 1979, MoF also had access to about 163,000 tons of nominal storage capacity in rented warehouses throughout the country. Of this, after deducting space required for storage of other commodities and for stock roll-over and transshipment -- some 105,000 tons were effectively available for grain storage. (All of this rented capacity, however, is generally of the type not very suitable for long-term grain storage). Hence, the combined total of facilities owned and rented by MoF amounts to about 806,000 tons of nominal capacity available for storage of grain stocks. 1/ 2/

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1/ During the summer of 1979, MoF completed the construction of 300,000 tons of temporary storage sheds in Chittagong port; this space is, however, strictly for temporary storage of imported foodgrains awaiting transport to permanent facilities and is not included in any of the totals given throughout this analysis.

2/ As noted earlier, there are almost always some MoF grains stored at the rice mills under contract to the Ministry.

Stock Holding Potential

38. How much grain can actually be loaded into this nominally available storage space depends on two factors: (i) the type of grain being stored; and (ii) the intended duration of storage. Wheat and milled rice have roughly equal weight/volume ratios, but paddy is bulkier. Standard gunny bags hold about 2 maunds of paddy (but about 2.5 maunds of milled rice or wheat) so that effective capacity utilization of sack storage space is about 25% higher by weight for rice than for paddy (with equal height bag stacks). Moreover, three units of paddy equal only two units of milled rice in terms of rice equivalent -- an important consideration when assessing the rice equivalent quantity of grains stored or to be stored.

39. The duration of the intended storage also has considerable bearing on the loading or over-loading rate recommended or permissible for warehouses. The recommended/acceptable loading factor 1/ varies from about 1.3 for paddy (expressed in rice equivalent) stored for medium-term duration to 1.7 for paddy stored temporarily, and from 1.7 for milled rice and wheat stored for medium-term duration to 2.0 for rice and wheat stored temporarily while awaiting transshipment. Table 8-4 shows these loading rates.

Table 8-4: RECOMMENDED/ACCEPTABLE WAREHOUSE LOADING RATES FOR FOODGRAIN STORAGE  
(expressed as ratios of nominal capacity; in terms of rice equivalent)

	<u>Long-term</u> (over 6 months)	<u>Medium-term</u> (4-6 months)	<u>Short-term</u> (under 4 months)	<u>Temporary</u> (up to 4 weeks)
Paddy	1.0	1.3	1.5	1.7
Rice & Wheat	1.25	1.7	1.9	2.0

40. If the entire available MoF capacity, then, were loaded to short-term capacity with wheat and milled rice, it would permit storing just over 1.2 million tons of foodgrains; including rented warehouses, this would increase to about 1.4 million tons. Loading the entire system to medium-term capacity would reduce these totals to 1.1 million and 1.28 million tons, respectively. If the system were loaded entirely with paddy, its short-term capacity would be reduced to 936,000 tons (rice equivalent) without and 1.09 million tons with the hired warehouses; its medium-term capacity for paddy would be 822,000 tons without and 958,000 tons (rice equivalent) with the rented godowns. 2/

41. Given the different degrees of suitability for grain storage of different categories of warehouses, however, loading the entire system to short-term or even medium-term capacity is not recommended; spoilage and

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1/ Expressed as a ratio of gross nominal capacity.

2/ Up to, say, 100,000 tons of paddy/rice might also be stored at the major rice mills at any particular time.

losses would become unacceptably high. For all non-pucca godowns throughout the system as well as for all rented warehouses, therefore, loading is recommended only up to the long-term or nominal capacity rating, while no such restriction applies to the pucca godowns. (The silos, of course, can be loaded up to full capacity regardless of duration of storage). Loading of non-pucca and rented warehouses above the nominal capacity should be strictly temporary when grains are merely awaiting movement to a different facility.

42. Another important consideration in determining the system's actual capacity for storage -- as distinct from handling -- grains is that of turnover. Facilities that have high turnover rates can be overloaded to a greater degree than facilities which commonly experience rather low rates of turnover. LSDs tend to have considerably higher turnover than CSDs because they are functionally geared more towards grain procurement and final distribution, while the CSDs are intended and utilized more for longer-term storage of stocks. Achieving higher turnover rates at the large CSDs would require considerable effort and cause significant increases in handling costs.

43. Finally, some storage capacity must be kept free to receive and store grains procured during the internal procurement seasons. At the beginning of the main procurement drive for aman, in November, this requirement is estimated at about 250,000 tons of short-term capacity for paddy (not counting storage space in Temporary Purchasing Centers). Prior to the start of the wheat and boro procurement, in April, the system should have some 100,000 tons of short-term paddy and wheat capacity free to take in these grains. Aus procurement, on the other hand, has been very small in the past and, given the climatic conditions during the aus harvest, is not likely to grow to the importance of the aman and the wheat and boro procurement. Nevertheless, about 50,000 tons of short-term capacity for paddy should be kept ready to receive aus procured in certain surplus areas.

44. As of November 1, 1979, therefore, the MoF system could effectively hold in storage some 906,000 tons of foodgrains -- 150,000 tons of paddy (rice equivalent) and 756,000 tons of milled rice and wheat. This estimate is based on the following assumptions:

- (a) Free space required for aman procurement is 250,000 tons of short-term sack storage capacity for paddy 1/ -- i.e., 166,667 tons of nominal capacity -- allocated between CSDs and LSDs and between Class 1 and Class 2 godowns in direct proportion to the total available godown capacity in each category; 2/

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1/ Some portion of aman procurement will be in the form of milled rice which requires less storage space than paddy; the estimate given, thus, accommodates rice procurement as well.

2/ At the CSDs, 21.75% or 36,250 tons in Class 1 godowns and 19.08% or 31,800 tons in Class 2 godowns; at the LSDs, 55.27% or 92,117 tons in Class 1 godowns and 3.90% or 6,500 tons in Class 2 godowns (all nominal capacity).

- (b) 150,000 tons of paddy (rice equivalent) are still in storage throughout the system, distributed among the CSDs, LSDs and rented facilities in direct proportion to each category's share in total available capacity; 1/
- (c) No paddy is stored in the silos;
- (d) Class 1 godowns at CSDs are loaded to medium-term capacity;
- (e) Class 1 godowns at LSDs are loaded to short-term capacity; and
- (f) All Class 2 godowns and rented warehouses are loaded to nominal capacity only.

45. On April 1, when only some 100,000 tons of free short-term capacity (50,000 tons for wheat and 50,000 tons for paddy) would be needed to facilitate wheat and boro procurement, the system could store about 1.022 million tons of foodgrains. All other underlying assumptions would be the same as those used for the November 1 assessment, except that 400,000 tons of paddy (rice equivalent) would be held within the system (mostly procured from the recent aman crop).

46. On July 1, 1980, finally, some 1.07 million tons of grain stocks could be accommodated by the system. 50,000 tons of short-term paddy storage capacity would be left free to permit Aus procurement, and 400,000 tons of paddy (rice equivalent) would still be in storage. All other parameters would remain as indicated in the November 1 estimate.

#### Procurement Potential

47. The procurement potential of the present system is determined primarily by the location of its individual facilities, by transport constraints, by the need to store paddy for prolonged periods until milling capacity is available, and by the necessity to avoid double-shipping as much as possible. (A further constraint to procurement potential could arise in case the system became so overloaded that insufficient free space remained to take in additional grains from domestic procurement.) In addition, procurement potential is significantly influenced by the highly seasonal nature of grain production. In the past, the bulk of domestic procurement has come from the large aman crop and during the dry season, and maximum procurement potential was estimated to be around 550,000-600,000 tons for the entire year. With increased efforts (and greatly improved prospects) for expanding both production and procurement of boro and wheat, however, there could soon be two major procurement peaks

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1/ 18.37% and 16.12%, respectively, in Class 1 and Class 2 godowns at CSDs; 46.69% and 3.30%, respectively, in Class 1 and Class 2 godowns at LSDs; and 15.52% in rented warehouses.

during the year, which would effectively increase the system's potential for procurement to around 800,000-900,000 tons per annum. (As the relative share of paddy in total procurement declines, while the share of milled rice and of wheat increases, the overall procurement potential will also increase -- due to the relatively smaller storage space required and to the reduced need to retain paddy in procurement areas until it can be milled.) With the construction of additional storage facilities (such as that undertaken under the IDA-financed Foodgrain Storage II project) this potential will increase further and should reach about 1.2 million tons (rice equivalent) by 1982. 1/

#### Disaster Response Potential

48. How quickly and effectively the system can respond to sudden demands for disaster relief is primarily a function of the stocks held, the locations where the stocks are held, and the transport capacity available to move and distribute these grains. As discussed in Annex VI, response time would be significantly cut if a sizeable part of security stocks were held at all times in or near the most calamity-prone districts. At present, relatively little is stored in these regions, but GOB and FAO have jointly prepared a draft outline of a "Food Security Programme" which contains a proposal to construct warehouse facilities in eight locations in the cyclone-prone districts of the South to store 100,000 tons of security stocks. This proposal further envisages that in a subsequent second phase, additional facilities would be constructed to store a total of 400,000 tons of grains in such disaster areas. 2/ Several aid donors have already indicated their willingness -- or are actively considering -- to finance parts of this scheme, but it seems that more will be required. The scheme certainly represents a major step forward in GOB's effort to cope with the country's food and calamity-relief problems and deserves support from aid donors. Considering what has been noted in Annex 7 about

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1/ This assessment of system potential extends only to the potential of the MoF storage system to absorb a certain tonnage of procured grains; it does not address the question of whether the procurement effort itself will in fact succeed in acquiring this tonnage.

2/ This proposal was discussed at a meeting of GOB and aid donors' representatives in Dacca on April 23-24, 1979. The program envisages the construction of flat storage facilities for 100,000 tons of security reserves in eight locations in Southern cyclone-prone districts (Barisal, Patuakhali, Khulna, Noakhali, Chandpur, Chittagong, and Bhagabari) and of a port silo at Chalna. As of September 20, 1979, the EEC had announced its willingness to finance 50,000 tons of flat storage and ADB had decided to finance 22,000 tons. Yugoslavia is negotiating with GOB for the possible financing of a 50,000 ton silo at Chalna. This leaves at least 28,000 tons of proposed capacity still to be financed. The Food Security Program also includes provisions for barges and pontoons, improvements of water transport landing points, and improvements of MoF's communications system.

the fungibility of grain stocks among theoretically different but partly complementary and partly overlapping purposes, the spreading of additional storage facilities and grain stocks into previously neglected areas of the country will not only improve overall emergency preparedness (as discussed in Annex 7), but will also help the Government in accomplishing its other food policy objectives of price stabilization and production increases. The security stocks to be held in the proposed locations could easily be procured from the producers in these areas themselves, and the need for periodic stock roll-over would dovetail conveniently with the need to inject public grain supplies into the market during the high-price seasons.

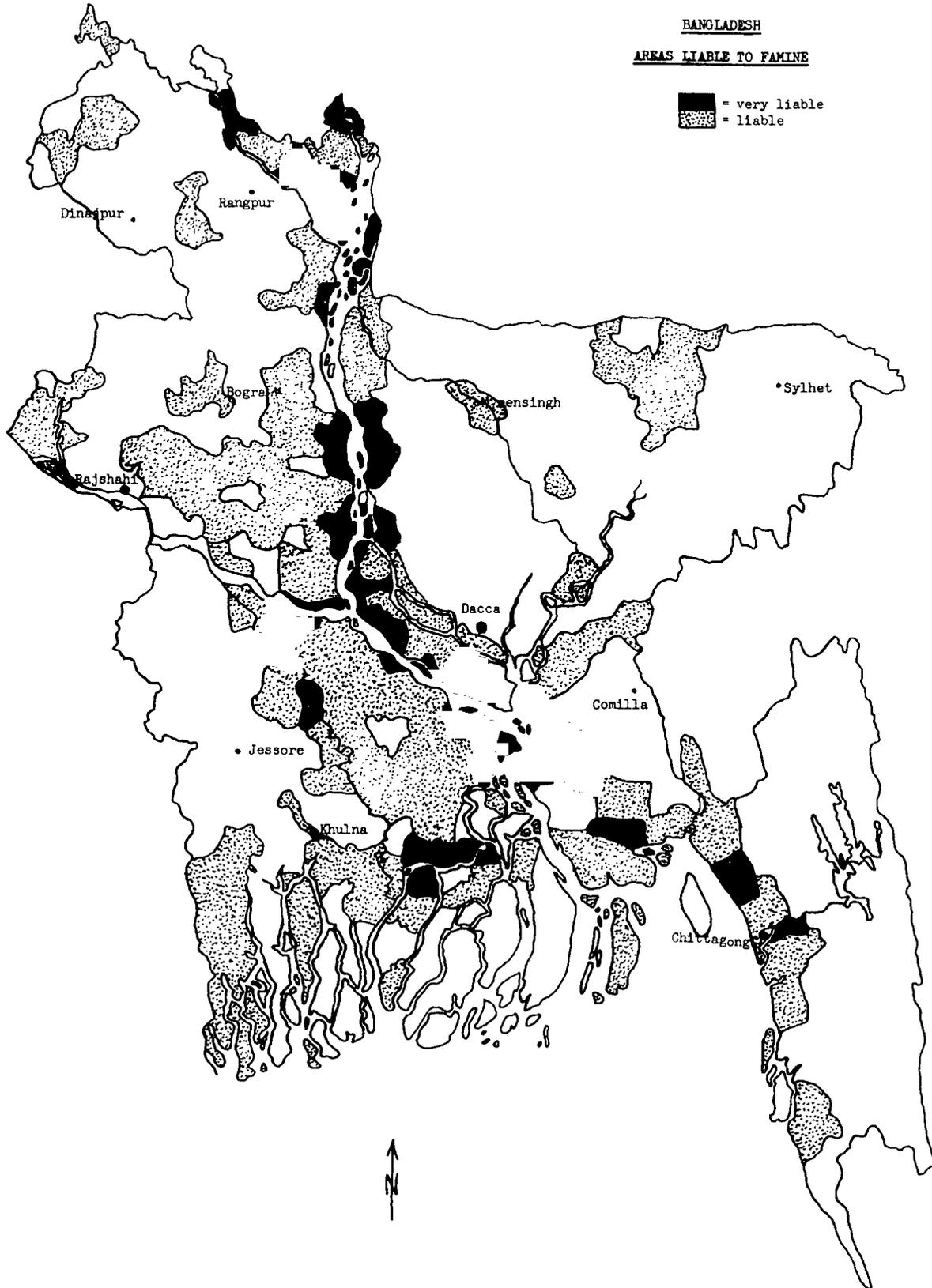
AREAS LIABLE TO FAMINE IN BANGLADESH

1. The map on page 126 shows the areas of Bangladesh which appear to be "liable" and "very liable" to famine. It has been adapted and simplified for purposes of reproduction from a large map prepared by a team of researchers from The Johns Hopkins University Center for Medical Research. <sup>1/</sup> The map is not intended to be a tool to predict future occurrences of famine. Rather, it purports to show those areas in which localized famines are most likely to occur and/or where effects of nationwide famines are likely to be most severe.

2. According to the study, the principal factors contributing to liability to famine are, in order of importance, flooding, drought, population pressure, food deficit, lack of alternative employment, low crop yields, poor land transport, river erosion, cyclone risk, and maldistribution of agricultural input. Taken together, the first five factors account for over 70% of the composite index of famine liability.

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<sup>1/</sup> Bruce Currey, et al., Mapping of Areas Liable to Famine in Bangladesh (Final Report, Preliminary Version), September 7, 1978. The research project was carried out for the Ministry of Relief and Rehabilitation, Government of Bangladesh, with financial support from the United States Agency for International Development (USAID). Mr. Currey, the principal investigator for the project, is currently with the Departments of Geography & International Health of the University of Hawaii and a consultant with the Food Systems Group, Resource Systems Institute, of the East-West Center in Honolulu, Hawaii. The permission of Bruce Currey and of USAID to adapt and reproduce this map in the present report is gratefully acknowledged.



THE MINISTRY OF FOOD AND CIVIL SUPPLIES:  
RESPONSIBILITIES AND ADMINISTRATIVE STRUCTURE

1. The Ministry of Food and Civil Supplies (MoF) is responsible for grain procurement, both domestic and foreign, and for food distribution programs (except for emergency relief food which is the responsibility of the Ministry of Relief and Rehabilitation). The staff of the Ministry is headed by the Secretary of Food, and the staff functions are vested with two Joint Secretaries (Administration and Distribution; Procurement and Development) who supervise civil servants with functional responsibilities under their respective jurisdiction (see Chart on page 129). The Directorate of Food is the operating arm of the Ministry, responsible for day-to-day operational matters. Broad policy and programs are determined by the Ministry.

2. The Directorate of Food (see Chart on page 130) is headed by the Director-General who reports directly to the Secretary of Food; its business is conducted by the following six Directorates:

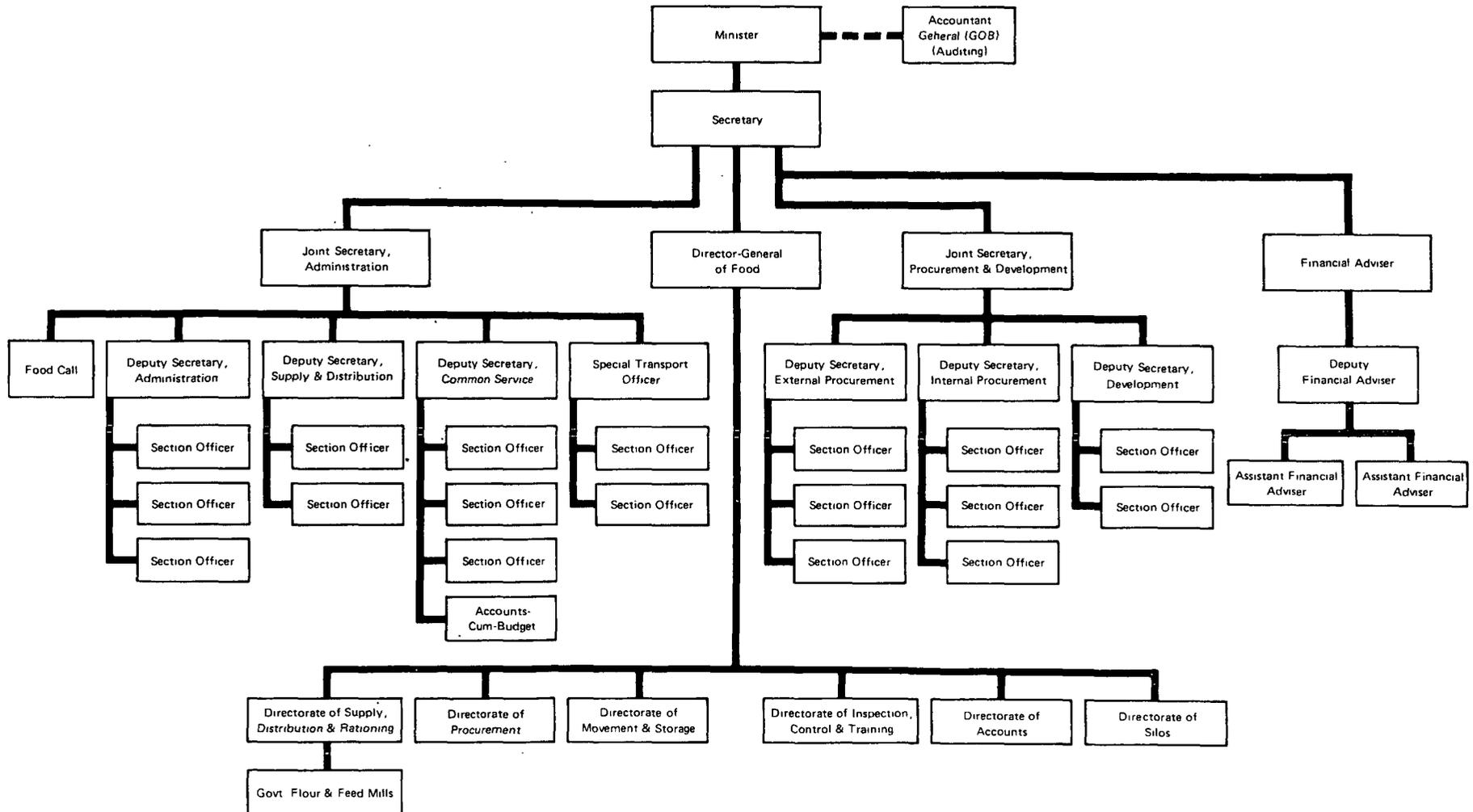
- (i) Directorate of Supply, Distribution and Rationing (DSDR): This Directorate is responsible for the distribution of foodgrains and other commodities through the different rationing and other distribution systems of MoF. It is also responsible for the administration of the 322 Local Supply Depots (LSDs).
- (ii) Directorate of Procurement: This Directorate is responsible for undertaking domestic procurement of foodgrains on the basis of the Procurement Policy of the Government. It is, therefore, responsible for setting up and operating the Temporary Purchasing Centers (over 250 during the FY79 and FY80 Aman procurement seasons).
- (iii) Directorate of Movement and Storage: This Directorate is responsible for clearance of ships carrying grain imports from external sources at the country's ports and for internal movement of grains within the country. It is also responsible for the administration of the 12 Central Supply Depots (CSDs).
- (iv) Directorate of Silos: This Directorate is responsible for the administration, operation and maintenance of the four silos.
- (v) Directorate of Inspection, Control and Training: This Directorate is responsible for inspection of foodgrains (both externally and internally procured grains) in the CSDs and LSDs and for pest control operations in MoF warehouses. It is also responsible for in-service training of field staff engaged in storage, handling, quality control and pest control operations.

(vi) Directorate of Accounts: This Directorate is responsible for maintenance of stock accounts, preparation of balance sheets, and for payments of procured grains, transport services contracting, etc.

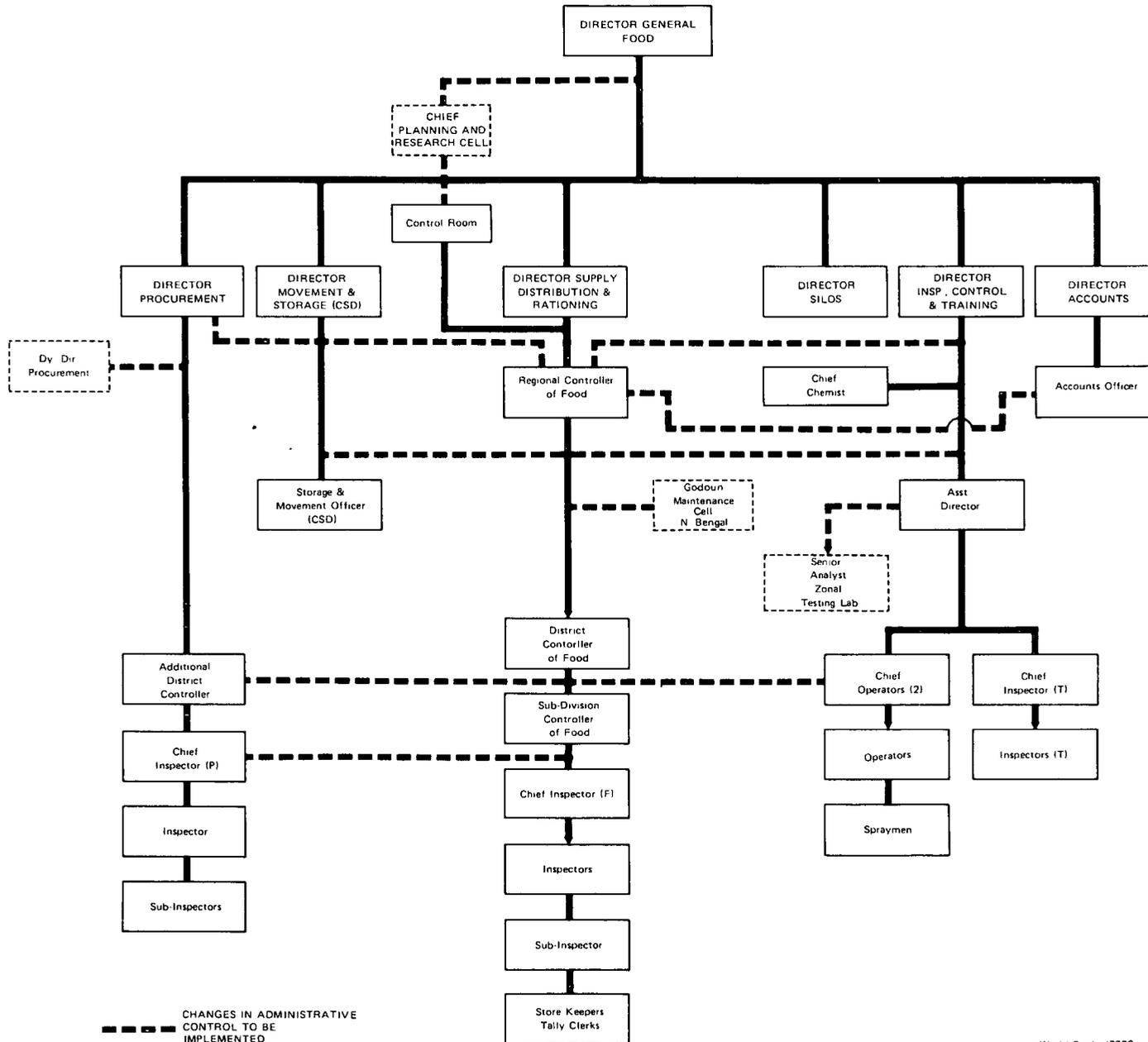
3. The structure and the relative strength of various directorates is a natural consequence of MoF's historical role, having been concerned mainly with the distribution of imported foodgrains which generally arrived in good condition and were held in storage at CSDs for relatively short periods for use in chronic deficit areas. Areas with production surpluses sometimes had to be used to feed the Government distribution system, but otherwise did not require attention. Procurement efforts were not concerned with their impact on farmgate prices and production. Recent changes in operational emphasis -- such as the vast expansion of the domestic grain procurement effort -- have, however, led to some changes within the Ministry.

4. The Directorate of Supply, Distribution and Rationing has the most extension staff, operating under four Regional Controllers of Food (RCF), with each District and Subdivision having a District (DCF) and a Subdivisional Controller of Food (SCF). Generally there are one chief inspector, 10 inspectors and 8-10 store keepers in a Subdivision. The Directorate of Procurement was established in January 1977. It operates in the major procurement areas through Additional District Controllers of Food and has a staff strength of about one quarter of DSDR, most of whom are recruited on a temporary basis. Regional, district or subdivisional staff of the various directorates are managed directly from Dacca, except for DSDR where the District Controller exercises control over the SCF. The seasonality of MoF's distribution and domestic procurement functions are complementary and offer scope for more effective use of manpower than is possible with the existing division of field responsibilities. The flow of communication between various field staff, which is through the Directorate Headquarters in Dacca, also leaves room for improvement. Field coordination between various directorates and with other ministries could also be improved.

**BANGLADESH  
MINISTRY OF FOOD AND CIVIL SUPPLIES  
Organization Chart**



**BANGLADESH  
MINISTRY OF FOOD AND CIVIL SUPPLIES  
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Table 1.1  
CULTIVATED AND LAND, 1977/78  
(in thousands of acres unless otherwise stated)

Division/District	Population ('000)	Total Area	Land Use					Cultivated Area					Irrigation					Population Density			
			Not Cultivable	Forests	Cultivable Area	Current Fallows	Net Cropped Area	Single-Cropped	Double-Cropped	Gross Cropped Area	Cropping Intensity	Modern Irrigation	Total Irrigation	Irrigation %	Per Acre	Per Sq. Mile					
Rajshahi	20,317	8543	1772	36	6735	218	383	6132	3391	2253	489	9362	1.53	1.44	1.39	352	381	733	10.9	2.38	3.02
Dhaka	3,029	1670	298	24	1348	60	166	1122	735	297	90	1600	1.43	1.24	1.19	33	49	103	7.6	1.81	2.25
Rangpur	6,360	2371	521	5	1845	84	53	1677	504	1007	166	3015	1.80	1.71	1.63	38	113	170	9.2	2.68	3.45
Bogra	2,602	961	217	-	744	1	28	715	357	286	73	1146	1.60	1.54	1.54	91	48	139	18.7	2.71	3.50
Rajshahi	5,037	2339	503	7	1829	72	59	1697	1272	361	65	2188	1.29	1.25	1.20	93	151	244	13.3	2.15	2.75
Pabna	3,289	1201	233	-	968	1	47	920	523	302	95	1412	1.53	1.46	1.46	47	20	77	8.0	2.74	3.40
Khulna	16,626	8198	1687	1467	5043	70	268	4706	3280	1172	253	6384	1.36	1.28	1.27	237	242	479	9.5	2.03	3.30
Kushtia	2,234	877	142	-	735	1	113	621	441	169	10	810	1.30	1.10	1.10	44	71	115	13.6	2.55	3.04
Jessore	3,941	1630	340	-	1290	23	25	1243	806	371	65	1745	1.40	1.38	1.35	36	47	84	6.5	2.42	3.06
Khulna	4,243	2977	449	1426	1102	6	60	1037	797	212	29	1306	1.26	1.19	1.19	30	42	72	6.5	1.43	3.85
Sariat	4,476	1669	451	10	1208	25	16	1167	784	245	138	1689	1.45	1.43	1.40	89	82	171	14.2	2.68	3.71
Patukhali	1,732	1044	306	32	706	15	54	638	452	175	11	834	1.31	1.21	1.18	37	.	37	5.2	1.66	2.45
Dacca	24,979	7639	1523	241	5874	96	413	5365	2997	2287	480	8612	1.61	1.49	1.47	609	410	1019	17.3	3.27	4.25
Jamalpur	2,342	840	124	30	686	8	39	638	267	318	53	1062	1.66	1.57	1.55	48	26	74	10.8	2.79	3.41
Hymensingh	6,386	2398	468	37	1911	55	193	1646	639	117	89	2741	1.67	1.49	1.45	247	238	485	25.6	2.66	3.37
Tangail	2,402	832	78	114	600	20	9	612	232	122	122	1114	1.82	1.79	1.74	87	18	105	16.4	2.89	3.75
Dacca	9,196	1844	402	60	1382	9	126	1247	775	100	100	1819	1.46	1.32	1.32	183	103	286	20.7	4.99	6.55
Faridpur	4,653	1724	451	-	1273	4	46	1223	684	116	116	1878	1.54	1.48	1.48	44	24	69	5.4	2.70	3.46
Chittagong	21,256	10901	1686	3680	5535	271	774	4490	2415	1808	267	6833	1.52	1.30	1.23	487	870	1358	24.5	2.00	3.93
Sylhet	5,506	3062	825	205	2032	137	393	1502	918	546	38	2111	1.41	1.12	1.05	141	469	610	30.0	1.80	2.71
Comilla	6,694	1660	271	2	1387	11	147	1229	545	396	87	1633	1.63	1.45	1.44	163	130	294	21.2	4.03	4.83
Noakhali	3,732	1187	160	21	1006	80	60	876	486	320	70	1153	1.53	1.43	1.33	67	94	161	16.0	3.14	3.71
Chittagong	5,238	1731	390	517	894	38	149	707	351	291	66	1111	1.60	1.32	1.26	109	158	267	29.9	3.03	5.86
Chittagong Hill Tracts	586	3660	110	2935	215	14	25	176	115	55	6	138	1.38	1.21	1.13	7	20	26	12.1	0.18	2.73
TOTAL	83,678	35281	6669	5425	23187	655	1838	20693	11683	7520	1489	31192	1.51	1.38	1.35	1684	1905	3589	15.5	2.37	3.61

a/ Population as of January 1, 1978; estimated by BBS.  
 b/ Rivers, tidal creeks, lakes, ponds, roads, homesteads, etc.  
 c/ Total area of not cultivable area and forests.  
 d/ Area cropped at least once during the year.  
 e/ Sum of single-cropped area plus 2 x double-cropped area.  
 f/ Ratio of gross cropped area to net cropped area.  
 g/ Ratio of gross cropped area to net cropped area plus current fallows.  
 h/ Ratio of gross cropped area to net cropped area.  
 i/ Area irrigated by tubewells and power pumps.  
 j/ Area irrigated by traditional methods like swing baskets, dooms, etc.  
 k/ Percentage of cultivable area irrigated.  
 l/ Persons per acre of total area.  
 m/ Persons per acre of cultivable area.

Source: Bangladesh Bureau of Statistics; Mission estimates.



Table 1.2

BANGLADESH: NORMAL RAINFALL PER MONTH  
(inches)

<u>Station</u>	<u>Total</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
Dinajpur	71.38	0.40	0.52	0.63	1.86	7.37	13.61	15.35	13.93	11.81	5.4	0.45	0.04
Rangpur	87.35	0.49	0.58	0.89	3.31	11.93	20.44	16.96	13.67	12.03	6.53	0.44	0.08
Bogra	70.24	0.54	0.65	1.07	2.49	7.68	13.00	12.50	13.80	10.83	7.07	0.53	0.08
Pabna	62.01	0.43	0.81	1.39	2.17	7.12	11.52	10.52	11.37	9.24	6.64	0.74	0.06
Jessore	62.63	0.54	0.85	1.36	3.47	7.44	10.81	12.38	12.09	7.40	5.35	0.88	0.06
Khulna	68.36	0.47	0.66	1.35	3.56	7.25	12.20	14.95	11.76	8.78	6.01	1.28	0.09
Barisal	89.82	0.60	0.73	1.49	3.94	9.16	16.58	18.54	17.03	12.27	7.72	1.63	0.13
Mymensingh	91.07	0.45	0.72	1.66	5.30	12.32	17.84	14.82	15.97	13.42	7.81	0.66	0.10
Dacca	74.79	0.70	1.23	2.29	4.04	7.65	12.67	17.20	12.00	9.28	6.64	1.00	0.09
Faridpur	75.81	0.50	1.04	1.43	5.04	10.66	13.58	13.31	12.30	9.64	7.09	1.15	0.07
Syhet	175.48	0.94	1.65	2.60	7.57	27.41	53.93	23.37	20.91	25.80	10.80	0.28	0.22
Comilla	97.35	0.41	0.97	2.07	6.24	12.45	18.84	15.91	16.43	13.27	8.89	1.77	0.10
Chittagong	113.13	0.41	0.30	3.50	2.67	11.17	22.41	24.57	22.23	12.04	11.45	1.97	0.41
Cox's Bazar (Chittagong)	146.72	0.42	0.48	1.27	3.17	11.52	30.34	36.75	30.71	17.45	10.83	2.49	1.29
Rangamati (Chittagong H.T.)	97.06	0.57	2.43	3.09	0.22	8.53	16.51	26.75	15.65	11.09	10.45	0.84	0.93
<u>Country Average</u> <sup>/a</sup>	<u>89.90</u>	<u>0.53</u>	<u>0.94</u>	<u>1.85</u>	<u>4.08</u>	<u>10.82</u>	<u>18.37</u>	<u>17.36</u>	<u>15.54</u>	<u>11.91</u>	<u>7.65</u>	<u>1.15</u>	<u>0.20</u>

<sup>/a</sup> Average of 21 stations (not all shown here).

Note: Based on average rainfall statistics for 1931-1960.

Source: Bangladesh Meteorological Department.

Table 1.3

BANGLADESH: NORMAL HUMIDITY PER MONTH  
(at 12:00 GMT and at 00:00 GMT, in %)

Station	January	February	March	April	May	June	July	August	September	October	November	December
Dinajpur	59 - 92	48 - 86	36 - 78	39 - 75	63 - 85	77 - 92	79 - 93	80 - 93	81 - 92	75 - 93	68 - 91	64 - 82
Rangpur /a	67 - 92	54 - 89	42 - 82	47 - 83	65 - 90	81 - 95	81 - 95	82 - 95	82 - 95	77 - 93	74 - 93	77 - 94
Bogra	59 - 78	48 - 72	37 - 63	42 - 67	67 - 78	82 - 86	81 - 86	82 - 87	82 - 85	76 - 81	69 - 78	65 - 75
Pabna	68 - 91	55 - 89	44 - 86	41 - 87	61 - 91	81 - 95	85 - 96	84 - 95	85 - 95	81 - 95	76 - 94	75 - 95
Jessore	67 - 92	59 - 92	52 - 90	57 - 91	71 - 91	82 - 95	86 - 96	87 - 96	86 - 96	83 - 95	74 - 95	74 - 93
Khuina	62 - 90	55 - 91	53 - 91	65 - 93	74 - 93	82 - 94	84 - 95	84 - 95	83 - 95	78 - 94	69 - 91	67 - 91
Barisal	60 - 89	56 - 90	56 - 90	66 - 91	74 - 91	82 - 92	83 - 94	83 - 94	82 - 94	77 - 94	69 - 91	64 - 89
Mymensingh	62 - 89	54 - 87	49 - 86	56 - 88	74 - 90	82 - 93	81 - 94	81 - 94	82 - 94	79 - 93	73 - 90	67 - 91
Dacca	61 - 93	48 - 90	44 - 88	54 - 91	75 - 93	81 - 95	82 - 95	83 - 94	83 - 95	79 - 95	71 - 94	70 - 95
Faridpur	65 - 94	60 - 92	49 - 89	58 - 90	75 - 93	84 - 95	85 - 96	84 - 93	83 - 94	81 - 95	76 - 94	75 - 94
Sylhet	67 - 93	57 - 88	51 - 83	63 - 87	79 - 93	82 - 96	83 - 97	84 - 95	85 - 95	84 - 96	75 - 93	73 - 95
Comilla	64 - 95	54 - 94	55 - 93	65 - 93	75 - 92	83 - 94	84 - 94	83 - 85	82 - 95	80 - 96	75 - 95	70 - 95
Chittagong	68 - 93	69 - 92	73 - 91	76 - 91	79 - 93	85 - 93	86 - 94	86 - 95	85 - 95	82 - 96	76 - 95	73 - 95
Cox's Bazaar (Chittagong)	68 - 71	68 - 70	73 - 73	75 - 73	79 - 76	86 - 85	88 - 88	88 - 89	85 - 85	80 - 78	71 - 75	70 - 74
Rangamadi (Chittagong Hill Tracts)	59 - 99	50 - 95	51 - 95	53 - 91	67 - 89	82 - 93	89 - 95	85 - 95	87 - 97	83 - 97	69 - 99	67 - 99

Note: First figure is for 12:00 GMT, second for 00:00 GMT. Based on averages for 1931-1960.

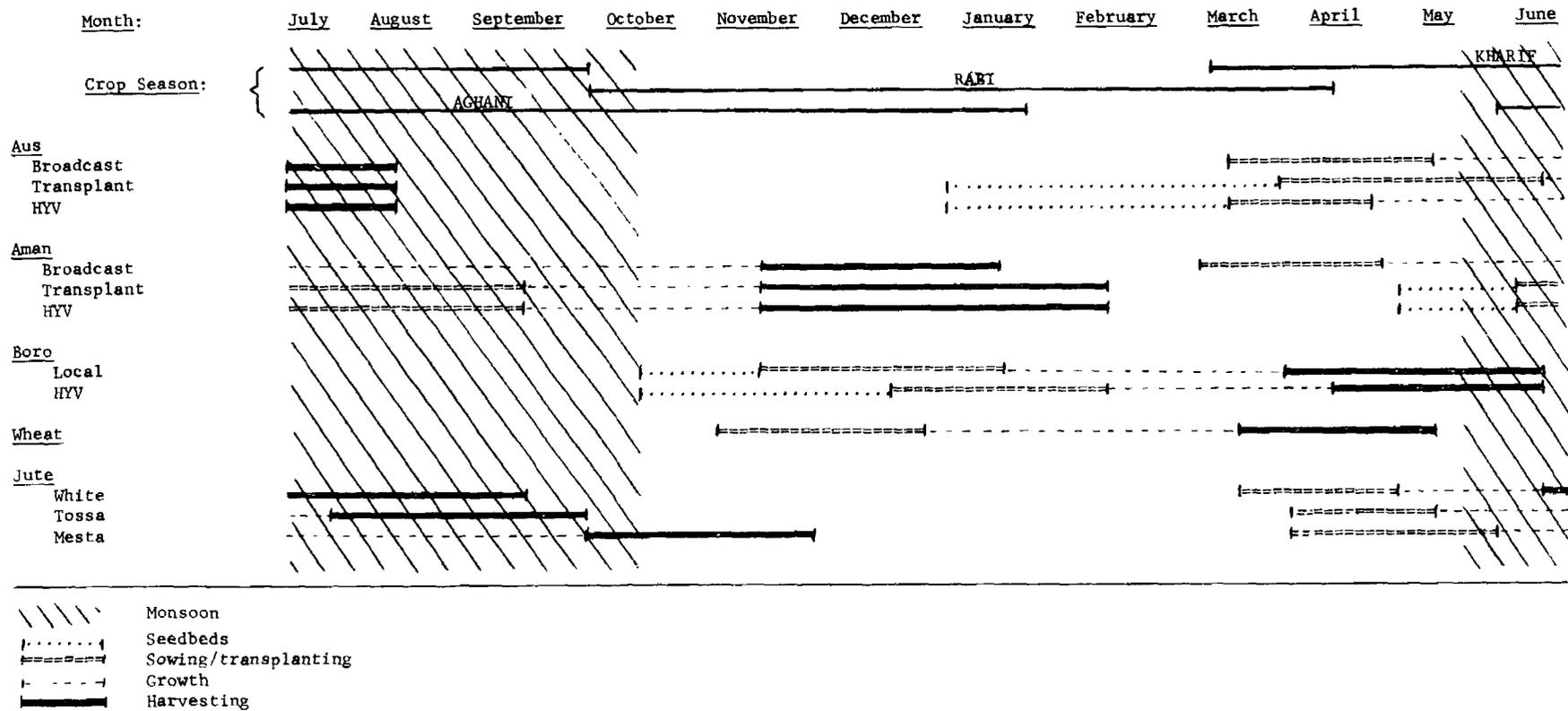
/a Second figure is for 03:00 GMT.

Source: Bangladesh Meteorological Department.

ASADD  
Dec. 18, 1979

Table 2.1

BANGLADESH: CROP SEASONS FOR MAJOR FOODGRAINS AND FOR JUTE



Source: Ministry of Agriculture and BBS.

ASADD  
November 11, 1979

Table 2.2

BANGLADESH: ACREAGE IRRIGATED BY DIFFERENT METHODS, 1969/70 - 1978/79  
(acres)

Method of Irrigation	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	Increase (in %)	
											FY70-FY78	FY75-FY78
Power pumps	742,180	1,032,570	829,580	1,165,400	1,407,900	1,442,330	1,363,324	1,232,020	1,343,669	1,311,689	81	-7
Tubewells	80,500	118,760	83,950	92,570	131,230	233,810	262,983	233,700	314,135	..	290	34
<u>Modern methods</u>	<u>822,680</u>	<u>1,151,330</u>	<u>913,530</u>	<u>1,257,970</u>	<u>1,539,130</u>	<u>1,676,140</u>	<u>1,626,307</u>	<u>1,465,720</u>	<u>1,657,804</u>	<u>..</u>	<u>102</u>	<u>-1</u>
Swing baskets	104,450	132,080	116,720	96,700	101,060	116,410	143,027	161,910	154,225	..	48	32
Doons	968,220	897,670	899,940	921,180	851,100	954,470	967,639	728,135	980,435	..	1	3
Canals	} 718,700	255,660	216,830	235,830	293,840	272,460	229,023	265,430	296,310	..	} 7	9
Other		447,210	440,280	480,820	417,120	541,992	491,282	381,725	473,750	..		-13
<u>Traditional methods</u>	<u>1,791,370</u>	<u>1,732,620</u>	<u>1,673,770</u>	<u>1,734,530</u>	<u>1,663,120</u>	<u>1,885,332</u>	<u>1,830,971</u>	<u>1,537,200</u>	<u>1,904,720</u>	<u>..</u>	<u>6</u>	<u>1</u>
<u>TOTAL</u>	<u>2,614,050</u>	<u>2,883,950</u>	<u>2,587,300</u>	<u>2,992,500</u>	<u>3,202,250</u>	<u>3,561,472</u>	<u>3,457,278</u>	<u>3,002,920</u>	<u>3,562,524</u>	<u>..</u>	<u>36</u>	<u>..</u>
of which:												
% modern	31.5	39.9	35.3	42.0	48.1	47.1	47.0	48.8	46.5	..		
% traditional	68.5	60.1	64.7	58.0	51.9	52.9	53.0	51.2	53.5	..		

. = less than 0.1%.  
.. = not available.

Source: Bangladesh Bureau of Statistics.

ASADD  
Nov. 11, 1979

Table 2.3

BADC DEEP TUBEWELLS PROGRAM, 1967/68 - 1978/79

<u>Year</u>	<u>Wells Sunk</u>	<u>Number of Wells in Operation</u>	<u>Total Area Irrigated (acres)</u>	<u>Average Irrigated Area per Well (acres)</u>
1967/68	106	102	4,117	40.4
1968/69	292	380	16,080	42.3
1969/70	662	980	32,119	32.8
1970/71	51	796	32,070	40.3
1971/72	221	906	29,330	32.4
1972/73	872	1,237	37,776	30.5
1973/74	1,778	1,494	61,456	41.1
1974/75	3,178	2,699	117,864	43.7
1975/76	1,656	3,828	153,747	40.2
1976/77	936	4,461	164,198	36.8
1977/78	1,271	7,453	338,474	45.4
1978/79	356	9,329	504,340	54.1
<u>TOTAL</u>	<u>11,379</u>			
1979/80 (target)	853	11,000	660,000	60.0

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.. = not available.

Source: Bangladesh Agricultural Development Corporation.

ASADD  
Nov. 4, 1979

Table 2.4

BADC SHALLOW TUBEWELLS PROGRAM, 1972/73 - 1978/79

<u>Year</u>	<u>Wells Sunk</u>	<u>Number of Wells in Operation</u>	<u>Total Area Irrigated (acres)</u>	<u>Average Irrigated Area per Well (acres)</u>
1972/73	1,808	994	3,560	3.6
1973/74	1,142	2,293	11,845	5.2
1974/75	911	3,605	23,470	6.5
1975/76	1,083	2,162	12,894	6.0
1976/77	1,627	3,045	17,707	5.8
1977/78	3,452	6,517	58,850	9.0
1978/79	2,174	8,379	87,415	10.4
<u>TOTAL</u>	<u>12,197</u>			
1979/80 (target)	6,000	..	..	..

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.. = not available.

Source: Bangladesh Agricultural Development Corporation.

ASADD  
Nov. 4, 1979

Table 2.5

FIELDING OF LOW LIFT PUMPS BY BADC, 1960/61 - 1978/79

<u>Year</u>	<u>Number of Pumps in Operation</u>	<u>Average Cusecs per Pump</u>	<u>Area Irrigated per Cusec (acres)</u>	<u>Total Area Irrigated (acres)</u>
1960/61	1,267	..	..	64,528
1961/62	1,555	..	..	73,922
1962/63	2,024	1.70	38.7	133,043
1963/64	2,477	1.85	34.2	156,751
1964/65	2,239	1.95	30.3	132,262
1965/66	3,420	2.05	24.7	173,512
1966/67	3,999	2.14	26.3	225,105
1967/68	6,558	2.08	23.3	317,903
1968/69	10,852	1.89	21.0	430,052
1969/70	17,846	1.84	19.6	642,752
1970/71	24,483	1.85	19.6	889,807
1971/72	24,249	1.84	19.8	883,941
1972/73	32,917	1.84	20.1	1,218,766
1973/74	35,343	1.84	20.5	1,330,810
1974/75	35,534	1.86	19.7	1,300,507
1975/76	36,382	1.86	19.4	1,312,576
1976/77	28,361	1.86	20.9	1,101,210
1977/78	36,730	1.87	19.6	1,343,669
1978/79	35,890	1.87	19.5	1,311,689
1979/80 (target)	37,000	..	..	..

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.. = not available.

Source: Bangladesh Agricultural Development Corporation.

ASADD  
Nov. 4, 1979

Table 2.6

BANGLADESH: HAND-TUBEWELLS DISTRIBUTED BY IRDP TCCAs, 1975/76-1977/78

Division/ District	1975/76 <sup>/a</sup>		1976/77		1977/78	
	TCCAs/ <sup>b</sup> involved	MOSTI/ <sup>c</sup> distributed	TCCAs involved	MOSTI distributed	TCCAs involved	MOSTI distributed
<u>Rajshahi</u>	<u>17</u>	<u>7,900</u>	<u>27</u>	<u>14,250</u>	<u>37</u>	<u>12,550</u>
Dinajpur	3	800	4	2,300	6	1,550
Rangpur	4	1,100	10	5,350	14	6,100
Bogra	6	4,400	6	4,000	3	1,500
Rajshahi	4	1,600	5	1,800	9	2,400
Pabna	-	-	2	800	5	1,000
<u>Khulna</u>	<u>-</u>	<u>-</u>	<u>7</u>	<u>1,040</u>	<u>9</u>	<u>3,500</u>
Kushtia	-	-	-	-	7	2,900
Jessore	-	-	-	-	-	-
Khulna	-	-	7	1,040	-	-
Barisal	-	-	-	-	2	600
Patuakhali	-	-	-	-	-	-
<u>Dacca</u>	<u>7</u>	<u>1,500</u>	<u>21</u>	<u>5,180</u>	<u>23</u>	<u>8,900</u>
Jamalpur )						
Mymensingh)	7	1,500	2	1,050	2	600
Tangail	-	-	4	850	4	1,200
Dacca	-	-	8	1,850	10	3,600
Faridpur	-	-	7	1,430	7	3,500
<u>Chittagong</u>	<u>-</u>	<u>-</u>	<u>7</u>	<u>1,300</u>	<u>10</u>	<u>1,250</u>
Sylhet	-	-	1	100	-	-
Comilla	-	-	3	500	7	750
Noakhali	-	-	2	400	2	200
Chittagong	-	-	1	300	1	300
Chittagong Hill Tracts	-	-	-	-	-	-
<u>Total</u>	<u>24</u>	<u>9,400</u>	<u>62</u>	<u>21,770</u>	<u>79</u>	<u>26,200</u>

<sup>/a</sup> 1975/76 was the first year of the program.

<sup>/b</sup> TCCA = Thana Central Cooperative Association.

<sup>/c</sup> MOSTI = Manually Operated Shallow Tubewell for Irrigation.

Source: IRDP

ASADD

December 17, 1979

Table 2.7

BANGLADESH: ACREAGE IRRIGATED UNDER BWDB SCHEMES, 1965/66-1977/78

(Acres)

<u>Year</u>	<u>Canals</u>	<u>DTWs</u>	<u>LLP</u>	<u>Total</u>
1965/66	54,931	3,042	5,000	62,973
1966/67	58,842	12,000	7,000	77,842
1967/68	65,310	41,000	12,000	118,310
1968/69	78,605	57,717	11,143	147,465
1969/70	82,396	61,733	11,399	155,528
1970/71	83,168	54,578	11,194	148,940
1971/72	57,960	3,598	1,814	63,399
1972/73	63,900	20,209	7,179	91,288
1973/74	72,008	27,143	5,972	105,123
1974/75	78,453	22,749	5,550	106,752
1975/76	88,764	24,704	5,766	119,234
1976/77	93,348	14,608	6,080	114,036
1977/78	135,063	10,100	7,952	153,115

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BWDB = Bangladesh Water Development Board

DTW = Deep Tubewell

LLP = Low-lift Pump

Source: BWDB

ASADD

December 17, 1979

Table 2.8

## BANGLADESH: ACREAGE IRRIGATED FOR DIFFERENT CROPS, 1969/70 - 1977/78

<u>Crop</u>	<u>1969/70</u>	<u>1970/71</u>	<u>1971/72</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>
Aus	72,710	76,990	89,710	107,560	172,300	178,020	182,117	189,060	211,030
Aman	394,905	323,350	243,050	254,590	294,160	275,250	208,003	208,370	208,045
Boro	1,759,490	2,095,135	2,043,510	2,220,860	2,361,900	2,699,650	2,618,126	2,022,925	2,515,285
<u>Rice, Total</u>	<u>2,227,105</u>	<u>2,495,475</u>	<u>2,376,270</u>	<u>2,583,010</u>	<u>2,828,360</u>	<u>3,152,920</u>	<u>3,008,246</u>	<u>2,420,355</u>	<u>2,934,360</u>
Wheat	22,350	28,050	23,250	34,250	34,050	45,442	125,102	178,620	231,805
Other Cereals	7,550	6,515	5,270	10,660	9,665	10,120	5,980	6,025	3,960
Pulses	16,720	15,190	10,060	11,590	4,000	5,180	4,325	2,635	2,255
Oilseeds	4,590	4,725	7,870	7,110	4,400	4,250	3,510	9,710	8,010
Potato	79,675	99,990	94,020	100,220	102,370	123,900	133,660	139,815	153,070
Vegetables	80,540	85,800	73,200	91,310	87,550	89,330	85,273	94,145	103,855
Sugarcane	30,525	27,150	14,800	15,520	17,280	17,170	18,958	22,315	25,135
Cotton	-	-	10	10	25	10	50	50	472
Others	150,215	121,055	108,950	140,520	123,400	113,150	90,389	135,400	137,120
<u>Total</u>	<u>2,619,270</u>	<u>2,883,950</u>	<u>2,713,700</u>	<u>2,994,200</u>	<u>3,211,100</u>	<u>3,561,472</u>	<u>3,475,493</u>	<u>3,009,070</u>	<u>3,600,042</u>

Source: BBS.

ASADD  
Dec. 18, 1979

Table 2.9

BANGLADESH: DISTRIBUTION OF COMMERCIAL FERTILIZER BY TYPE, 1962/63 - 1979/80  
(in long tons of bulk weight)

<u>Year</u>	<u>Urea</u>	<u>TSP</u>	<u>DAP</u>	<u>MP</u>	<u>HP</u>	<u>SP</u>	<u>AS/PS</u>	<u>NPK</u>	<u>TP</u>	<u>Total</u>
1962/63	41,122	3,081	-	1,405	-	1,021	3,531	-	-	50,160
1963/64	74,951	22,985	-	3,418	-	487	555	-	-	102,396
1964/65	71,007	18,975	-	3,316	-	343	190	-	-	93,831
1965/66	83,280	20,027	-	2,700	-	100	88	-	-	106,195
1966/67	120,825	33,764	-	7,310	-	63	134	-	-	162,096
1967/68	152,092	48,148	-	10,816	-	25	60	-	-	211,141
1968/69	159,937	52,938	-	12,433	-	-	-	-	-	225,308
1969/70	196,463	65,535	-	15,109	-	-	-	-	-	277,107
1970/71	212,358	74,900	-	17,112	-	-	-	-	-	304,370
1971/72	169,771	60,139	-	13,932	-	-	-	-	-	243,842
1972/73	276,640	88,913	-	18,470	-	-	-	-	-	384,023
1973/74	267,673	93,820	-	18,391	-	-	-	-	-	379,884
1974/75	174,195	75,175	-	17,509	11,455	-	-	1,235	-	279,569
1975/76	311,959	100,055	-	21,737	4,361	1,952	-	7,522	-	457,586
1976/77	349,258	125,215	-	22,156	4,066	1,486	-	13,877	-	516,058
1977/78	477,447	191,332	-	40,998	3,268	838	715	777	-	715,374
1978/79	470,556	177,655	37,748	46,991	3,328	389	330	3,874	738	741,609
1979/80t	600,000	300,000	...	100,000	...	...	...	...	...	1,000,000

t = target.  
... = no target set.

Source: BADC.

Table 2.10

BANGLADESH: DISTRIBUTION OF COMMERCIAL FERTILIZER BY WEIGHT, 1969/70-1979/80  
(in long tons of bulk weight)

Division/District	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79 <sup>/a</sup>	Target 1979/80
<b>Rajshahi</b>	<u>64,153</u>	<u>71,190</u>	<u>43,643</u>	<u>66,550</u>	<u>78,997</u>	<u>68,379</u>	<u>104,830</u>	<u>131,423</u>	<u>189,572</u>	<u>192,226</u>	<u>286,000</u>
Dinajpur	13,883	12,187	8,062	13,626	14,113	14,149	20,281	24,198	35,267	34,044	59,000
Rangpur	12,689	14,961	11,532	13,637	16,555	14,442	21,533	27,309	38,203	40,353	57,000
Bogra	17,269	19,662	9,797	14,206	19,293	15,865	24,382	33,682	42,772	47,428	62,000
Rajshahi	13,349	15,549	8,238	13,588	17,435	15,792	21,136	27,556	41,753	41,327	63,000
Pabna	6,963	8,831	6,014	11,493	11,601	8,131	17,498	18,678	31,577	29,074	45,000
<b>Khulna</b>	<u>37,005</u>	<u>45,057</u>	<u>42,194</u>	<u>54,156</u>	<u>53,790</u>	<u>36,799</u>	<u>63,192</u>	<u>66,524</u>	<u>106,917</u>	<u>100,763</u>	<u>144,000</u>
Kushtia	7,814	7,158	6,037	10,599	9,631	8,227	14,281	21,356	31,053	28,154	41,000
Jessore	8,267	8,071	7,585	7,954	10,635	9,198	15,291	20,928	31,068	32,838	42,000
Khulna	7,696	7,683	6,659	6,483	7,375	4,201	6,864	7,577	11,890	9,545	17,000
Barisal	10,801	14,758	16,284	23,475	20,987	12,216	20,923	13,222	25,117	22,692	33,000
Patuakhali	2,427	7,387	5,629	5,645	5,162	2,957	5,833	3,441	7,789	7,534	11,000
<b>Dacca</b>	<u>67,284</u>	<u>83,441</u>	<u>55,655</u>	<u>110,974</u>	<u>105,544</u>	<u>66,633</u>	<u>129,750</u>	<u>138,585</u>	<u>192,826</u>	<u>201,592</u>	<u>274,000</u>
Jamalpur <sup>/b</sup>											34,000
Mymensingh <sup>/c</sup>	} 30,268	} 36,078	} 19,816	} 48,963	} 49,604	} 33,218	} 59,457	} 59,118	} 91,889	} 91,249	94,000
Tangail	6,135	7,503	4,623	9,165	9,835	5,805	14,661	16,002	22,511	27,454	36,000
Dacca	27,377	35,079	24,390	45,800	39,589	23,871	50,192	54,692	65,710	68,695	90,000
Faridpur	3,504	4,781	6,826	7,046	6,516	3,739	5,440	8,773	12,716	14,194	20,000
<b>Chittagong</b>	<u>108,665</u>	<u>104,682</u>	<u>102,350</u>	<u>152,343</u>	<u>141,553</u>	<u>107,758</u>	<u>159,813</u>	<u>179,525</u>	<u>226,059</u>	<u>238,369</u>	<u>295,000</u>
Sylhet	12,719	9,647	17,583	20,858	12,772	14,634	15,511	16,082	23,512	20,097	33,000
Comilla	33,523	35,152	30,142	51,460	52,610	36,063	62,261	69,091	98,790	112,960	130,000
Noakhali	14,107	16,585	10,452	19,967	21,605	15,434	24,867	27,375	32,763	30,211	44,000
Chittagong	45,077	41,735	41,591	58,236	51,977	39,086	54,487	64,446	68,335	72,116	82,000
Chittagong Hill Tracts	3,239	1,563	2,582	1,822	2,589	2,541	2,687	2,531	2,659	2,985	6,000
<b>TOTAL</b>	<u>277,107</u>	<u>304,370</u>	<u>243,842</u>	<u>384,023</u>	<u>379,884</u>	<u>279,569</u>	<u>457,586</u>	<u>516,057</u>	<u>715,374</u>	<u>741,609<sup>/d</sup></u>	<u>1,000,000</u>

<sup>/a</sup> District data exclude a total of 8,659 tons of miscellaneous fertilizer.

<sup>/b</sup> Jamalpur was a subdivision of Mymensingh until December 31, 1978.

<sup>/c</sup> Including Jamalpur, except in 1979/80.

<sup>/d</sup> Including 8,659 tons of miscellaneous fertilizer (not included in district figures).

Source: BADC.

ASADD  
Dec. 19, 1979

Table 2.11

AREA UNDER MAIN CROPS  
(million acres)

<u>Crops</u>	<u>1969/70</u>	<u>1970/71</u>	<u>1971/72</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
Rice	25.48	24.50	22.98	23.80	24.41	24.20	25.53	24.42	24.78	25.00
- Aus	( 8.46)	( 7.89)	( 7.42)	( 7.24)	( 7.68)	( 7.86)	( 8.45)	( 7.95)	( 7.82)	( 8.00)
- Aman	(14.84)	(14.18)	(13.37)	(14.12)	(14.13)	(13.47)	(14.24)	(14.36)	(14.26)	(14.35)
- Boro	( 2.18)	( 2.43)	( 2.19)	( 2.43)	( 2.60)	( 2.87)	( 2.84)	( 2.11)	( 2.70)	( 2.65)
Wheat	0.30	0.31	0.31	0.30	0.30	0.31	0.37	0.40	0.47	0.65
Other Cereals	0.28	0.30	0.25	0.18	0.24	0.24	0.23	0.22	0.22	0.19
Pulses	0.91	0.92	0.89	0.78	0.70	0.76	0.75	0.82	0.83	0.84
Oilseeds	0.78	0.76	0.69	0.68	0.63	0.69	0.70	0.69	0.74	0.75
- Rape and Mustard	( 0.54)	( 0.53)	( 0.47)	( 0.47)	( 0.44)	( 0.48)	( 0.48)	( 0.48)	( 0.51)	( 0.53)
- Til and Linseed	( 0.16)	( 0.15)	( 0.15)	( 0.15)	( 0.14)	( 0.16)	( 0.17)	( 0.16)	( 0.17)	( 0.16)
- Groundnut	( 0.08)	( 0.08)	( 0.07)	( 0.06)	( 0.05)	( 0.05)	( 0.05)	( 0.05)	( 0.06)	( 0.06)
Jute	2.46	2.20	1.68	2.21	2.02	1.42	1.28	1.60	1.81	2.05
Spices	0.42	0.40	0.39	0.38	0.35	0.38	0.38	0.37	0.38	0.39
Sugarcane	0.40	0.40	0.35	0.32	0.36	0.38	0.33	0.36	0.38	0.38
Potato	0.21	0.21	0.19	0.19	0.20	0.23	0.24	0.19	0.22	0.24
Sweet Potato	0.18	0.18	0.17	0.16	0.15	0.16	0.18	0.17	0.18	0.18
Fruits and Vegetables	0.64	0.63	0.58	0.58	0.59	0.61	0.63	0.63	0.64	0.64
Cotton	0.03	0.02	0.03	0.04	0.02	0.02	0.02	0.01	0.01	0.02
Tea	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.11	0.11
Tobacco	0.11	0.11	0.10	0.12	0.11	0.11	0.12	0.17	0.14	0.14
Others	0.53	0.50	0.39	0.40	0.31	0.50	0.40	0.28	0.28	0.28
<u>Total, all crops</u>	<u>32.84</u>	<u>31.53</u>	<u>29.11</u>	<u>30.24</u>	<u>30.50</u>	<u>30.12</u>	<u>31.27</u>	<u>30.43</u>	<u>31.19</u>	<u>31.86</u>
Net Cropped Area Including Current Fallow	22.49	22.48	22.47	22.47	22.48	22.57	22.56	22.53	..	..
Cropping Intensity (%)	146	140	130	135	136	134	139	135	..	..

, = not available.

Source: Agricultural Statistics Wing, Bangladesh Bureau of Statistics.

Table 2.12

PRODUCTION OF MAIN CROPS  
( '000 long tons, unless indicated otherwise)

Crops	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79
Rice	11,818	10,967	9,774	9,932	11,721	11,109	12,561	12,567	12,765	12,543
Wheat	103	110	113	90	109	115	215	255	343	486
Gram and Pulses	293	296	269	222	208	223	220	230	236	226
Edible Oil Seeds	290	274	240	228	214	237	238	235	188	190
Rape, Mustard and Til	(163)	(163)	(112)	(133)	(122)	(142)	(138)	(140)	(161)	(163)
Groundnut	( 51)	( 47)	( 38)	( 31)	( 28)	( 26)	( 31)	( 23)	( 27)	( 28)
Jute ('000 bales)	7,171	6,670	4,193	6,514	6,000	3,965	4,248	4,806	5,359	6,443
Mesta ('000 bales)	220	131	93	110	106	54	62	67	75	88
Potato	857	849	741	747	719	866	889	724	849	895
Sugarcane	7,417	7,598	5,686	5,318	6,342	6,635	5,886	6,401	6,670	6,828
Tea (million lbs.)	67	69	22	53	60	71	65	74	82	79
Tobacco	41	47	34	39	41	40	44	63	49	43

.. = not available.

Source: Bangladesh Bureau of Statistics, and Tea Board.

ASADD  
December 12, 1979

Table 2.13

YIELD OF MAIN CROPS  
(Maunds per acre)

<u>Crops</u>	<u>1969/70</u>	<u>1970/71</u>	<u>1971/72</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
Rice	12.6	12.2	11.6	11.4	13.1	12.5	13.5	13.0	14.0	13.8
- Aus	( 9.5)	( 9.9)	( 8.6)	( 8.5)	( 9.9)	( 9.9)	( 10.4)	( 10.3)	( 10.8)	( 11.2)
- Aman	( 12.7)	( 11.3)	( 11.9)	( 10.8)	( 12.9)	( 12.1)	( 13.5)	( 13.1)	( 14.2)	( 14.1)
- Boro	( 23.7)	( 24.6)	( 22.6)	( 23.2)	( 23.3)	( 21.3)	( 21.9)	( 21.3)	( 22.6)	( 19.8)
Wheat	9.3	9.6	9.9	8.2	9.7	10.0	15.8	17.6	20.0	20.2
Gram and Pulses	8.7	8.7	8.2	7.7	8.1	7.9	7.9	7.6	7.7	7.3
Rape and Mustard Seeds	6.6	6.7	5.1	6.0	6.1	6.4	6.3	6.4	7.1	7.0
Groundnuts	17.3	16.0	14.8	14.0	14.6	13.0	15.4	12.1	12.8	12.2
Jute	14.2	14.7	12.1	14.3	14.4	13.3	15.4	15.0	14.9	15.7
Potato	111.0	110.0	106.0	107.0	98.2	101.7	102.0	103.0	103.9	102.0
Sugarcane <sup>/a</sup>	504.0	516.0	442.0	452.0	473.6	475.9	487.8	487.7	477.7	485.6
Tea	7.4	7.6	2.4	5.8	6.6	7.4	7.4	8.8	9.4	9.0
Tobacco	10.0	9.5	9.2	8.8	9.6	9.6	10.0	10.1	9.7	9.5

<sup>/a</sup> These official yield figures of sugarcane are considered by the Bangladesh Sugarcane Corporation and by the IBRD to be too high; more reasonable yield estimates would be around 65-70% of these official figures.

Source: Agricultural Statistics Wing, Bangladesh Bureau of Statistics; and Tea Board.

ASADD  
Nov. 2, 1979



Table 2.14

## BANGLADESH: FOODGRAIN ACREAGE, YIELDS AND PRODUCTION

Year	Acreage ('000 acres)						Yields (maunds per acre) <sup>/a</sup>						Production <sup>/b</sup> ('000 long tons)					
	Aus	Aman	Boro	All Rice	Wheat	All Grains	Aus	Aman	Boro	All Rice	Wheat	All Grains	Aus	Aman	Boro	All Rice	Wheat	All Grains
1960/61	6,300	14,578	1,007	21,885	140	22,025	10.79	12.27	12.11	11.84	6.22	11.80	2,497	6,574	448	9,519	32	9,551
1961/62	5,874	14,082	1,007	20,963	145	21,108	10.79	12.86	13.11	12.29	7.32	12.26	2,328	6,652	485	9,465	39	9,504
1962/63	6,192	14,221	1,071	21,484	182	21,666	9.68	11.57	12.25	11.06	6.58	11.02	2,202	6,046	482	8,730	44	8,774
1963/64	6,586	14,604	1,069	22,259	142	22,401	10.98	13.59	12.96	12.79	6.52	12.75	2,657	7,290	509	10,457	34	10,491
1964/65	6,645	15,107	1,053	22,805	132	22,937	10.24	13.08	14.84	12.34	6.39	12.30	2,501	7,262	574	10,337	31	10,368
<u>5-Year Average</u>	<u>6,319</u>	<u>14,518</u>	<u>1,041</u>	<u>21,879</u>	<u>148</u>	<u>22,027</u>	<u>10.50</u>	<u>12.68</u>	<u>13.07</u>	<u>12.07</u>	<u>6.62</u>	<u>12.03</u>	<u>2,437</u>	<u>6,765</u>	<u>500</u>	<u>9,702</u>	<u>36</u>	<u>9,738</u>
1965/66	7,321	14,672	1,137	23,130	136	23,266	10.85	12.61	14.80	12.16	7.01	12.13	2,918	6,799	618	10,335	35	10,370
1966/67	6,965	14,059	1,390	22,414	168	22,582	10.45	11.46	16.27	11.44	8.59	11.42	2,674	5,919	831	9,424	53	9,477
1967/68	8,221	14,672	1,534	24,427	192	24,619	10.16	12.64	19.77	12.25	8.22	12.22	3,069	6,812	1,114	10,995	58	11,053
1968/69	7,658	14,895	2,015	24,568	290	24,858	9.54	12.55	21.78	12.37	8.64	12.33	2,683	6,870	1,612	11,165	92	11,257
1969/70	8,462	14,841	2,183	25,486	296	25,782	9.53	12.56	23.73	12.52	9.47	12.48	2,963	6,850	1,903	11,18	103	11,821
<u>5-Year Average</u>	<u>7,725</u>	<u>14,628</u>	<u>1,652</u>	<u>24,005</u>	<u>216</u>	<u>24,221</u>	<u>10.08</u>	<u>12.38</u>	<u>20.04</u>	<u>12.16</u>	<u>8.57</u>	<u>12.13</u>	<u>2,861</u>	<u>6,650</u>	<u>1,216</u>	<u>10,727</u>	<u>68</u>	<u>10,796</u>
1970/71	7,885	14,184	2,425	24,494	311	24,805	9.88	11.35	24.60	12.19	9.63	12.16	2,863	5,912	2,192	10,967	110	11,077
1971/72	7,418	13,372	2,185	22,975	314	23,289	8.59	11.59	21.65	11.58	9.80	11.56	2,341	5,695	1,738	9,774	113	9,887
1972/73	7,241	14,121	2,434	23,796	297	24,093	8.54	10.77	23.16	11.36	8.25	11.32	2,273	5,587	2,071	9,932	90	10,022
1973/74	7,681	14,133	2,596	24,410	305	24,715	9.93	12.90	23.28	13.07	9.73	13.03	2,802	6,699	2,220	11,721	109	11,830
1974/75	7,857	13,469	2,871	24,197	311	24,508	9.90	12.13	21.33	12.50	10.07	12.47	2,859	6,000	2,250	11,109	115	11,224
<u>5-Year Average</u>	<u>7,616</u>	<u>13,856</u>	<u>2,502</u>	<u>23,974</u>	<u>308</u>	<u>24,282</u>	<u>9.39</u>	<u>11.75</u>	<u>22.78</u>	<u>12.15</u>	<u>9.46</u>	<u>12.12</u>	<u>2,628</u>	<u>5,979</u>	<u>2,094</u>	<u>10,701</u>	<u>107</u>	<u>10,808</u>
1975/76	8,452	14,236	2,837	25,525	371	25,896	10.40	13.47	21.93	13.40	15.77	13.43	3,230	7,045	2,286	12,561	215	12,776
1976/77	7,952	14,355	2,112	24,419	395	24,814	10.31	13.10	21.27	12.89	17.57	12.97	3,011	6,906	1,650	11,567	255	11,822
1977/78	7,814	14,261	2,703	24,778	467	25,245	10.81	14.17	22.55	14.02	19.99	14.13	3,104	7,422	2,239	12,765	343	13,107
1978/79	7,995	14,347	2,650	24,992	654	25,646	11.19	13.90	19.82	13.66	20.23	14.04	3,288	7,326 <sup>p</sup>	1,929	12,543 <sup>t</sup>	486 <sup>t</sup>	13,029
1979/80	..	..	..	..	..	..	..	..	..	..	..	..	2,650 <sup>p</sup>	(7,400) <sup>t</sup>	(2,700) <sup>t</sup>	(12,750) <sup>t</sup>	(1,000) <sup>t</sup>	(13,750) <sup>t</sup>

p = Provisional.

t = Target.

<sup>/a</sup> 1 long ton = 27.22 maunds.<sup>/b</sup> Gross production, expressed in long tons of rice equivalent.

Source: Bangladesh Bureau of Statistics.



Table 2.15

## BANGLADESH: PRODUCTION OF AMAN BY DISTRICT, 1967/68-1978/79

Division/District	1967/68	1968/69	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79
<b>Rajshahi</b>	<u>1,956,410</u>	<u>2,128,320</u>	<u>1,987,220</u>	<u>2,285,380</u>	<u>1,824,965</u>	<u>1,772,490</u>	<u>2,125,105</u>	<u>2,060,785</u>	<u>2,087,105</u>	<u>2,126,950</u>	<u>2,232,760</u>	<u>2,234,525</u>
Dinaipur	405,820	457,420	407,065	455,405	285,855	327,010	484,850	441,220	420,695	433,845	438,385	427,875
Rangpur	630,460	624,670	622,025	731,755	751,570	631,115	775,020	692,540	702,755	683,845	717,960	729,100
Bogra	280,020	314,030	280,905	350,460	297,250	265,960	325,880	330,010	292,430	310,745	324,910	344,630
Rajshahi	445,580	553,930	544,415	584,540	349,600	405,005	404,810	449,695	454,840	472,285	492,325	485,010
Pabna	194,530	178,270	132,810	163,220	140,690	143,400	134,545	147,320	216,385	226,230	259,180	247,910
<b>Khulna</b>	<u>1,562,690</u>	<u>1,471,080</u>	<u>1,480,585</u>	<u>845,640</u>	<u>985,715</u>	<u>1,084,050</u>	<u>1,157,220</u>	<u>1,279,110</u>	<u>1,513,625</u>	<u>1,551,760</u>	<u>1,632,630</u>	<u>1,630,345</u>
Kushtia	65,580	63,950	64,600	67,520	21,740	50,920	68,615	70,465	62,145	78,635	72,810	90,055
Jessore	257,640	226,700	231,120	193,430	222,240	191,615	241,110	272,120	291,460	280,945	307,545	303,740
Khulna	603,860	494,320	437,665	255,935	217,995	247,690	377,210	403,025	481,750	471,210	485,360	475,495
Barisal				189,540	302,025	360,275	333,855	301,035	379,155	417,420	441,480	449,260
Patuakhali	} 635,610	} 686,110	} 747,200	139,215	221,715	233,550	136,430	232,465	299,115	303,550	325,435	311,795
<b>Dacca</b>	<u>1,360,410</u>	<u>1,457,470</u>	<u>1,554,895</u>	<u>1,174,045</u>	<u>1,341,715</u>	<u>1,317,265</u>	<u>1,619,480</u>	<u>1,340,290</u>	<u>1,674,075</u>	<u>1,536,510</u>	<u>1,675,115</u>	<u>1,768,450</u>
Jamalpur										248,335	233,135	243,620
Mymensingh	} 727,250	} 928,850	} 938,530	} 656,580	} 760,645	} 702,150	} 911,760	} 730,205	} 910,845	567,485	643,760	676,860
Tangail				69,425	151,475	140,885	166,130	173,205	161,220	180,125	211,800	216,325
Dacca	343,120	300,600	312,720	266,655	302,490	275,915	304,915	252,415	357,875	316,265	344,075	358,310
Faridpur	290,040	228,020	303,645	181,385	127,105	198,315	236,675	184,465	244,135	224,300	242,345	273,335
<b>Chittagong</b>	<u>1,932,490</u>	<u>1,813,130</u>	<u>1,827,155</u>	<u>1,607,365</u>	<u>1,542,865</u>	<u>1,412,755</u>	<u>1,797,095</u>	<u>1,319,815</u>	<u>1,770,295</u>	<u>1,690,760</u>	<u>1,881,135</u>	<u>1,795,770</u>
Sylhet	698,800	615,570	629,510	645,600	497,775	414,990	574,055	443,240	544,495	432,305	476,980	466,480
Comilla	544,950	514,480	508,305	452,930	431,115	407,610	515,140	240,635	481,915	437,065	505,045	475,120
Noakhali	353,680	334,900	332,125	218,300	281,485	277,315	297,315	259,475	320,755	395,385	452,260	435,940
Chittagong	304,200	315,340	319,075	258,050	299,685	298,870	372,250	343,390	383,375	383,330	400,395	371,815
Chittagong Hill Tracts	30,860	32,840	38,140	32,485	32,805	13,970	38,335	33,075	39,755	42,675	46,455	46,415
<b>TOTAL</b>	<u>6,812,000</u>	<u>6,870,000</u>	<u>6,849,855</u>	<u>5,912,430</u>	<u>5,695,260</u>	<u>5,586,560</u>	<u>6,698,900</u>	<u>6,000,000</u>	<u>7,045,100</u>	<u>6,905,980</u>	<u>7,421,640</u>	<u>7,429,090</u>

Source: BBS.

ASADD  
Dec. 19, 1979

Table 2.16

BANGLADESH: PRODUCTION OF AUS BY DISTRICT, 1967/68-1978/79  
(in long tons of rice equivalent)

<u>Division/District</u>	<u>1967/68</u>	<u>1968/69</u>	<u>1969/70</u>	<u>1970/71</u>	<u>1971/72</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
<u>Rajshahi</u>	<u>842,020</u>	<u>975,980</u>	<u>926,420</u>	<u>909,280</u>	<u>658,390</u>	<u>645,400</u>	<u>754,715</u>	<u>815,450</u>	<u>871,910</u>	<u>929,475</u>	<u>894,495</u>	<u>972,155</u>
Dinaipur	165,300	226,850	187,185	189,150	103,045	82,835	162,525	167,430	178,225	198,530	167,045	201,895
Rangpur	361,000	388,470	324,985	367,785	276,480	247,375	294,095	295,575	327,575	334,430	329,220	349,205
Bogra	88,320	97,370	95,240	81,120	58,020	82,590	80,310	111,860	97,165	105,640	103,635	120,680
Rajshahi	144,060	141,160	173,860	170,740	132,530	142,845	150,530	154,075	163,535	177,765	181,435	171,035
Pabna	83,340	122,130	145,150	100,485	88,315	89,755	67,255	86,510	105,410	113,110	113,160	129,340
<u>Khulna</u>	<u>733,120</u>	<u>492,450</u>	<u>581,370</u>	<u>596,325</u>	<u>475,755</u>	<u>494,425</u>	<u>588,980</u>	<u>611,830</u>	<u>681,680</u>	<u>684,605</u>	<u>647,195</u>	<u>688,500</u>
Kushtia	152,440	99,940	97,455	116,210	73,505	99,300	123,980	146,880	125,975	112,540	135,620	151,070
Jessore	248,180	211,320	214,445	226,515	203,210	176,050	212,720	263,875	275,895	253,420	273,115	261,270
Khulna	57,210	26,280	49,115	33,645	40,365	20,215	39,345	53,135	45,630	47,180	46,255	50,365
Barisal/a			181,155	185,765	128,750	167,000	173,840	118,675	197,650	221,790	144,810	176,125
Patuakhali/b	275,290	154,910	39,200	34,190	29,925	31,860	39,095	29,265	36,530	49,675	47,395	49,670
<u>Dacca</u>	<u>776,070</u>	<u>650,010</u>	<u>730,020</u>	<u>664,375</u>	<u>621,370</u>	<u>603,970</u>	<u>717,705</u>	<u>846,165</u>	<u>883,955</u>	<u>846,945</u>	<u>801,890</u>	<u>844,065</u>
Jamalpur/c												
Mymensingh/d	424,150	405,070	380,060	316,110	285,580	266,620	376,240	414,585	466,355	440,955	406,060	412,565
Tangail/e				60,490	67,905	79,785	64,865	100,895	93,580	108,230	114,690	121,060
Dacca	175,240	118,090	185,035	145,300	150,285	104,565	138,340	154,415	152,100	154,110	162,935	160,060
Faridpur	176,680	126,850	164,925	142,475	117,600	153,000	138,260	176,270	171,920	143,650	118,205	150,380
<u>Chittagong</u>	<u>717,980</u>	<u>564,470</u>	<u>725,325</u>	<u>693,205</u>	<u>585,885</u>	<u>529,630</u>	<u>740,635</u>	<u>585,520</u>	<u>792,555</u>	<u>550,410</u>	<u>759,610</u>	<u>783,215</u>
Sylhet	168,390	81,390	164,960	157,025	132,080	82,385	144,580	200,985	251,605	61,270	174,110	182,770
Comilla	188,720	215,740	224,045	213,480	169,950	157,780	246,235	93,930	193,045	182,840	220,465	237,135
Noakhali	138,780	137,230	154,690	177,935	143,625	158,530	149,690	93,545	166,325	208,840	166,645	170,765
Chittagong	160,730	72,000	121,470	100,405	95,810	100,020	162,355	159,125	137,855	64,520	163,640	154,065
Chittagong Hill Tracts	61,360	58,110	60,160	44,360	44,420	30,915	37,775	37,935	43,725	32,940	34,750	38,480
<u>TOTAL</u>	<u>3,069,190</u>	<u>2,682,910</u>	<u>2,963,135</u>	<u>2,863,185</u>	<u>2,341,400</u>	<u>2,273,425</u>	<u>2,802,035</u>	<u>2,858,965</u>	<u>3,230,100</u>	<u>3,011,435</u>	<u>3,103,190</u>	<u>3,287,935</u>

/a In 1967/68 and 1968/69, including Patuakhali.

/b In 1967/68 and 1968/69, included in Barisal.

/c Included in Mymensingh.

/d From 1967/68 to 1969/70, including Jamalpur and Tangail; from 1970/71 to 1978/79, including Jamalpur.

/e From 1967/68 to 1969/70, included in Mymensingh.

Source: Bangladesh Bureau of Statistics.

Table 2.17

**BANGLADESH: PRODUCTION OF BORO BY DISTRICT, 1967/68-1978/79**  
(in long tons of rice equivalent)

<u>Division/District</u>	<u>1967/68</u>	<u>1968/69</u>	<u>1969/70</u>	<u>1970/71</u>	<u>1971/72</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
<b>Rajshahi</b>	<b>70,890</b>	<b>132,680</b>	<b>144,885</b>	<b>178,080</b>	<b>138,665</b>	<b>204,355</b>	<b>284,335</b>	<b>270,975</b>	<b>248,845</b>	<b>171,095</b>	<b>248,165</b>	<b>220,010</b>
Dinaajpur	4,010	6,650	6,800	9,220	3,295	13,975	14,065	20,535	10,235	11,215	13,960	10,820
Rangpur	10,030	28,710	30,555	29,665	24,725	33,335	51,205	49,675	40,970	19,220	46,265	52,765
Bogra	10,190	19,690	22,680	33,825	20,595	34,375	39,520	38,920	38,750	19,685	55,210	61,360
Rajshahi	39,530	60,950	66,730	78,590	63,020	82,030	119,685	104,125	101,630	94,660	95,995	70,305
Pabna	7,130	16,680	18,120	26,780	27,030	40,640	59,860	57,720	57,260	26,315	36,735	24,760
<b>Khulna</b>	<b>37,950</b>	<b>76,710</b>	<b>157,080</b>	<b>290,080</b>	<b>187,205</b>	<b>262,945</b>	<b>272,885</b>	<b>215,500</b>	<b>212,320</b>	<b>108,810</b>	<b>196,030</b>	<b>153,725</b>
Kushtia	2,360	2,885	2,890	4,710	2,610	4,655	4,820	5,815	3,930	4,355	2,755	2,480
Jessore	8,260	10,895	23,850	29,375	15,605	21,285	25,900	35,800	21,155	18,955	26,600	18,060
Khulna	17,330	31,895	33,630	44,930	30,825	38,320	31,610	35,120	28,660	18,595	32,285	30,720
Barisal/a		24,510	74,380	145,515	96,155	129,695	146,910	107,680	115,210	57,985	109,495	77,995
Patuakhali/b	9,800	6,525	22,330	65,550	42,010	68,990	63,645	31,085	43,365	8,920	24,895	24,470
<b>Dacca</b>	<b>499,330</b>	<b>624,385</b>	<b>714,185</b>	<b>731,000</b>	<b>642,910</b>	<b>767,840</b>	<b>784,860</b>	<b>769,975</b>	<b>814,630</b>	<b>700,825</b>	<b>809,705</b>	<b>731,075</b>
Jamalpur/c			470,785	463,995	391,175	431,165	443,350	430,215	458,920	375,435	437,690	44,890
Mymensingh/d	392,180	471,030	50,710	49,315	32,220	58,285	55,040	80,080	78,830	82,930	106,385	322,160
Tangail/e			161,180	167,805	177,115	211,130	215,770	191,975	216,165	203,730	214,495	80,585
Dacca	95,320	126,985	31,510	49,885	42,400	67,260	70,700	67,705	60,715	38,730	51,135	226,565
Faridpur	11,830	26,370										56,875
<b>Chittagong</b>	<b>505,690</b>	<b>778,105</b>	<b>886,760</b>	<b>993,025</b>	<b>769,290</b>	<b>835,110</b>	<b>877,920</b>	<b>993,230</b>	<b>1,009,785</b>	<b>669,395</b>	<b>984,715</b>	<b>824,375</b>
Sylhet	322,200	449,120	474,290	515,705	353,560	408,220	292,660	406,080	417,850	149,875	430,215	273,905
Comilla	72,100	129,115	162,470	184,035	137,410	150,820	227,295	220,010	218,920	177,030	187,195	198,465
Noakhali	16,470	32,360	57,140	66,555	81,970	77,750	147,015	143,895	170,065	132,915	138,630	119,675
Chittagong	79,920	137,815	162,770	201,390	179,330	183,085	194,345	201,380	187,955	185,430	208,665	216,485
Chittagong Hill Tracts	15,000	29,695	30,090	25,340	17,020	15,235	16,605	21,865	14,995	24,145	20,100	15,845
<b>TOTAL</b>	<b>1,113,860</b>	<b>1,611,880</b>	<b>1,902,910</b>	<b>2,192,185</b>	<b>1,738,070</b>	<b>2,070,250</b>	<b>2,220,000</b>	<b>2,249,680</b>	<b>2,285,580</b>	<b>1,650,125</b>	<b>2,238,615</b>	<b>1,929,185</b>

/a In 1967/68, including Patuakhali.

/b In 1967/68, included in Barisal.

/c From 1967/68 to 1977/78, included in Mymensingh.

/d From 1967/68 to 1968/69, including Jamalpur and Tangail; from 1969/70 to 1977/78, including Jamalpur.

/e From 1967/68 to 1968/69, included in Mymensingh.

Source: Bangladesh Bureau of Statistics.

Table 2.18

BANGLADESH: PRODUCTION OF WHEAT, 1967/68-1978/79  
(in long tons)

<u>Division/District</u>	<u>1967/68</u>	<u>1968/69</u>	<u>1969/70</u>	<u>1970/71</u>	<u>1971/72</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
<u>Rajshahi</u>	<u>26,215</u>	<u>42,445</u>	<u>46,250</u>	<u>47,420</u>	<u>48,575</u>	<u>47,862</u>	<u>50,802</u>	<u>50,737</u>	<u>84,526</u>	<u>95,771</u>	<u>136,048</u>	<u>211,660</u>
Dinajpur	1,620	3,645	2,725	2,695	610	2,819	5,501	3,058	15,484	12,270	25,097	47,936
Rangpur	4,135	5,200	5,445	6,075	5,920	5,421	5,587	5,648	7,029	6,960	15,712	56,775
Bogra	1,685	2,730	3,085	2,720	3,370	3,410	3,633	3,862	9,771	19,813	27,802	29,504
Rajshahi	8,905	13,020	14,070	14,030	16,125	13,331	13,215	14,656	25,110	27,669	32,505	37,812
Pabna	9,870	17,850	20,925	21,900	22,550	22,881	22,866	23,513	27,132	29,059	34,932	39,633
<u>Khulna</u>	<u>8,720</u>	<u>15,310</u>	<u>18,735</u>	<u>20,342</u>	<u>21,780</u>	<u>10,724</u>	<u>22,845</u>	<u>23,796</u>	<u>56,121</u>	<u>60,570</u>	<u>91,967</u>	<u>136,335</u>
Kushtia	6,485	11,540	13,705	14,245	15,995	7,507	19,278	19,396	39,008	38,488	64,195	90,520
Jessore	1,915	3,525	4,720	5,825	5,325	3,040	3,439	4,112	16,014	20,111	23,379	31,360
Khulna	100	185	205	190	275	95	81	240	888	1,917	4,286	13,230
Barisal a/		50	85	70	180	79	47	48	211	54	107	1,225
Patuakhali b/	220	10	20	12	5	3	.	.	.	.	.	.
<u>Dacca</u>	<u>19,670</u>	<u>26,765</u>	<u>30,580</u>	<u>33,200</u>	<u>32,030</u>	<u>18,522</u>	<u>20,053</u>	<u>20,901</u>	<u>31,409</u>	<u>45,066</u>	<u>64,618</u>	<u>71,781</u>
Jamalpur c/											3,754	
Mymensingh d/	2,370	2,600	1,965	2,230	2,195	1,937	2,019	1,881	8,328	10,689	8,020	11,426
Tangail e/			1,460	3,920	2,155	2,061	2,214	1,930	5,925	11,588	14,202	23,200
Dacca	4,700	5,400	5,240	5,540	5,265	4,832	4,248	4,080	5,367	10,734	14,082	11,675
Faridpur	12,600	18,765	21,915	21,510	22,415	9,692	11,572	13,010	11,789	12,055	24,560	25,480
<u>Chittagong</u>	<u>3,290</u>	<u>7,695</u>	<u>7,740</u>	<u>8,917</u>	<u>10,810</u>	<u>12,418</u>	<u>15,477</u>	<u>19,436</u>	<u>42,672</u>	<u>53,951</u>	<u>49,867</u>	<u>66,451</u>
Sylhet	95	115	105	140	206	209	242	214	691	2,084	2,131	3,158
Comilla	2,995	7,340	7,410	8,575	10,420	12,094	15,139	19,075	38,640	50,578	47,438	62,786
Noakhali	130	170	195	185	180	111	96	147	3,192	992	210	466
Chittagong	70	70	30	15	2	2	.	.	149	267	36	21
Chittagong Hill Tracts	.	.	.	2	2	2	.	.	.	30	52	20
<u>TOTAL</u>	<u>57,895</u>	<u>92,215</u>	<u>103,305</u>	<u>109,879</u>	<u>113,195</u>	<u>89,526</u>	<u>109,177</u>	<u>114,870</u>	<u>214,728</u>	<u>255,358</u>	<u>342,500</u>	<u>486,227</u>

. = Negligible or nil.

a/ In 1967/68, including Patuakhali.

b/ In 1967/68, included in Barisal.

c/ Except for 1977/78, included in Mymensingh.

d/ From 1967/68 to 1968/69, including Jamalpur and Tangail; from 1969/70 to 1976/77 and in 1978/79, including Jamalpur.

e/ From 1967/68 to 1968/69, included in Mymensingh.

Source: BBS.

ASADD  
October 31, 1979

Table 2.19

BANGLADESH: ESTIMATED PORTION OF FOODGRAIN CROPS HARVESTED PER MONTH  
(in percent of crop total)

	<u>Aus</u>	<u>Aman</u>	<u>Boro</u>	<u>Wheat</u>
July	35	-	-	-
August	55	-	-	-
September	10	-	-	-
October	-	3	-	-
November	-	50	-	-
December	-	42	-	-
January	-	5	-	-
February	-	-	-	-
March	-	-	-	55
April	-	-	10	45
May	-	-	65	-
June	-	-	25	-

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Source: Mission estimates.

ASADD  
Dec. 4, 1979

Table 3.1

BANGLADESH: FOODGRAIN IMPORTS BY MONTH, 1972/73-1979/80  
( '000 long tons)

<u>Month</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>
July	354	83	292	176	96	254	98	410
August	295	159	221	213	54	303	76	451
September	272	263	27	93	44	307	141	495
October	161	288	76	213	-	135	265	
November	227	59	182	81	-	101	269	
December	108	82	164	287	55	146	55	
January	229	38	196	120	82	13	16	
February	194	91	78	95	66	6	62	
March	468	99	169	27	-	56	3	
April	212	147	176	6	43	105	7	
May	179	224	296	51	129	131	55	
June	126	134	416	131	210	121	100	
<u>Total</u> (Monthly Average)	<u>2,825</u> (235)	<u>1,667</u> (139)	<u>2,293</u> (191)	<u>1,493</u> (124)	<u>779</u> ( 69)	<u>1,678</u> (140)	<u>1,147</u> ( 96)	<u>          </u> (     )

Source: World Food Programme, Dacca.

ASADD  
Dec. 18, 1979

Table 3.2

BANGLADESH: FOODGRAIN IMPORTS BY SOURCE, FY78 AND FY79  
(metric tons)

<u>Donor</u>	<u>1977/78</u>				<u>1978/79</u>			
	<u>Rice</u>	<u>Wheat</u>	<u>Sorghum</u>	<u>Total</u>	<u>Rice</u>	<u>Wheat</u>	<u>Sorghum</u>	<u>Total</u>
Australia	-	50,000	-	50,000	-	51,930	-	51,930
Burma	-	-	-	-	4,200	-	-	4,200
Canada	-	261,836	-	261,836	-	207,205	-	207,205
China, People's Rep. of	-	-	-	-	-	24,130	-	24,130
European Economic Community	-	124,030	-	124,030	-	114,957	-	114,957
Finland	-	6,996	-	6,996	-	-	-	-
France	-	7,496	-	7,496	-	-	-	-
Germany, Fed. Rep. of	-	84,963	-	84,963	-	40,000	-	40,000
India	-	-	-	-	-	20,722	-	20,722
Italy	5,175	-	-	5,175	-	-	-	-
Japan	16,818	-	-	16,818	15,848	-	-	15,848
Saudi Arabia	-	-	-	-	25,610	-	-	25,610
Turkey	-	-	-	-	-	5,000	-	5,000
United Kingdom	-	33,720	-	33,720	-	20,418	-	20,418
United States	82,589	459,399	10,000	551,988	-	418,134	-	418,134
World Food Programme	-	239,257	-	239,257	-	216,592	-	216,592
GOB Commercial Purchases	200,237	96,529	-	296,966	-	-	-	-
<u>TOTAL</u>	<u>304,819</u>	<u>1,364,226</u>	<u>10,000</u>	<u>1,679,045</u>	<u>45,658</u>	<u>1,119,088</u>	<u>-</u>	<u>1,164,746</u>

Source: World Food Programme, Dacca.

ASADD  
Dec. 18, 1979

TABLE 4.1

BANGLADESH: COL INDEX FOR MIDDLE INCOME FAMILIES IN DACCA  
(Annual Averages; 1973/74 = 100)

<u>Year</u>	<u>Food</u>	<u>Fuel and</u> <u>Lighting</u>	<u>Housing</u>	<u>Clothing</u>	<u>Miscellaneous</u>	<u>Overall</u> <u>Index</u>
(Weights)	(62.74)	(7.50)	(11.85)	(6.20)	(11.71)	(100.00)
1964/65	30.40	28.43	51.79	27.88	29.05	32.47
1965/66	31.45	29.65	53.93	28.80	33.16	34.01
1966/67	35.85	31.70	55.00	31.57	36.50	37.62
1967/68	34.80	33.74	55.71	31.80	38.30	37.42
1968/69	36.48	39.06	58.93	34.33	39.85	39.60
1969/70	37.74	39.88	59.64	35.71	41.90	40.86
1970/71	39.62	41.72	60.36	36.41	47.30	42.94
1971/72	46.12	53.17	64.64	41.71	52.44	49.31
1972/73	69.60	76.48	78.93	82.72	75.06	72.67
1973/74	100.00	100.00	100.00	100.00	100.00	100.00
1974/75	176.92	153.42	178.24	119.26	137.77	167.17
1975/76	148.60	154.53	204.44	110.86	147.44	153.19
1976/77	150.16	164.07	218.11	109.96	150.43	156.89
1977/78	173.65	167.96	237.30	144.93	160.72	176.69

Source: Bangladesh Bureau of Statistics.

ASADD  
Dec. 10, 1979

Table 4.2

BANGLADESH: SPREAD BETWEEN RICE PROCUREMENT AND ISSUE PRICE, 1973-1979

<u>Effective Date</u> <sup>/a</sup>	<u>Procurement Price</u> <sup>/b</sup> (Taka/md)	<u>Issue Price, ex godown</u> <sup>/c</sup> (Taka/md)	<u>Implicit Unit Subsidy</u>	
			<u>Absolute</u> (Taka/md)	<u>Relative</u> (%) <sup>/d</sup>
Dec. 14, 1972	53.00	(29.00) <sup>/e</sup>	24.00	45.28
Jan. 15, 1973	..	28.82	24.18	45.62
July 1, 1973	..	38.82	14.18	26.75
Sept. 3, 1973	..	38.00	15.00	28.30
Nov. 15, 1973	71.69	..	33.69	46.99
Jan. 2, 1974	71.69+T	..	34.19/f	47.36/f
May 27, 1974	..	58.00	14.19/f	19.66/f
Nov. 15, 1974	118.00+3.00	..	63.00	52.07
Dec. 20, 1975	..	68.00	50.00	41.32
Feb. 7, 1976	..	87.00	34.00	28.10
Feb. 19, 1977	118.00+4.00	..	35.00	28.69
Nov. 15, 1977	128.00+4.00	..	45.00	34.09
Dec. 31, 1977	..	97.00	35.00	26.52
May 19, 1979	..	117.00	15.00	11.36
Nov. 15, 1979	165.00+5.00	..	53.00	31.18

.. = no change.

T = variable transport bonus, ranging from Taka 0.5 to Taka 1 depending on distance from the procurement point.

/a Differs from date of announcement.

/b Procurement price for coarse Aman paddy.

/c Price charged by MoF to ration shop dealers.

/d Percentage of procurement price.

/e Effective since January 11, 1971

/f Using transport bonus of Tk 0.5.

Source: Ministry of Food; mission estimates.

ASADD

December 17, 1979

TABLE 4.3

BANGLADESH: AVERAGE GROWERS' PRICES OF JUTE, 1972/73 - 1978/79 <sup>a/</sup>

<u>Month</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
July	50.47	50.94	66.17	88.90	93.55	129.92	130.00
August	49.73	52.44	67.39	87.78	93.38	123.68	137.50
September	48.25	51.70	85.76	90.51	93.77	128.45	143.30
October	50.94	52.54	107.48	88.24	95.68	123.27	132.00
November	52.48	52.64	128.71	87.02	103.35	125.29	142.00
December	54.29	52.90	106.80	90.23	109.69	147.82	145.50
January	54.52	53.64	94.09	96.39	118.16	184.67	146.07
February	55.10	54.80	84.21	101.00	126.21	192.00	130.70
March	55.33	56.31	81.77	103.70	130.22	191.00	120.30
April	56.37	57.52	76.67	103.85	131.43	191.25	117.75
May	55.72	61.12	83.31	105.93	135.64	189.00	123.25
June	55.77	67.32	88.00	106.05	133.83	185.00	147.00
<u>Annual</u> <u>Average</u> <sup>b/</sup>	<u>53.25</u>	<u>55.32</u>	<u>89.20</u>	<u>95.80</u>	<u>113.74</u>	<u>159.28</u>	<u>134.57</u>

<sup>a/</sup> Unweighted average price for white and tossa jute paid to growers.

<sup>b/</sup> Unweighted average of monthly prices.

Source: Bangladesh Jute Export Corporation.

Table 4.4

BANGLADESH: GROWERS' PRICES AND ACREAGE  
FOR JUTE AND AUS PADDY, 1972/73-1978/79

	<u>Growers' Prices for</u>		<u>Price</u> <u>Ratio</u>	<u>Acreage under</u>	
	<u>Jute</u> <u>(Tk/md)</u>	<u>Aus Paddy</u> <u>(Tk/md)</u>		<u>Jute</u> <u>('000 acres)</u>	<u>Aus</u> <u>('000 acres)</u>
1972/73	53.25	34.65	1.54	2,215	7,241
1973/74	55.32	45.62	1.21	2,196	7,681
1974/75	89.20	102.13	0.87	1,417	7,857
1975/76	95.80	82.09	1.17	1,277	8,452
1976/77	113.74	54.91	2.07	1,603	7,952
1977/78	159.28	75.75	2.10	1,805	7,814
1978/79	134.57	74.00	1.82	2,052	7,995

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Source: BBS, Ministry of Jute, Ministry of Agriculture

ASADD  
December 18, 1979

Table 4.5

BANGLADESH: AVERAGE WHOLESALE PRICES OF ALL VARIETIES OF COARSE RICE  
(Tk/md)

<u>Months</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
July	60.85	84.73	138.00	197.13	104.77	150.24	130.00
August	71.68	83.24	169.72	159.78	104.31	142.27	129.35
September	72.55	86.19	208.67	152.50	105.67	145.00	139.42
October	71.33	90.39	256.33	130.18	110.25	145.14	139.41
November	67.18	85.16	213.46	104.91	106.99	128.90	137.35
December	63.14	81.76	186.47	105.83	98.05	125.44	132.19
January	69.41	87.73	211.79	113.04	100.65	133.32	139.28
February	74.89	97.08	239.00	112.84	111.08	133.25	144.79
March	81.96	114.20	261.23	107.47	118.14	142.56	159.27
April	91.38	131.37	235.26	104.08	129.91	146.73	176.21
May	91.49	129.74	201.59	104.87	128.70	137.45	183.22
June	87.35	134.12	192.82	101.41	139.09	131.23	216.79

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Source: Agricultural Marketing Directorate.

ASADD  
Dec. 19, 1979

Table 4.6

BANGLADESH: GROWERS' PRICE OF AUS PADDY BY DISTRICT DURING 1974/75 TO 1978/79  
(Tk per maund)

District	1974/75				1975/76				1976/77				1977/78				1978/79			
	July	August	September	Average	July	August	September	Average	July	August	September	Average	July	August	September	Average	July	August	September	Average
Rajshahi	75.00	92.40	114.80	96.23	91.00	72.00	68.00	75.53	54.20	48.40	52.40	51.27	69.00	73.00	76.40	72.80	66.63	67.00	78.20	70.80
Dinaipur	55.00	80.00	95.00	76.67	97.00	75.00	68.00	80.00	53.00	42.00	45.00	46.67	70.00	71.00	75.00	72.00	62.00	66.00	76.00	68.00
Rangpur	70.00	82.00	110.00	87.33	80.00	75.00	62.00	72.33	52.00	48.00	52.00	50.67	70.00	72.00	74.00	72.00	-	58.00	65.00	61.50
Bogra	-	100.00	115.00	107.50	82.00	65.00	60.00	69.00	56.00	45.00	51.00	50.67	68.00	72.00	73.00	71.00	62.50	-	80.00	72.50
Rajshahi	85.00	98.00	120.00	101.00	-	68.00	70.00	69.00	52.00	50.00	52.00	51.33	70.00	75.00	76.00	73.67	67.00	69.00	78.00	71.33
Pabna	90.00	102.00	134.00	108.67	105.00	77.00	80.00	87.33	58.00	51.00	62.00	57.00	67.00	75.00	84.00	75.33	75.00	75.00	92.00	80.67
Khulna	75.50	89.40	115.40	99.07	97.50	84.80	74.60	84.70	54.00	50.60	56.80	53.80	73.80	72.80	79.00	75.20	63.50	69.20	76.80	70.67
Kushtia	75.00	80.00	115.00	90.00	100.00	75.00	68.00	81.00	58.00	57.00	58.00	57.67	75.00	71.00	76.00	74.00	54.00	52.00	75.00	60.33
Jessore	76.00	92.00	115.00	94.33	100.00	85.00	70.00	85.00	58.00	56.00	57.00	57.00	75.00	84.00	77.00	75.33	70.00	85.00	78.00	77.67
Khulna	-	90.00	125.00	107.50	95.00	87.00	75.00	85.67	56.00	50.00	54.00	53.33	74.00	75.00	82.00	77.00	60.00	68.00	80.00	69.33
Barisal	-	90.00	110.00	100.00	95.00	90.00	80.00	88.33	48.00	46.00	58.00	50.67	72.00	72.00	80.00	74.67	70.00	68.00	72.00	70.00
Patuakhali	-	95.00	112.00	103.50	-	87.00	80.00	83.50	50.00	44.00	57.00	50.33	73.00	72.00	80.00	75.00	-	73.00	79.00	76.00
Dacca	75.80	100.20	138.88	104.94	95.40	87.60	86.00	89.67	50.60	57.80	62.00	56.80	75.40	79.80	83.80	79.67	68.13	77.50	85.10	77.73
Jamalpur																				
Mymensingh	70.00	97.00	138.00	101.67	91.00	84.50	82.50	85.85	47.50	55.00	61.00	54.50	68.50	75.50	82.00	75.34	66.50	73.00	78.50	72.67
(Mymensingh)	(69.00)	(100.00)	(136.00)	(101.67)	(94.00)	(82.00)	(85.00)	(88.67)	(49.00)	(52.00)	(60.00)	(53.67)	(70.00)	(75.00)	(82.00)	(75.67)	(69.00)	(68.00)	(76.00)	(71.00)
(Kishoreganj)	(71.00)	(94.00)	(140.00)	(101.67)	(88.00)	(82.00)	(80.00)	(83.33)	(46.00)	(58.00)	(62.00)	(55.33)	(67.00)	(76.00)	(82.00)	(75.00)	(64.00)	(78.00)	(81.00)	(74.33)
Tangail	87.00	95.00	150.00	110.67	98.00	87.00	80.00	88.33	52.00	58.00	62.00	57.33	78.00	82.00	85.00	81.67	71.50	78.50	87.50	79.17
Dacca	70.00	102.00	128.00	100.00	95.00	92.00	90.00	92.33	58.00	62.00	64.00	61.33	80.00	82.00	84.00	82.00	-	78.00	83.00	80.50
Faridpur	82.00	110.00	140.00	110.67	102.00	90.00	95.00	95.67	48.00	59.00	62.00	56.33	82.00	84.00	86.00	84.00	68.00	85.00	98.00	83.67
Chittagong	77.00	103.33	124.25	108.27	88.50	75.40	75.40	78.47	51.50	57.60	60.40	57.77	74.33	75.20	77.40	75.33	68.75	75.75	77.00	77.50
Sylhet	76.00	95.00	-	85.50	95.00	70.00	72.00	79.00	-	52.00	53.00	52.50	70.00	72.00	75.00	72.33	-	72.00	77.00	74.50
Comilla	78.00	100.00	132.00	103.33	97.00	82.00	80.00	86.33	51.00	56.00	63.00	56.67	77.00	82.00	84.00	81.00	65.00	64.00	74.00	67.67
Noakhali	-	115.00	140.00	127.50	100.00	90.00	85.00	91.67	52.00	60.00	64.00	58.67	76.00	80.00	82.00	79.33	72.50	75.00	80.00	75.83
Chittagong	-	-	115.00	115.00	-	63.00	75.00	69.00	-	60.00	61.00	60.50	-	72.00	74.00	73.00	-	92.00	-	92.00
Chittagong Hill Tracts	-	-	110.00	110.00	62.00	72.00	65.00	66.33	-	60.00	61.00	60.50	-	70.00	72.00	71.00	-	-	-	-
<b>Average</b>	<b>75.69</b>	<b>95.56</b>	<b>123.26</b>	<b>102.13</b>	<b>93.24</b>	<b>79.95</b>	<b>76.00</b>	<b>82.09</b>	<b>52.76</b>	<b>53.30</b>	<b>57.90</b>	<b>54.91</b>	<b>73.11</b>	<b>75.10</b>	<b>79.15</b>	<b>75.75</b>	<b>66.46</b>	<b>72.47</b>	<b>79.53</b>	<b>74.00</b>

Source: Ministry of Agriculture

ASADD  
Nov. 27, 1979

Table 4.7

BANGLADESH: CROKERS' PRICE OF AMAM PADDY BY DISTRICT DURING 1974/75 TO 1978/79  
(Tk per maund)

District	1974/75				1975/76				1976/77				1977/78				1978/79				
	December	January	February	Average	December	January	February	Average	December	January	February	Average	December	January	February	Average	December	January	February	Average	
Rajshahi	97.80	126.60	126.00	116.80	63.60	67.20	63.20	64.67	55.20	63.80	68.40	62.47	77.00	82.80	84.00	81.27	79.50	84.50	85.40	83.13	
Dinajpur	72.00	75.00	92.00	79.67	58.00	65.00	59.00	60.67	50.00	62.00	68.00	60.00	77.00	81.00	82.00	80.00	76.00	82.00	85.00	81.00	
Rangpur	74.00	173.00	198.00	118.33	69.00	64.00	56.00	60.00	50.00	59.00	66.00	58.33	74.00	80.00	82.00	78.67	70.00	76.00	78.00	74.57	
Bogra	85.00	115.00	125.00	108.33	65.00	67.00	65.00	65.67	58.00	65.00	66.00	63.00	75.00	82.00	83.00	80.00	82.00	86.50	88.00	85.50	
Rajshahi	108.00	115.00	145.00	122.67	68.00	69.00	66.00	67.67	57.00	65.00	70.00	64.00	79.00	84.00	85.00	82.67	77.50	83.00	83.00	81.17	
Pabna	150.00	155.00	160.00	155.00	67.00	71.00	70.00	69.33	61.00	68.00	72.00	67.00	80.00	87.00	88.00	85.00	92.00	95.00	93.00	93.33	
Khulna	95.80	114.60	138.40	116.67	62.80	68.80	68.20	66.60	59.20	64.40	68.60	64.07	78.20	83.00	85.00	82.07	80.60	86.75	92.50	86.61	
Kustia	124.00	145.00	155.00	141.33	64.00	72.00	73.00	69.67	63.00	66.00	70.00	66.33	82.00	85.00	88.00	85.00	85.00	94.00	97.00	91.00	
Jessore	110.00	146.00	152.00	136.00	65.00	70.00	69.00	68.00	60.00	66.00	70.00	63.33	79.00	84.00	85.00	82.67	80.00	89.00	92.00	87.00	
Khulna	100.00	126.00	150.00	125.33	58.00	68.00	64.00	63.33	58.00	64.00	68.00	63.33	77.00	84.00	85.00	81.00	81.00	85.00	90.00	85.33	
Barisal	72.00	82.00	118.00	90.67	62.00	65.00	67.00	64.67	57.00	64.00	67.00	62.67	77.00	82.00	84.00	81.00	80.00	81.75	97.50	85.42	
Patuakhali	73.00	80.00	117.00	90.00	65.00	69.00	68.00	67.33	58.00	62.00	68.00	62.67	76.00	80.00	83.00	79.67	76.00	84.00	90.00	83.33	
Dacca	131.00	155.00	176.40	154.13	63.60	67.40	68.40	66.47	70.20	67.40	72.40	72.20	79.40	85.80	88.40	84.53	85.00	92.20	97.80	91.62	
Jamulpur	99.00	131.50	170.00	133.50	58.50	62.50	63.00	61.34	55.00	62.50	70.00	62.50	77.50	83.00	84.50	81.67	81.50	86.00	91.00	86.17	
Hymanatgañh (Nymnatgañh) (Kishoreganj)	(96.00) (125.00)	(130.33) (170.00)	(130.33) (136.67)	(99.00) (59.00)	(61.00) (62.00)	(62.00) (60.67)	(60.67) (62.00)	(55.00) (55.00)	(64.00) (64.00)	(70.00) (70.00)	(63.00) (62.00)	(77.00) (78.00)	(83.00) (84.00)	(85.00) (85.00)	(85.00) (82.00)	(81.33) (81.33)	(83.00) (80.00)	(87.00) (85.00)	(91.00) (103.00)	(94.00) (88.00)	(88.00) (84.35)
Tangail	160.00	170.00	180.00	170.00	62.00	70.00	72.00	68.00	61.00	67.00	75.00	69.33	80.00	88.00	92.00	85.00	91.00	103.00	103.00	98.87	
Dacca	157.00	180.00	187.00	174.67	70.00	72.00	73.00	71.67	63.00	72.00	73.00	68.67	80.00	85.00	90.00	85.00	84.00	91.00	96.00	91.87	
Faridpur	140.00	162.00	175.00	159.00	69.00	70.00	71.00	70.00	62.00	70.00	74.00	103.00	82.00	90.00	91.00	87.67	83.00	98.00	104.00	95.87	
Chittagong	142.00	169.25	181.25	160.80	65.60	69.60	70.80	68.67	59.00	66.20	70.60	65.27	78.00	83.60	85.40	82.31	83.68	86.25	90.13	89.42	
Sylhet	118.00	162.00	165.00	148.33	62.00	66.00	67.00	65.00	55.00	67.00	70.00	64.00	77.00	83.00	87.00	81.33	77.00	80.00	85.00	80.87	
Comilla	140.00	180.00	190.00	170.00	65.00	68.00	70.00	67.67	62.00	69.00	72.00	67.00	80.00	85.00	89.00	84.17	77.00	89.00	102.00	89.33	
Noakhali	145.00	165.00	190.00	166.67	66.00	72.00	73.00	70.33	60.00	70.00	70.00	64.33	78.00	84.00	85.00	82.33	82.50	90.00	104.50	92.33	
Chittagong	157.00	170.00	180.00	169.00	68.00	71.00	72.00	70.33	60.00	63.00	70.00	66.33	78.00	84.00	85.00	82.33	85.00	93.00	105.00	95.33	
Chittagong Hill Tracts	150.00	-	-	150.00	67.00	71.00	72.00	70.00	58.00	62.00	69.00	63.00	77.00	82.00	84.00	81.00	-	86.00	-	-	
Average	113.65	134.95	151.00	137.10	60.80	63.25	67.45	66.60	60.25	67.45	72.00	64.25	78.15	83.80	85.70	82.55	81.95	97.49	93.42	87.62	

Source: Ministry of Agriculture

Table 4.8

BANGLADESH: GROWERS' PRICE OF BORO PADDY BY DISTRICT DURING 1974/75 TO 1978/79  
(Tk per maund)

District	1974/75			1975/76			1976/77			1977/78			1978/79		
	April	May	Average	April	May	Average	April	May	Average	April	May	Average	April	May	Average
<u>Raishahi</u>	-	104.00	104.00	-	59.00	59.00	71.00	70.00	70.50	80.00	73.33	75.83	90.00	109.67	102.50
Dinajpur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rangpur	-	90.00	90.00	-	-	-	-	-	-	-	75.00	75.00	-	-	-
Bogra	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rajshahi	-	102.00	102.00	-	58.00	58.00	-	66.00	66.00	80.00	70.00	75.00	75.00	103.00	89.00
Pabna	-	120.00	120.00	-	60.00	60.00	71.00	74.00	72.50	80.00	75.00	77.50	105.00	120.00	112.50
<u>Khulna</u>	122.00	121.00	121.50	-	60.00	60.00	70.00	72.00	71.00	74.00	74.00	72.50	96.00	114.00	146.00
Kushtia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jessore	-	122.00	122.00	-	-	-	-	-	-	-	-	-	-	130.00	130.00
Khulna	122.00	120.00	121.00	-	60.00	60.00	70.00	72.00	71.00	80.00	74.00	77.00	96.00	104.00	100.00
Barisal	-	-	-	-	-	-	-	-	-	-	-	-	-	108.00	108.00
Patuakhali	-	-	-	-	-	-	-	-	-	68.00	-	68.00	-	-	-
<u>Dacca</u>	113.75	111.60	112.80	55.50	55.80	55.80	67.20	70.80	69.00	71.00	70.80	70.80	100.50	104.50	102.50
Jamalpur	}103.50	}105.00	}104.25	}55.00	}53.50	}54.25	}63.00	}69.00	}66.00	}70.50	}66.50	}68.50	}93.00	}97.50	}95.25
Mymensingh	(107.00)	(104.00)	(105.50)	(56.00)	(55.00)	(55.50)	(64.00)	(68.00)	(66.00)	(74.00)	(65.00)	(69.50)	(90.00)	(95.00)	(92.50)
(Kishoreganj)	(100.00)	(106.00)	(103.00)	(54.00)	(52.00)	(53.00)	(62.00)	(70.00)	(66.00)	(67.00)	(68.00)	(67.50)	(96.00)	(100.00)	(98.00)
Tangail	-	115.00	115.00	60.00	57.00	58.50	68.00	71.00	69.50	65.00	70.00	67.50	-	-	-
Dacca	118.00	113.00	115.50	-	58.00	58.00	72.00	71.00	71.50	74.00	75.00	74.50	120.00	110.00	115.00
Faridpur	130.00	120.00	125.00	52.00	67.00	54.50	70.00	74.00	72.00	75.00	76.00	75.50	96.00	113.00	104.50
<u>Chittagong</u>	97.50	102.50	120.25	53.00	51.00	52.00	62.00	68.00	65.00	71.00	73.00	72.00	-	99.00	99.00
Sylhet	80.00	87.00	83.50	42.00	48.00	45.00	62.00	68.00	65.00	67.00	72.00	69.50	-	90.00	90.00
Comilla	115.00	110.00	112.50	57.00	55.00	56.00	-	-	-	75.00	74.00	74.00	-	108.00	108.00
Noakhali	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chittagong	-	108.00	108.00	60.00	50.00	55.00	-	-	-	-	-	-	-	-	-
Chittagong Hill Tracts	-	105.00	105.00	-	-	-	-	-	-	-	-	-	-	-	-
<u>Average</u>	<u>110.29</u>	<u>108.71</u>	<u>109.14</u>	<u>54.43</u>	<u>55.45</u>	<u>55.77</u>	<u>67.38</u>	<u>70.44</u>	<u>68.83</u>	<u>73.18</u>	<u>72.18</u>	<u>72.58</u>	<u>96.86</u>	<u>107.25</u>	<u>104.46</u>

Source: Ministry of Agriculture

ASADD  
Nov. 27, 1979

Table 4.9

BANGLADESH: GROWERS' PRICE OF IRRI PADDY BY DISTRICT DURING 1974/75 TO 1978/79  
(Tk per maund)

District	1974/75			1975/76			1976/77			1977/78			1978/79		
	May	June	Average	May	June	Average	May	June	Average	May	June	Average	May	June	Average
<u>Rajshahi</u>	<u>113.50</u>	<u>107.40</u>	<u>105.60</u>	<u>58.67</u>	<u>51.75</u>	<u>54.13</u>	<u>66.33</u>	<u>74.00</u>	<u>70.88</u>	<u>72.50</u>	<u>73.80</u>	<u>72.90</u>	<u>105.75</u>	<u>126.25</u>	<u>116.00</u>
Dinaipur	-	100.00	100.00	-	-	-	-	-	-	-	70.00	70.00	116.00	134.00	125.00
Rangpur	-	90.00	90.00	-	50.00	50.00	-	72.00	72.00	72.00	73.00	72.50	114.00	124.00	119.00
Bogra	-	102.00	102.00	50.00	48.00	49.00	65.00	73.00	69.00	74.00	76.00	75.00	-	-	-
Rajshahi	105.00	130.00	117.50	62.00	54.00	58.00	69.00	76.00	72.50	72.00	70.00	71.00	103.00	117.00	110.00
Pabna	122.00	115.00	118.50	64.00	55.00	59.50	65.00	75.00	70.00	72.00	80.00	76.00	90.00	130.00	110.00
<u>Khulna</u>	<u>120.00</u>	<u>122.50</u>	<u>122.00</u>	<u>59.50</u>	<u>54.80</u>	<u>56.70</u>	<u>71.75</u>	<u>76.25</u>	<u>74.00</u>	<u>73.75</u>	<u>74.00</u>	<u>74.00</u>	<u>114.00</u>	<u>124.45</u>	<u>120.43</u>
Kushtia	-	120.00	120.00	60.00	56.00	58.00	-	-	-	-	75.00	75.00	-	140.00	140.00
Jessore	-	130.00	130.00	60.00	55.00	57.50	74.00	80.00	77.00	73.00	75.00	74.00	130.00	140.00	135.00
Khulna	120.00	-	120.00	-	55.00	55.00	73.00	80.00	76.50	74.00	75.00	74.50	110.00	127.00	118.50
Barisal	-	120.00	120.00	60.00	53.00	56.50	70.00	73.00	71.50	74.00	72.00	73.00	102.00	115.25	108.63
Patuakhali	-	120.00	120.00	58.00	55.00	56.50	70.00	72.00	71.00	74.00	73.00	73.50	-	100.00	100.00
<u>Dacca</u>	<u>120.75</u>	<u>120.00</u>	<u>121.25</u>	<u>56.75</u>	<u>55.25</u>	<u>56.00</u>	<u>69.40</u>	<u>75.80</u>	<u>72.60</u>	<u>74.20</u>	<u>75.40</u>	<u>74.80</u>	<u>105.33</u>	<u>115.63</u>	<u>108.56</u>
Jamalpur	111.00	112.00	111.50	56.00	55.00	55.50	64.00	72.00	68.00	74.00	73.50	73.75	93.00	102.50	97.00
Mymensingh	(111.00)	(112.00)	(111.50)	(56.00)	(55.00)	(55.50)	(66.00)	(72.00)	(69.00)	(75.00)	(75.00)	(75.00)	(93.00)	(115.00)	(104.00)
(Mymensingh) (Kishoreganj)	( - )	( - )	( - )	( - )	( - )	( - )	(62.00)	(72.00)	(67.00)	(73.00)	(72.00)	(72.50)	( - )	( 90.00)	( 90.00)
Tangail	122.00	120.00	121.00	57.00	56.00	56.50	72.00	79.00	75.50	75.00	72.00	73.50	-	-	-
Dacca	120.00	118.00	119.00	56.00	55.00	55.50	72.00	78.00	75.00	76.00	78.00	77.00	110.00	121.50	115.75
Faridpur	130.00	130.00	130.00	58.00	55.00	56.50	75.00	78.00	76.50	72.00	80.00	76.00	113.00	136.00	124.50
<u>Chittagong</u>	<u>112.25</u>	<u>117.50</u>	<u>114.88</u>	<u>59.80</u>	<u>59.60</u>	<u>59.70</u>	<u>69.40</u>	<u>74.80</u>	<u>72.10</u>	<u>72.40</u>	<u>76.00</u>	<u>74.20</u>	<u>101.50</u>	<u>115.00</u>	<u>109.33</u>
Sylhet	92.00	100.00	96.00	52.00	52.00	52.00	67.00	73.00	70.00	75.00	74.00	74.50	95.00	115.00	105.00
Comilla	112.00	120.00	116.00	57.00	60.00	58.50	72.00	77.00	74.50	72.00	80.00	76.00	108.00	-	108.00
Noakhali	130.00	130.00	130.00	62.00	60.00	61.00	75.00	80.00	77.50	73.00	80.00	76.50	-	115.00	115.00
Chittagong	115.00	120.00	117.50	65.00	64.00	64.50	67.00	72.00	69.50	72.00	74.00	73.00	-	-	-
Chittagong Hill Tracts	-	-	-	63.00	62.00	62.50	66.00	72.00	69.00	70.00	72.00	71.00	-	-	-
<u>Average</u>	<u>116.27</u>	<u>116.29</u>	<u>115.50</u>	<u>58.75</u>	<u>55.56</u>	<u>56.81</u>	<u>69.41</u>	<u>75.22</u>	<u>72.39</u>	<u>73.22</u>	<u>74.80</u>	<u>73.98</u>	<u>107.00</u>	<u>121.32</u>	<u>114.27</u>

Source: Ministry of Agriculture

ASADD  
Nov. 27, 1979

Table 4.10

BANGLADESH: AVERAGE WHOLESALE PRICE OF AUS PADDY BY DISTRICT DURING 1975/76  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>93.17</u>	<u>74.90</u>	<u>73.25</u>	<u>65.44</u>	<u>57.33</u>	<u>64.06</u>	<u>74.45</u>	<u>66.25</u>	<u>62.38</u>	<u>69.38</u>	<u>65.02</u>	<u>50.82</u>	<u>68.04</u>
Dinaipur	72.00	68.00	66.37	60.75	57.82	-	-	-	-	-	-	-	64.99
Rangur	100.56	89.40	79.50	68.92	60.50	-	-	-	-	-	-	47.83	74.45
Bogra	90.00	74.00	65.62	64.37	55.37	-	-	-	-	-	60.57	-	68.32
Rajshahi	-	63.75	70.37	63.81	54.80	58.87	71.40	68.25	62.00	67.75	70.75	-	65.18
Pabna	110.12	79.37	84.37	69.37	58.15	69.25	77.50	65.00	62.75	71.00	63.75	53.80	72.04
<u>Khulna</u>	<u>113.15</u>	<u>83.23</u>	<u>76.75</u>	<u>66.72</u>	<u>55.68</u>	<u>60.12</u>	<u>61.00</u>	<u>66.00</u>	<u>61.00</u>	<u>63.33</u>	<u>67.80</u>	<u>61.25</u>	<u>69.67</u>
Kushtia	113.66	80.25	68.50	65.25	56.00	66.00	-	-	-	-	-	61.50	73.02
Jessore	128.00	92.15	79.30	69.25	54.73	62.83	-	-	61.00	63.33	67.80	64.00	74.24
Khulna	-	72.50	78.46	64.43	50.08	51.00	-	-	-	-	-	-	63.29
Barisal	97.50	82.25	78.50	69.41	58.83	60.66	61.00	66.00	-	-	-	58.25	70.27
Patuakhali	-	89.00	79.00	65.25	58.75	-	-	-	-	-	-	-	73.00
<u>Dacca</u>	<u>111.23</u>	<u>90.70</u>	<u>94.71</u>	<u>78.41</u>	<u>66.42</u>	<u>62.00</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>55.29</u>	<u>79.82</u>
Jamalpur	} 98.19	} 86.80	} 91.08	} 79.08	} 65.61	} 54.00	} -	} -	} -	} -	} -	} 48.00	} 74.68
Mymensingh													
(Mymensingh)	(97.87)	(89.60)	(91.75)	(77.75)	(65.00)	( - )	( - )	( - )	( - )	( - )	( - )	(48.00)	(78.33)
(Kishoreganj)	(98.50)	(84.00)	(90.40)	(80.40)	(66.22)	(54.00)	( - )	( - )	( - )	( - )	( - )	( - )	(78.92)
Tangail	-	-	-	-	-	-	-	-	-	-	-	-	47.50
Dacca	118.00	93.00	93.56	74.66	65.00	-	-	-	-	-	-	64.00	84.70
Faridpur	117.50	92.30	99.50	81.50	68.66	70.00	-	-	-	-	-	61.67	84.45
<u>Chittagong</u>	<u>100.50</u>	<u>84.67</u>	<u>80.70</u>	<u>72.14</u>	<u>62.29</u>	<u>64.66</u>	<u>-</u>	<u>75.67</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>55.00</u>	<u>74.45</u>
Sylhet	97.50	75.53	76.00	67.06	62.93	-	-	-	-	-	-	-	75.80
Comilla	103.50	84.50	84.31	74.76	59.45	-	-	-	-	-	-	-	81.30
Noakhali	-	98.00	91.25	80.00	-	-	-	-	-	-	-	55.00	81.06
Chittagong	-	80.66	71.25	66.75	64.50	64.66	-	75.67	-	-	-	-	70.58
Chittagong Hill Tracts	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Average</u>	<u>103.88</u>	<u>82.44</u>	<u>79.82</u>	<u>69.68</u>	<u>59.45</u>	<u>61.92</u>	<u>69.97</u>	<u>68.73</u>	<u>61.92</u>	<u>67.36</u>	<u>65.72</u>	<u>56.16</u>	<u>70.59</u>

Source: Ministry of Agriculture

Table 4.11

BANGLADESH: AVERAGE WHOLESALE PRICE OF AUS PADDY BY DISTRICT DURING 1976/77  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>50.50</u>	<u>51.04</u>	<u>52.09</u>	<u>57.85</u>	<u>57.09</u>	<u>56.81</u>	<u>62.00</u>	<u>72.00</u>	<u>88.63</u>	<u>93.25</u>	<u>81.44</u>	<u>82.54</u>	<u>67.11</u>
Dinajpur	53.33	40.75	45.62	53.40	55.50	53.75	-	-	-	-	70.00	79.50	56.48
Rangpur	49.50	59.25	54.93	63.15	60.16	-	-	-	-	-	-	74.50	58.58
Bogra	42.00	-	47.50	56.10	54.50	54.00	-	-	-	-	82.50	-	56.10
Rajshahi	55.30	48.42	50.60	58.18	56.81	61.00	62.00	72.00	77.25	84.50	81.25	92.15	66.62
Pabna	52.37	55.75	61.80	58.50	58.50	58.50	-	-	100.00	102.00	92.00	84.00	72.34
<u>Khulna</u>	<u>56.76</u>	<u>50.40</u>	<u>57.15</u>	<u>66.35</u>	<u>64.12</u>	<u>59.21</u>	<u>61.50</u>	<u>69.50</u>	<u>74.25</u>	<u>90.60</u>	<u>91.00</u>	<u>99.00</u>	<u>69.97</u>
Kushtia	58.50	48.67	56.03	63.88	67.44	-	-	-	-	-	-	-	58.90
Jessore	62.86	54.83	58.25	66.98	64.52	63.41	61.00	-	-	-	-	-	61.69
Khulna	57.17	46.25	54.50	66.13	63.33	-	-	-	-	-	-	-	57.48
Barisal	-	55.00	56.12	-	63.33	55.00	62.00	69.50	74.25	90.60	91.00	99.00	71.58
Patuakhali	48.50	47.25	60.87	68.40	62.00	-	-	-	-	-	-	-	57.40
<u>Dacca</u>	<u>55.96</u>	<u>58.07</u>	<u>63.77</u>	<u>68.09</u>	<u>67.93</u>	<u>50.00</u>	<u>-</u>	<u>69.00</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>61.83</u>
Jamalpur	49.85	52.68	59.38	62.38	63.88	50.00	-	69.00	-	-	-	-	58.17
Mymensingh	(49.70)	(56.18)	(60.75)	(64.75)	(65.75)	(50.00)	(-)	(69.00)	(-)	(-)	(-)	(-)	(59.45)
(Kishoreganj)	(50.00)	(49.17)	(58.00)	(60.00)	(62.00)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(55.83)
Tangail	52.25	57.00	-	68.40	69.99	-	-	-	-	-	-	82.50	65.96
Dacca	64.50	62.41	61.92	68.20	70.00	-	-	-	-	-	-	-	65.40
Faridpur	57.25	60.18	70.00	73.37	68.17	-	-	-	-	-	-	81.66	68.44
<u>Chittagong</u>	<u>50.75</u>	<u>55.90</u>	<u>59.83</u>	<u>65.70</u>	<u>65.50</u>	<u>60.00</u>	<u>65.80</u>	<u>74.75</u>	<u>81.61</u>	<u>89.60</u>	<u>91.83</u>	<u>80.00</u>	<u>70.11</u>
Sylhet	-	54.37	54.00	61.16	65.15	60.00	-	-	-	-	-	64.50	59.86
Comilla	49.50	53.83	60.75	66.60	65.84	-	66.80	-	82.62	-	92.00	88.00	69.55
Noakhali	52.00	59.50	64.75	69.33	-	-	-	-	-	-	-	-	61.40
Chittagong	-	-	-	-	-	60.00	64.80	74.75	80.60	89.60	91.66	87.50	78.42
Chittagong Hill Tracts	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Average</u>	<u>53.66</u>	<u>53.51</u>	<u>57.31</u>	<u>64.01</u>	<u>63.05</u>	<u>57.30</u>	<u>63.32</u>	<u>71.31</u>	<u>82.94</u>	<u>91.68</u>	<u>85.77</u>	<u>83.33</u>	<u>68.93</u>

Source: Ministry of Agriculture

ASADD  
Nov. 15, 1979

Table 4.12

BANGLADESH: AVERAGE WHOLESALE PRICE OF AUS PADDY BY DISTRICT DURING 1977/78  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>81.44</u>	<u>77.38</u>	<u>80.19</u>	<u>82.34</u>	<u>80.82</u>	<u>81.50</u>	-	-	<u>93.00</u>	<u>109.40</u>	<u>89.25</u>	<u>85.26</u>	<u>86.06</u>
Dinajpur	83.60	71.00	74.62	77.50	81.00	-	-	-	-	-	-	-	75.54
Rangpur	85.80	84.80	84.03	82.00	81.66	-	-	-	-	-	74.00	69.85	80.31
Bogra	70.62	74.25	76.50	76.40	72.83	-	-	-	-	-	-	-	74.12
Rajshahi	92.66	74.87	77.37	86.16	82.50	85.00	-	-	-	-	-	-	83.09
Pabna	84.50	82.00	88.44	89.65	86.12	78.00	-	-	93.00	109.40	104.50	100.66	91.63
<u>Khulna</u>	<u>88.01</u>	<u>80.86</u>	<u>86.40</u>	<u>91.31</u>	<u>81.42</u>	<u>75.50</u>	<u>80.00</u>	-	-	<u>97.00</u>	<u>91.00</u>	<u>95.00</u>	<u>86.65</u>
Kushtia	68.83	68.53	81.00	90.66	85.92	-	-	-	-	-	-	-	78.99
Jessore	85.26	83.00	93.75	92.73	79.13	76.00	80.00	-	-	-	-	-	84.27
Khulna	79.48	78.02	90.75	93.79	82.03	-	-	-	-	-	-	-	84.81
Barisal	118.00	95.00	84.87	92.60	80.00	75.00	-	-	-	97.00	91.00	95.00	92.05
Patuakhali	88.50	79.75	81.62	86.75	80.00	-	-	-	-	-	-	-	83.32
<u>Dacca</u>	<u>85.03</u>	<u>85.91</u>	<u>93.61</u>	<u>95.53</u>	<u>88.21</u>	<u>78.25</u>	-	-	-	-	-	<u>70.00</u>	<u>85.22</u>
Jamalpur	71.90	76.25	86.06	87.30	82.00	-	-	-	-	-	-	65.00	78.09
Mymensingh	(72.80)	(75.12)	(86.75)	(86.60)	(84.00)	(-)	(-)	(-)	(-)	(-)	(-)	(65.00)	(78.38)
(Kishoreganj)	(71.00)	(77.37)	(85.37)	(88.00)	(80.00)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(80.35)
Tangail	81.37	88.50	93.66	97.33	94.12	-	-	-	-	-	-	-	91.00
Dacca	93.80	84.62	93.25	94.25	88.50	78.50	-	-	-	-	-	-	88.78
Faridpur	93.06	94.25	101.48	103.25	-	-	-	-	-	-	-	75.00	93.41
<u>Chittagong</u>	<u>80.86</u>	<u>79.24</u>	<u>84.05</u>	<u>79.91</u>	<u>85.88</u>	<u>79.65</u>	<u>83.75</u>	<u>88.00</u>	<u>101.50</u>	<u>106.00</u>	<u>100.00</u>	<u>85.00</u>	<u>87.82</u>
Sylhet	72.83	73.84	84.96	83.70	89.88	-	-	-	-	-	-	-	81.04
Comilla	78.70	82.37	92.00	81.23	92.00	77.80	-	-	-	-	-	70.00	82.01
Noakhali	75.00	76.25	80.25	-	-	-	-	-	-	-	-	-	77.17
Chittagong	96.90	84.50	79.00	74.80	75.75	81.50	83.75	88.00	101.50	106.00	100.00	100.00	89.31
Chittagong Hill Tracts	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Average</u>	<u>83.93</u>	<u>80.66</u>	<u>85.76</u>	<u>87.65</u>	<u>88.47</u>	<u>78.79</u>	<u>81.88</u>	<u>88.00</u>	<u>97.25</u>	<u>104.13</u>	<u>92.38</u>	<u>82.22</u>	<u>87.59</u>

Source: Ministry of Agriculture

ASADD  
Nov. 16, 1979

Table 4.13

BANGLADESH: AVERAGE WHOLESALE PRICE OF AUS PADDY BY DISTRICT DURING 1978/79  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	69.55	71.35	83.01	85.81	83.60	87.08	100.00	-	-	-	-	-	82.91
Dina jpur	62.50	68.62	80.55	82.00	84.12	84.00	-	-	-	-	-	-	76.97
Rangpur	69.85	78.62	86.45	86.06	83.54	-	-	-	-	-	-	-	80.90
Bogra	-	59.90	75.70	84.12	74.67	-	-	-	-	-	-	-	73.60
Rajshahi	68.50	71.59	80.75	83.75	81.80	80.50	-	-	-	-	-	-	77.82
Pabna	77.35	78.00	91.60	93.12	93.87	96.75	100.00	-	-	-	-	-	90.10
<u>Khulna</u>	67.11	73.18	82.76	87.53	83.23	78.00	85.00	-	-	-	127.25	-	85.51
Kushtia	57.58	64.33	81.91	89.44	87.66	-	-	-	-	-	-	-	76.18
Jessore	73.50	75.00	80.80	91.00	83.50	78.00	85.00	-	-	-	-	-	80.97
Khulna	70.25	76.55	87.59	90.06	85.33	-	-	-	-	-	-	-	81.96
Barisal	-	75.00	83.50	-	83.30	-	-	-	-	-	127.25	-	92.26
Patuakhali	-	75.00	80.00	79.62	76.37	-	-	-	-	-	-	-	77.75
<u>Dacca</u>	72.60	79.32	90.08	88.85	82.50	97.00	-	-	-	-	-	-	85.06
Jamalpur													
Mymensingh	} 63.84	} 72.00	} 80.18	} 80.19	} 80.00	} -	} -	} -	} -	} -	} -	} -	} 75.24
(Mymensingh)	(67.00)	(70.00)	(82.55)	(82.12)	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	(75.42)
(Kishoreganj)	(60.67)	(74.00)	(77.80)	(78.25)	(80.00)	( - )	( - )	( - )	( - )	( - )	( - )	( - )	(74.14)
Tangail	71.37	80.20	90.00	89.89	-	-	-	-	-	-	-	-	82.87
Dacca	78.25	80.00	88.85	86.50	85.00	97.00	-	-	-	-	-	-	85.93
Faridpur	76.95	85.06	101.30	98.81	-	-	-	-	-	-	-	-	90.53
<u>Chittagong</u>	68.61	74.27	77.94	81.74	79.67	83.03	90.00	92.50	108.20	-	127.50	-	88.35
Sylhet	-	78.83	77.57	85.84	78.93	83.06	-	-	-	-	-	-	80.85
Comilla	66.10	71.00	78.10	76.87	77.75	-	-	-	-	-	-	-	73.96
Noakhali	71.12	71.50	75.38	80.00	-	-	-	-	-	-	-	-	74.50
Chittagong	-	75.75	80.69	84.25	82.33	83.00	90.00	92.50	108.20	-	127.50	-	91.58
Chittagong Hill Tracts	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Average</u>	<u>69.78</u>	<u>74.28</u>	<u>83.38</u>	<u>85.97</u>	<u>82.54</u>	<u>86.04</u>	<u>91.67</u>	<u>92.50</u>	<u>108.20</u>	<u>-</u>	<u>127.38</u>	<u>-</u>	<u>90.17</u>

Source: Ministry of Agriculture

ASADD  
Nov. 16, 1979

Table 4.14

BANGLADESH: AVERAGE WHOLESALE PRICE OF AMAN PADDY BY DISTRICT DURING 1975/76  
(Tk per maund)

District	July	August	September	October	November	December	January	February	March	April	May	June	Average
<u>Rajshahi</u>	<u>127.70</u>	<u>113.09</u>	<u>97.27</u>	<u>90.45</u>	<u>60.23</u>	<u>64.33</u>	<u>70.66</u>	<u>66.02</u>	<u>63.24</u>	<u>65.08</u>	<u>69.96</u>	<u>67.68</u>	<u>79.64</u>
Dinajpur	122.50	109.00	101.25	90.00	56.25	64.12	69.20	61.50	67.62	62.12	67.50	67.00	78.17
Rangpur	120.81	112.41	94.10	81.00	62.42	61.30	66.55	62.31	59.94	64.86	69.80	67.12	76.89
Bogra	120.37	105.00	85.62	78.12	59.75	65.37	71.00	68.00	59.12	62.62	67.35	67.37	75.81
Rajshahi	144.00	123.60	94.12	83.12	65.75	66.09	72.65	67.40	61.75	66.56	72.37	69.06	82.21
Pabna	130.83	115.42	111.25	120.00	57.00	64.75	73.90	70.87	67.75	69.25	72.80	67.87	85.14
<u>Khulna</u>	<u>136.27</u>	<u>123.40</u>	<u>111.34</u>	<u>88.97</u>	<u>59.24</u>	<u>63.84</u>	<u>69.54</u>	<u>69.70</u>	<u>64.33</u>	<u>67.11</u>	<u>72.24</u>	<u>69.26</u>	<u>82.53</u>
Kushtia	145.00	130.00	-	-	52.05	65.08	72.80	73.92	68.67	68.42	68.66	66.64	81.12
Jessore	149.25	134.50	130.00	97.50	56.75	68.16	72.62	71.00	65.33	66.91	73.33	66.41	87.65
Khulna	131.25	115.60	103.87	88.12	54.76	57.08	67.00	68.96	63.93	65.67	69.90	69.84	79.67
Barisal	125.87	110.42	100.00	85.83	67.66	61.87	65.00	66.66	60.70	-	73.80	70.87	80.79
Patuakhali	130.00	126.50	111.50	84.44	65.00	67.00	70.30	67.94	63.00	67.44	75.50	72.56	83.43
<u>Dacca</u>	<u>128.50</u>	<u>149.00</u>	<u>-</u>	<u>61.25</u>	<u>58.61</u>	<u>67.07</u>	<u>72.02</u>	<u>71.03</u>	<u>69.39</u>	<u>72.47</u>	<u>74.69</u>	<u>71.60</u>	<u>81.42</u>
Jamalpur	137.00	149.00	-	-	53.39	61.96	66.77	64.33	64.57	66.79	69.28	65.53	79.86
Mymensingh	(137.00)	(149.00)	( - )	( - )	(55.00)	(61.75)	(66.80)	(63.25)	(65.30)	(70.87)	(72.55)	(68.68)	(81.02)
(Mymensingh)	( - )	( - )	( - )	( - )	(51.77)	(62.16)	(66.73)	(65.41)	(63.83)	(62.70)	(66.00)	(62.37)	(62.62)
(Kishoreganj)	-	-	-	-	-	-	-	-	74.00	79.70	79.50	78.00	77.80
Tangail	-	-	-	-	-	-	-	-	-	74.00	79.70	79.50	78.00
Dacca	-	-	-	60.00	63.68	71.14	74.30	75.83	71.25	74.62	75.36	70.00	70.69
Faridpur	120.00	-	-	62.50	58.75	68.12	75.00	72.94	67.75	68.75	74.62	72.85	74.13
<u>Chittagong</u>	<u>126.75</u>	<u>119.00</u>	<u>103.00</u>	<u>75.11</u>	<u>60.77</u>	<u>65.12</u>	<u>70.85</u>	<u>72.87</u>	<u>70.67</u>	<u>67.74</u>	<u>67.68</u>	<u>62.50</u>	<u>80.17</u>
Sylhet	127.50	-	-	-	60.00	68.12	71.25	70.31	70.31	63.25	60.00	62.00	72.53
Comilla	126.50	119.00	103.00	75.11	56.46	63.00	68.75	71.65	70.37	67.47	71.42	63.00	79.64
Noakhali	126.25	-	-	-	61.70	65.50	72.20	74.00	70.87	70.00	70.80	62.50	74.87
Chittagong	-	-	-	-	64.91	63.87	71.20	75.50	71.12	70.25	68.49	-	69.33
Chittagong Hill Tracts	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Average</u>	<u>130.48</u>	<u>120.87</u>	<u>103.47</u>	<u>83.81</u>	<u>59.78</u>	<u>64.85</u>	<u>70.62</u>	<u>69.60</u>	<u>66.56</u>	<u>67.92</u>	<u>71.14</u>	<u>68.15</u>	<u>81.44</u>

Source: Ministry of Agriculture

Table 4.15

BANGLADESH: AVERAGE WHOLESALE PRICE OF AMAN PADDY BY DISTRICT DURING 1976/77  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	68.27	71.15	71.36	76.40	58.01	56.67	64.33	70.85	80.03	83.99	86.52	94.23	73.48
Dinajpur	68.70	70.37	70.25	-	52.25	53.50	66.50	72.87	77.37	81.60	87.12	96.25	72.43
Rangpur	68.62	74.12	73.37	77.60	57.65	56.00	60.35	67.93	77.31	82.85	90.25	92.04	73.17
Bogra	64.65	-	-	74.50	56.00	54.00	61.40	66.75	78.25	82.70	82.94	92.88	71.41
Rajshahi	72.10	72.25	69.33	70.51	62.64	59.47	64.94	71.72	81.49	85.54	85.13	95.28	74.20
Pabna	67.30	67.87	72.50	83.00	61.50	60.37	68.45	75.00	85.75	87.26	87.15	94.69	75.90
<u>Khulna</u>	71.09	72.88	78.66	72.27	64.65	60.52	64.59	69.98	77.83	87.15	88.81	96.68	75.43
Kushtia	70.06	70.25	-	-	61.55	63.83	67.97	69.66	81.35	88.17	87.94	96.63	75.74
Jessore	70.86	68.91	72.00	69.30	67.00	64.68	66.84	71.31	80.76	87.37	88.78	96.10	75.33
Khulna	71.03	70.25	73.40	79.73	67.68	57.61	62.66	68.30	76.30	85.33	87.19	98.00	74.79
Barisal	72.15	76.25	80.00	75.30	65.00	57.37	63.00	71.75	75.50	91.22	93.37	98.37	76.61
Patuakhali	71.37	78.75	89.25	64.75	62.00	59.12	62.50	68.87	75.25	83.68	86.75	94.28	74.71
<u>Dacca</u>	73.56	78.20	76.13	67.47	62.35	61.02	66.54	74.92	83.23	87.99	89.69	92.21	76.11
Jamalpur													
Mymensingh	69.43	78.20	75.75	73.25	55.27	55.56	60.41	70.44	76.88	81.85	85.27	89.12	72.62
(Mymensingh)	(77.05)	(78.20)	(75.75)	(73.25)	(59.37)	(57.04)	(62.87)	(70.87)	(78.39)	(83.50)	(88.54)	(89.12)	(74.50)
(Kishoreganj)	(61.80)	(-)	(-)	(-)	(51.16)	(54.08)	(57.94)	(70.00)	(75.37)	(80.20)	(82.00)	(-)	(66.57)
Tangail	78.75	-	-	-	62.75	62.00	68.87	76.50	89.37	90.77	90.00	89.00	78.67
Dacca	-	-	-	63.00	66.13	64.66	68.70	78.25	84.83	90.63	90.37	94.25	77.87
Faridpur	72.50	-	76.50	66.16	65.25	61.87	68.20	74.50	81.82	88.71	93.12	96.45	76.83
<u>Chittagong</u>	-	-	68.33	64.41	60.28	58.27	64.31	71.46	77.02	83.87	85.18	88.14	72.13
Sylhet	-	-	-	-	59.12	56.33	64.46	68.11	73.44	80.37	87.50	95.00	73.04
Comilla	-	-	68.33	68.81	67.12	59.00	65.57	75.40	81.42	90.50	90.72	92.13	75.90
Noakhali	-	-	-	60.00	57.50	59.00	65.70	73.19	78.62	85.50	87.00	88.79	72.81
Chittagong	-	-	-	-	57.37	58.75	61.50	69.12	74.58	79.10	75.50	76.62	69.07
Chittagong Hill Tracts	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Average</u>	<u>70.58</u>	<u>72.72</u>	<u>74.61</u>	<u>71.22</u>	<u>61.32</u>	<u>59.06</u>	<u>64.89</u>	<u>71.65</u>	<u>79.46</u>	<u>85.73</u>	<u>87.56</u>	<u>93.10</u>	<u>74.33</u>

Source: Ministry of Agriculture

ASADD  
Nov 15 1979

Table 4.16

BANGLADESH: AVERAGE WHOLESALE PRICE OF AMAN PADDY BY DISTRICT DURING 1977/78  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>106.78</u>	<u>102.55</u>	<u>102.76</u>	<u>98.48</u>	<u>80.16</u>	<u>77.13</u>	<u>84.58</u>	<u>84.38</u>	<u>86.23</u>	<u>95.32</u>	<u>89.42</u>	<u>92.78</u>	<u>91.71</u>
Dinajpur	109.50	103.37	106.62	101.70	81.62	76.15	83.77	84.75	85.01	90.50	89.25	92.00	92.02
Rangpur	107.77	108.48	95.36	102.06	82.80	75.06	80.83	81.08	86.77	95.20	74.37	94.44	90.35
Bogra	98.40	96.90	94.87	92.80	68.00	75.40	82.25	82.12	85.00	92.60	89.75	87.12	87.10
Rajshahi	102.67	102.02	102.69	102.35	90.56	79.20	85.62	85.00	88.12	97.95	95.62	95.94	93.98
Pabna	115.56	102.00	114.25	93.50	77.81	79.85	90.44	88.94	-	100.35	98.12	94.40	95.93
<u>Khulna</u>	<u>105.87</u>	<u>104.41</u>	<u>103.27</u>	<u>104.08</u>	<u>75.80</u>	<u>78.12</u>	<u>86.08</u>	<u>86.36</u>	<u>91.02</u>	<u>99.26</u>	<u>96.48</u>	<u>95.60</u>	<u>93.86</u>
Kushtia	100.13	-	85.00	-	75.00	79.40	91.00	89.92	91.00	100.53	98.67	97.83	90.85
Jessore	102.97	99.30	-	94.00	80.63	81.08	86.83	88.96	90.65	100.00	101.34	92.50	92.57
Khulna	102.59	99.29	106.33	108.80	82.35	77.64	85.24	86.42	90.81	96.64	95.14	96.16	93.95
Barisal	112.66	111.25	113.75	112.00	68.00	75.95	86.56	83.50	91.37	101.90	94.50	95.50	95.58
Patuakhali	111.00	107.80	108.00	101.50	73.00	76.55	80.75	83.00	91.25	97.25	92.75	96.00	93.24
<u>Dacca</u>	<u>100.73</u>	<u>106.50</u>	<u>98.83</u>	<u>83.03</u>	<u>76.75</u>	<u>82.02</u>	<u>91.05</u>	<u>91.44</u>	<u>98.87</u>	<u>105.16</u>	<u>100.41</u>	<u>96.57</u>	<u>94.28</u>
Jamalpur	88.15	102.50	102.25	86.90	78.94	79.34	84.03	83.56	92.32	100.40	97.50	93.25	90.76
Mymensingh	(96.30)	(102.50)	(102.25)	(95.80)	(86.25)	(79.30)	(85.00)	(84.37)	(90.50)	(98.90)	(97.50)	(93.25)	(92.66)
(Kishoreganj)	(80.00)	( - )	( - )	(78.00)	(71.62)	(79.37)	(83.06)	(82.75)	(94.13)	(101.90)	( - )	( - )	(83.85)
Tangail	107.50	-	-	72.50	79.80	85.60	95.50	97.00	104.20	108.37	102.37	99.30	95.21
Dacca	103.00	102.00	-	85.00	73.50	81.16	88.00	91.75	99.58	106.12	100.50	90.87	92.86
Faridpur	104.25	115.00	95.40	87.70	74.75	81.97	96.65	93.44	99.37	105.75	101.25	102.87	96.53
<u>Chittagong</u>	<u>86.84</u>	<u>90.25</u>	<u>93.63</u>	<u>83.35</u>	<u>79.89</u>	<u>78.28</u>	<u>83.84</u>	<u>87.74</u>	<u>99.75</u>	<u>105.92</u>	<u>98.13</u>	<u>99.96</u>	<u>90.63</u>
Sylhet	85.91	85.25	90.88	93.74	88.92	79.18	85.50	89.75	97.50	101.80	96.62	94.17	90.77
Comilla	-	90.25	100.00	-	-	78.83	86.00	89.50	102.88	107.09	93.66	99.50	94.19
Noakhali	95.00	-	-	74.50	74.00	78.51	84.12	87.45	105.00	107.50	99.80	106.75	91.26
Chittagong	79.60	95.25	90.00	81.80	76.75	76.60	79.72	84.25	93.62	107.30	102.43	99.43	88.90
Chittagong Hill Tracts	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Average</u>	<u>101.57</u>	<u>101.38</u>	<u>100.39</u>	<u>93.18</u>	<u>78.03</u>	<u>78.75</u>	<u>86.27</u>	<u>87.24</u>	<u>93.79</u>	<u>100.96</u>	<u>95.76</u>	<u>96.00</u>	<u>92.78</u>

Source: Ministry of Agriculture

Table 4.17

BANGLADESH: AVERAGE WHOLESALE PRICE OF AMAN PADDY BY DISTRICT DURING 1978/79  
(Tk per maund)

District	July	August	September	October	November	December	January	February	March	April	May	June	Average
<u>Rajshahi</u>	<u>92.06</u>	<u>94.94</u>	<u>100.39</u>	<u>100.84</u>	<u>87.32</u>	<u>82.52</u>	<u>87.33</u>	<u>92.86</u>	<u>99.41</u>	<u>115.98</u>	<u>122.57</u>	<u>142.00</u>	<u>101.52</u>
Dinaipur	96.30	95.62	100.00	100.75	81.50	79.20	85.00	91.75	94.50	114.00	122.50	137.00	99.84
Rangpur	95.25	101.25	101.55	100.25	92.50	81.66	83.50	86.75	93.60	113.50	124.60	143.30	101.48
Bogra	84.80	87.37	93.10	95.87	85.37	80.00	83.50	85.87	96.20	106.13	116.37	139.30	96.16
Rajshahi	92.05	89.44	96.30	95.59	85.23	81.32	90.48	98.92	104.33	121.00	122.21	145.14	101.83
Pabna	91.90	101.00	111.00	111.75	92.00	90.40	94.19	101.00	108.40	125.25	127.16	145.27	108.28
<u>Khulna</u>	<u>92.33</u>	<u>91.46</u>	<u>97.64</u>	<u>95.68</u>	<u>87.66</u>	<u>84.46</u>	<u>91.02</u>	<u>86.13</u>	<u>106.03</u>	<u>117.59</u>	<u>127.56</u>	<u>146.78</u>	<u>102.86</u>
Kushtia	91.01	82.00	-	-	86.61	83.73	93.00	96.16	106.53	120.25	130.66	152.80	104.28
Jessore	92.50	96.82	92.00	88.33	90.77	86.00	94.00	100.25	105.40	115.25	132.36	153.87	103.96
Khulna	92.55	89.16	92.70	96.88	84.55	88.34	94.94	96.16	107.46	115.58	129.43	152.84	103.38
Barisal	93.20	91.33	98.87	100.00	98.75	-	88.66	95.83	107.26	120.25	122.70	134.00	104.62
Patuakhali	92.40	98.00	107.00	97.50	77.62	79.75	84.50	92.25	103.50	116.63	122.65	140.37	101.01
<u>Dacca</u>	<u>96.67</u>	<u>98.44</u>	<u>104.23</u>	<u>94.30</u>	<u>81.84</u>	<u>90.09</u>	<u>95.84</u>	<u>102.10</u>	<u>112.77</u>	<u>123.97</u>	<u>127.25</u>	<u>132.77</u>	<u>105.02</u>
Jamalpur													
Mymensingh	}96.20	}98.75	}107.50	}102.40	}79.02	}97.39	}88.96	}97.36	}107.70	}122.38	}130.69	}135.60	}104.16
(Mymensingh)	(96.20)	(98.75)	(107.50)	(102.40)	(81.86)	(95.80)	(90.50)	(102.75)	(112.50)	(122.00)	(129.37)	(136.00)	(106.30)
(Kishoreganj)	( - )	( - )	( - )	( - )	(76.17)	(78.97)	(87.42)	( 91.96)	(106.90)	(122.75)	(132.00)	(135.20)	(103.92)
Tangail	98.66	98.25	-	-	82.70	93.00	103.00	107.75	120.40	136.00	125.72	-	107.28
Dacca	88.00	90.75	98.00	94.25	84.31	92.91	94.28	101.08	112.37	120.75	120.50	127.70	102.08
Faridpur	103.80	106.00	107.20	86.25	81.31	87.05	97.12	102.19	110.62	116.75	132.08	135.00	105.45
<u>Chittagong</u>	<u>96.57</u>	<u>93.71</u>	<u>90.58</u>	<u>90.94</u>	<u>82.79</u>	<u>82.11</u>	<u>92.78</u>	<u>96.02</u>	<u>108.91</u>	<u>115.90</u>	<u>116.36</u>	<u>134.94</u>	<u>99.97</u>
Sylhet	-	-	-	102.50	92.00	80.85	90.67	94.00	109.83	108.08	113.80	124.88	101.85
Comilla	97.00	94.12	90.80	88.37	78.29	83.00	98.18	95.83	112.20	116.25	115.81	-	97.26
Noakhali	95.00	93.25	88.00	73.00	77.87	83.10	95.00	101.25	111.20	112.25	119.82	-	95.43
Chittagong	97.50	93.75	92.95	99.87	83.00	81.50	87.25	93.00	102.40	119.00	116.00	145.00	100.95
Chittagong Hill Tracts	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Average</u>	<u>94.02</u>	<u>94.52</u>	<u>98.46</u>	<u>95.85</u>	<u>85.19</u>	<u>84.66</u>	<u>91.46</u>	<u>96.52</u>	<u>106.33</u>	<u>117.74</u>	<u>123.61</u>	<u>140.80</u>	<u>102.43</u>

Source: Ministry of Agriculture

ASADD  
Nov. 15, 1979

Table 4.18

BANGLADESH: AVERAGE WHOLESALE PRICE OF BORO PADDY BY DISTRICT DURING 1975/76  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>118.18</u>	<u>99.08</u>	<u>64.75</u>	<u>60.75</u>	<u>54.00</u>	-	-	-	-	-	<u>58.00</u>	<u>51.3</u>	<u>72.30</u>
Dinajpur	-	-	-	-	-	-	-	-	-	-	-	50.00	50.00
Rangpur	-	-	-	-	-	-	-	-	-	-	-	-	-
Bogra	-	-	-	-	-	-	-	-	-	-	-	-	-
Rajshahi	126.35	99.08	64.75	60.75	54.00	-	-	-	-	-	58.00	53.87	73.83
Pabna	110.00	-	-	-	-	-	-	-	-	-	-	50.05	80.03
<u>Khulna</u>	<u>109.67</u>	-	-	-	-	<u>60.00</u>	-	-	-	<u>67.00</u>	<u>63.40</u>	<u>59.37</u>	<u>71.89</u>
Kushtia	-	-	-	-	-	-	-	-	-	-	-	60.00	60.00
Jessore	-	-	-	-	-	-	-	-	-	-	-	-	-
Khulna	109.67	-	-	-	-	-	-	-	-	67.00	63.40	59.37	774.86
Barisal	-	-	-	-	-	60.00	-	-	-	-	-	-	60.00
Patuakhali	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Dacca</u>	<u>116.67</u>	<u>98.24</u>	<u>102.5</u>	<u>81.44</u>	<u>66.25</u>	<u>59.00</u>	-	-	-	<u>57.61</u>	<u>59.01</u>	<u>56.75</u>	<u>77.50</u>
Jamalpur	-	-	-	-	-	-	-	-	-	-	-	-	-
Mymensingh	107.83	99.97	97.5	79.12	60.00	59.00	-	-	-	55.33	55.25	53.31	74.15
(Mymensingh)	(106.50)	(101.00)	( - )	( - )	( - )	( - )	( - )	( - )	( - )	(55.83)	(56.90)	(56.12)	(75.27)
(Kishoreganj)	(109.16)	(98.93)	(97.50)	(79.12)	(60.00)	(59.00)	( - )	( - )	( - )	(54.82)	(53.60)	(50.50)	(73.63)
Tangail	-	-	-	-	-	-	-	-	-	64.66	58.12	60.80	61.19
Dacca	125.50	96.50	107.50	83.75	72.50	-	-	-	-	-	60.18	52.33	85.47
Faridpur	-	-	-	-	-	-	-	-	44.00	52.85	62.50	60.56	54.98
<u>Chittagong</u>	<u>111.27</u>	<u>111.07</u>	<u>93.40</u>	<u>67.33</u>	<u>60.64</u>	<u>60.92</u>	<u>63.40</u>	<u>72.00</u>	<u>64.75</u>	<u>49.84</u>	<u>58.48</u>	<u>57.20</u>	<u>72.53</u>
Sylhet	107.87	95.20	87.00	75.25	69.20	70.00	-	-	-	43.75	53.35	54.81	72.94
Comilla	114.67	113.00	99.79	76.75	61.40	62.50	-	-	-	49.50	57.40	55.75	76.75
Noakhali	-	-	-	-	-	-	-	-	-	43.00	65.00	64.25	57.42
Chittagong	-	125.00	-	50.00	51.33	50.25	63.40	72.00	64.75	63.12	58.17	54.00	65.20
Chittagong Hill Tracts	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Average</u>	<u>114.56</u>	<u>104.79</u>	<u>91.31</u>	<u>70.94</u>	<u>61.41</u>	<u>60.35</u>	<u>63.40</u>	<u>72.00</u>	<u>54.38</u>	<u>54.90</u>	<u>59.46</u>	<u>56.38</u>	<u>71.99</u>

Source: Ministry of Agriculture

ASADD  
Nov. 15, 1979

Table 4.19

BANGLADESH: AVERAGE WHOLESALE PRICE OF BORO PADDY BY DISTRICT DURING 1976/77  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>54.22</u>	<u>55.30</u>	<u>53.87</u>	<u>55.00</u>	<u>58.30</u>	-	-	-	-	<u>72.75</u>	<u>72.70</u>	<u>84.38</u>	<u>63.32</u>
Dinajpur	56.40	54.75	51.00	53.00	58.30	-	-	-	-	-	-	-	54.69
Rangpur	-	-	-	57.00	-	-	-	-	-	-	-	-	57.00
Bogra	-	-	-	-	-	-	-	-	-	-	-	-	-
Rajshahi	57.50	55.85	56.73	-	-	-	-	-	-	67.50	69.80	82.75	65.02
Pabna	48.75	-	-	-	-	-	-	-	-	78.00	75.60	86.00	72.09
<u>Khulna</u>	<u>54.03</u>	<u>52.50</u>	<u>56.75</u>	-	<u>60.00</u>	-	-	-	-	<u>78.27</u>	<u>76.17</u>	<u>82.33</u>	<u>65.72</u>
Kushtia	-	-	-	-	-	-	-	-	-	-	-	-	-
Jessore	-	-	-	-	-	-	-	-	-	-	82.50	89.00	85.75
Khulna	60.05	52.50	-	-	-	-	-	-	-	81.54	75.50	78.00	69.52
Barisal	-	-	-	-	60.00	-	-	-	-	75.00	70.50	80.00	71.38
Patuakhali	48.00	-	56.75	-	-	-	-	-	-	-	-	-	52.38
<u>Dacca</u>	<u>61.23</u>	<u>63.63</u>	<u>67.62</u>	<u>71.22</u>	<u>69.53</u>	-	-	-	-	<u>72.75</u>	<u>76.09</u>	<u>84.39</u>	<u>70.81</u>
Jamalpur } Mymensingh }	57.10	57.50	64.16	66.40	63.50	-	-	-	-	64.91	71.44	78.00	65.38
(Mymensingh)	(59.00)	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	(65.25)	(73.50)	(80.87)	(69.66)
(Kishoreganj)	(55.20)	(57.50)	(64.16)	(66.40)	(63.50)	( - )	( - )	( - )	( - )	(64.56)	(69.37)	(75.13)	(64.48)
Tangail	60.00	-	-	-	-	-	-	-	-	79.50	74.75	85.20	74.86
Dacca	66.47	69.75	71.08	76.03	75.56	-	-	-	-	69.00	76.04	84.00	73.49
Faridpur	61.33	-	-	-	-	-	-	-	-	77.60	82.12	90.37	77.86
<u>Chittagong</u>	<u>60.41</u>	<u>62.25</u>	<u>64.00</u>	<u>67.38</u>	<u>65.74</u>	<u>58.50</u>	<u>64.40</u>	-	-	<u>66.82</u>	<u>69.56</u>	<u>76.18</u>	<u>65.52</u>
Sylhet	61.60	63.00	66.50	66.55	70.81	-	-	-	-	65.66	64.62	75.50	66.78
Comilla	60.83	-	67.00	72.00	63.42	-	64.40	-	-	71.00	70.00	73.66	67.79
Noakhali	67.00	-	-	-	-	-	-	-	-	63.80	67.00	-	65.93
Chittagong	52.20	61.50	58.50	63.60	63.00	58.50	-	-	-	-	76.62	79.37	64.16
Chittagong Hill Tracts	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Average</u>	<u>58.25</u>	<u>59.26</u>	<u>61.47</u>	<u>64.94</u>	<u>64.94</u>	<u>58.50</u>	<u>64.40</u>	-	-	<u>72.14</u>	<u>73.58</u>	<u>81.82</u>	<u>65.93</u>

Source: Ministry of Agriculture

ASADD  
Nov. 15, 1979

Table 4.20

BANGLADESH: AVERAGE WHOLESALE PRICE OF BORO PADDY BY DISTRICT DURING 1977/78  
(Tk per maund)

District	July	August	September	October	November	December	January	February	March	April	May	June	Average
<u>Rajshahi</u>	<u>46.00</u>	<u>55.22</u>	-	-	-	-	-	-	<u>101.25</u>	-	<u>74.44</u>	<u>76.57</u>	<u>70.70</u>
Dinajpur	22.00	22.00	-	-	-	-	-	-	-	-	-	72.50	38.83
Rangpur	22.00	-	-	-	-	-	-	-	-	-	-	-	22.00
Bogra	-	-	-	-	-	-	-	-	-	-	-	-	-
Rajshahi	94.00	88.43	-	-	-	-	-	-	-	-	72.62	75.56	82.65
Pabna	-	-	-	-	-	-	-	-	101.25	-	76.25	81.66	86.37
<u>Khulna</u>	<u>95.00</u>	<u>86.67</u>	-	<u>85.00</u>	-	-	-	-	-	<u>85.00</u>	<u>81.16</u>	<u>84.54</u>	<u>86.23</u>
Kushtia	-	-	-	-	-	-	-	-	-	-	-	-	-
Jessore	95.00	98.33	-	-	-	-	-	-	-	-	-	85.75	93.03
Khulna	-	-	-	-	-	-	-	-	-	85.00	81.16	83.33	83.16
Barisal	-	75.00	-	85.00	-	-	-	-	-	-	-	-	80.00
Patuakhali	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Dacca</u>	<u>93.73</u>	<u>92.00</u>	<u>96.31</u>	<u>98.31</u>	<u>91.00</u>	-	-	-	-	<u>78.69</u>	<u>76.27</u>	<u>77.52</u>	<u>87.99</u>
Jamalpur	83.80	84.75	87.62	91.45	-	-	-	-	-	73.50	71.80	70.88	80.54
Mymensingh } (Mymensingh)	(83.90)	(86.50)	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	(70.75)	(68.00)	(77.29)
(Kishoreganj)	(83.70)	(83.00)	(87.62)	(91.45)	( - )	( - )	( - )	( - )	( - )	(73.50)	(72.84)	(73.75)	(80.84)
Tangail	-	-	-	-	-	-	-	-	-	82.50	74.62	-	78.56
Dacca	90.00	86.25	-	94.50	91.00	-	-	-	-	81.00	80.00	79.50	86.04
Faridpur	107.40	105.00	105.00	109.33	-	-	-	-	-	77.75	78.66	82.19	95.05
<u>Chittagong</u>	<u>71.28</u>	<u>79.84</u>	<u>80.81</u>	<u>84.33</u>	<u>71.00</u>	<u>69.00</u>	-	-	-	<u>73.66</u>	<u>81.42</u>	<u>79.53</u>	<u>76.76</u>
Sylhet	69.75	73.03	85.12	90.50	-	-	-	-	-	73.66	85.25	76.62	79.13
Comilla	-	75.00	-	85.00	-	-	-	-	-	-	73.50	79.50	80.58
Noakhali	-	-	-	-	-	-	-	-	-	-	-	76.33	76.33
Chittagong	72.80	77.00	76.50	74.00	65.50	62.00	-	-	-	-	85.50	85.68	74.87
Chittagong Hill Tracts	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Average</u>	<u>72.97</u>	<u>79.93</u>	<u>88.56</u>	<u>90.47</u>	<u>77.67</u>	<u>69.00</u>	-	-	<u>101.25</u>	<u>78.90</u>	<u>77.94</u>	<u>79.13</u>	<u>81.58</u>

Source: Ministry of Agriculture

ASADD  
Nov. 15, 1979

Table 4.21

BANGLADESH: AVERAGE WHOLESALE PRICE OF BORO PADDY BY DISTRICT DURING 1978/79  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>72.72</u>	<u>73.46</u>	<u>79.50</u>	<u>87.50</u>	-	-	-	-	-	-	<u>111.05</u>	<u>132.50</u>	<u>92.79</u>
Dinajpur	77.50	-	-	-	-	-	-	-	-	-	-	-	77.50
Rangpur	-	-	-	-	-	-	-	-	-	-	110.00	132.50	121.25
Bogra	65.30	-	-	-	-	-	-	-	-	-	-	-	65.30
Rajshahi	75.37	73.46	79.50	87.50	-	-	-	-	-	-	107.41	-	84.65
Pabna	-	-	-	-	-	-	-	-	-	-	115.75	-	115.75
<u>Khulna</u>	<u>86.00</u>	-	-	<u>87.33</u>	-	-	-	-	-	<u>104.25</u>	<u>119.84</u>	<u>130.73</u>	<u>105.63</u>
Kushtia	-	-	-	-	-	-	-	-	-	-	-	129.80	129.80
Jessore	-	-	-	87.33	-	-	-	-	-	-	124.33	134.40	115.35
Khulna	86.00	-	-	-	-	-	-	-	-	104.25	115.34	128.00	108.40
Barisal	-	-	-	-	-	-	-	-	-	-	-	-	-
Patuakhali	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Dacca</u>	<u>79.63</u>	<u>83.16</u>	<u>90.03</u>	<u>89.88</u>	<u>83.00</u>	<u>90.00</u>	<u>99.00</u>	-	-	<u>99.13</u>	<u>104.29</u>	<u>122.78</u>	<u>94.09</u>
Jamalpur	74.62	80.87	86.10	85.00	77.00	-	-	-	-	-	-	-	89.72
Mymensingh	(72.50)	( - )	( - )	( - )	( - )	( - )	( - )	( - )	( - )	(100.00)	(100.37)	(117.20)	(97.52)
(Kishoreganj)	(76.73)	(80.87)	(86.10)	(85.00)	(77.00)	( - )	( - )	( - )	( - )	( 98.50)	(103.41)	(108.89)	(89.56)
Tangail	-	-	-	-	-	-	-	-	-	-	100.00	-	100.00
Dacca	79.98	83.62	93.95	92.75	89.00	90.00	99.00	-	-	-	107.00	124.88	95.58
Faridpur	84.30	85.00	-	-	-	-	-	-	-	99.00	108.25	130.40	101.79
<u>Chittagong</u>	<u>77.83</u>	<u>78.40</u>	<u>81.68</u>	<u>81.81</u>	<u>78.63</u>	<u>68.60</u>	<u>91.00</u>	-	-	<u>87.50</u>	<u>94.33</u>	<u>108.33</u>	<u>84.81</u>
Sylhet	75.83	81.15	82.76	87.37	85.25	-	-	-	-	87.50	99.50	116.20	89.45
Comilla	77.25	73.55	-	-	-	-	-	-	-	-	101.75	107.00	89.89
Noakhali	84.62	-	-	-	-	-	-	-	-	-	-	-	74.62
Chittagong	83.60	80.50	80.60	76.25	72.00	68.80	91.00	-	-	-	81.75	101.80	81.81
Chittagong Hill Tracts	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Average</u>	<u>77.67</u>	<u>79.74</u>	<u>84.58</u>	<u>86.03</u>	<u>80.81</u>	<u>79.40</u>	<u>95.00</u>	-	-	<u>97.50</u>	<u>106.08</u>	<u>121.80</u>	<u>90.86</u>

Source: Ministry of Agriculture

ASADD  
Nov. 15, 1979

Table 4.22

BANGLADESH: AVERAGE WHOLESALE PRICE OF IRRI PADDY BY DISTRICT DURING 1975/76  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>111.10</u>	<u>88.81</u>	<u>69.88</u>	<u>65.46</u>	<u>55.77</u>	<u>61.03</u>	<u>69.62</u>	<u>63.25</u>	<u>59.08</u>	<u>61.88</u>	<u>59.03</u>	<u>56.24</u>	<u>68.43</u>
Dinajpur	116.00	76.00	62.50	58.75	58.00	67.00	68.80	62.50	58.50	62.75	67.40	68.00	68.85
Rangpur	100.87	98.80	85.00	75.72	52.56	54.25	60.80	61.00	58.75	61.00	52.50	51.50	67.73
Bogra	91.87	74.00	62.50	63.12	52.30	59.15	-	-	-	-	55.25	52.12	63.79
Rajshahi	129.58	99.00	69.50	64.25	58.33	63.75	69.55	65.25	60.00	-	60.00	54.58	72.25
Pabna	117.20	96.25	-	-	57.66	61.00	79.33	-	-	-	60.00	55.00	76.06
<u>Khulna</u>	<u>116.33</u>	<u>92.66</u>	<u>83.25</u>	<u>72.53</u>	<u>55.67</u>	<u>57.50</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>68.00</u>	<u>62.50</u>	<u>57.79</u>	<u>74.25</u>
Kushtia	114.75	81.00	76.75	69.75	62.50	-	-	-	-	-	-	60.00	77.46
Jessore	136.83	116.00	98.33	93.33	-	-	-	-	-	-	65.00	65.00	95.75
Khulna	-	88.80	76.50	59.75	43.00	-	-	-	-	-	-	60.08	65.63
Barisal	108.75	92.50	85.41	76.83	61.16	57.50	-	-	-	68.00	60.00	-	76.27
Patuakhali	105.00	85.00	79.25	63.00	56.00	-	-	-	-	-	-	54.06	73.72
<u>Dacca</u>	<u>115.87</u>	<u>98.25</u>	<u>100.95</u>	<u>81.65</u>	<u>62.75</u>	<u>73.61</u>	<u>76.59</u>	<u>79.25</u>	<u>71.19</u>	<u>71.71</u>	<u>60.43</u>	<u>57.26</u>	<u>79.13</u>
Jamalpur	105.85	93.10	95.84	80.28	64.05	68.25	76.60	76.75	67.38	69.29	58.05	51.84	75.61
Mymensingh	(103.45)	(96.20)	(95.75)	(79.75)	(66.00)	( - )	( - )	( - )	(65.00)	(72.25)	(58.90)	(55.75)	(77.01)
(Kishoreganj)	(108.25)	(90.00)	(95.92)	(80.80)	(62.10)	(68.25)	(76.60)	(76.75)	(69.75)	(66.33)	(57.20)	(47.92)	(74.99)
Tangail	-	-	-	-	-	-	-	-	-	73.83	60.25	56.70	63.59
Dacca	123.00	105.00	103.00	81.00	69.20	72.58	77.30	81.75	75.00	72.00	60.66	62.25	81.90
Faridpur	118.75	96.65	104.00	83.66	55.00	80.00	-	-	-	-	62.75	58.25	82.38
<u>Chittagong</u>	<u>122.26</u>	<u>105.24</u>	<u>88.27</u>	<u>75.57</u>	<u>62.06</u>	<u>64.25</u>	<u>65.10</u>	<u>71.24</u>	<u>67.33</u>	<u>66.37</u>	<u>60.37</u>	<u>56.29</u>	<u>75.36</u>
Sylhet	110.00	94.75	92.25	75.66	68.00	71.25	-	-	-	-	-	52.25	80.59
Comilla	121.12	105.60	89.31	76.37	61.35	53.12	66.80	70.47	69.90	68.50	59.86	60.63	76.09
Noakhali	131.75	117.10	101.25	84.06	61.90	61.25	-	-	-	62.00	64.30	60.29	82.66
Chittagong	126.16	103.50	70.25	66.19	57.00	61.37	63.40	72.00	64.75	68.62	56.95	52.00	71.85
Chittagong Hill Tracts	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Average</u>	<u>116.09</u>	<u>95.47</u>	<u>84.48</u>	<u>73.23</u>	<u>58.63</u>	<u>65.11</u>	<u>70.32</u>	<u>70.10</u>	<u>64.90</u>	<u>67.33</u>	<u>60.21</u>	<u>57.33</u>	<u>73.60</u>

Source: Ministry of Agriculture

Table 4.23

BANGLADESH: AVERAGE WHOLESALE PRICE OF IRRI PADDY BY DISTRICT DURING 1976/77  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>56.01</u>	<u>59.30</u>	<u>48.88</u>	<u>54.12</u>	<u>54.67</u>	<u>56.05</u>	<u>62.39</u>	<u>70.25</u>	<u>74.75</u>	<u>76.20</u>	<u>79.54</u>	<u>83.12</u>	<u>64.61</u>
Dinajpur	69.60	72.00	44.25	50.30	54.00	53.50	67.40	73.00	77.00	81.60	88.75	94.00	68.78
Rangpur	48.16	54.00	50.99	55.20	57.42	56.25	58.46	65.75	72.25	75.00	-	82.33	61.44
Bogra	51.60	-	49.00	52.99	51.75	49.00	56.40	-	-	-	77.00	75.50	57.91
Rajshahi	57.87	56.25	53.17	57.98	55.16	60.25	61.48	72.00	75.00	72.00	70.00	81.15	64.36
Pabna	52.80	54.93	47.00	-	55.00	61.25	68.20	-	-	-	82.40	82.62	63.03
<u>Khulna</u>	<u>62.06</u>	<u>51.72</u>	<u>57.77</u>	<u>66.22</u>	<u>62.14</u>	<u>53.00</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>73.17</u>	<u>81.85</u>	<u>63.49</u>
Kushtia	68.00	46.00	53.50	59.00	62.00	-	-	-	-	-	-	-	57.70
Jessore	73.80	68.00	56.50	-	-	-	-	-	-	-	77.50	87.16	72.59
Khulna	60.08	51.14	54.50	65.48	62.20	51.99	-	-	-	-	72.00	84.38	62.72
Barisal	60.22	46.25	61.25	69.40	64.00	54.00	-	-	-	-	-	86.62	63.11
Parua'hali	48.20	47.21	63.12	71.00	60.37	-	-	-	-	-	70.00	69.25	61.31
<u>Dacca</u>	<u>59.09</u>	<u>61.74</u>	<u>65.18</u>	<u>69.30</u>	<u>67.90</u>	<u>63.33</u>	<u>64.50</u>	<u>78.00</u>	<u>82.63</u>	<u>77.32</u>	<u>76.94</u>	<u>84.16</u>	<u>70.84</u>
Jamalpur	55.73	55.83	57.92	64.52	61.19	60.16	60.10	75.25	80.75	79.45	74.50	80.25	67.14
Mymensingh } (Mymensingh)	(57.60)	(53.00)	(53.25)	(64.30)	(56.00)	(52.31)	(56.20)	( - )	( - )	(80.00)	(74.00)	(80.00)	(62.67)
(Kishoreganj)	(53.86)	(58.66)	(62.59)	(64.73)	(66.37)	(68.00)	(64.00)	(75.25)	(80.75)	(78.90)	(75.00)	(80.50)	(69.05)
Tangail	56.50	62.00	-	69.00	69.66	-	-	-	-	75.50	76.87	85.00	70.65
Dacca	65.12	68.50	67.62	71.66	70.75	66.50	68.90	80.75	84.50	77.50	75.75	86.00	73.63
Faridpur	59.00	60.62	70.00	72.00	70.00	-	-	-	-	76.83	80.62	85.37	71.81
<u>Chittagong</u>	<u>59.14</u>	<u>64.33</u>	<u>62.48</u>	<u>64.93</u>	<u>63.03</u>	<u>59.64</u>	<u>64.84</u>	<u>70.19</u>	<u>75.38</u>	<u>76.40</u>	<u>74.25</u>	<u>77.05</u>	<u>67.64</u>
Sylhet	60.25	66.00	57.91	59.03	60.08	54.25	54.60	65.75	69.75	70.00	-	73.83	62.86
Comilla	57.50	59.83	60.87	68.07	60.52	-	75.08	74.62	81.00	86.21	74.04	78.75	70.59
Noakhali	60.70	67.00	70.25	71.70	69.50	66.66	-	-	-	73.00	79.60	82.75	71.24
Chittagong	58.10	64.50	60.87	60.90	62.00	58.00	-	-	-	-	69.12	72.87	63.30
Chittagong Hill Tracts	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Average</u>	<u>59.07</u>	<u>58.83</u>	<u>57.57</u>	<u>63.64</u>	<u>65.10</u>	<u>57.65</u>	<u>63.40</u>	<u>72.45</u>	<u>77.18</u>	<u>76.71</u>	<u>76.30</u>	<u>81.64</u>	<u>67.46</u>

Source: Ministry of Agriculture

ASADD  
Nov. 18, 1979

Table 4.24

BANGLADESH: AVERAGE WHOLESALE PRICE OF IRRI PADDY BY DISTRICT DURING 1977/78  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>89.00</u>	<u>80.00</u>	<u>73.14</u>	<u>77.38</u>	<u>72.78</u>	<u>75.83</u>	<u>79.64</u>	<u>80.53</u>	<u>82.77</u>	<u>89.98</u>	<u>80.16</u>	<u>70.23</u>	<u>79.29</u>
Dinajpur	106.80	-	74.25	75.40	76.00	78.02	83.87	84.50	84.25	91.80	88.50	67.00	82.76
Rangpur	84.70	80.60	74.04	79.28	64.12	72.50	79.29	78.33	83.07	92.10	77.50	67.50	77.75
Bogra	73.20	70.25	71.12	72.17	66.87	70.00	75.75	78.75	81.00	86.00	69.62	67.75	73.54
Rajshahi	91.33	82.15	-	82.67	81.66	82.62	-	-	-	90.00	-	-	85.07
Pabna	88.96	87.00	-	-	75.25	76.00	-	-	-	-	85.00	78.66	81.81
<u>Khulna</u>	<u>88.20</u>	<u>81.77</u>	<u>88.47</u>	<u>87.49</u>	<u>75.78</u>	<u>74.91</u>	<u>84.00</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>69.17</u>	<u>76.70</u>	<u>80.72</u>
Kushtia	70.00	65.75	83.00	-	-	-	-	-	-	-	-	-	72.92
Jessore	103.25	100.00	100.66	-	79.00	76.62	84.00	-	-	-	-	80.00	89.08
Khulna	93.00	80.87	87.25	89.67	77.50	-	-	-	-	-	75.00	79.94	83.32
Barisal	87.00	82.50	90.05	96.11	76.00	-	-	-	-	-	72.50	75.37	82.79
Patuakhali	87.75	79.75	81.37	76.70	70.62	73.20	-	-	-	-	60.00	71.50	75.11
<u>Dacca</u>	<u>90.53</u>	<u>91.19</u>	<u>97.90</u>	<u>96.77</u>	<u>85.26</u>	<u>81.01</u>	<u>83.69</u>	<u>92.44</u>	<u>100.15</u>	<u>92.12</u>	<u>78.28</u>	<u>76.54</u>	<u>88.82</u>
Jamalpur	84.95	80.49	86.81	87.85	75.75	76.70	83.00	92.25	96.25	97.60	78.06	74.94	84.55
Mymensingh }													
(Mymensingh)	(81.90)	(76.37)	(85.25)	(84.60)	(78.50)	(73.60)	( - )	( - )	( - )	( - )	(80.50)	(74.00)	(79.34)
(Kishoreganj)	(88.00)	(84.60)	(88.37)	(91.10)	(73.00)	(79.80)	(83.00)	(92.25)	(96.25)	(97.60)	(75.62)	(75.87)	(87.12)
Tangail	89.12	93.50	100.00	93.66	91.90	-	-	-	-	-	77.12	72.20	88.21
Dacca	95.00	92.50	98.12	97.75	88.12	85.31	84.37	92.62	104.05	96.75	79.50	78.00	91.01
Faridpur	93.06	98.25	106.66	107.83	-	-	-	-	-	82.00	78.45	81.00	92.46
<u>Chittagong</u>	<u>82.13</u>	<u>82.33</u>	<u>85.79</u>	<u>86.59</u>	<u>80.78</u>	<u>73.65</u>	<u>83.50</u>	<u>86.75</u>	<u>96.19</u>	<u>92.00</u>	<u>78.59</u>	<u>82.20</u>	<u>84.21</u>
Sylhet	75.47	76.58	80.91	92.22	85.90	-	-	85.50	91.00	-	70.00	76.25	81.54
Comilla	85.93	86.25	91.94	89.20	80.87	76.00	83.50	88.00	101.37	92.00	75.00	81.66	85.98
Noakhali	89.90	88.75	91.50	89.05	84.75	-	-	-	-	-	82.37	90.87	88.17
Chittagong	77.20	77.75	78.80	75.90	71.58	71.30	-	-	-	-	87.00	80.00	77.44
Chittagong Hill Tracts	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Average</u>	<u>87.59</u>	<u>83.70</u>	<u>87.28</u>	<u>87.03</u>	<u>77.87</u>	<u>76.21</u>	<u>81.97</u>	<u>85.71</u>	<u>91.57</u>	<u>91.03</u>	<u>77.04</u>	<u>76.40</u>	<u>83.62</u>

Source: Ministry of Agriculture

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Nov. 18, 1979

Table 4.25

BANGLADESH AVERAGE WHOLESALE PRICE OF IRRI PADDY BY DISTRICT DURING 1978/79  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	70.44	71.00	78.96	80.46	80.02	95.77	84.62	90.56	94.00	113.67	108.14	126.37	91.17
Dinaipur	67.85	71.62	76.95	82.00	84.25	80.67	85.25	90.75	94.40	111.00	123.00	121.90	90.80
Rangpur	70.90	71.51	75.60	78.12	78.04	76.30	79.00	81.75	87.60	107.00	113.54	130.63	87.50
Bogra	65.30	65.75	73.70	79.87	72.50	74.90	76.12	79.75	90.05	-	98.58	121.00	81.59
Rajshahi	72.45	72.12	78.53	81.83	80.00	79.75	89.00	98.04	103.93	123.00	103.38	129.15	92.60
Pabna	75.72	74.00	90.00	-	85.33	87.20	93.75	102.50	-	-	102.18	129.18	93.32
<u>Khulna</u>	71.53	70.63	80.13	83.47	80.66	80.47	83.75	-	-	102.00	107.87	131.57	89.21
Kushtia	53.00	57.75	82.00	84.00	80.00	-	-	-	-	-	113.33	155.00	89.30
Jessore	93.66	75.00	85.50	-	85.50	83.00	90.50	-	-	-	103.64	138.00	94.35
Khulna	79.23	74.83	77.00	82.00	78.54	84.20	-	-	-	102.00	116.78	130.46	91.67
Barisal	66.78	71.18	-	85.25	77.25	-	-	-	-	-	102.25	116.66	86.56
Patuakhali	65.00	74.37	76.00	82.62	82.00	74.20	77.00	-	-	-	103.35	117.75	83.59
<u>Dacca</u>	77.45	80.61	90.74	85.34	83.17	83.29	87.39	93.89	102.90	118.00	105.87	120.29	94.08
Jamalpur	70.26	73.17	81.26	79.31	77.17	79.85	84.25	94.92	102.90	118.00	110.29	114.36	90.48
Mymensingh } (Mymensingh)	(68.00)	(69.34)	(81.52)	(78.87)	(78.58)	(81.00)	(84.00)	(97.50)	(100.00)	( - )	(110.00)	(113.15)	(87.45)
(Kishoreganj)	(72.52)	(77.00)	(81.00)	(79.75)	(75.75)	(78.70)	(84.50)	(92.33)	(105.80)	(118.00)	(110.58)	(115.57)	(90.96)
Tangail	75.50	82.00	91.50	85.87	90.50	91.50	-	-	-	-	99.37	118.90	91.89
Dacca	81.16	80.25	94.00	86.50	83.75	88.60	94.91	101.75	-	-	107.55	125.40	94.39
Faridpur	82.87	87.00	96.20	89.66	81.25	83.20	83.00	85.00	-	-	106.25	122.50	90.69
<u>Chittagong</u>	79.93	80.07	79.60	78.88	77.31	79.53	86.89	89.88	106.20	109.75	101.82	125.00	91.24
Sylhet	77.39	78.00	77.67	85.57	76.75	77.00	-	-	-	-	100.00	124.10	87.06
Comilla	73.20	72.55	78.26	76.20	77.74	78.10	90.00	94.50	106.20	113.50	106.92	130.26	91.45
Noakhali	86.52	85.30	82.40	79.12	76.50	79.00	-	-	-	106.00	103.66	132.75	92.36
Chittagong	82.60	83.50	84.40	83.50	78.25	84.00	83.77	85.25	-	-	96.70	112.90	87.49
Chittagong Hill Tracts	-	81.00	75.25	70.00	-	-	-	-	-	-	-	-	75.42
<u>Average</u>	<u>74.41</u>	<u>75.31</u>	<u>82.01</u>	<u>81.85</u>	<u>80.24</u>	<u>80.72</u>	<u>85.55</u>	<u>91.42</u>	<u>97.51</u>	<u>111.50</u>	<u>106.15</u>	<u>126.16</u>	<u>91.07</u>

Source: Ministry of Agriculture

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Nov. 18, 1979

Table 4.26

BANGLADESH: AVERAGE WHOLESALE PRICE OF AMAN COARSE RICE BY DISTRICT DURING 1975/76  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>214.15</u>	<u>183.91</u>	<u>160.77</u>	<u>135.35</u>	<u>103.40</u>	<u>107.78</u>	<u>112.55</u>	<u>105.37</u>	<u>98.72</u>	<u>103.67</u>	<u>112.84</u>	<u>109.22</u>	<u>128.98</u>
Dinajpur	204.62	179.40	161.00	129.25	111.70	107.12	116.70	103.87	93.62	100.87	-	109.25	128.85
Rangpur	199.00	185.25	159.87	132.50	104.92	101.12	106.95	99.44	97.30	103.00	110.00	109.28	125.72
Bogra	207.50	175.00	157.50	128.75	99.25	109.00	112.60	104.87	96.87	102.50	110.90	109.12	126.16
Rajshahi	228.87	187.90	146.75	136.25	94.88	108.25	113.08	108.06	99.45	103.67	112.56	108.33	129.00
Pabna	230.75	192.00	178.75	150.00	106.25	113.40	113.40	110.62	106.37	108.31	117.90	110.12	136.49
<u>Khulna</u>	<u>201.63</u>	<u>191.35</u>	<u>169.28</u>	<u>139.32</u>	<u>105.71</u>	<u>106.64</u>	<u>112.69</u>	<u>109.19</u>	<u>102.37</u>	<u>104.91</u>	<u>113.85</u>	<u>113.92</u>	<u>130.91</u>
Kushtia	222.50	193.66	174.33	155.00	105.28	110.08	118.93	115.58	109.25	110.66	113.66	112.42	136.78
Jessore	228.44	212.86	187.66	125.00	94.80	106.47	114.19	114.42	107.77	108.84	113.20	114.87	135.71
Khulna	201.33	171.60	156.67	135.17	98.53	98.61	105.80	103.55	93.92	97.62	106.26	106.04	122.93
Barisal	154.25	190.31	171.44	145.93	112.75	107.43	112.85	110.42	103.12	103.56	117.75	114.81	128.72
Patuakhali	201.62	188.30	156.31	135.50	117.20	110.62	111.70	102.00	97.81	103.87	118.40	121.44	130.40
<u>Dacca</u>	<u>216.54</u>	<u>202.31</u>	<u>183.88</u>	<u>128.47</u>	<u>103.50</u>	<u>106.74</u>	<u>112.20</u>	<u>110.29</u>	<u>106.50</u>	<u>109.74</u>	<u>122.54</u>	<u>113.21</u>	<u>134.66</u>
Jamalpur	218.41	223.35	198.13	177.36	102.45	102.30	109.52	104.44	103.89	107.97	115.07	114.06	139.75
Mymensingh }													
(Mymensingh)	(209.81)	(219.70)	(190.25)	(165.71)	(111.90)	(104.37)	(110.10)	(102.12)	(108.62)	(109.12)	(115.40)	(110.62)	(137.64)
(Kishoreganj)	(227.00)	(227.00)	(206.00)	(189.00)	(93.00)	(100.22)	(108.93)	(106.75)	(105.16)	(106.82)	(114.73)	(117.50)	(141.84)
Tangail	215.00	200.00	175.00	105.00	108.87	104.00	109.20	107.75	104.50	111.80	114.25	108.20	130.30
Dacca	218.00	205.00	-	105.00	102.66	112.91	116.83	115.71	109.62	111.20	145.82	117.58	132.76
Faridpur	214.75	180.87	178.50	126.50	100.00	107.75	113.25	113.25	108.00	108.00	115.00	113.00	131.57
<u>Chittagong</u>	<u>197.27</u>	<u>163.49</u>	<u>144.02</u>	<u>129.39</u>	<u>100.03</u>	<u>103.89</u>	<u>113.44</u>	<u>115.80</u>	<u>114.15</u>	<u>113.45</u>	<u>107.73</u>	<u>107.26</u>	<u>125.83</u>
Sylhet	185.00	149.42	139.00	115.00	94.50	100.00	116.45	115.82	120.43	102.72	99.63	101.54	119.96
Comilla	197.50	153.00	150.22	129.00	91.85	103.67	109.61	114.62	113.44	110.47	112.42	116.68	125.21
Noakhali	192.50	166.25	160.62	140.00	105.00	108.75	112.70	113.25	112.87	110.37	112.12	-	130.40
Chittagong	208.75	176.23	140.72	118.68	105.20	104.31	115.92	118.31	108.50	122.43	105.46	107.31	127.65
Chittagong Hill Tracts	202.58	172.55	129.54	144.25	103.60	102.72	112.50	117.00	115.50	121.25	109.00	103.50	127.83
<u>Average</u>	<u>206.91</u>	<u>184.37</u>	<u>162.33</u>	<u>133.38</u>	<u>103.14</u>	<u>106.24</u>	<u>112.75</u>	<u>110.16</u>	<u>105.38</u>	<u>107.85</u>	<u>113.86</u>	<u>110.98</u>	<u>129.78</u>

Source: Ministry of Agriculture

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Nov. 23, 1979

Table 4.27

BANGLADESH: AVERAGE WHOLESALE PRICE OF AMAN COARSE RICE BY DISTRICT DURING 1976/77  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>111.73</u>	<u>113.82</u>	<u>114.41</u>	<u>111.06</u>	<u>100.73</u>	<u>94.90</u>	<u>100.89</u>	<u>109.72</u>	<u>121.64</u>	<u>129.09</u>	<u>136.96</u>	<u>151.10</u>	<u>116.40</u>
Dinaipur	-	111.12	108.50	106.50	98.75	91.37	105.00	114.12	120.25	126.60	137.62	152.75	115.69
Rangpur	110.33	129.50	113.87	116.68	108.28	98.17	96.13	106.00	118.72	126.78	142.19	148.25	117.91
Bogra	113.80	111.75	125.00	120.00	100.62	92.25	95.70	103.00	118.87	127.20	132.87	150.50	115.96
Rajshahi	110.50	109.00	114.70	103.70	98.08	95.61	103.40	112.50	125.25	133.40	134.37	152.00	116.04
Pabna	112.30	107.75	110.00	108.40	97.91	97.12	104.20	113.00	125.12	131.45	137.75	152.00	116.42
<u>Khulna</u>	<u>113.62</u>	<u>113.73</u>	<u>118.20</u>	<u>119.98</u>	<u>111.63</u>	<u>99.76</u>	<u>101.34</u>	<u>108.86</u>	<u>140.22</u>	<u>132.83</u>	<u>134.21</u>	<u>150.85</u>	<u>120.44</u>
Kushtia	115.20	113.25	114.00	116.13	109.33	103.41	106.26	112.33	126.83	136.53	136.22	150.25	119.98
Jessore	115.45	117.92	123.37	122.05	113.62	105.50	104.65	109.06	123.18	134.62	138.06	151.31	121.57
Khulna	111.60	111.50	114.67	120.53	110.50	96.33	97.13	105.45	216.92	127.64	128.75	148.74	124.15
Barisal	114.37	111.25	119.25	119.68	109.68	96.44	99.55	110.87	118.44	138.35	137.50	154.56	119.16
Patuakhali	111.50	114.75	119.73	121.50	115.00	97.12	99.10	106.62	115.75	127.00	130.50	149.37	117.33
<u>Dacca</u>	<u>110.85</u>	<u>113.80</u>	<u>117.81</u>	<u>112.93</u>	<u>106.41</u>	<u>99.71</u>	<u>101.69</u>	<u>113.08</u>	<u>123.81</u>	<u>133.08</u>	<u>133.62</u>	<u>141.70</u>	<u>117.84</u>
Jamalpur													
Mymensingh	115.80	118.00	122.94	115.60	109.75	93.56	96.75	111.10	121.03	129.87	132.52	140.32	117.27
(Mymensingh)	(112.80)	(116.00)	(117.87)	(112.20)	(101.50)	(92.12)	(97.50)	(110.12)	(122.13)	(126.60)	(134.62)	(140.50)	(115.33)
(Kishoreganj)	(118.80)	(120.00)	(128.00)	(119.00)	(118.00)	(95.00)	(96.00)	(112.08)	(119.92)	(133.13)	(130.42)	(140.13)	(119.21)
Tangail	105.00	-	114.75	109.60	100.75	96.50	100.00	110.50	124.40	128.75	129.33	136.37	114.18
Dacca	-	-	-	110.00	109.25	108.37	106.12	119.13	127.04	138.29	134.94	140.10	121.47
Faridpur	111.75	109.60	115.75	116.50	105.87	100.41	103.87	111.60	122.75	135.41	137.69	150.00	118.43
<u>Chittagong</u>	<u>113.62</u>	<u>109.81</u>	<u>106.38</u>	<u>102.42</u>	<u>101.04</u>	<u>97.81</u>	<u>98.69</u>	<u>109.32</u>	<u>116.09</u>	<u>129.06</u>	<u>131.88</u>	<u>135.45</u>	<u>114.76</u>
Sylhet	-	-	-	-	98.33	99.34	105.35	113.31	118.93	141.91	139.37	145.00	120.19
Comilla	122.66	-	-	105.00	104.55	101.19	103.70	116.36	124.87	127.31	135.58	138.87	118.01
Noakhali	110.00	-	-	110.00	103.12	96.50	100.00	111.00	117.37	130.60	132.50	142.50	115.36
Chittagong	107.17	109.62	105.25	102.17	100.44	101.75	95.40	104.68	112.43	125.00	119.12	122.75	112.57
Chittagong Hill Tracts	114.66	110.00	107.50	92.50	98.75	90.25	89.00	101.25	106.87	120.50	132.81	128.12	107.68
<u>Average</u>	<u>112.63</u>	<u>113.22</u>	<u>115.29</u>	<u>112.03</u>	<u>104.87</u>	<u>97.97</u>	<u>100.56</u>	<u>110.26</u>	<u>125.53</u>	<u>130.91</u>	<u>129.46</u>	<u>145.46</u>	<u>117.34</u>

Source: Ministry of Agriculture

ASADD  
Nov. 23, 1979

Table 4.28

BANGLADESH: AVERAGE WHOLESALE PRICE OF AMAN COARSE RICE BY DISTRICT DURING 1977/78  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>169.92</u>	<u>165.94</u>	<u>156.96</u>	<u>157.83</u>	<u>133.30</u>	<u>127.19</u>	<u>132.06</u>	<u>132.12</u>	<u>136.83</u>	<u>144.66</u>	<u>142.65</u>	<u>138.70</u>	<u>144.85</u>
Dinajpur	174.80	166.87	160.00	154.00	145.31	128.00	135.00	136.37	135.97	143.20	141.87	146.00	147.28
Rangpur	167.37	175.62	149.33	161.05	141.94	119.07	127.68	127.35	135.56	145.25	145.12	148.19	145.29
Bogra	170.83	173.00	166.50	160.00	118.00	126.75	128.37	129.62	131.75	142.00	136.12	132.92	142.99
Rajshahi	167.00	152.00	-	-	128.75	135.40	134.75	134.00	135.94	147.60	144.41	150.58	143.04
Pabna	169.60	162.20	152.00	156.25	132.50	126.75	134.50	133.25	144.00	145.25	145.75	145.80	145.65
<u>Khulna</u>	<u>171.99</u>	<u>168.66</u>	<u>165.83</u>	<u>163.27</u>	<u>133.52</u>	<u>128.42</u>	<u>134.46</u>	<u>131.57</u>	<u>136.89</u>	<u>149.63</u>	<u>144.84</u>	<u>147.20</u>	<u>147.32</u>
Kushtia	172.00	160.00	-	-	136.39	134.47	141.00	138.50	142.17	155.93	152.33	150.75	148.35
Jessore	167.37	160.62	164.45	159.33	137.06	131.00	139.00	134.59	138.18	151.81	149.56	146.20	148.26
Khulna	165.00	163.20	165.00	158.76	130.14	123.73	131.73	126.58	133.17	148.64	135.88	141.40	143.60
Barisal	172.10	168.87	153.37	165.50	129.00	126.00	131.56	129.94	136.56	147.50	141.41	154.81	146.39
Patuakhali	183.50	190.62	180.50	169.50	135.00	126.90	129.00	128.25	134.37	144.25	135.00	143.00	149.99
<u>Dacca</u>	<u>161.00</u>	<u>157.58</u>	<u>157.50</u>	<u>150.45</u>	<u>127.59</u>	<u>127.94</u>	<u>136.10</u>	<u>138.03</u>	<u>143.91</u>	<u>152.67</u>	<u>147.92</u>	<u>147.68</u>	<u>145.40</u>
Jamalpur													
Mymensingh }	161.55	162.38	161.63	158.50	123.60	128.02	138.77	135.81	142.17	151.57	154.24	147.06	147.11
(Mymensingh)	(164.40)	(168.50)	(168.75)	(162.60)	(134.25)	(131.10)	(137.87)	(136.62)	(141.00)	(151.00)	(152.12)	(156.12)	(150.36)
(Kishoreganj)	(158.70)	(156.25)	(154.50)	(154.40)	(112.94)	(124.93)	(139.67)	(135.00)	(143.33)	(152.13)	(156.33)	(138.00)	(143.85)
Tangail	151.62	151.70	150.87	154.00	135.50	127.62	130.20	137.18	142.60	150.75	147.12	146.00	143.76
Dacca	160.00	153.50	-	135.00	124.50	129.27	138.00	141.50	146.04	156.00	144.25	148.25	143.30
Faridpur	170.83	162.75	160.00	154.31	126.75	126.85	137.41	137.63	144.81	152.35	146.08	149.40	147.43
<u>Chittagong</u>	<u>145.89</u>	<u>144.50</u>	<u>149.15</u>	<u>139.43</u>	<u>125.55</u>	<u>123.09</u>	<u>130.61</u>	<u>131.78</u>	<u>144.49</u>	<u>153.27</u>	<u>152.52</u>	<u>157.14</u>	<u>141.45</u>
Sylhet	135.50	128.75	145.62	141.50	129.00	125.35	142.64	137.43	155.00	167.83	150.16	153.75	142.71
Comilla	145.00	-	-	-	123.87	121.00	129.69	132.75	148.40	132.25	147.00	155.08	137.23
Noakhali	161.00	158.33	158.00	150.00	120.12	124.80	131.37	131.75	149.50	155.70	153.12	160.75	146.20
Chittagong	135.45	134.68	133.48	128.70	125.62	121.20	128.33	131.37	144.06	161.15	148.50	149.37	136.83
Chittagong Hill Tracts	152.50	156.25	159.50	137.50	129.12	-	121.00	125.62	125.50	149.43	163.80	166.75	144.27
<u>Average</u>	<u>162.26</u>	<u>160.07</u>	<u>157.33</u>	<u>152.74</u>	<u>130.11</u>	<u>126.79</u>	<u>133.16</u>	<u>133.13</u>	<u>140.30</u>	<u>149.92</u>	<u>146.41</u>	<u>148.21</u>	<u>144.77</u>

Source: Ministry of Agriculture

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Table 4.29

**BANGLADESH: AVERAGE WHOLESALE PRICE OF AMAN COARSE RICE BY DISTRICT DURING 1978/79**  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>145.21</u>	<u>144.61</u>	<u>154.73</u>	<u>155.48</u>	<u>146.24</u>	<u>132.58</u>	<u>137.15</u>	<u>144.08</u>	<u>151.00</u>	<u>176.50</u>	<u>190.70</u>	<u>227.58</u>	<u>158.84</u>
Dinajpur	150.70	150.75	159.50	151.00	148.75	133.30	135.12	141.50	146.80	164.25	196.37	223.20	158.44
Rangpur	147.15	144.30	155.20	157.19	151.48	130.00	140.00	143.25	149.60	174.25	189.99	226.95	159.11
Bogra	136.85	147.15	154.87	160.00	151.75	131.40	133.25	141.12	151.70	184.25	183.37	231.60	158.94
Rajshahi	148.06	137.50	147.70	153.48	133.45	132.60	138.37	151.51	155.10	183.75	195.00	231.07	158.97
Pabna	143.30	143.37	156.40	155.75	145.78	135.60	139.00	143.00	151.80	176.00	188.75	225.10	158.74
<u>Khulna</u>	<u>145.02</u>	<u>143.64</u>	<u>153.10</u>	<u>152.80</u>	<u>142.66</u>	<u>134.24</u>	<u>140.63</u>	<u>147.13</u>	<u>158.74</u>	<u>177.03</u>	<u>191.40</u>	<u>231.62</u>	<u>160.28</u>
Kushtia	147.93	145.64	155.00	155.00	145.42	140.46	145.58	148.83	159.87	183.25	192.58	226.00	162.13
Jessore	145.00	145.81	155.58	149.00	144.81	135.70	141.50	157.25	165.60	185.50	202.31	241.50	164.13
Khulna	136.81	134.98	147.31	157.29	137.19	134.98	141.30	142.06	156.02	172.38	189.85	235.84	157.17
Barisal	150.02	144.15	153.10	149.96	136.12	-	141.50	147.25	160.20	176.75	182.50	231.00	161.14
Patuakhali	145.35	147.62	154.50	152.75	149.75	125.80	133.25	140.25	152.00	167.25	189.75	223.75	156.84
<u>Dacca</u>	<u>146.62</u>	<u>146.69</u>	<u>158.46</u>	<u>152.49</u>	<u>141.03</u>	<u>138.36</u>	<u>143.14</u>	<u>149.08</u>	<u>162.55</u>	<u>182.40</u>	<u>192.59</u>	<u>210.66</u>	<u>160.34</u>
Jamalpur													
Mymensingh	147.00	152.50	157.20	152.63	141.52	136.79	143.42	148.13	166.53	190.75	206.19	218.05	163.39
(Mymensingh)	(156.00)	(160.00)	(163.20)	(160.25)	(150.36)	(144.30)	(148.75)	(153.00)	(170.80)	(194.75)	(203.00)	(222.40)	(168.90)
(Kishoreganj)	(138.00)	(145.00)	(151.20)	(145.00)	(132.67)	(129.27)	(138.08)	(143.25)	(162.25)	(186.75)	(209.37)	(213.70)	(157.88)
Tangail	141.50	141.20	153.62	146.25	143.00	136.36	142.87	148.75	162.70	186.75	182.25	212.00	158.10
Dacca	146.64	143.00	158.25	156.50	134.25	138.86	144.09	151.20	159.38	175.65	189.66	180.57	156.50
Faridpur	151.33	150.06	164.77	154.58	145.33	141.41	142.19	148.25	161.60	176.44	192.25	232.00	163.35
<u>Chittagong</u>	<u>151.76</u>	<u>142.09</u>	<u>151.02</u>	<u>145.94</u>	<u>132.42</u>	<u>130.86</u>	<u>141.07</u>	<u>149.02</u>	<u>165.15</u>	<u>170.70</u>	<u>181.21</u>	<u>196.82</u>	<u>155.34</u>
Sylhet	135.00	-	-	-	129.75	132.76	140.00	141.25	162.30	162.50	173.81	190.83	152.02
Comilla	152.21	122.54	156.70	156.00	133.60	132.52	140.06	152.00	172.60	188.00	179.62	175.00	155.07
Noakhali	150.00	146.25	150.00	-	128.00	135.75	150.00	158.33	167.40	167.50	196.25	200.00	159.04
Chittagong	151.60	144.56	140.75	132.81	125.75	125.75	137.06	144.50	160.55	171.75	179.37	200.00	151.20
Chittagong Hill Tracts	170.00	155.00	156.63	149.00	145.00	127.50	138.25	149.00	162.90	163.75	177.00	218.25	159.36
<u>Average</u>	<u>147.18</u>	<u>144.24</u>	<u>154.28</u>	<u>152.31</u>	<u>140.56</u>	<u>133.75</u>	<u>140.36</u>	<u>147.23</u>	<u>159.16</u>	<u>176.35</u>	<u>188.78</u>	<u>217.00</u>	<u>158.61</u>

Source: Ministry of Agriculture

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Table 4.30

BANGLADESH: AVERAGE RETAIL PRICE OF AMAN COARSE RICE BY DISTRICT DURING 1975/76  
(Tk per maund)

District	July	August	September	October	November	December	January	February	March	April	May	June	Average
<u>Rajshahi</u>	<u>216.72</u>	<u>189.68</u>	<u>157.84</u>	<u>140.56</u>	<u>109.20</u>	<u>111.12</u>	<u>116.80</u>	<u>110.72</u>	<u>105.44</u>	<u>107.20</u>	<u>113.60</u>	<u>114.16</u>	<u>132.75</u>
Dinajpur	208.00	183.20	165.60	134.00	116.40	111.20	121.20	108.00	97.20	104.40	102.80	119.60	115.72
Rangpur	208.40	190.80	165.60	138.00	112.80	106.40	112.00	111.20	102.40	107.20	115.20	112.40	131.87
Bogra	208.40	182.80	162.40	136.00	106.00	112.40	116.40	108.00	100.00	106.40	114.40	112.40	130.47
Rajshahi	232.80	192.80	110.00	140.00	99.60	114.40	116.40	112.00	112.00	106.40	114.40	110.00	130.07
Pabna	226.00	198.80	185.60	154.80	111.20	111.20	118.00	114.40	115.60	111.60	121.60	116.40	140.43
<u>Khulna</u>	<u>214.00</u>	<u>195.04</u>	<u>174.88</u>	<u>142.16</u>	<u>110.16</u>	<u>110.24</u>	<u>116.64</u>	<u>114.56</u>	<u>106.32</u>	<u>109.36</u>	<u>119.84</u>	<u>118.32</u>	<u>135.96</u>
Kushtia	230.40	198.40	182.40	160.80	111.20	111.20	123.60	123.60	113.60	113.20	116.80	116.00	141.77
Jessore	232.80	212.80	191.60	130.00	100.40	111.20	118.00	119.60	111.20	112.40	120.00	119.20	139.93
Khulna	206.00	176.80	161.20	139.20	102.80	102.80	110.40	107.20	98.40	102.40	110.40	110.40	112.61
Barisal	194.40	194.40	177.60	141.20	115.20	111.20	115.60	115.20	107.20	110.80	130.00	120.00	136.07
Patuakhali	206.40	192.80	161.60	139.60	121.20	114.80	115.60	107.20	101.20	108.00	122.00	126.00	134.70
<u>Dacca</u>	<u>222.85</u>	<u>208.25</u>	<u>188.07</u>	<u>132.10</u>	<u>112.60</u>	<u>111.45</u>	<u>115.65</u>	<u>115.45</u>	<u>112.35</u>	<u>114.45</u>	<u>122.50</u>	<u>117.85</u>	<u>139.46</u>
Jamalpur													
Mymensingh } (Mymensingh)	(217.20)	(217.60)	(194.40)	(167.60)	(116.00)	(107.60)	(112.80)	(105.60)	(106.00)	(112.80)	(117.60)	(116.00)	(140.93)
(Kishoreganj)	(228.80)	(229.20)	(208.40)	(190.80)	(134.40)	(107.20)	(113.20)	(110.00)	(108.80)	(110.00)	(117.60)	(119.60)	(148.17)
Tangail	220.00	204.80	178.00	108.00	112.00	106.40	111.20	110.40	112.40	116.00	120.80	114.00	134.50
Dacca	227.20	214.80	-	110.00	109.20	120.00	120.80	124.40	118.00	118.40	134.40	121.60	138.07
Faridpur	221.20	190.00	184.80	131.20	104.00	112.00	117.60	119.20	111.60	112.00	117.20	118.00	136.57
<u>Chittagong</u>	<u>211.33</u>	<u>182.60</u>	<u>143.00</u>	<u>138.80</u>	<u>110.56</u>	<u>108.24</u>	<u>117.84</u>	<u>120.80</u>	<u>115.76</u>	<u>116.96</u>	<u>113.52</u>	<u>111.60</u>	<u>132.58</u>
Sylhet	-	-	-	-	99.60	104.00	120.80	120.00	114.40	113.60	107.20	107.20	110.85
Comilla	207.20	-	-	-	95.60	106.80	113.60	118.40	117.20	114.40	117.20	116.00	122.93
Noakhali	-	-	-	-	107.20	114.00	118.00	120.00	117.60	114.40	117.60	-	115.54
Chittagong	217.60	186.80	152.40	131.60	112.80	110.40	122.40	125.60	112.00	116.00	111.20	113.20	134.33
Chittagong Hill Tracts	209.20	178.40	133.60	146.00	137.60	106.00	114.40	120.00	117.60	126.40	114.40	110.00	134.47
<u>Average</u>	<u>216.23</u>	<u>193.89</u>	<u>165.95</u>	<u>138.41</u>	<u>110.63</u>	<u>110.26</u>	<u>116.73</u>	<u>115.38</u>	<u>109.97</u>	<u>111.99</u>	<u>117.37</u>	<u>115.48</u>	<u>135.19</u>

Source: Ministry of Agriculture

Table 4.31

**BANGLADESH: AVERAGE RETAIL PRICE OF AMAN COARSE RICE BY DISTRICT DURING 1976/77**  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>112.96</u>	<u>118.48</u>	<u>118.88</u>	<u>112.40</u>	<u>104.80</u>	<u>99.36</u>	<u>100.08</u>	<u>113.60</u>	<u>126.16</u>	<u>133.80</u>	<u>138.40</u>	<u>153.44</u>	<u>119.11</u>
Dinajpur	115.60	115.20	111.60	110.40	102.80	95.20	108.00	118.80	125.20	-	141.60	160.00	118.58
Rangpur	116.80	133.20	122.00	104.80	113.60	104.00	81.60	112.80	123.60	131.60	134.80	154.00	119.40
Bogra	101.20	116.40	130.00	125.20	102.00	96.00	99.60	103.20	122.80	131.20	137.60	153.20	118.20
Rajshahi	115.20	115.20	116.80	107.60	103.60	100.40	104.40	114.40	128.00	136.00	136.00	144.00	118.47
Pabna	116.00	112.40	114.00	114.00	102.00	101.20	106.80	118.80	131.20	136.40	142.00	156.00	120.90
<u>Khulna</u>	<u>117.92</u>	<u>118.32</u>	<u>114.00</u>	<u>124.80</u>	<u>115.52</u>	<u>104.16</u>	<u>105.36</u>	<u>114.70</u>	<u>125.36</u>	<u>137.36</u>	<u>138.80</u>	<u>156.80</u>	<u>121.01</u>
Kushtia	119.20	118.40	118.00	122.00	111.20	108.00	110.00	120.00	131.20	142.40	140.80	154.40	124.63
Jessore	119.20	122.40	127.60	126.40	117.60	108.80	108.80	112.80	128.00	138.00	142.40	156.40	125.70
Khulna	116.00	115.60	119.60	124.80	114.40	101.60	101.20	-	121.60	133.20	134.00	-	118.20
Barisal	119.20	116.40	121.60	124.80	119.60	101.20	103.20	115.20	124.00	141.20	138.00	159.60	123.67
Patuakhali	116.00	118.80	83.20	126.00	114.80	101.20	103.60	110.80	122.00	132.00	-	-	112.84
<u>Dacca</u>	<u>116.45</u>	<u>117.70</u>	<u>122.27</u>	<u>117.15</u>	<u>110.35</u>	<u>105.05</u>	<u>106.30</u>	<u>120.70</u>	<u>129.15</u>	<u>138.55</u>	<u>138.80</u>	<u>147.25</u>	<u>122.59</u>
Jamalpur	119.00	121.40	126.80	119.40	108.60	99.00	101.20	125.60	126.60	135.80	136.00	145.80	121.17
Mymensingh } (Mymensingh)	(117.20)	(120.80)	(123.60)	(116.40)	(106.00)	(99.20)	(100.00)	(113.60)	(128.00)	(132.80)	(136.00)	(146.80)	(120.03)
(Kishoreganj)	(120.80)	(122.00)	(130.00)	(122.40)	(111.20)	(98.80)	(102.40)	(115.20)	(125.20)	(138.80)	(136.00)	(144.80)	(122.30)
Tangail	108.00	-	120.00	113.20	105.20	102.80	103.20	113.20	128.40	132.00	133.20	139.20	118.04
Dacca	123.20	-	-	115.20	117.60	113.20	112.40	128.00	133.60	143.60	142.80	150.00	127.96
Faridpur	115.60	114.00	120.00	120.80	110.00	105.20	108.40	116.00	128.00	142.80	143.20	154.00	123.17
<u>Chittagong</u>	<u>117.60</u>	<u>115.60</u>	<u>112.60</u>	<u>108.30</u>	<u>108.16</u>	<u>102.08</u>	<u>104.32</u>	<u>115.04</u>	<u>123.36</u>	<u>139.36</u>	<u>139.76</u>	<u>144.24</u>	<u>120.38</u>
Sylhet	115.20	-	-	-	105.60	100.40	112.40	116.80	122.40	148.00	147.60	154.80	124.80
Comilla	124.80	-	-	110.00	108.80	105.60	107.60	121.60	130.80	143.20	140.40	145.60	123.84
Noakhali	112.00	-	-	115.20	106.80	100.80	104.40	117.60	126.40	136.40	140.00	147.20	120.68
Chittagong	116.00	116.00	112.80	110.40	106.00	107.20	103.20	113.20	123.20	133.20	129.60	133.60	117.03
Chittagong Hill Tracts	120.00	115.20	112.40	97.60	113.60	96.40	94.00	106.00	114.00	136.00	141.20	140.00	115.53
<u>Average</u>	<u>116.22</u>	<u>117.90</u>	<u>117.09</u>	<u>115.99</u>	<u>109.67</u>	<u>102.85</u>	<u>103.89</u>	<u>115.82</u>	<u>125.84</u>	<u>137.39</u>	<u>138.96</u>	<u>149.87</u>	<u>120.67</u>

Source: Ministry of Agriculture

ASADD  
Nov. 23, 1979

Table 4.32

BANGLADESH: AVERAGE RETAIL PRICE OF AMAN COARSE RICE BY DISTRICT DURING 1977/78  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>166.96</u>	<u>165.60</u>	<u>161.20</u>	<u>164.40</u>	<u>146.80</u>	<u>140.00</u>	<u>137.60</u>	<u>136.72</u>	<u>140.72</u>	<u>157.84</u>	<u>147.44</u>	<u>148.74</u>	<u>151.22</u>
Dinajpur	180.00	140.40	166.00	161.60	151.60	134.40	138.40	139.20	138.40	147.20	145.60	149.60	149.37
Rangpur	173.60	184.00	155.60	168.80	190.00	125.60	132.80	133.20	138.40	151.60	151.60	154.40	154.97
Bogra	174.80	176.80	176.00	168.80	120.00	134.00	132.00	132.40	136.80	146.00	140.40	138.80	148.07
Rajshahi	132.40	158.80	151.20	160.80	137.60	174.80	144.40	142.00	140.00	150.00	149.60	153.20	149.57
Pabna	174.00	168.00	157.20	162.00	134.80	131.20	140.40	136.80	150.00	194.40	150.00	150.40	154.10
<u>Khulna</u>	<u>181.04</u>	<u>178.88</u>	<u>177.10</u>	<u>171.20</u>	<u>139.92</u>	<u>137.60</u>	<u>140.24</u>	<u>137.92</u>	<u>142.96</u>	<u>154.00</u>	<u>147.68</u>	<u>153.68</u>	<u>154.25</u>
Kushtia	177.20	190.00	-	-	140.80	140.00	149.60	144.80	147.60	160.00	157.20	155.20	156.24
Jessore	172.40	163.20	167.20	170.80	142.80	135.20	142.00	138.40	142.40	156.80	150.40	163.20	153.73
Khulna	184.80	165.20	167.20	163.60	136.00	128.40	137.20	132.40	138.80	149.20	142.00	147.20	149.33
Barisal	180.40	178.00	180.00	172.80	138.00	132.40	137.60	136.00	146.00	154.00	146.80	154.80	154.73
Patuakhali	190.40	198.00	194.00	177.60	142.00	132.00	134.80	138.00	140.00	150.00	142.00	148.00	157.23
<u>Dacca</u>	<u>170.60</u>	<u>160.15</u>	<u>166.33</u>	<u>158.70</u>	<u>133.20</u>	<u>134.95</u>	<u>143.20</u>	<u>145.35</u>	<u>147.65</u>	<u>159.25</u>	<u>158.30</u>	<u>151.65</u>	<u>152.12</u>
Jamalpur													
Mymensingh	168.40	170.20	168.60	166.00	129.60	134.20	140.80	141.40	149.80	159.80	172.40	144.60	153.82
(Mymensingh)	(171.60)	(175.20)	(173.20)	(168.80)	(130.00)	(135.60)	(143.60)	(141.60)	(146.40)	(158.00)	(156.80)	(149.20)	(154.17)
(Kishoreganj)	(165.20)	(165.20)	(164.00)	(163.20)	(129.20)	(132.80)	(138.00)	(141.20)	(153.20)	(161.60)	(188.00)	(140.00)	(153.47)
Tangail	158.00	156.80	164.00	160.80	141.60	132.00	142.00	143.20	146.80	155.20	153.20	152.00	150.47
Dacca	170.00	146.00	-	140.00	130.00	139.20	147.60	154.80	154.00	164.80	157.60	154.80	150.80
Faridpur	186.00	167.60	166.40	168.00	131.60	134.40	142.40	142.00	140.00	157.20	150.00	155.20	153.40
<u>Chittagong</u>	<u>154.48</u>	<u>153.80</u>	<u>156.40</u>	<u>148.20</u>	<u>133.10</u>	<u>128.72</u>	<u>135.28</u>	<u>141.92</u>	<u>155.60</u>	<u>167.84</u>	<u>163.28</u>	<u>166.96</u>	<u>150.21</u>
Sylhet	144.80	138.40	146.80	153.20	137.20	130.00	142.40	141.20	154.40	160.40	156.40	159.20	147.03
Comilla	152.40	-	-	-	133.60	130.80	135.60	138.80	152.80	164.40	158.40	163.20	147.78
Noakhali	165.60	163.20	162.80	154.80	126.80	130.00	136.00	136.40	156.80	164.80	163.60	167.20	152.33
Chittagong	149.60	151.20	146.00	140.80	136.80	130.40	136.40	154.80	156.40	174.40	160.40	164.40	150.13
Chittagong Hill Tracts	160.00	162.40	170.00	144.00	131.20	122.40	126.00	138.40	157.60	175.20	177.60	180.80	153.80
<u>Average</u>	<u>168.15</u>	<u>165.46</u>	<u>164.94</u>	<u>160.85</u>	<u>138.53</u>	<u>134.28</u>	<u>138.86</u>	<u>140.22</u>	<u>146.68</u>	<u>159.76</u>	<u>153.96</u>	<u>155.59</u>	<u>151.94</u>

Source: Ministry of Agriculture

ASADD  
Nov. 23, 1979

Table 4.33

BANGLADESH: AVERAGE RETAIL PRICE OF AMAN COARSE RICE BY DISTRICT DURING 1978/79  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>149.60</u>	<u>149.04</u>	<u>162.40</u>	<u>159.36</u>	<u>156.56</u>	<u>137.04</u>	<u>139.52</u>	<u>146.24</u>	<u>153.52</u>	<u>179.36</u>	<u>192.16</u>	<u>229.28</u>	<u>162.96</u>
Dinaipur	154.00	156.80	165.60	158.00	152.80	140.80	140.00	146.00	151.20	164.40	196.40	223.20	162.43
Rangpur	153.60	145.20	168.40	164.40	156.80	136.40	138.80	138.40	153.20	190.80	190.00	226.80	163.34
Bogra	144.00	152.40	160.80	165.60	181.20	140.00	138.40	146.80	156.80	182.00	190.40	240.00	166.53
Rajshahi	148.00	142.40	154.00	148.00	141.20	138.40	138.40	151.60	155.20	183.60	195.20	231.20	160.60
Pabna	148.40	148.40	163.20	160.80	150.80	139.60	142.00	148.40	151.20	176.00	188.80	225.20	161.90
<u>Khulna</u>	<u>151.33</u>	<u>150.56</u>	<u>161.44</u>	<u>161.04</u>	<u>148.72</u>	<u>139.04</u>	<u>141.76</u>	<u>151.44</u>	<u>163.52</u>	<u>184.88</u>	<u>201.92</u>	<u>242.08</u>	<u>166.79</u>
Kushtia	152.80	146.40	158.00	162.00	150.00	145.20	156.80	154.00	164.80	191.20	201.60	236.00	168.23
Jessore	149.20	152.80	162.00	160.00	150.00	140.80	146.80	158.00	166.00	190.00	210.00	250.00	169.63
Khulna	-	141.60	152.80	163.60	142.00	140.80	120.80	148.40	159.20	177.20	200.40	259.20	164.18
Barisal	157.60	158.00	174.40	159.60	145.60	136.40	144.40	148.80	163.60	181.20	199.60	231.20	166.70
Patuakhali	152.00	154.00	160.00	160.00	156.00	132.00	140.00	148.00	164.00	184.80	198.00	234.00	165.23
<u>Dacca</u>	<u>155.20</u>	<u>154.05</u>	<u>165.25</u>	<u>158.70</u>	<u>146.55</u>	<u>143.15</u>	<u>141.50</u>	<u>155.10</u>	<u>170.85</u>	<u>191.90</u>	<u>202.65</u>	<u>229.95</u>	<u>168.23</u>
Jamalpur													
Mymensingh	154.40	159.00	163.40	158.80	147.40	141.80	146.00	150.40	173.80	197.60	213.80	224.20	170.52
(Mymensingh)	(164.00)	(168.00)	(171.20)	(167.60)	(156.00)	(147.60)	( - )	(150.00)	(177.60)	(204.00)	(212.40)	(231.60)	(177.27)
(Kishoreganj)	(144.80)	(150.00)	(155.60)	(150.00)	(138.80)	(136.00)	(146.00)	(150.80)	(170.00)	(191.20)	(215.20)	(216.80)	(163.77)
Tangail	147.60	150.00	159.60	156.00	151.20	144.00	149.20	154.80	169.20	192.00	195.20	226.00	166.23
Dacca	158.80	154.80	170.00	160.00	147.60	148.40	123.20	161.60	174.40	193.20	201.60	222.40	168.00
Faridpur	160.00	152.40	168.00	160.00	140.00	138.40	147.60	153.60	166.00	184.80	200.00	247.20	168.17
<u>Chittagong</u>	<u>152.96</u>	<u>155.92</u>	<u>158.90</u>	<u>155.80</u>	<u>138.56</u>	<u>136.80</u>	<u>149.44</u>	<u>155.30</u>	<u>178.32</u>	<u>180.40</u>	<u>191.68</u>	<u>207.44</u>	<u>163.63</u>
Sylhet	137.60	140.00	-	153.60	134.40	136.40	146.40	149.60	202.80	174.40	180.00	200.00	159.56
Comilla	156.80	154.00	166.80	-	140.80	140.00	154.80	158.80	172.80	194.80	192.80	190.00	165.67
Noakhali	160.00	156.00	160.00	171.20	140.00	139.20	148.80	-	174.80	172.40	200.00	212.40	166.80
Chittagong	160.40	158.80	148.00	142.40	142.80	136.80	149.60	154.00	171.20	185.60	195.60	210.00	162.93
Chittagong Hill Tracts	150.00	170.80	160.80	156.00	134.80	131.60	147.60	158.80	170.00	174.80	190.00	224.80	164.17
<u>Average</u>	<u>152.51</u>	<u>152.31</u>	<u>161.99</u>	<u>158.89</u>	<u>147.65</u>	<u>139.32</u>	<u>143.14</u>	<u>151.67</u>	<u>175.57</u>	<u>183.73</u>	<u>196.81</u>	<u>227.05</u>	<u>165.31</u>

Source: Ministry of Agriculture

ASADD  
Nov. 23, 1979

Table 4.34

BANGLADESH: AVERAGE RETAIL PRICE OF COARSE RICE BY DISTRICT DURING 1974/75  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>142.75</u>	<u>164.13</u>	<u>190.34</u>	<u>240.78</u>	<u>179.49</u>	<u>154.29</u>	<u>175.13</u>	<u>205.43</u>	<u>236.71</u>	<u>227.19</u>	<u>209.64</u>	<u>199.02</u>	<u>193.74</u>
Dina jpur	142.00	186.25	201.87	244.00	154.38	123.75	131.00	165.67	226.25	209.00	190.00	195.00	180.76
Rangpur	147.90	167.12	177.44	244.80	162.37	126.43	136.45	177.56	227.44	221.25	191.19	182.00	180.16
Bogra	131.40	144.37	182.25	232.00	172.25	150.63	164.60	210.62	237.75	230.50	213.12	197.50	188.92
Rajshahi	146.45	161.06	189.50	233.10	190.31	160.63	194.60	218.94	238.37	219.20	217.62	201.87	197.64
Pabna	146.00	161.87	200.62	250.00	218.12	210.00	249.00	254.37	253.75	256.00	236.25	218.75	221.23
<u>Khulna</u>	<u>135.76</u>	<u>162.43</u>	<u>190.42</u>	<u>238.64</u>	<u>193.79</u>	<u>158.36</u>	<u>201.49</u>	<u>218.71</u>	<u>250.18</u>	<u>240.24</u>	<u>225.31</u>	<u>209.45</u>	<u>202.07</u>
Kushtia	140.73	153.66	189.50	225.86	201.83	193.33	246.00	250.33	259.99	252.60	235.00	214.49	213.61
Jessore	135.91	154.31	184.19	229.25	200.37	182.81	230.70	244.00	262.50	257.20	250.68	221.25	212.76
Khulna	133.46	157.16	183.33	227.13	189.67	144.67	198.46	210.00	240.33	224.73	206.17	205.66	193.40
Barisal	135.70	173.25	203.81	259.95	195.94	151.75	205.70	220.12	252.06	236.77	215.94	203.12	204.51
Patuakhali	133.00	173.75	191.25	251.00	181.12	119.25	126.60	169.12	236.00	229.90	218.75	202.75	186.04
<u>Dacca</u>	<u>131.43</u>	<u>165.72</u>	<u>204.35</u>	<u>252.59</u>	<u>218.55</u>	<u>208.27</u>	<u>250.59</u>	<u>264.33</u>	<u>268.38</u>	<u>246.68</u>	<u>212.87</u>	<u>188.64</u>	<u>217.70</u>
Jamalpur													
Mymensingh	122.33	163.25	201.04	242.45	198.88	159.39	194.12	245.50	269.00	227.52	182.65	173.43	198.30
(Mymensingh)	-	-	-	-	-	-	-	-	-	-	-	-	-
(Kishoreganj)	-	-	-	-	-	-	-	-	-	-	-	-	-
Tangail	129.20	162.25	210.75	259.20	212.50	212.50	252.00	267.50	256.25	247.00	236.00	168.25	217.78
Dacca	132.70	163.25	193.62	254.90	236.50	239.75	289.25	282.50	275.31	255.95	206.87	197.62	227.35
Faridpur	141.50	174.12	212.00	253.80	226.31	221.44	267.00	261.81	272.94	256.25	225.94	215.25	227.36
<u>Chittagong</u>	<u>123.27</u>	<u>161.39</u>	<u>181.57</u>	<u>230.39</u>	<u>208.21</u>	<u>192.74</u>	<u>236.54</u>	<u>272.54</u>	<u>288.45</u>	<u>258.36</u>	<u>204.51</u>	<u>206.58</u>	<u>213.71</u>
Sylhet	122.80	161.56	191.44	253.10	220.31	186.88	205.30	268.19	279.94	221.45	143.37	152.00	200.53
Comilla	134.13	169.74	198.33	260.13	234.00	223.92	279.13	295.58	292.91	248.10	191.04	196.16	226.93
Noakhali	134.90	174.37	201.37	256.00	211.25	187.88	243.00	276.87	296.37	253.50	216.25	206.00	221.48
Chittagong	117.80	165.62	170.62	196.40	195.50	192.50	250.60	258.00	273.12	261.40	233.12	197.50	209.35
Chittagong Hill Tracts	106.73	135.66	146.08	186.33	180.00	172.50	204.67	264.08	299.92	307.33	238.75	281.25	210.28
<u>Average</u>	<u>133.40</u>	<u>163.30</u>	<u>191.00</u>	<u>239.97</u>	<u>199.03</u>	<u>176.84</u>	<u>214.11</u>	<u>238.99</u>	<u>260.54</u>	<u>242.93</u>	<u>213.09</u>	<u>201.57</u>	<u>206.23</u>

Source: Ministry of Food

ASADD  
Nov. 24, 1979

Table 4.35

BANGLADESH: AVERAGE RETAIL PRICE OF COARSE RICE BY DISTRICT DURING 1975/76  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>201.83</u>	<u>162.19</u>	<u>132.24</u>	<u>112.55</u>	<u>98.17</u>	<u>105.66</u>	<u>115.85</u>	<u>110.09</u>	<u>102.02</u>	<u>104.12</u>	<u>111.40</u>	<u>104.81</u>	<u>121.74</u>
Dinaipur	204.00	158.75	140.62	103.50	99.33	109.60	115.75	107.62	95.00	101.25	108.12	109.30	121.07
Rangpur	194.90	152.00	128.19	115.00	97.12	101.20	112.62	106.62	99.70	104.72	113.88	104.75	119.23
Bogra	193.00	160.00	135.75	117.00	94.37	101.80	113.75	109.25	106.40	101.94	112.13	98.00	120.28
Rajshahi	213.25	183.94	123.50	109.75	96.92	103.70	117.25	112.44	102.10	103.06	108.62	104.00	123.21
Pabna	204.00	156.25	133.12	117.50	103.12	112.00	119.88	114.50	106.90	109.62	114.25	108.00	124.93
<u>Khulna</u>	<u>204.31</u>	<u>162.41</u>	<u>134.40</u>	<u>120.63</u>	<u>98.85</u>	<u>104.18</u>	<u>112.54</u>	<u>110.85</u>	<u>102.87</u>	<u>104.49</u>	<u>111.58</u>	<u>108.40</u>	<u>123.13</u>
Kushtia	218.53	161.67	128.00	119.13	98.00	109.87	120.75	118.29	110.27	109.42	117.91	110.60	126.87
Jessore	222.75	173.25	137.19	121.00	95.33	104.00	115.37	114.19	110.85	107.75	115.37	110.90	127.33
Khulna	198.52	153.33	133.50	112.67	89.66	98.53	105.08	103.58	93.30	98.58	102.12	100.27	115.76
Barisal	192.25	158.81	144.06	123.35	103.62	104.60	111.00	109.19	102.25	101.94	106.00	105.75	121.90
Patuakhali	189.50	165.00	129.25	127.00	107.62	103.90	110.50	109.00	97.70	104.75	116.50	114.50	123.77
<u>Dacca</u>	<u>190.85</u>	<u>150.88</u>	<u>149.92</u>	<u>127.78</u>	<u>106.13</u>	<u>105.33</u>	<u>114.86</u>	<u>112.08</u>	<u>108.48</u>	<u>106.58</u>	<u>101.31</u>	<u>99.22</u>	<u>122.78</u>
Jamalpur													
Mymensingh } (Mymensingh) (Kishoreganj)	165.40	156.56	145.48	132.23	101.94	97.15	111.37	107.25	103.32	94.87	92.19	92.15	116.63
Tangail	185.60	120.25	151.25	129.80	111.00	106.00	112.50	109.00	106.40	105.75	95.00	95.60	119.01
Dacca	202.00	165.02	151.56	125.45	111.87	109.80	121.37	119.12	116.20	117.62	105.44	100.25	128.81
Faridpur	210.40	161.69	151.37	123.65	99.69	108.35	114.19	112.94	108.00	108.38	112.62	108.87	126.68
<u>Chittagong</u>	<u>187.69</u>	<u>169.47</u>	<u>138.93</u>	<u>120.03</u>	<u>106.65</u>	<u>102.27</u>	<u>111.67</u>	<u>115.59</u>	<u>113.10</u>	<u>109.49</u>	<u>99.94</u>	<u>97.21</u>	<u>122.91</u>
Sylhet	189.50	156.31	128.75	114.15	100.87	95.70	114.87	115.06	110.55	98.25	88.81	89.50	116.86
Comilla	195.47	159.96	155.75	125.93	103.08	104.73	112.75	115.33	115.60	110.50	106.83	104.23	125.85
Noakhali	214.30	175.63	161.87	139.00	118.75	106.00	115.25	116.75	114.50	113.37	109.75	111.30	133.04
Chittagong	191.50	182.12	129.12	112.40	111.37	106.30	111.75	114.12	106.20	107.00	92.25	86.00	120.84
Chittagong Hill Tracts	147.66	173.33	119.17	108.66	99.17	98.60	103.75	116.67	118.67	118.34	102.08	95.00	116.76
<u>Average</u>	<u>196.45</u>	<u>161.78</u>	<u>138.29</u>	<u>119.85</u>	<u>102.25</u>	<u>104.31</u>	<u>113.67</u>	<u>112.15</u>	<u>106.52</u>	<u>106.16</u>	<u>106.31</u>	<u>102.58</u>	<u>122.57</u>

Source: Ministry of Food

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Table 4.36

**BANGLADESH: AVERAGE RETAIL PRICE OF COARSE RICE BY DISTRICT DURING 1976/77**  
(Tk per maund)

District	July	August	September	October	November	December	January	February	March	April	May	June	Average
<u>Rajshahi</u>	<u>104.36</u>	<u>101.90</u>	<u>100.32</u>	<u>103.55</u>	<u>102.60</u>	<u>98.29</u>	<u>101.46</u>	<u>108.76</u>	<u>119.41</u>	<u>128.71</u>	<u>132.42</u>	<u>141.51</u>	<u>112.44</u>
Dinajpur	110.00	114.37	113.00	115.62	98.75	98.75	104.75	112.50	119.63	125.75	130.50	151.25	116.24
Rangpur	98.62	102.75	100.10	104.31	102.62	98.13	94.94	107.12	118.62	128.81	141.31	145.18	111.88
Bogra	104.12	89.38	95.50	95.00	87.62	96.00	101.00	104.37	115.88	126.62	130.25	148.62	107.86
Rajshahi	106.19	103.87	95.10	98.44	125.00	98.81	101.75	107.81	122.81	131.50	128.93	143.75	113.66
Pabna	102.87	99.12	97.90	104.37	99.00	99.75	104.87	112.00	120.12	130.87	131.12	148.75	112.56
<u>Khulna</u>	<u>102.24</u>	<u>96.34</u>	<u>101.79</u>	<u>110.47</u>	<u>109.15</u>	<u>103.01</u>	<u>103.60</u>	<u>109.32</u>	<u>115.69</u>	<u>132.11</u>	<u>130.65</u>	<u>147.33</u>	<u>113.48</u>
Kushtia	107.50	101.67	110.00	113.17	111.67	110.42	111.25	115.50	116.75	132.41	130.00	141.41	116.81
Jessore	112.87	99.37	102.75	113.06	114.12	107.81	110.06	112.06	119.75	135.37	134.87	154.00	118.01
Khulna	101.91	96.33	99.53	111.33	107.66	95.66	96.33	103.83	112.50	127.16	129.08	147.83	110.76
Barisal	94.06	90.69	100.25	107.81	109.06	98.31	98.00	106.69	116.19	134.25	131.31	146.31	111.08
Patuakhali	94.87	93.62	96.40	107.00	103.25	102.87	102.37	108.50	113.25	131.37	128.00	147.12	110.72
<u>Dacca</u>	<u>99.09</u>	<u>99.91</u>	<u>103.43</u>	<u>110.75</u>	<u>106.56</u>	<u>100.89</u>	<u>104.00</u>	<u>113.91</u>	<u>121.92</u>	<u>130.48</u>	<u>129.31</u>	<u>132.93</u>	<u>112.77</u>
Jamalpur													
Mymensingh } (Mymensingh) (Kishoreganj)	94.31	94.50	100.80	104.69	101.56	91.25	97.20	111.71	120.05	120.16	116.68	125.50	106.53
Tangail	88.00	91.50	98.00	108.50	103.00	97.00	104.00	114.00	123.00	129.50	133.50	124.50	109.54
Dacca	108.44	111.97	107.25	115.37	114.44	111.06	109.66	117.69	122.38	135.37	131.31	135.00	118.33
Faridpur	105.62	101.67	107.65	114.44	107.25	104.25	105.13	112.25	122.25	136.87	135.75	146.73	116.66
<u>Chittagong</u>	<u>106.25</u>	<u>103.00</u>	<u>99.99</u>	<u>103.94</u>	<u>101.72</u>	<u>97.37</u>	<u>98.99</u>	<u>109.23</u>	<u>113.86</u>	<u>129.76</u>	<u>121.53</u>	<u>121.88</u>	<u>108.96</u>
Sylhet	106.56	99.44	97.40	99.63	103.44	93.00	96.31	110.06	113.88	130.81	116.00	122.18	107.39
Comilla	109.50	99.88	101.87	111.68	111.30	104.98	106.05	115.25	123.08	134.66	125.58	135.00	114.90
Noakhali	110.00	98.00	104.60	111.87	107.25	99.94	102.62	110.65	116.71	130.62	121.62	133.37	112.27
Chittagong	93.50	98.50	95.50	102.62	97.50	100.62	99.38	107.12	105.75	123.12	121.12	111.75	104.71
Chittagong Hill Tracts	111.67	119.16	100.60	93.92	89.12	88.33	90.58	103.08	109.90	129.58	123.33	107.08	105.53
<u>Average</u>	<u>103.19</u>	<u>99.78</u>	<u>101.26</u>	<u>106.99</u>	<u>104.93</u>	<u>99.84</u>	<u>101.91</u>	<u>110.12</u>	<u>117.50</u>	<u>130.25</u>	<u>128.43</u>	<u>137.65</u>	<u>111.87</u>

Source: Ministry of Food

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Table 4.37

BANGLADESH: AVERAGE RETAIL PRICE OF COARSE RICE DURING 1977/78  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	<u>151.89</u>	<u>131.68</u>	<u>130.57</u>	<u>130.15</u>	<u>128.69</u>	<u>126.86</u>	<u>131.51</u>	<u>132.89</u>	<u>134.19</u>	<u>144.76</u>	<u>141.33</u>	<u>138.90</u>	<u>135.29</u>
Dinajpur	160.00	130.50	125.00	128.37	129.75	129.00	132.50	133.38	135.00	145.75	142.50	146.00	136.48
Rangpur	149.92	136.10	137.93	137.25	132.50	121.81	128.68	133.31	133.75	143.81	148.30	145.56	137.41
Bogra	144.37	122.90	123.37	120.87	123.87	123.87	127.12	128.63	130.90	142.88	139.10	133.75	130.14
Rajshahi	154.06	132.90	130.18	131.50	128.83	131.64	135.12	134.75	134.40	147.25	136.55	130.94	133.43
Pabna	151.12	136.00	136.37	132.75	128.50	128.00	134.12	134.98	136.90	144.13	140.20	138.25	136.73
<u>Khulna</u>	<u>158.56</u>	<u>140.30</u>	<u>143.00</u>	<u>142.12</u>	<u>129.87</u>	<u>128.00</u>	<u>133.93</u>	<u>131.21</u>	<u>136.02</u>	<u>146.20</u>	<u>141.46</u>	<u>138.42</u>	<u>139.09</u>
Kushtia	157.08	130.26	140.68	138.83	129.50	131.16	139.99	136.84	139.94	148.67	144.33	141.33	139.88
Jessore	158.25	141.10	142.18	140.39	132.81	131.81	140.56	137.44	138.65	153.31	147.20	146.50	142.52
Khulna	162.00	147.46	141.41	141.08	128.25	126.08	131.00	124.00	134.00	143.33	136.13	132.50	137.27
Barisal	153.62	140.90	146.37	145.31	124.81	123.87	130.25	130.13	136.00	146.19	139.25	132.00	137.39
Patuakhali	161.87	141.80	144.37	145.00	134.00	127.00	127.87	127.63	131.50	139.50	140.40	139.75	138.39
<u>Dacca</u>	<u>142.38</u>	<u>135.36</u>	<u>142.04</u>	<u>138.79</u>	<u>128.65</u>	<u>126.54</u>	<u>136.37</u>	<u>136.95</u>	<u>142.30</u>	<u>148.90</u>	<u>134.28</u>	<u>131.53</u>	<u>137.01</u>
Jamalpur	135.00	132.90	137.87	132.93	125.62	124.36	130.81	132.44	137.55	143.42	132.05	128.38	132.78
Mymensingh }													
Tangail	129.25	127.00	138.12	137.25	127.75	125.00	134.00	137.50	140.40	147.50	129.20	122.50	132.96
Dacca	148.98	136.40	145.15	142.90	131.05	127.76	140.55	139.05	146.07	153.06	136.70	134.45	140.14
Faridpur	156.30	145.75	146.12	142.06	130.18	129.05	140.10	138.80	145.16	151.60	139.16	140.80	142.09
<u>Chittagong</u>	<u>127.29</u>	<u>123.97</u>	<u>129.40</u>	<u>130.05</u>	<u>125.22</u>	<u>121.59</u>	<u>129.09</u>	<u>131.27</u>	<u>146.97</u>	<u>156.76</u>	<u>143.77</u>	<u>142.59</u>	<u>134.00</u>
Sylhet	126.00	119.90	130.31	137.50	135.25	124.75	133.25	134.17	149.80	142.06	122.20	129.25	132.04
Comilla	141.20	133.06	142.08	140.25	128.91	123.00	131.75	134.17	146.67	157.75	141.47	139.75	138.34
Noakhali	142.12	133.50	138.25	135.32	123.12	125.12	132.62	129.75	149.90	160.50	153.90	154.88	140.75
Chittagong	112.12	122.10	119.16	122.50	118.58	117.08	123.33	129.68	144.40	159.83	141.13	130.58	128.38
Chittagong Hill Tracts	115.00	111.33	117.22	114.58	120.25	118.00	124.51	128.59	144.06	163.67	160.13	158.50	131.32
<u>Average</u>	<u>145.17</u>	<u>132.73</u>	<u>135.90</u>	<u>135.09</u>	<u>128.08</u>	<u>125.70</u>	<u>132.53</u>	<u>137.53</u>	<u>138.16</u>	<u>149.17</u>	<u>140.52</u>	<u>138.72</u>	<u>136.23</u>

Source: Ministry of Food

ASADD  
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Table 4.38

BANGLADESH: AVERAGE RETAIL PRICE OF COARSE RICE DURING 1978/79  
(Tk per maund)

<u>District</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Average</u>
<u>Rajshahi</u>	127.37	127.68	134.29	135.57	135.58	132.39	135.70	141.05	149.48	169.37	178.79	209.73	147.92
Dinajpur	121.75	130.70	135.75	139.62	135.90	130.12	133.90	139.12	145.62	165.88	185.30	214.00	148.14
Rangpur	139.87	136.33	138.87	140.56	135.50	130.62	133.20	136.43	145.75	165.64	182.45	211.56	149.73
Bogra	117.75	116.50	129.00	127.87	129.80	131.75	135.80	142.25	151.25	165.88	175.60	205.63	144.09
Rajshahi	126.12	122.65	130.75	132.56	130.70	132.73	136.60	142.68	152.68	174.94	176.40	210.06	147.41
Pabna	131.37	132.20	137.06	137.25	136.00	136.75	139.00	144.75	152.12	174.50	174.20	207.38	150.22
<u>Khulna</u>	132.20	127.34	138.89	141.31	133.79	133.79	137.71	143.08	152.39	167.86	182.60	210.11	150.09
Kushtia	133.91	129.40	141.49	142.75	136.59	137.08	142.40	146.66	157.83	178.50	182.52	215.25	153.53
Jessore	143.04	134.40	141.50	144.93	135.95	137.37	139.85	143.50	153.51	173.69	191.50	221.00	155.02
Khulna	130.00	130.93	143.58	146.08	137.53	138.68	142.60	145.53	152.50	168.66	183.33	226.34	153.80
Barisal	126.43	124.80	133.37	133.93	129.78	128.93	134.20	148.93	151.62	162.81	174.85	207.81	146.46
Patuakhali	127.62	117.20	134.50	138.87	129.10	126.87	129.50	131.00	146.50	155.63	180.80	182.13	141.65
<u>Dacca</u>	127.02	128.67	139.17	136.82	131.43	133.66	139.79	145.54	159.07	170.32	170.46	194.30	153.13
Jamalpur	125.89	127.65	135.18	133.81	130.45	131.25	136.20	139.44	155.37	168.00	163.00	185.00	172.00
Mymensingh	119.43	123.00	137.50	135.00	132.80	137.50	141.40	149.75	163.25	180.25	168.00	186.25	147.84
Tangail	131.90	131.00	140.80	139.80	129.44	132.59	142.02	146.62	160.75	172.45	175.95	210.87	151.18
Dacca	130.85	133.04	143.20	138.65	133.04	133.30	139.52	146.35	156.90	167.45	177.80	206.70	150.57
<u>Faridpur</u>													
<u>Chittagong</u>	133.23	131.08	132.39	131.12	125.18	128.60	137.65	146.33	160.22	163.22	166.89	195.79	145.98
Sylhet	121.50	122.75	126.31	130.93	126.45	131.68	139.25	146.75	159.18	148.88	154.45	184.25	141.03
Comilla	127.83	125.20	132.25	129.58	124.40	129.58	139.86	147.08	156.33	166.91	167.33	205.83	146.02
Noakhali	138.25	130.80	136.12	132.75	128.60	132.82	141.70	150.88	169.00	173.50	179.60	218.88	152.74
Chittagong	129.50	131.33	130.17	133.99	122.19	122.66	131.73	140.75	152.75	155.83	166.66	183.75	141.78
Chittagong Hill Tracts	149.08	145.33	137.09	128.33	124.26	126.24	135.73	146.17	163.83	171.00	166.40	186.25	148.31
<u>Average</u>	<u>130.11</u>	<u>128.70</u>	<u>136.03</u>	<u>136.17</u>	<u>130.97</u>	<u>132.03</u>	<u>137.60</u>	<u>143.92</u>	<u>155.09</u>	<u>167.69</u>	<u>174.69</u>	<u>202.48</u>	<u>149.28</u>

Source: Ministry of Food

ASADD  
Nov. 26, 1979

Table 5.1

BANGLADESH: FOODGRAIN PROCUREMENT PRICES, 1969-1979  
(in Taka per maund)

Year	Effective Date /a	Rice Paddy						Wheat	
		Aus		Aman			Boro /b		
		Paddy	Rice	Paddy	Coarse Rice	Medium Rice	Paddy	Rice	
1969/70	Jan. 1, 1970 /c	---	---	18.00R 19.00B	29.41R 30.96B	29.79R 31.37B	---	---	---
1970/71	Jan. 1, 1971	---	---	...	...	...	---	---	---
1971/72	Jan 15, 1972 /d	---	---	23.00	37.40	37.85	---	---	---
1972/73	Dec. 14, 1972	---	---	33.00	53.00	54.00	---	---	---
1973/74	Nov. 15, 1973	---	---	45.0	71.69	72.63	---	---	---
	Jan. 2, 1974 /e	---	---	45.0 + T	71.69 + T	72.63 + T	---	---	---
1974/75	Nov. 15, 1974 /f	---	---	74.0 + 3.0	118.00 + 3.0	120.0 + 3.0	---	---	---
	Apr. 21, 1975	---	---	...	...	...	74.0 + 3.0	118.0 + 3.0	---
1975/76	Aug. 1, 1975	74.0 + 3.0	118.0 + 3.0	...	...	...	...	...	...
	Apr. 1, 1976	...	...	...	...	...	...	...	72.0 + 3.0
1976/77	Sept. 14, 1976	70.0 + 3.0	112.0 + 3.0	...	...	...	...	...	...
	Feb. 19, 1977 /g	...	...	74.0 + 4.0	118.0 + 4.0	120.0 + 4.0	...	...	...
	Apr. 1, 1977	...	...	...	...	...	...	...	74.0 + 4.0
	May 1, 1977	...	...	...	...	...	70.0 + 4.0	112.0 + 4.0	...
1977/78	Aug. 1, 1977	70.0 + 4.0	112.0 + 4.0	...	...	...	...	...	...
	Nov. 15, 1977	...	...	80.0 + 4.0	128.0 + 4.0	130.0 + 4.0	...	...	80.0 + 4.0
	May 1, 1978	...	...	...	...	...	80.0 + 4.0	128.0 + 4.0	...
1978/79	Aug. 1, 1978	80.0 + 4.0	128.0 + 4.0	...	...	...	...	...	...
	Apr. 5, 1979	...	...	...	...	...	...	...	86.0 + 4.0
	May 2, 1979	...	...	...	...	...	86.0 + 4.0	136.0 + 4.0	...
1979/80	Nov. 15, 1979	...	...	96.0 + 4.0	154.0 + 4.0	.. /h	...	...	...
	Nov. 15, 1979 /i	105.0 + 5.0	165.0 + 5.0	105.0 + 5.0	165.0 + 5.0	..	105.0 + 5.0	165.0 + 5.0	105.0 + 5.0

--- = No procurement  
.. = Not applicable  
... = No price change

R = Regular  
B = 5-mile border belt  
T = Transport Bonus (variable; see footnote e).

/a The announcement of procurement prices is usually (although not always) made prior to sowing/planting, while the effective date generally denotes the date when government purchases at the announced prices will commence.

/b Prices for IRRI are set equal to those for Boro.

/c Different procurement prices were set for the 5-mile border belt than for the rest of the country in order to encourage procurement and discourage smuggling into India.

/d The procurement price differential for the border belt was eliminated effective Jan. 15, 1972.

/e Effective January 2, 1974, a transport bonus was paid to farmers and traders delivering grains to the purchasing centers. The amount of the bonus depended on the distance travelled to reach the center: Paisa 50 for up to 5 miles, Paisa 75 for 5-10 miles, and Taka 1 for over 10 miles.

/f The variable Transport Bonus was abolished and replaced by a single uniform Transport Bonus of Taka 3, effective with the procurement price increase of November 15, 1974.

/g Effective February 19, 1977, the Transport Bonus was increased to Taka 4.

/h The higher price quotation for medium quality rice was abolished effective November 15, 1979.

/i The Government changed the previously announced procurement prices on November 11, i.e., before they became effective.

Source: Ministry of Food

Table 5.2

BANGLADESH: PROCUREMENT OF FOODGRAINS BY DISTRICT (SUMMARY)  
(in long tons of rice equivalent a/)

<u>Division/District</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
<u>Rajshahi</u>	<u>73,130</u>	<u>196,813</u>	<u>175,009</u>	<u>236,803</u>	<u>164,580</u>
Dinajpur	34,213	79,233	75,160	89,458	65,859
Rangpur	16,252	41,990	32,675	51,419	20,185
Bogra	8,368	23,749	19,944	26,676	19,320
Rajshahi	13,686	43,999	42,352	65,200	54,658
Pabna	611	7,842	4,878	4,050	4,558
<u>Khulna</u>	<u>33,428</u>	<u>87,535</u>	<u>44,653</u>	<u>111,259</u>	<u>40,776</u>
Kushtia	1,066	8,878	3,079	2,188	3,106
Jessore	1,733	14,827	3,074	7,793	5,652
Khulna	10,511	21,778	10,789	15,016	2,118
Barisal	4,029	15,776	13,627	30,310	11,318
Patuakhali	16,089	26,276	14,084	55,952	18,582
<u>Dacca</u>	<u>9,593</u>	<u>63,131</u>	<u>41,213</u>	<u>90,305</u>	<u>64,220</u>
Jamalpur <u>b/</u>	} 8,828	} 52,557	} 37,898	} 86,341	} 3,771
Mymensingh					
Tangail					
Dacca					
Faridpur					
Chittagong	202	2,551	365	1,550	1,938
Faridpur	526	4,485	1,518	1,705	10,655
Faridpur	37	3,538	1,432	709	854
<u>Chittagong</u>	<u>11,711</u>	<u>67,478</u>	<u>52,731</u>	<u>112,073</u>	<u>85,587</u>
Sylhet	4,049	33,376	28,712	39,807	34,705
Comilla	455	13,326	5,953	19,016	25,868
Noakhali	2,627	11,587	9,818	22,746	8,592
Chittagong	3,950	8,270	7,128	25,884	12,575
Chittagong Hill Tracts	630	919	1,120	4,620	3,847
<u>TOTAL</u>	<u>127,862</u>	<u>414,957</u>	<u>313,606</u>	<u>550,440</u>	<u>355,163</u>

a/ All grains procured are shown here expressed in terms of "rice equivalent"; i.e., 1 unit of wheat equals 1 unit of cleaned rice and 3 units of paddy procured equal 2 units of cleaned rice. (For 1974/75, a paddy/rice conversion ratio of 1 to 0.65 was used.)

b/ Jamalpur District was established on January 1, 1979; previously it was a subdivision of Mymensingh District.

Source: Ministry of Food.

Table 5.3

BANGLADESH: PROCUREMENT OF FOODGRAINS BY CROP AND TYPE (SUMMARY)  
(in maunds)

	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
<u>Aus, total</u>	-	1,698,730	110,594	43,104	630,967
- Paddy	-	2,389,643	76,665	59,601	805,896
(= rice equivalent)	-	(1,593,095)	(51,110)	(39,734)	(537,264)
- Rice	-	105,635	4,187	3,370	93,703
<u>Aman, total</u>	3,460,884	9,184,884	8,259,880	13,562,032	5,657,747
- Paddy	4,861,027	11,511,127	8,704,043	14,244,458	6,643,882
(= rice equivalent)	(3,240,685)	(7,674,085)	(5,802,695)	(9,496,305)	(4,429,255)
- Rice	220,199	1,510,799	2,457,185	4,065,727	1,228,492
<u>Boro/IRRI, total</u>	291,222	157,722	144,721	1,000,798	2,262,385
- Paddy	430,726	235,251	174,478	1,392,472	2,856,767
(= rice equivalent)	(287,151)	(156,834)	(116,319)	(928,315)	(1,904,511)
- Rice	4,061	888	28,402	80,483	357,874
<u>Rice, total</u>	3,752,095	11,146,484	8,459,898	14,613,934	8,551,099
- Paddy	5,291,753	14,293,743	8,955,186	15,696,531	10,306,545
(= rice equivalent)	(3,527,835)	(9,529,162)	(5,970,124)	(10,464,354)	(6,871,030)
- Rice	224,260	1,617,322	2,489,774	4,149,580	1,680,069
<u>Wheat</u>	-	181,358	77,147	300,337	1,352,997
<u>FOODGRAINS, total (rice equivalent)</u>	<u>3,752,095</u>	<u>11,327,842</u>	<u>8,537,045</u>	<u>14,914,271</u>	<u>9,904,096</u>
Of which: paddy (%)	94.0	84.1	69.9	70.2	69.4
milled rice (%)	6.0	14.3	29.2	27.8	17.0
wheat (%)	-	1.6	0.9	2.0	13.7
<u>Foodgrains, total (by weight)</u>	<u>5,516,013</u>	<u>16,092,423</u>	<u>11,522,107</u>	<u>20,146,448</u>	<u>13,339,611</u>
Of which: paddy (%)	95.9	88.8	77.7	77.9	77.3
milled rice (%)	4.1	10.1	21.6	20.6	12.6
wheat (%)	-	1.1	0.7	1.5	10.1

Source: Ministry of Food

ASADD  
Dec. 1, 1979

Table 5.4

BANGLADESH: PROCUREMENT OF RICE AND PADDY BY DISTRICT (SUMMARY)  
(in long tons of rice equivalent)

<u>Division/District</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
<u>Rajshahi</u>	<u>73,130</u>	<u>194,304</u>	<u>173,382</u>	<u>231,841</u>	<u>142,723</u>
Dinajpur	34,213	77,868	75,051	88,544	59,211
Rangpur	16,252	41,978	32,656	51,307	17,190
Bogra	8,368	22,803	19,409	24,947	12,681
Rajshahi	13,686	43,846	41,992	64,326	50,748
Pabna	611	7,809	4,274	2,717	2,893
<u>Khulna</u>	<u>33,428</u>	<u>86,824</u>	<u>43,930</u>	<u>106,361</u>	<u>32,550</u>
Kushtia	1,066	8,213	2,790	612	668
Jessore	1,733	14,781	2,640	4,481	430
Khulna	10,511	21,778	10,789	15,006	1,555
Barisal	4,029	15,776	13,627	30,310	11,315
Patuakhali	16,089	26,276	14,084	55,952	18,582
<u>Dacca</u>	<u>9,593</u>	<u>62,878</u>	<u>41,104</u>	<u>89,902</u>	<u>59,721</u>
Jamalpur <sup>/a</sup>	} 8,828	} 52,533	} 37,874	} 86,299	3,759
Mymensingh					46,894
Tangail	202	2,551	315	1,331	1,558
Dacca	526	4,485	1,518	1,633	7,274
Faridpur	37	3,309	1,397	639	236
<u>Chittagong</u>	<u>11,711</u>	<u>64,289</u>	<u>52,356</u>	<u>111,303</u>	<u>70,109</u>
Sylhet	4,049	33,376	28,708	39,754	34,214
Comilla	455	10,137	5,582	18,299	10,881
Noakhali	2,627	11,587	9,818	22,746	8,592
Chittagong	3,950	8,270	7,128	25,884	12,575
Chittagong Hill Tracts	630	919	1,120	4,620	3,847
<u>TOTAL</u>	<u>127,862</u>	<u>408,295</u>	<u>310,772</u>	<u>539,407</u>	<u>305,103</u>

<sup>/a</sup> Jamalpur was a subdivision of Mymensingh until December 31, 1978.

Note: Rice is procured in the form of paddy as well as of milled/husked rice. Unless otherwise specified, data concerning the procurement of rice and paddy are uniformly expressed in terms of "rice equivalent", where the tonnage of paddy procured is converted into "rice equivalent" using a conversion ratio of 3:2.

Source: Ministry of Food.

Table 5.5

BANGLADESH: PROCUREMENT OF AUS RICE AND PADDY BY DISTRICT  
(in long tons of rice equivalent)

<u>Division/District</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
<u>Rajshahi</u>	<u>24,555</u>	<u>1,903</u>	<u>495</u>	<u>1,890</u>
Dinajpur	13,954	1,801	16	980
Rangpur	2,088	11	-	44
Bogra	4,555	91	3	6
Rajshahi	3,054	-	428	824
Pabna	904	-	48	36
<u>Khulna</u>	<u>9,387</u>	<u>5</u>	<u>19</u>	<u>714</u>
Kushtia	2,586	5	9	268
Jessore	5,926	-	10	191
Khulna	445	-	-	105
Barisal	142	-	-	137
Patuakhali	288	-	-	13
<u>Dacca</u>	<u>40</u>	<u>124</u>	<u>21</u>	<u>1,221</u>
Jamalpur <sup>/a</sup>	} 6	} 124	} 20	133
Mymensingh				1,039
Tangail	-	-	-	46
Dacca	-	-	1	3
Faridpur	34	-	-	-
<u>Chittagong</u>	<u>9,101</u>	<u>-</u>	<u>1,048</u>	<u>14,922</u>
Sylhet	9,013	-	735	9,625
Comilla	11	-	1	96
Noakhali	-	-	-	701
Chittagong	77	-	-	3,490
Chittagong Hill Tracts	-	-	312	1,010
<u>TOTAL</u>	<u>43,083</u>	<u>2,032</u>	<u>1,583</u>	<u>18,747</u>

<sup>/a</sup> Jamalpur was a subdivision of Mymensingh until December 31, 1978.

**Note:** Rice is procured in the form of paddy as well as of milled/husked rice. Unless otherwise specified, data concerning the procurement of rice and paddy are uniformly expressed in terms of "rice equivalent", where the tonnage of paddy procured is converted into "rice equivalent" using a conversion ratio of 3:2.

Source: Ministry of Food.

ASADD  
Nov. 2, 1979

Table 5.6

BANGLADESH: PROCUREMENT OF AMAN RICE AND PADDY BY DISTRICT  
(in long tons of rice equivalent)

<u>Division/District</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
<u>Rajshahi</u>	<u>165,577</u>	<u>171,464</u>	<u>230,252</u>	<u>125,081</u>
Dinajpur	63,914	73,250	88,428	56,581
Rangpur	38,822	32,644	51,296	16,855
Bogra	18,248	19,318	24,831	10,305
Rajshahi	37,694	41,978	63,092	39,897
Pabna	6,899	4,274	2,605	1,443
<u>Khulna</u>	<u>76,847</u>	<u>43,925</u>	<u>104,832</u>	<u>30,300</u>
Kushtia	5,627	2,785	603	89
Jessore	8,385	2,640	4,465	226
Khulna	21,333	10,789	14,978	1,284
Barisal	15,514	13,627	28,834	10,150
Pabna	25,988	14,084	55,952	18,551
<u>Dacca</u>	<u>54,728</u>	<u>37,815</u>	<u>72,054</u>	<u>26,004</u>
Jamalpur /a	} 44,639	} 34,585	} 68,826	1,990
Mymensingh				22,922
Tangail	2,534	315	1,029	78
Dacca	4,304	1,518	1,577	901
Faridpur	3,251	1,397	622	113
<u>Chittagong</u>	<u>45,352</u>	<u>50,220</u>	<u>93,628</u>	<u>24,723</u>
Sylhet	16,346	27,679	23,949	5,866
Comilla	8,786	5,582	17,688	2,906
Noakhali	11,297	9,818	22,746	7,491
Chittagong	8,019	6,042	25,192	6,548
Chittagong Hill Tracts	904	1,099	4,053	1,912
<u>TOTAL</u>	<u>342,504</u>	<u>303,424</u>	<u>500,766</u>	<u>206,108</u>

/a Jamalpur was a subdivision of Mymensingh until December 31, 1978.

Note: Rice is procured in the form of paddy as well as of milled/husked rice. Unless otherwise specified, data concerning the procurement of rice and paddy are uniformly expressed in terms of "rice equivalent", where the tonnage of paddy procured is converted into "rice equivalent" using a conversion ratio of 3:2.

Source: Ministry of Food

ASADD  
Nov. 2, 1979

Table 5.7

BANGLADESH: PROCUREMENT OF BORO/IRRI RICE AND PADDY BY DISTRICT  
(in long tons of rice equivalent)

<u>Division/District</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
<u>Rajshahi</u>	<u>4,172</u>	<u>15</u>	<u>1,094</u>	<u>15,752</u>
Dinajpur	-	-	100	1,650
Rangpur	1,068	1	11	291
Bogra	-	-	113	2,370
Rajshahi	3,098	14	806	10,027
Pabna	6	-	64	1,414
<u>Khulna</u>	<u>590</u>	<u>-</u>	<u>1,510</u>	<u>1,536</u>
Kushtia	-	-	-	311
Jessore	470	-	6	13
Khulna	-	-	28	166
Barisal	120	-	1,476	1,028
Patuakhali	-	-	-	18
<u>Dacca</u>	<u>8,110</u>	<u>3,165</u>	<u>17,827</u>	<u>32,496</u>
Jamalpur <sup>/a</sup>	} 7,888	} 3,165	} 17,453	1,636
Mymensingh				22,933
Tangail	17	-	302	1,434
Dacca	181	-	55	6,370
Faridpur	24	-	17	123
<u>Chittagong</u>	<u>9,836</u>	<u>2,136</u>	<u>16,627</u>	<u>30,464</u>
Sylhet	8,017	1,029	15,070	18,723
Comilla	1,340	-	610	7,879
Noakhali	290	-	-	400
Chittagong	174	1,086	692	2,537
Chittagong Hill Tracts	15	21	255	925
<u>TOTAL</u>	<u>22,708</u>	<u>5,316</u>	<u>37,058</u>	<u>80,248</u>

<sup>/a</sup> Jamalpur was a subdivision of Mymensingh until December 31, 1978.

**Note:** Rice is procured in the form of paddy as well as of milled/husked rice. Unless otherwise specified, data concerning the procurement of rice and paddy are uniformly expressed in terms of "rice equivalent", where the tonnage of paddy procured is converted into "rice equivalent" using a conversion ratio of 3:2.

Source: Ministry of Food

ASADD  
Nov. 2, 1979

Table 5.8

BANGLADESH: PROCUREMENT OF WHEAT BY DISTRICT  
(in long tons)

<u>Division/District</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
<u>Rajshahi</u>	<u>2,509</u>	<u>1,627</u>	<u>4,962</u>	<u>21,857</u>
Dinajpur	1,365	109	914	6,648
Rangpur	12	19	112	2,995
Bogra	946	535	1,729	6,639
Rajshahi	153	360	874	3,910
Pabna	33	604	1,333	1,665
<u>Khulna</u>	<u>711</u>	<u>723</u>	<u>4,898</u>	<u>8,226</u>
Kushtia	665	289	1,576	2,438
Jessore	46	434	3,312	5,222
Khulna	-	-	10	563
Barisal	-	-	-	3
Patuakhali	-	-	-	-
<u>Dacca</u>	<u>253</u>	<u>109</u>	<u>403</u>	<u>4,499</u>
Jamalpur a/	} 24	} 24	} 42	12
Mymensingh b/				108
Tangail	-	50	219	380
Dacca	-	-	72	3,381
Faridpur	229	35	70	618
<u>Chittagong</u>	<u>3,189</u>	<u>375</u>	<u>770</u>	<u>15,478</u>
Sylhet	-	4	53	491
Comilla	3,189	371	717	14,987
Noakhali	-	-	-	-
Chittagong	-	-	-	-
Chittagong Hill Tracts	-	-	-	-
<u>TOTAL</u>	<u>6,662</u>	<u>2,834</u>	<u>11,033</u>	<u>50,060</u>

a/ From 1975/76 to 1977/78, included in Mymensingh.

b/ From 1975/76 to 1977/78, including Jamalpur.

Source: Ministry of Food.

ASADD  
October 31, 1979

Table 5.9

## BANGLADESH: WHEAT PRODUCTION AND PROCUREMENT, 1975/76-1978/79

Division/District	Production as Percentage of Country Total				Procurement as Percentage of Country Total				Procurement as Percentage of Production			
	1975/76	1976/77	1977/78	1978/79	1975/76	1976/77	1977/78	1978/79	1975/76	1976/77	1977/78	1978/79
<b>Rajshahi</b>	39.36	37.50	39.72	43.53	37.66	57.41	44.97	43.66	2.97	1.70	3.65	10.33
Dinajpur	7.21	4.81	7.33	9.86	20.49	3.85	8.28	13.28	8.82	0.89	3.64	13.87
Rangpur	3.27	2.73	4.59	11.68	0.18	0.67	1.02	5.98	0.17	0.27	0.71	5.28
Bogra	4.55	7.76	8.12	6.07	14.20	18.88	15.67	13.26	9.68	2.70	6.22	22.50
Rajshahi	11.69	10.84	9.49	7.78	2.30	12.70	7.92	7.81	0.61	1.30	2.69	10.34
Pabna	12.64	11.38	10.20	8.15	0.50	21.31	12.08	3.33	0.12	2.08	3.82	4.20
<b>Khulna</b>	26.14	23.72	26.85	28.04	10.67	25.51	44.39	16.43	1.27	1.19	5.33	6.03
Kushtia	18.17	15.07	18.74	18.62	9.98	10.20	14.28	4.87	1.70	0.75	2.46	2.69
Jessore	7.46	7.88	6.83	6.45	0.69	15.31	30.02	10.43	0.29	2.16	14.17	16.65
Khulna	0.41	0.75	1.25	2.72	-	-	0.09	1.12	-	-	0.23	4.26
Barisal	0.10	0.02	0.03	0.25	-	-	-	0.01	-	-	-	0.24
Patuakhali	.	.	.	.	-	-	-	-	-	-	-	-
<b>Dacca</b>	14.63	17.65	18.87	14.76	3.80	3.85	3.65	8.99	0.81	0.24	0.62	6.26
Jamalpur			1.10					0.02				
Mymensingh	} 3.88	} 4.19	2.34	} 2.35	} 0.36	} 0.85	} 0.38	0.22	} 0.29	} 0.22	} 0.36	} 1.05
Tangail	2.76	4.54	4.15	4.77	-	1.76	1.98	0.76	-	0.43	1.54	1.64
Dacca	2.50	4.20	4.11	2.40	-	-	0.65	6.75	-	-	0.49	28.96
Faridpur	5.49	4.72	7.17	5.24	3.44	1.24	0.63	1.23	1.94	0.29	0.29	2.43
<b>Chittagong</b>	19.87	21.13	14.56	13.67	47.87	13.23	6.98	30.92	7.47	0.70	1.54	23.29
Sylhet	0.32	0.82	0.62	0.65	-	0.14	0.48	0.98	-	0.19	2.49	15.55
Comilla	17.99	19.81	13.85	12.91	47.87	13.09	6.50	29.94	8.25	0.73	1.51	23.87
Noakhali	1.49	0.39	0.06	0.10	-	-	-	-	-	-	-	-
Chittagong	0.07	0.10	0.01	.	-	0.10	-	-	-	-	-	-
Chittagong Hill Tracts	.	0.01	0.02	.	-	-	-	-	-	-	-	-
<b>TOTAL</b>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>3.10</u>	<u>1.11</u>	<u>3.22</u>	<u>10.30</u>

. = Negligible or nil.

Note: Components may not add to totals due to rounding.

Source: Tables 2.18 and 5.8

ASADD  
Nov. 1, 1979

Table 6.1

BANGLADESH: NOMINAL GRAIN STORAGE CAPACITY, MINISTRY OF FOOD (SUMMARY)  
(as of April 1, 1979)

	By Division				Total
	Rajshahi	Khulna	Dacca	Chittagong	
<b>A. Silos</b>					
Number	1	-	1	2	4
Capacity (tons)	26,248	-	51,699 + 500/a	155,117 1,000/b	233,064 1,500/c
<b>B. Central Storage Depots (CSDs)</b>					
Number	2	3	4	3	12
Number of godowns	64	167	144/d	119/e	494/f
Capacity (tons)	50,500	143,500	91,250	116,650	401,900
<b>C. Local Supply Depots (LSDs)</b>					
Number	85/g	75/h	77/i	88/j	322/k
Number of godowns	317/l	250/m	253/n	235/o	1,055/p
Capacity (tons)	166,950	114,494	125,450	118,975	525,869
<b>D. Hired Godowns/q</b>					
Number of godowns	306	124	193	179	802
Capacity (tons)	66,533	21,491	25,514	49,779	163,317
<hr/>					
<b>TOTALS</b>					
Silo capacity	26,248	-	51,699	155,117	233,064
Godown capacity at silos	-	-	500	1,000	1,500
CSD capacity	50,500	143,500	91,250	116,650	401,900
LSD capacity	166,950	114,494	125,450	118,975	525,869
Subtotal: MoF capacity	243,698	257,994	268,899	391,742	1,162,333
Hired godown capacity	66,533	21,491	25,514	49,779	163,317
<u>Overall capacity</u>	<u>310,231</u>	<u>279,485</u>	<u>294,413</u>	<u>441,521</u>	<u>1,325,650</u>

- /a 1 godown at silo site.  
 /b 2 godowns at silo sites.  
 /c 3 godowns at silo sites.  
 /d Including 2 hired godowns with 1,500 tons capacity.  
 /e Including 10 hired godowns with 6,350 tons capacity.  
 /f Including 12 hired godowns with 7,850 tons capacity.  
 /g Including 3 LSDs with rented facilities only.  
 /h Including 5 LSDs with rented facilities only.  
 /i Including 2 LSDs with rented facilities only.  
 /j Including 1 LSD with rented facilities only.  
 /k Including 11 LSDs with rented facilities only.  
 /l Including a total of 4 hired godowns with 750 tons capacity.  
 /m Including 16 hired godowns with 2,606 tons capacity.  
 /n Including 2 hired godowns with 700 tons capacity.  
 /o Including 1 hired godown with 125 tons capacity.  
 /p Including 23 hired godowns with 4,181 tons capacity.  
 /q Not including hired godowns at CSDs and LSDs; see notes /d - /p above.

Table 6.2

**BANGLADESH: FOODGRAIN STORAGE CAPACITY BY TYPE AND BY DISTRICT**  
(as of April 1, 1979)

Division/District	Local Supply Depots (LSDs)					Central Storage Depots (CSDs)					Silos	Aggregate Capacity <sup>e/</sup>
	Pucca Godowns <sup>a/</sup>	Prefabricated Godowns <sup>b/</sup>	Other Godowns <sup>c/</sup>	Hired Godowns <sup>d/</sup>	Total Capacity <sup>e/</sup>	Pucca Godowns <sup>a/</sup>	Prefabricated Godowns <sup>b/</sup>	Other Godowns <sup>c/</sup>	Hired Godowns <sup>d/</sup>	Total Capacity <sup>e/</sup>	Total Capacity <sup>f/</sup>	
<b>Rajshahi</b>	143,850	-	22,350	750	166,950	50,500	-	-	-	50,500	26,248	243,698
Dinaipur	49,000	-	1,625	750	51,375	-	-	-	-	-	-	51,375
Rangpur	28,000	-	-	-	28,000	-	-	-	-	-	-	28,000
Bogra	14,600	-	11,100	-	25,700	20,000	-	-	-	20,000	26,248	71,948
Rajshahi	31,750	-	9,625	-	41,375	-	-	-	-	-	-	41,375
Pabna	20,500	-	-	-	20,500	30,500	-	-	-	30,500	-	51,000
<b>Khulna</b>	105,436	-	6,452	2,606	114,494	42,000	-	101,500	-	143,500	-	257,994
Kushtia	17,000	-	1,102	-	18,102	-	-	-	-	-	-	18,102
Jessore	21,286	-	250	2,156	23,692	-	-	-	-	-	-	23,692
Khulna	19,500	-	5,100	450	25,050	21,000	-	101,500	-	122,500	-	147,550
Barisal	25,150	-	-	-	25,150	21,000	-	-	-	21,000	-	46,150
Patuakhali	22,500	-	-	-	22,500	-	-	-	-	-	-	22,500
<b>Dacca</b>	115,500	7,000	2,250	700	125,450	60,200	4,500	25,050	1,500	91,250	52,199	268,899
Jamalpur	9,000	2,500	750	-	12,250	-	-	-	-	-	-	12,250
Mymensingh	31,750	4,000	500	-	36,250	19,000	3,000	-	-	22,000	-	58,250
Tangail	12,750	-	-	-	12,750	-	-	-	-	-	-	12,750
Dacca	33,500	500	1,000	-	35,000	41,200	1,500	25,050	1,500	69,250	52,199	156,449
Faridpur	28,500	-	-	700	29,200	-	-	-	-	-	-	29,200
<b>Chittagong</b>	107,350	4,500	7,000	125	118,975	18,000	-	92,300	6,350	116,650	156,117	391,742
Sylhet	21,000	2,500	5,000	-	28,500	-	-	-	-	-	-	28,500
Comilla	33,300	-	2,000	-	35,300	-	-	10,100	2,350	12,450	51,813	99,563
Noakhali	24,250	-	-	125	24,375	-	-	-	-	-	-	24,375
Chittagong	21,500	2,000	-	-	23,500	18,000	-	82,200	4,000	104,200	104,304	232,004
Chittagong Hill Tracts	7,300	-	-	-	7,300	-	-	-	-	-	-	7,300
<b>TOTAL</b>	472,136 <sup>g/</sup>	11,500	38,052	4,181	525,869	170,700 <sup>h/</sup>	4,500	218,850	7,850	401,900	234,564	1,162,333
(%)	(40.6)	(1.0)	(3.3)	(0.4)	(45.2)	(14.7)	(0.4)	(18.8)	(0.7)	(34.6)	(20.2)	(100.0)

a/ "Pucca" godowns are: Dacca-type, Twin-Dacca, and Calcutta Shed.

b/ Prefabricated godowns are concrete floor, steel siding and roof godowns for foodgrain storage.

c/ Other godowns include all so-called "non-Pucca" godowns (i.e., Lahore Shed, Twin-Nissen Hut, Tin Shed, Shell-type, Assam-type) and all other non-standardized warehouses. These godowns are basically unsuitable for foodgrain storage, except for temporary storage at peak levels.

d/ Hired godowns at LSD and CSD sites are generally of the non-standardized, non-Pucca variety and basically unsuitable for foodgrain storage.

e/ Nominal capacity.

f/ Includes three godowns (500 tons capacity each) at Ashuganj, Narayanganj and Chittagong silos.

g/ Of this, 20,036 tons of capacity are in Calcutta Sheds, the rest in Dacca-type and Twin-Dacca godowns.

h/ Of this, 30,500 tons of capacity are in Calcutta Sheds, the rest in Dacca-type and Twin-Dacca godowns.

Source: Ministry of Food.

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Table 6.3

## BANGLADESH: LOCATION, CAPACITY AND CAPABILITIES OF FOODGRAIN SILOS

Silos	Location Division/District	Capacity (tons) <sup>/a</sup>			Receiving Capacity		Dispatch Capacity	
		Silo	Godowns	Total	Bulk	Bag/ <sup>b</sup>	Bulk	Bag
<u>Chittagong</u>	Chittagong/Chittagong	103,804 (100,000)	500	104,304	Water	-	Water Rail/ <sup>c</sup> Truck/ <sup>f</sup>	Rail/ <sup>c</sup> Truck
<u>Ashugani</u>	Chittagong/Comilla	51,313 (50,000)	500	51,813	Water Rail/ <sup>c</sup>	-	Rail/ <sup>c</sup> Truck/ <sup>f</sup>	Water Rail/ <sup>c</sup> Truck
<u>Narayanganj</u>	Dacca/Dacca	51,699 (50,000)	500	52,199	Water Rail/ <sup>c</sup>	-	Rail/ <sup>c</sup> Truck/ <sup>f</sup>	Water Rail/ <sup>c</sup>
<u>Santahar</u>	Rajshahi/Bogra	26,248 (25,000)	-	26,248	Rail/ <sup>d</sup> Truck/ <sup>e</sup>	-	Rail/ <sup>d</sup> Truck/ <sup>f</sup>	Rail/ <sup>d</sup> Truck

<sup>/a</sup> Nominal silo capacity is indicated in parentheses.

<sup>/b</sup> All silos could technically receive grain in bags if necessary, but the actual loading into the silo would then have to be done in bulk from the opened bags.

<sup>/c</sup> Meter gauge.

<sup>/d</sup> Meter gauge and broad gauge.

<sup>/e</sup> Although the silos are not designed to receive grains from trucks in bulk, the rail receiving pit at Santahar has been used for this purpose. Grains were delivered to Santahar in bags which were then opened to permit the silo to receive in bulk. The same could be done, if necessary, at Narayanganj and Ashuganj.

<sup>/f</sup> Although technically possible, dispatch in bulk by truck is not likely to be done at any silo due to the high risk of pilferage.

Source: Ministry of Food, Directorate of Silos.

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Table 6.4

BANGLADESH: LOCATION AND CAPACITY OF CENTRAL STORAGE DEPOTS (CSDs)  
(as of July 1, 1979)

Division/District	Number of CSDs	CSD Site	Government-owned Godowns		Hired Godowns		All Godowns		(For Comparison: Total Capacity on July 1, 1977)
			Number	Capacity (tons)	Number	Capacity (tons)	Number	Capacity (tons)	
<u>Rajshahi</u>	<u>2</u>	...	<u>64</u>	<u>50,500</u>	-	-	<u>64</u>	<u>50,500</u>	<u>(51,300)</u>
Dinaipur	-	-	-	-	-	-	-	-	-
Rangpur	-	-	-	-	-	-	-	-	-
Bogra	1	Santahar	32	20,000	-	-	32	20,000	(20,800)
Rajshahi	-	-	-	-	-	-	-	-	-
Pabna	1	Molladuli	32	30,500	-	-	32	30,500	(30,500)
<u>Khulna</u>	<u>3</u>	...	<u>167</u>	<u>143,500</u>	-	-	<u>167</u>	<u>143,500</u>	<u>(132,500)</u>
Kushctia	-	-	-	-	-	-	-	-	-
Jessore	-	-	-	-	-	-	-	-	-
Khulna	2	Khulna	87	67,100	-	-	87	67,100	(67,100)
"	-	Moheswarpasha	55	55,400	-	-	55	55,400	(44,400)
Barisal	1	Barisal	25	21,000	-	-	25	21,000	(21,000)
Patuakhali	-	-	-	-	-	-	-	-	-
<u>Dacca</u>	<u>4</u>	...	<u>142</u>	<u>89,750</u>	-	-	<u>144</u>	<u>91,250</u>	<u>(91,100)</u>
Jamalpur	-	-	-	-	-	-	-	-	-
Mymensingh	1	Mymensingh	40	22,000	-	-	40	22,000	(22,000)
Tangail	-	-	-	-	-	-	-	-	-
Dacca	3	Dacca	19	9,500	-	-	19	9,500	(11,200)
"	-	Tejgaon	48	37,100	-	-	48	37,100	(36,900)
"	-	Narayangani	35	21,150	2	1,500	37	22,650	(21,000)
Faridpur	-	-	-	-	-	-	-	-	-
<u>Chittagong</u>	<u>3</u>	...	<u>109</u>	<u>110,300</u>	<u>10</u>	<u>6,350</u>	<u>119</u>	<u>116,650</u>	<u>(95,400)</u>
Sylhet	-	-	-	-	-	-	-	-	-
Comilla	1	Chandpur	9	10,100	3	2,350	12	12,450	(10,200)
Noakhali	-	-	-	-	-	-	-	-	-
Chittagong	2	Dewanhat	41	35,800	7	4,000	48	39,800	(13,500)
"	-	Halishahar	59	64,400	-	-	59	64,400	(71,700)
Chittagong Hill Tracts	-	-	-	-	-	-	-	-	-
<u>TOTAL</u>	<u>12</u>	...	<u>482</u>	<u>394,050</u>	<u>12</u>	<u>7,850</u>	<u>494</u>	<u>401,900</u>	<u>(370,300)</u>

... = Not applicable.

Source: Ministry of Food.

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Table 6.5

BANGLADESH: LOCATION AND CAPACITY OF LOCAL SUPPLY DEPOTS (LSDs)  
(as of April 1, 1979)

Division/District	Number of LSDs <u>a/</u>	Number of Godowns <u>a/</u>	Nominal Capacity (tons) <u>a/</u>	Number of Thanas			
				Total	With LSD or CSD	With more than 1 LSD or CSD	Without LSD or CSD
<u>Rajshahi</u>	<u>82(3)</u>	<u>317(4)</u>	<u>166,950(750)</u>	<u>116</u>	<u>74</u>	<u>6</u>	<u>42</u>
Dinajpur	24(3)	107(4)	51,375(750)	22	21 <u>b/</u>	2	1 <u>c/</u>
Rangpur	17	55	28,000	33	17 <u>d/</u>	-	16 <u>e/</u>
Bogra	12	42	25,700	14	12 <u>f/</u>	-	2
Rajshahi	22	72	41,375	30	17 <u>g/</u>	4	13 <u>h/</u>
Pabna	7	41	20,500	17	7	-	10
<u>Khulna</u>	<u>75(5)</u>	<u>250(16)</u>	<u>114,494(2606)</u>	<u>93</u>	<u>64</u>	<u>10</u>	<u>29</u>
Kushtia	9	39	18,102	12	8	1	4
Jessore	16(4)	57(13)	23,692(2156)	21	16 <u>i/</u>	-	5
Khulna	17(1)	52(3)	25,050(450)	23	17 <u>j/</u>	2	6
Barisal	16	47	25,150	27	15	2	12
Patuakhali	17	55	22,500	10	8	5	2
<u>Dacca</u>	<u>77(2)</u>	<u>253(2)</u>	<u>125,450(700)</u>	<u>129</u>	<u>81</u>	<u>10</u>	<u>48</u>
Jamalpur	7	27	12,250	12	7	-	5
Mymensingh	22	75	36,250	33	18 <u>k/</u>	5	15
Tangail	7	24	12,750	10	6	1	4
Dacca	21	69	35,000	48 <u>l/</u>	32 <u>m/</u>	2	16
Faridpur	20(2)	58(2)	29,200(700)	26	18 <u>n/</u>	2 <u>o/</u>	8
<u>Chittagong</u>	<u>88(1)</u>	<u>235(1)</u>	<u>118,975(125)</u>	<u>131</u>	<u>79</u>	<u>9</u>	<u>52</u>
Sylhet	26	57	28,500	37	23 <u>p/</u>	2	14
Comilla	18	68	35,300	25	17 <u>q/</u>	2	8
Noakhali	17(1)	49(1)	24,375(125)	15	14 <u>r/</u>	1	1
Chittagong	15	47	23,500	26	15 <u>s/</u>	2	11
Chittagong Hill Tracts	12	14	7,300	28	10	2	18
<u>TOTAL</u>	<u>322(11)</u>	<u>1,055(23)</u>	<u>525,869(4181)</u>	<u>469</u>	<u>298</u>	<u>35</u>	<u>171</u>

Note: All data shown include completed facilities which have not yet been officially classified as LSD as well as hired facilities; excluded are LSDs under construction or scheduled for construction.

a/ Rented facilities (which are included in the totals) are shown in parentheses.

b/ 3 LSDs (with 5 godowns and 2500 tons capacity) have been set up, but have not yet been officially classified as LSDs.-- 3 Thanas have very small LSDs with hired facilities (4 godowns, 750 tons) only; in two of these, permanent facilities are about to be constructed.-- 2 other LSDs (with 2 godowns and 1500 tons capacity) are presently under construction.

c/ In this Thana, one additional LSD (2 godowns, 1000 tons) is under construction.

d/ 2 LSDs (3 godowns, 1500 tons) are in place, but not yet officially classified as LSDs.

e/ 5 additional LSDs (7 godowns, 3500 tons) are under construction in 5 of these Thanas.

f/ Adamdighi Thana has no LSD, but Santahar CSD is located there.

g/ 4 LSDs (5 godowns, 3500 tons) are in place, but not yet officially classified as LSDs.

h/ 1 additional LSD (2 godowns, 1000 tons) is under construction.

i/ 4 Thanas are served by 4 small LSDs with hired facilities (11 godowns, 1910 tons) only.

j/ 2 Thanas (Khulna Kotwali and Daulatpur) have no LSDs, but Khulna and Moheswarpasha CSDs, respectively, are located there.

k/ Mymensingh Kotwali Thana has no LSD, but Mymensingh CSD is located there.-- 3 LSDs (6 godowns, 2650 tons) are in place, but not yet officially classified as LSDs.

l/ 12 of these Thanas constitute Metropolitan Dacca.

m/ The 12 Thanas of Metropolitan Dacca have no LSDs, but are served by 2 CSDs located there (Dacca CSD and Tejgaon CSD). Narayanganj Thana has no LSD, but Narayanganj CSD is located there.

n/ 1 Thana has a small LSD with hired facilities (1 godown, 400 tons) only.

o/ 1 of these Thanas has one LSD and one small Temporary Supply Depot (TSD) with 1 hired godown of 400 tons capacity.

p/ 3 LSDs (3 godowns, 1500 tons) are in place, but not yet officially classified as LSDs.

q/ Chandpur Thana has no LSD, but Chandpur CSD is located there.

r/ 1 Thana has a very small LSD with hired facilities (1 godown, 125 tons) only.

s/ 2 Thanas (Chittagong Kotwali and Double Mooring) have no LSDs, but Dewanhat CSD and Haliashar CSD, respectively, are located there.

Source: Ministry of Food.

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Table 6.6

## BANGLADESH: RELATIVE LOCATION OF STORAGE CAPACITY

District/Division	Nominal MoF Foodgrain Storage Capacity (long tons) <sup>/a</sup>				Share (in %) in Country Total of:				
	LSDs <sup>/b</sup>	CSDs <sup>/b</sup>	Silos <sup>/c</sup>	Total	Storage Capacity		Grain	Population <sup>/e</sup>	Public Grain Distribution <sup>/f</sup>
					Incl. Silos	Excl. Silos	Procurement <sup>/d</sup>		
<b>Rajshahi</b>	<b>166,950</b>	<b>50,500</b>	<b>26,248</b>	<b>243,698</b>	<b>20.97</b>	<b>23.44</b>	<b>43.02</b>	<b>24.31</b>	<b>14.88</b>
Dinajpur	51,375	-	-	51,375	4.42	5.55	16.25	3.63	1.84
Rangpur	28,000	-	-	28,000	2.41	3.02	9.34	7.60	4.09
Bogra	25,700	20,000	26,248	71,948	6.19	4.93	4.85	3.11	1.92
Rajshahi	41,375	-	-	41,375	3.56	4.46	11.85	6.04	4.33
Pabna	20,500	30,500	-	51,000	4.39	5.50	0.74	3.93	2.69
<b>Khulna</b>	<b>114,494</b>	<b>143,500</b>	<b>-</b>	<b>257,994</b>	<b>22.20</b>	<b>27.81</b>	<b>20.21</b>	<b>19.86</b>	<b>17.77</b>
Kushtia	18,102	-	-	18,102	1.56	1.95	0.40	2.69	2.52
Jessore	23,692	-	-	23,692	2.04	2.55	1.42	4.73	3.19
Khulna	25,050	122,500	-	147,550	12.69	15.90	2.73	5.08	7.27
Barisal	25,150	21,000	-	46,150	3.97	4.97	5.51	5.31	3.50
Patuakhali	22,500	-	-	22,500	1.94	2.43	10.16	2.05	1.29
<b>Dacca</b>	<b>125,450</b>	<b>91,250</b>	<b>52,199</b>	<b>268,899</b>	<b>23.13</b>	<b>23.36</b>	<b>16.41</b>	<b>29.83</b>	<b>41.61</b>
Jamalpur	12,250	-	-	12,250	1.05	1.32	} 15.69 /g	2.79	} 4.72 /g
Mymensingh	36,250	22,000	-	58,250	5.01	6.28		7.61	
Tangail	12,750	-	-	12,750	1.10	1.37	0.28	2.86	1.84
Dacca	35,000	69,250	52,199	156,449	13.46	11.24	0.31	11.05	31.11
Faridpur	29,200	-	-	29,200	2.51	3.15	0.13	5.52	3.94
<b>Chittagong</b>	<b>118,975</b>	<b>116,650</b>	<b>156,117</b>	<b>391,742</b>	<b>33.70</b>	<b>25.40</b>	<b>20.36</b>	<b>26.00</b>	<b>25.75</b>
Sylhet	28,500	-	-	28,500	2.45	3.07	7.23	6.57	5.10
Comilla	35,300	12,450	51,813	99,563	8.57	5.15	3.45	7.97	5.73
Noakhali	24,375	-	-	24,375	2.10	2.63	4.13	4.45	2.89
Chittagong	23,500	104,200	104,304	232,004	19.96	13.76	4.70	6.32	11.35
Chittagong Hill Tracts	7,300	-	-	7,300	0.63	0.79	0.84	0.69	0.68
<b>TOTAL</b>	<b>525,869</b>	<b>401,900</b>	<b>234,564</b>	<b>1,162,333</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

/a Excluding hired godowns, except at LSD and CSD sites.

/b Including hired godowns.

/c Including godowns at silo sites.

/d Total grain procurement in terms of rice equivalent: FY78.

/e BBS estimate for January 1, 1979.

/f Total grain distribution, FY78.

/g Including Jamalpur.

Source: Ministry of Food; BBS.

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Table 6.7

**BANGLADESH: NOMINAL AND HYPOTHETICALLY POSSIBLE FOODGRAIN STORAGE CAPACITY**  
(in long tons; as of April 1, 1979)

	Nominal Capacity <sup>a/</sup>	Required for Non-Foodgrain Storage <sup>b/</sup>	Available for Foodgrain Operations <sup>c/</sup>	Required for Stock Roll-Over and Transit Handling <sup>d/</sup>	Required for Trans-shipment of Imports <sup>e/</sup>	Effectively Available for Foodgrain Storage <sup>f/</sup>	Effective Loading Capacity for Paddy (expressed as rice-equivalent)			Effective Loading Capacity for Rice/Wheat <sup>h/</sup>		
							Medium-Term <sup>1/</sup>	Short-Term <sup>i/</sup>	Temporary <sup>k/</sup>	Medium-Term <sup>l/</sup>	Short-Term <sup>m/</sup>	Temporary <sup>n/</sup>
Silos	234,564	1,500	233,064	-	100,000	133,064	82,906	82,906	82,906	133,064	133,064	133,064
Silos	233,064	-	233,064	-	100,000	133,064	82,906	82,906	82,906	133,064	133,064	133,064
Godowns at silos	1,500	1,500 <sup>o/</sup>	-	-	-	-	-	-	-	-	-	-
<b>Central Storage Depots (CSDs)</b>	<b>401,900</b>	<b>80,380</b>	<b>321,520</b>	<b>64,304</b>	<b>25,000</b>	<b>137,117</b>	<b>301,881</b>	<b>166,881</b>	<b>394,767</b>	<b>394,767</b>	<b>441,210</b>	<b>464,432</b>
Pucca godowns	170,700	20,600 <sup>s/</sup>	154,600	30,920	...	...	160,784	...	210,256	210,256	234,992	247,360
Prefabricated godowns	4,500	...	...	...	...	...	...	...	210,256	...	...	...
Other godowns <sup>t/</sup>	218,850	59,780 <sup>u/</sup>	166,920	33,384	25,000 <sup>v/</sup>	108,536	141,097	162,804	184,511	184,511	206,218	217,072
Hired godowns <sup>w/</sup>	7,850	...	...	...	...	...	...	...	...	...	...	...
<b>Local Supply Depots (LSDs)</b>	<b>525,869</b>	<b>105,174</b>	<b>420,695</b>	<b>84,139</b>	<b>-</b>	<b>336,556</b>	<b>437,523</b>	<b>504,834</b>	<b>572,145</b>	<b>572,145</b>	<b>639,456</b>	<b>673,112</b>
Pucca godowns	472,136	90,688 <sup>s/</sup>	392,948	78,590	-	314,358	408,668	471,537	534,409	534,409	597,280	628,716
Prefabricated godowns	11,500	...	...	...	...	...	...	...	...	...	...	...
Other godowns <sup>t/</sup>	38,052	14,486	27,747	5,549	-	22,198	28,857	33,297	37,736	37,736	42,176	44,396
Hired godowns <sup>w/</sup>	4,181	...	...	...	...	...	...	...	...	...	...	...
<b>Storage Capacity Owned by MoF</b>	<b>1,162,333</b>	<b>185,554</b>	<b>975,279</b>	<b>148,743</b>	<b>125,000</b>	<b>701,836</b>	<b>822,310</b>	<b>936,064</b>	<b>1,049,818</b>	<b>1,099,976</b>	<b>1,213,730</b>	<b>1,270,608</b>
Hired godowns <sup>x/</sup>	163,317	32,663	130,654	26,131	-	104,523	135,880	156,785	177,689	177,689	198,594	209,046
<b>Storage Capacity Available to MoF</b>	<b>1,325,650</b>	<b>219,717</b>	<b>1,105,933</b>	<b>174,574</b>	<b>125,000</b>	<b>806,359</b>	<b>958,190</b>	<b>1,092,849</b>	<b>1,227,507</b>	<b>1,277,665</b>	<b>1,412,324</b>	<b>1,479,654</b>
of which: Silos	233,064	-	233,064	-	100,000	133,064	82,906	82,906	82,906	133,064	133,064	133,064
Class 1 godowns <sup>y/</sup>	660,336	112,788	547,548	109,510	-	438,038	569,450	657,057	744,665	744,665	832,272	876,076
Class 2 godowns <sup>z/</sup>	268,933	74,266	194,667	38,933	25,000	130,734	169,954	196,101	222,247	222,247	248,394	261,468
Hired godowns <sup>z/</sup>	163,317	32,663	130,654	26,131	-	104,523	135,880	156,785	177,689	177,689	198,594	209,046

a/ Capacity as officially rated by the Ministry of Food (MoF), expressed in long tons of "rice equivalent".

b/ MoF also stores other commodities (e.g., edible oils, salt, sugar, kerosene, fumigants, empty grain bags, etc.). This is estimated to require about 20% of the warehouse capacity in CSDs and LSDs as well as in hired godown space.

c/ Nominal capacity minus space required for storage of other commodities.

d/ Maximum utilization of available capacity should not exceed 80% in any single facility so as to permit proper stock management (inspections, pest control operations, periodic roll-over, etc.) and stock movement within the system.

e/ Capacity required to receive foodgrain imports at the ports.

f/ Nominal capacity minus requirements for non-foodgrain storage, stock management, transit and import handling.

g/ Loading capacity of warehouses differs from nominal capacity available for foodgrain storage as bagged foodgrains may be stacked higher than recommended for long-term storage; depending on the duration of storage, different effective utilization rates have been found to be acceptable after considering both costs (increased losses, higher handling costs, etc.) and benefits (reduced capital charges per unit stored, etc.).

h/ The acceptable utilization rates for milled rice and wheat are 20-30% higher than those for paddy.

i/ An effective utilization rate of 1.3 for warehouses is acceptable for medium-term storage of 4-6 months' duration.

j/ An effective utilization rate of 1.5 for warehouses is acceptable for short-term storage of less than 4 months' duration.

k/ For strictly temporary storage of bagged grains awaiting trans-shipment to more permanent storage elsewhere, an effective utilization rate of 1.7 is acceptable.

l/ A loading rate of 1.7 is acceptable for medium-term storage of 4-6 months' duration.

m/ A loading rate of 1.9 is acceptable for short-term storage of less than 4 months' duration.

n/ A temporary loading rate of 2.0 is acceptable for bagged rice and wheat awaiting trans-shipment to permanent storage elsewhere.

o/ The three godowns at the silo sites are used entirely for storage of fumigants, bags, etc.

p/ 100,000 tons of capacity at the Chittagong silo must be kept free for receiving imports.

q/ Silo capacity for paddy storage, expressed in rice equivalent, is considerably less than rated (nominal) capacity.

r/ For rice and wheat, effective silo capacity equals nominal capacity.

s/ Although it would be preferable to utilize only non-pucca godowns for storing non-foodgrain commodities, the geographical location of different categories of godowns requires some space in pucca godowns to be used for this purpose as well. The allocation of this total space requirement between pucca and non-pucca godowns -- both in CSDs and in LSDs -- has been determined for each depot individually.

t/ This category includes: Lahore Sheds, Assam Sheds, Twin-Nissen Huts, Tin Sheds, Shell-Type godowns, and all other warehouses of non-standardized specifications. These godowns are generally regarded as unsuitable for long-term foodgrain storage.

u/ MoF leases additional warehouse space at its LSDs and CSDs to meet its requirements; most of this is in the non-pucca category generally regarded as unsuitable for foodgrain storage.

v/ 25,000 tons of capacity at the Khulna and Moheswarpasha CSDs (near Khulna) must be kept free for receiving imports. All this space is in non-pucca godowns, as neither CSD has any pucca warehouses.

w/ MoF leases godown space outside LSDs and CSDs to meet additional storage needs; most of this is in the non-pucca category generally regarded as unsuitable for foodgrain storage.

y/ Pucca-godowns and prefabricated godowns designed for foodgrain storage.

z/ Non-pucca godowns generally regarded as unsuitable for long-term foodgrain storage. (This includes hired godowns at CSD and LSD sites).

General Note: See Annex 8 for full explanation and interpretation.

ASADD  
November 7, 1979

Source: Ministry of Food; mission estimates.



Table 6.8

## BANGLADESH: TEMPORARY PURCHASING CENTERS OPENED FOR AMAN PROCUREMENT, FY78 - FY80

Division/District	TPCs			CSDs <sup>/b</sup>	LSDs <sup>/b</sup>	Total Purchasing Centers FY80 <sup>/b</sup>
	1977/78	1978/79	1979/80P			
<u>Rajshahi</u>	<u>61</u>	<u>74</u>	<u>76</u>	<u>2</u>	<u>82</u>	<u>160</u>
Dinajpur	24	26	33		24	57
Rangpur	15	15	16		17	33
Bogra	5	9	5	1	12	18
Rajshahi	13	17	17		22	39
Pabna	4	7	5	1	7	13
<u>Khulna</u>	<u>58</u>	<u>68</u>	<u>66</u>	<u>3</u>	<u>75</u>	<u>148</u>
Kushtia	7	7	8		9	17
Jessore	8	5	6		16	22
Khulna	10	14	18	2	17	37
Barisal	20	23	19	1	16	40 <sup>/c</sup>
Patuakhali	13	19	15		17	32
<u>Dacca</u>	<u>31</u>	<u>37</u>	<u>37</u>	<u>4</u>	<u>77</u>	<u>118</u>
Jamalpur <sup>/a</sup>			6		7	13
Mymensingh	26	31	24	1	22	47
Tangail	3	3	3		7	10
Dacca	2	3	4	3	21	28
Faridpur	-	-	-		20	20
<u>Chittagong</u>	<u>66</u>	<u>80</u>	<u>75</u>	<u>3</u>	<u>88</u>	<u>166</u>
Sylhet	15	16	16		26	42
Comilla	16	19	20	1	18	39
Noakhali	12	18	16		17	33
Chittagong	16	17	16	2	15	33
Chittagong Hill Tracts	7	10	7		12	19
<u>TOTAL</u>	<u>216</u>	<u>259</u>	<u>254</u>	<u>12</u>	<u>322</u>	<u>592<sup>/c</sup></u>

P = Preliminary; more may be opened if necessary.

<sup>/a</sup> Jamalpur was a sub-division of Mymensingh until December 31, 1978.

<sup>/b</sup> LSDs and CSDs also function as purchasing centers during the procurement drive.

<sup>/c</sup> Including also four so-called Temporary Supply Depots (TSDs).



Table 6.9

BANGLADESH: TEMPORARY PURCHASING CENTERS OPENED  
FOR THE DIFFERENT CROPS, FY77 - FY80

	<u>Aman</u>	<u>Boro</u>	<u>Wheat</u>	<u>Aus</u>
1976/77	132	24	27	-
1977/78	216	27	9	-
1978/79	259	27	11	-
1979/80	254	..	..	..

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Source: Ministry of Food, Directorate of Procurement.

ASADD  
December 15, 1979

Table 6.10

**BANGLADESH: EFFECTIVE STOCK-HOLDING CAPACITY OF THE MOP STORAGE SYSTEM PRIOR TO AMAN PROCUREMENT (NOV. 1)**  
(in long tons, unless indicated otherwise)

	Nominal Capacity	Nominal Capacity Required for:				Nominal Stock-Holding Capacity/ <sup>a</sup>	Effective Stock-Holding Capacity				Total Effective Stock Holding Capacity/ <sup>j</sup>
		Non-Foodgrain Storage	Stock Roll-Over and Transit Handling	Receiving Imports	Domestic Procurement		Paddy/h		Rice/Wheat		
						Loading Factor/ <sup>i</sup>	Quantity/h	Loading Factor/ <sup>i</sup>	Quantity/h		
<b>Silos</b>	<u>234,564</u> <sup>b</sup>	<u>1,500</u> <sup>c</sup>	-	<u>103,804</u> <sup>d</sup>	-	...	-	<u>1.0</u>	<u>129,260</u>	<u>129,260</u>	
<b>CSDs</b>	<u>401,900</u>	<u>80,380</u>	<u>64,304</u>	<u>25,000</u>	<u>68,050</u>	...	<u>51,735</u>	...	<u>178,293</u>	<u>230,028</u>	
Class 1 godowns	<u>175,200</u>	<u>20,600</u> <sup>e</sup>	<u>30,920</u>	-	<u>36,250</u>	<u>1.3</u>	<u>27,555</u>	<u>1.7</u>	<u>112,598</u>	<u>140,153</u>	
Class 2 godowns	<u>226,700</u>	<u>59,780</u>	<u>33,384</u>	<u>25,000</u>	<u>31,800</u>	<u>1.0</u>	<u>24,180</u>	<u>1.25</u>	<u>65,695</u>	<u>89,875</u>	
<b>LSDs</b>	<u>525,869</u>	<u>105,174</u>	<u>84,139</u>	-	<u>98,617</u>	...	<u>74,985</u>	...	<u>346,982</u>	<u>421,967</u>	
Class 1 godowns	<u>483,636</u>	<u>90,688</u> <sup>f</sup>	<u>78,590</u>	-	<u>92,117</u>	<u>1.5</u>	<u>70,035</u>	<u>1.9</u>	<u>333,547</u>	<u>403,582</u>	
Class 2 godowns	<u>42,233</u>	<u>14,486</u>	<u>5,549</u>	-	<u>6,500</u>	<u>1.0</u>	<u>4,950</u>	<u>1.25</u>	<u>13,435</u>	<u>18,385</u>	
<b>Hired Godowns</b>	<u>163,217</u>	<u>32,663</u>	<u>26,131</u>	-	-	<u>1.0</u>	<u>23,280</u>	<u>1.25</u>	<u>101,554</u>	<u>124,834</u>	
<b>TOTAL</b>	<u>1,325,650</u>	<u>219,717</u>	<u>174,574</u>	<u>128,804</u>	<u>166,667</u>	...	<u>150,000</u>	...	<u>756,089</u>	<u>906,089</u>	

... = not applicable.

<sup>a</sup> Nominal capacity available after allowing for storage of non-foodgrain commodities, stock roll-over, import handling, procurement space, etc.

<sup>b</sup> Including godowns at silo sites.

<sup>c</sup> Godowns at silo sites used for equipment storage only.

<sup>d</sup> Total capacity of Chittagong silo.

<sup>e</sup> Where possible, non-foodgrains are to be stored in Class 2 godowns, but in many CSDs Class 1 godowns must also serve this purpose.

<sup>f</sup> Khulna CSD has no Class 1 godowns.

<sup>g</sup> Where possible, non-foodgrains are to be stored in Class 2 godowns, but in many LSDs Class 1 must be used for this purpose.

<sup>h</sup> In terms of rice-equivalent.

<sup>i</sup> Expressed as ratio of nominal capacity.

<sup>j</sup> In terms of rice equivalent; includes "dead stocks."

Source: Mission estimates.

Table 6.11

BANGLADESH: EFFECTIVE STOCK-HOLDING CAPACITY OF THE MOF STORAGE SYSTEM PRIOR TO MAIN LEAN SEASON (JULY 1)  
(in long tons, unless indicated otherwise)

	Nominal Capacity Required for:					Nominal Stock-Holding Capacity <sup>/a</sup>	Effective Stock-Holding Capacity				Total Effective Stock-Holding Capacity <sup>/j</sup>
	Nominal Capacity	Non-Foodgrain Storage	Stock Roll-Over and Transit Handling	Receiving Imports	Domestic Procurement		Paddy <sup>/h</sup>		Rice/Wheat		
							Loading Factor <sup>/i</sup>	Quantity <sup>/h</sup>	Loading Factor <sup>/i</sup>	Quantity <sup>/h</sup>	
<u>Silos</u>	<u>234,564</u> <sup>/b</sup>	<u>1,500</u> <sup>/c</sup>	-	<u>103,804</u> <sup>/d</sup>	-	<u>129,260</u>	...	-	1.0	<u>129,260</u>	<u>129,260</u>
<u>CSDs</u>	<u>401,900</u>	<u>80,380</u>	<u>64,304</u>	<u>25,000</u>	<u>13,610</u>	<u>218,606</u>	...	<u>137,960</u>	...	<u>148,962</u>	<u>286,922</u>
Class 1 godowns	175,200	20,600 <sup>/e</sup>	30,920	- <sup>/f</sup>	7,250	116,430	1.3	73,480	1.7	101,842	175,322
Class 2 godowns	226,700	59,780	33,384	25,000	6,360	102,176	1.0	64,480	1.25	47,120	111,600
<u>LSDs</u>	<u>525,869</u>	<u>105,174</u>	<u>84,139</u>	-	<u>19,723</u>	<u>316,833</u>	...	<u>199,960</u>	...	<u>335,336</u>	<u>535,296</u>
Class 1 godowns	483,636	90,688 <sup>/g</sup>	78,590	-	18,423	295,935	1.5	186,760	1.9	325,713	512,473
Class 2 godowns	42,233	14,486	5,549	-	1,300	20,898	1.0	13,200	1.25	9,623	22,823
<u>Hired Godowns</u>	<u>163,317</u>	<u>32,663</u>	<u>26,131</u>	-	-	<u>104,523</u>	1.0	<u>62,080</u>	1.25	<u>53,054</u>	<u>115,134</u>
<u>TOTAL</u>	<u>1,325,650</u>	<u>219,717</u>	<u>174,574</u>	<u>128,804</u>	<u>33,333</u>	<u>769,222</u>	...	<u>400,000</u>	...	<u>666,612</u>	<u>1,066,612</u>

... = Not applicable.

<sup>/a</sup> Nominal capacity available after allowing for storage of non-foodgrain commodities, stock roll-over, import handling, procurement space, etc.

<sup>/b</sup> Including godowns at silo sites.

<sup>/c</sup> Godowns at silo sites used for equipment storage only.

<sup>/d</sup> Total capacity of Chittagong silo.

<sup>/e</sup> Where possible, non-foodgrains are to be stored in Class 2 godowns, but in many CSDs Class 1 godowns must also serve this purpose.

<sup>/f</sup> Khulna CSD has no Class 1 godowns.

<sup>/g</sup> Where possible, non-foodgrains are to be stored in Class 2 godowns, but in many LSDs Class 1 godowns must be used for this purpose.

<sup>/h</sup> In terms of rice-equivalent.

<sup>/i</sup> Expressed as ratio of nominal capacity.

<sup>/j</sup> In terms of rice-equivalent; includes "dead stocks".

Source: Mission estimates.

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Dec. 17, 1979

Table 6.12

BANGLADESH: MAJOR RICE MILLS - LOCATION AND CAPACITY  
(as of March 1978)

<u>Division/District</u>	<u>No. of Major Rice Mills</u>	<u>Storage Capacity (tons)</u>	<u>Milling Capacity per 8-hour day (tons)</u>	<u>% of Total Milling Capacity</u>	<u>% of Rice Production 1977/78</u>	<u>% of Rice<sup>a/</sup> Procurement 1977/78</u>
<u>Rajshahi</u>	<u>77</u>	<u>61,608</u>	<u>1,462</u>	<u>51.41</u>	<u>26.44</u>	<u>42.98</u>
Dinajpur	50	44,746	1,043	36.67	4.85	16.42
Rangpur	8	8,817	140	4.92	8.56	9.51
Bogra	12	2,094	207	7.28	3.80	4.62
Rajshahi	7	5,951	72	2.53	6.03	11.93
Pabna	-	-	-	-	3.20	0.50
<u>Khulna</u>	<u>19</u>	<u>37,289</u>	<u>282</u>	<u>9.92</u>	<u>19.40</u>	<u>19.72</u>
Kushtia	-	-	-	-	1.66	0.11
Jessore	-	-	-	-	4.75	0.83
Khulna	16	34,460	231	8.12	4.42	2.78
Patuakhali	1	551	18	0.63	3.12	5.62
Barisal	2	2,278	33	1.16	5.45	10.37
<u>Dacca</u>	<u>34</u>	<u>11,710</u>	<u>544</u>	<u>19.13</u>	<u>25.77</u>	<u>16.67</u>
Jamalpur b/	} 7	} 3,490	} 149	} 5.24	} 13.48	} 16.00
Mymensingh						
Tangail	-	-	-	-	3.39	0.25
Dacca	25	7,485	372	13.08	5.66	0.30
Faridpur	2	735	23	0.81	3.24	0.12
<u>Chittagong</u>	<u>39</u>	<u>18,020</u>	<u>555</u>	<u>19.51</u>	<u>28.39</u>	<u>20.63</u>
Sylhet	9	1,708	72	2.53	8.47	7.37
Comilla	1	441	11	0.39	7.15	3.39
Noakhali	1	735	26	0.91	5.93	4.22
Chittagong	28	15,136	446	15.68	6.06	4.80
Chittagong H. T.	-	-	-	-	0.79	0.86
<u>TOTAL</u>	<u>169</u>	<u>126,627</u>	<u>2,844</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>

a/ Procurement of paddy and of milled rice.

b/ Jamalpur was a subdivision of Mymensingh until December 31, 1978.

Sources: Ministry of Food; Ministry of Agriculture and Forestry;  
Bangladesh Bureau of Statistics.

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October 29, 1979

TABLE 7.1

BANGLADESH: ESTIMATED GOVERNMENT FOODGRAIN STOCKS, END-OF-MONTH, 1972/73 - 1978/79

<u>Month</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>
July	434	218	340	752	806	454	598
August	409	213	363	787	764	571	580
September	351	296	196	684	705	673	582
October	203	388	106	704	565	591	685
November	208	294	120	655	453	540	836
December	136	267	176	926	464	715	862
January	205	203	279	1,050	550	760	800
February	225	171	252	1,046	559	696	713
March	501	144	274	1,060	471	616	541
April	491	149	311	844	371	566	412
May	401	238	479	792	370	577	306
June	297	214	749	823	376	591	209
-----							
Average	322	233	304	845	538	613	594
High	501	388	749	1,060	806	760	862
Low	136	144	106	655	370	454	209

Source: 1972/73 - 1976/77, World Food Programme, Dacca;  
1977/78 - 1978/79, IBRD (including monthly adjustment for losses).

Table 8.1

BANGLADESH: DIETARY-ENERGY GAP, 1973/74

	<u>Rural Areas</u>	<u>Urban Areas</u>	<u>All Areas</u>
1. Average daily minimum per capita calorie standard <sup>a/</sup>	2122	2122	2122
2. Average per capita daily intake of the poor <sup>b/</sup>	1680	1813	1691
3. Per capita daily calorie gap of the poor (cal)	442	309	431
4. Annual calorie gap of the poor in rice equivalents (in million tons)	2.5	0.2	2.7

---

<sup>a/</sup> Based on 1974 population distribution, and minimum daily calorie requirements for average body weights by age groups with allowance for pregnant women and lactating mothers.

<sup>b/</sup> Poor are defined as those who consume less than the standard

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October 25, 1979

Table 8.2

BANGLADESH: AVERAGE MONTHLY PER CAPITA CONSUMPTION OF MAJOR FOOD ITEMS BY QUARTER, 1973/74

Period	Urban						Rural					
	Monthly per capita consumption (lbs.)			Monthly per capita expenditure (Tk)			Monthly per capita consumption (lbs.)			Monthly per capita expenditure (Tk)		
	Rice	Wheat	Pulses	Rice	Wheat	Pulses	Rice	Wheat	Pulses	Rice	Wheat	Pulses
July-Sept. 1973	19.62	11.13	1.54	22.0	5.0	2.1	24.85	7.69	1.77	26.2	4.7	2.4
Oct.-Dec. 1973	20.90	10.92	1.52	22.5	4.9	2.8	25.71	5.66	1.42	28.1	3.5	2.8
Jan.-Mar. 1974	20.61	10.29	0.97	25.8	5.4	2.0	25.42	5.88	1.19	33.3	4.8	1.9
Apr.-June 1974	19.66	11.46	1.28	32.7	6.9	2.5	23.90	4.53	1.19	42.2	4.9	2.1

Source: BBS, Household Expenditure Survey of Bangladesh 1973-74, Vol. I, August 1978 (Tables 5.3 and 5.5).

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Dec. 19, 1979

Table 8.3

BANGLADESH: AVERAGE DAILY PER CAPITA CALORIE INTAKE BY QUARTERS IN  
RURAL AREAS, 1973-74

<u>Period</u>	<u>Calory Intake</u>				
	<u>Rice</u>	<u>Wheat</u>	<u>Rice and Wheat</u>	<u>Others</u>	<u>Total</u>
July-September 1973	1,296	401	1,697	260	1,957
October-December 1973	1,341	295	1,636	254	1,890
January-March 1974	1,326	296	1,622	241	1,863
April-June 1974	1,247	236	1,483	213	1,696
<u>July 1973 - June 1974</u>	<u>1,303</u>	<u>307</u>	<u>1,610</u>	<u>242</u>	<u>1,852</u>

Source: Bangladesh Bureau of Statistics, Household Expenditure Survey of Bangladesh 1973-74, Vol. I; August 1978 (Table 5.5).

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Nov. 14, 1979

Table 8.4

/a  
SIZE DISTRIBUTION OF AGRICULTURAL LAND IN RURAL BANGLADESH, 1978

Holding Size (acres)	Households				Persons					Total Acreage Owned			
	Number	% of Total	Cumulative % of Total		Number	% of Total	Persons per Household	Cumulative % of Total		Acres	% of Total	Cumulative % of Total	
			A /b	B /c				A /b	B /c			A /b	B /c
0	3,462,167	28.78	28.78	100.00	16,332,396	4.72	23.43	23.43	100.00	1,653,197	-	-	-
0.01 - 1.00	3,994,542	33.20	61.98	71.22	21,190,000	5.29	30.33	53.76	76.57	2,608,916	8.41	100.00	8.41
1.01 - 2.00	1,750,072	14.55	76.52	38.02	10,422,407	5.96	14.95	68.71	46.24	2,337,063	13.27	91.59	21.68
2.01 - 3.00	940,116	7.81	84.34	23.48	6,192,404	6.57	8.88	77.60	31.29	2,072,870	11.89	78.32	33.57
3.01 - 4.00	596,247	4.96	89.29	15.66	4,322,184	7.25	6.20	83.80	22.40	1,566,362	10.54	66.43	44.11
4.01 - 5.00	346,286	2.88	92.17	10.71	2,645,305	7.64	3.80	87.59	16.20	1,230,924	7.97	55.89	52.08
5.01 - 6.00	224,067	1.86	94.03	7.83	1,816,360	8.11	2.61	90.20	12.41	1,035,028	6.26	47.92	58.34
6.01 - 7.00	159,160	1.32	95.36	5.97	1,405,858	8.83	2.02	92.22	9.80	808,471	5.27	41.66	63.61
7.01 - 8.00	107,028	0.89	96.25	4.64	916,639	8.56	1.32	93.53	7.78	718,271	4.11	36.39	67.72
8.00 - 9.00	84,586	0.70	96.95	3.75	759,205	8.98	1.09	94.62	6.47	675,552	3.65	32.28	71.37
9.01 - 10.00	70,431	0.59	97.54	3.05	649,761	9.23	0.93	95.55	5.38	548,433	3.44	28.63	74.81
10.01 - 11.00	52,133	0.43	97.97	2.47	461,599	8.85	0.66	96.21	4.45	461,919	2.79	25.19	77.60
11.01 - 12.00	39,704	0.33	98.30	2.03	396,347	9.98	0.57	96.78	3.79	358,998	2.35	22.40	79.95
12.01 - 13.00	28,656	0.24	98.54	1.70	294,498	10.28	0.42	97.20	3.22	386,217	1.83	20.05	81.78
13.01 - 14.00	28,311	0.24	98.77	1.46	298,641	10.55	0.43	97.63	2.80	238,338	1.96	18.22	83.74
14.01 - 15.00	16,227	0.13	98.91	1.23	181,602	11.19	0.26	97.89	2.37	19,658,617	1.21	16.26	84.95
Over 15.00	131,340	1.09	100.00	1.09	1,468,003	11.16	2.11	100.00	2.11	19,658,617	15.05	15.05	100.00
<b>TOTAL</b>	<b>12,031,272</b>	<b>100.00</b>	<b>...</b>	<b>...</b>	<b>69,703,206</b>	<b>5.79</b>	<b>100.00</b>	<b>...</b>	<b>...</b>	<b>19,658,617</b>	<b>100.00</b>	<b>...</b>	<b>...</b>

/a Land holdings excluding homestead land.

/b Cumulative from smallest to largest farm size.

/c Cumulative from largest to smallest farm size.

Source: BBS, Summary Report of the 1978 Land Occupancy Survey of Rural Bangladesh, Dec. 1978; Table II-A.

ASADD  
Dec. 19, 1979

Table 9.1

## BANGLADESH: AGRICULTURAL LABOR FORCE AND AGRICULTURAL EMPLOYMENT BY DISTRICT, 1977

Division/District	Agricultural Labor Force (million) <sup>/a</sup>	Estimated Labor Requirement for: (million man-years)			Total Estimated Employment in Agriculture		Cropping intensity	Population per acre of net cropped area <sup>/d</sup>
		Crop Production (A) <sup>/b</sup>	(B)	Other Agricultural Activities <sup>/c</sup>	Total (mill.man-years)	As % of Agricultural Labor Force		
<u>Rajshahi</u>								
Dinajpur	0.81	0.22	0.23	0.12	0.57	70	1.43	2.3
Rangpur	1.71	0.54	0.37	0.25	1.16	66	1.79	3.2
Bogra	0.71	0.16	0.16	0.11	0.43	61	1.53	3.1
Rajshahi	1.33	0.32	0.23	0.20	0.75	56	1.31	3.2
Pabna	0.86	0.19	0.14	0.13	0.46	53	1.56	2.5
<u>Khulna</u>								
Kushtia	0.57	0.15	0.10	0.09	0.34	60	1.31	2.6
Jessore	1.04	0.27	0.18	0.15	0.60	58	1.37	3.3
Khulna	1.00	0.16	0.21	0.22	0.59	59	1.23	3.5
Barisal	1.25	0.23	0.22	0.25	0.70	56	1.48	1.6
Patuakhali	0.48	0.07	0.13	0.12	0.32	67	1.25	5.1
<u>Dacca</u>								
Jamalpur	} 2.36	} 0.59	} 0.53	} 0.34	} 1.46	} 62	} 1.66	} 3.2
Mymensingh								
Tangail	0.65	0.18	0.12	0.10	0.40	62	1.77	3.5
Dacca	1.77	0.32	0.20	0.26	0.78	44	1.46	6.3
Faridpur	1.30	0.29	0.16	0.19	0.64	49	1.53	3.4
<u>Chittagong</u>								
Sylhet	1.53	0.24	0.29	0.23	0.76	50	1.28	2.6
Comilla	1.84	0.34	0.24	0.31	0.89	48	1.59	4.7
Noakhali	1.04	0.22	0.20	0.21	0.63	61	1.55	3.5
Chittagong	1.13	0.18	0.17	0.26	0.61	54	1.47	5.9
Chittagong Hill Tracts	(0.15)	..	..	..	..	..	..	2.9
<u>Total</u>	<u>21.38</u> (21.53)	<u>4.67</u>	<u>3.97</u>	<u>3.54</u>	<u>12.09</u>	<u>57</u>	<u>1.49</u>	<u>3.4</u>

/a Calculated as 29% of rural population. Assumes population growth between 1974/77 of 2.8%. Labor force includes age group 14-64, all males and 11% of all females.

/b (A) pertains to monthly average during dry season (mid-December to mid-June), and (B) pertains to monthly average of mid-June to mid-December.  
(About 5% of total cropped area is not included.)

/c Includes livestock, fisheries, land and water development (except FFW), and other activities, including processing, transport and marketing.

/d For 1975/76.

Source: H. Brundin, Food for Work Saturation Level and Constraints to Expansion Study, USAID, Dacca, Oct. 1978; Tables I, III and IV.

Table 9.2

BANGLADESH: ESTIMATES OF UNEMPLOYMENT AND UNDER-EMPLOYMENT, 1978/79  
(millions)

1. <u>Rural labor force</u> <sup>a/</sup>	<u>27.4</u>
Labor requirements in major agricultural sectors	
i. Crop production <sup>b/</sup>	9.23
ii. Agriculture other than crop production <sup>c/</sup>	<u>3.78</u>
	13.01
2. Food For Work <sup>d/</sup>	0.38
3. Small industries <sup>e/</sup>	<u>3.08</u>
	<u>16.47</u>
	<u>16.47</u>
4. Unemployment/under-employment (as percent of rural labor force)	10.93 (40)

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a/ 1978/79 rural population has been estimated at 77.9 million.  
A participation rate of .352 is assumed.

b/ See Table 9.1 for labor requirements of crop production in 1977. Add pro-rata labor requirements of 5% of the cropped area not included in 1977 estimates plus an increase of 1.7% in labor requirements due to shift toward HYVs.

c/ See Table 9.1. Add 1.7% per annum increase in employment. Includes livestock, forestry, fisheries, land and water development (except FFW) and other activities, including processing, transport and marketing (Forestry 0.12).

d/ See Table 10.10.

e/ Based on Rural Industries Study Project, BIDS, 1978. Also see Allen's estimates in his Rural Industries Employment Findings of RISP Phase I Report. 1979. Allen's employment estimates of 4 million in rural small industries for the whole country are adopted, but employment in food processing and manufacturing (23%) is excluded as this is included in 1 (ii).

Table 9.3

DAILY WAGES OF AGRICULTURAL LABOUR (WITHOUT FOOD) BY DISTRICT, 1969/70 - 1977/78  
(Taka per day)

Division/District	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78
<u>Rajshahi</u>	2.74	2.84	3.21	4.26	5.71	7.39	8.06	7.83	7.92
Dinaipur	3.03	3.18	3.92	4.35	5.62	7.89	8.30	8.00	8.00
Rangpur	2.56	2.64	2.64	4.10	6.18	6.79	7.35	7.54	7.50
Bogra	2.82	2.71	3.17	4.06	5.33	6.83	7.92	8.42	8.42
Rajshahi	2.76	3.12	3.25	4.13	5.61	7.88	8.08	7.29	8.00
Pabna	2.51	2.54	3.08	4.67	5.81	7.55	8.63	7.91	7.67
<u>Khulna</u>	2.73	2.78	3.02	3.94	6.10	8.40	8.48	8.63	9.30
Kushtia	2.37	2.26	2.33	3.18	4.83	7.42	7.32	8.00	8.84
Jessore	2.44	2.97	2.86	3.17	4.91	6.92	7.50	7.67	9.00
Khulna	2.85	2.30	2.87	3.29	5.40	7.09	8.55	7.50	9.09
Barisal	2.81	2.94	2.95	4.41	8.52	10.83	10.20	10.08	10.00
Patuakhali	3.18	3.41	4.11	5.64	6.82	9.75	8.81	9.92	9.59
<u>Dacca</u>	2.63	3.02	3.25	4.99	6.76	9.02	7.82	8.27	9.17
Jamalpur <sup>/a</sup>	2.76	2.98	3.13	5.26	6.35	8.64	7.63	8.09	8.92
Mymensingh (Mymensingh <sup>/b</sup> ) (Kishoreganj <sup>/b</sup> )	2.61	2.97	3.19	5.15	6.87	8.43	8.09	8.50	10.00
Tangail	2.92	3.00	3.07	5.37	5.82	8.86	7.16	7.67	7.84
Dacca	2.00	2.83	3.20	4.75	6.60	8.21	7.27	6.71	8.00
Faridpur	3.22	3.71	3.56	5.63	8.92	11.74	9.29	9.29	10.00
Chittagong	2.41	2.60	3.21	4.06	5.58	7.85	7.27	9.17	10.00
<u>Chittagong</u>	3.75	3.87	4.02	5.68	8.18	11.40	10.92	10.85	11.15
Sylhet	3.67	3.88	4.59	6.47	8.86	11.52	11.55	10.29	11.17
Comilla	2.96	3.26	3.28	4.82	6.51	10.14	9.42	8.96	8.67
Noakhali	3.53	3.94	3.74	5.70	8.50	12.38	11.27	9.33	10.25
Chittagong	4.52	4.38	4.50	6.23	8.77	12.08	11.07	12.27	12.84
Chittagong Hill Tracts	4.06	3.88	4.00	5.17	8.27	10.86	11.29	13.42	12.84
<u>Country Average</u>	<u>2.96</u>	<u>3.13</u>	<u>3.38</u>	<u>4.72</u>	<u>6.69</u>	<u>9.05</u>	<u>8.82</u>	<u>8.90</u>	<u>9.39</u>

<sup>/a</sup> Jamalpur was a subdivision of Mymensingh until December 31, 1978.

<sup>/b</sup> In some presentations of agricultural statistics, data for Mymensingh district are shown separately for Kishoreganj subdivision and for the rest of Mymensingh district.

Note: All district, division and country averages are simple, unweighted averages of the wage rates in the constituent administrative units.

Source: Bangladesh Bureau of Statistics.

Table 10.1

BANGLADESH: RATION ISSUE PRICES FOR FOODGRAINS, 1970-1979  
(in Taka per Maund)

	Effective Date										
	1 Nov. 65	1 Jan. 70	11 Jan. 71	15 Jan. 73	1 July 73	3 Sept. 73	27 May 74	20 Dec. 75	7 Feb. 76	31 Dec. 77	19 May 79
<u>Rice</u>											
Wholesale/ <sup>a</sup>	25.40	...	29.00	28.82	38.82	38.00	58.00	68.00	87.00	97.00	117.00
Retail/ <sup>b</sup>	26.40	...	30.00	30.00	40.00	40.00	60.00	70.00	90.00	100.00	120.00
<u>Wheat</u>											
Wholesale/ <sup>a</sup>	/ <sup>c</sup>	19.62	...	...	28.82	28.00	48.00	53.20	67.00	77.00	87.00
Retail/ <sup>b</sup>	/ <sup>c</sup>	20.80	...	...	30.00	30.00	50.00	55.00	70.00	80.00	90.00

... = no change.

/<sup>a</sup> Price ex MoF godown, charged to ration shop dealers.

/<sup>b</sup> Price to ration card holders.

/<sup>c</sup> The wheat prices prior to 1 Jan. 1970 were 17.62 and 18.80, respectively (since 15 April 1969).

Source: Ministry of Food.

ASADD  
Nov. 20, 1979

Table 10.2

BANGLADESH: FOODGRAIN PRICES APPLICABLE TO MINISTRY OF FOOD  
"MARKET OPERATIONS" AND "OPEN MARKET SALES"  
 (in Taka per maund)

	Effective Date			
	MO	OMS	MO	OMS
	<u>April 1978</u>	<u>August 1978</u>	<u>November 1978</u>	<u>August 1979</u>
Target Ceiling Price for Coarse Rice <u>/a</u>	...	150	...	184
Trigger Price of Coarse Rice <u>/b</u>	160	145	140	172
Wholesale Price for Wheat <u>/c</u>	77	85	77	87
Retail Ceiling Price for Wheat <u>/d</u>	90	95	90	100

... = Not applicable, as no target ceiling price was set for "market operations".

/a Maximum above which free market retail price for coarse rice should not rise if MO/OMS were operated successfully.

/b Retail price level for coarse rice at which MO/OMS operations are to begin.

/c Price ex MoF godown, charged to grain dealers participating in the program.

/d Maximum retail price participating dealers are permitted to charge customers.

Source: Ministry of Food.

ASADD  
 Nov. 20, 1979

Table 10.3

BANGLADESH: CEREAL QUOTA PER CARDHOLDER UNDER STATUTORY RATIONING  
(in Seers per cardholder /1)

<u>Period</u>	<u>Total Cereal Quota</u>	<u>of Which</u>		<u>Rice/Wheat Ratio</u>
		<u>Rice</u>	<u>Wheat</u>	
March 19, 1973 - February 23, 1975	3.0	0.75	2.25	1:3
February 24, 1975 - September 5, 1975	2.5	0.5	2.0	1:4
September 6, 1975 - August 30, 1976	2.5	1.5	1.0	3:2
August 31, 1976 - October 15, 1976	3.0	2.0	1.0	2:1
October 16, 1976 - March 4, 1977	4.0	2.5	1.5	5:3
March 5, 1977 - December 2, 1977	3.0	2.0	1.0	2:1
December 3, 1977 - present <u>/2</u>	3.0	1.5	1.5	1:1

/1 Quota for adults. Children are entitled to half the adult quota. The cereal quota has remained constant during the period indicated. The breakup into rice and wheat as given here reflects the initial policy. However, the mix has varied occasionally during the period depending on availability. In many cases the decisions were ad hoc, summary, different for different areas, and records are not available.

/2 From early October to early December 1979, for the statutory rationing area of Dacca only, the cereal quota was changed to two seers of rice and one seer of wheat to help lower rice prices.

Note: 1 seer = 2.057 lbs.

Source: Ministry of Food.

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Dec. 19, 1979

Table 10.4

BANGLADESH: OFFTAKE OF FOODGRAINS FROM THE PUBLIC DISTRIBUTION SYSTEM, 1964/65-1978/79  
( '000 long tons)

Year	Statutory Rationing	Essential and Other Priority Groups	All Priority Groups Total	Modified Rationing	Relief	Food-For-Work	Total	Share of Priority Groups (%)	Share of Modified Rationing (%)
1964/65	143	..	-	..	..	-	709	-	-
1965/66	162	..	-	..	..	-	964	-	-
1966/67	224	..	-	..	..	-	1,056	-	-
1967/68	197	..	-	..	..	-	648	-	-
1968/69	223	141	364	604	70	-	1,038	35	58
1969/70	243	171	414	925	15	-	1,354	31	68
1970/71	210	97	307	778	233	-	1,318	23	59
1971/72	281	162	443	871	421	-	1,714	26	51
1972/73	465	354	819	1,592	207	-	2,618	31	61
1973/74	502	396	898	777	52	-	1,728	52	45
1974/75	471	554	1,025	578	161	-	1,764	58	33
1975/76	359	595	954	495	110	116	1,676	57	30
1976/77	377	609	986	288	33	166	1,473	67	20
1977/78	451	753	1,204	358	30	255	1,847	65	19
1978/79	417	807	1,224	311	45	216	1,796	68	17

.. = Not available.

Source: Ministry of Food.

ASADD  
Dec. 17, 1979

Table 10.5

BANGLADESH: ESTIMATED POPULATION COVERED BY THE PUBLIC FOOD DISTRIBUTION SYSTEM, 1975/76 - 1978/79

Year	Urban Population ('000)						Rural Population ('000)					
	SR	MR	EP, OP & LE	Total Coverage	Total Popu- lation	Coverage as % of total Population	MR	EP, OP & LE	FFW & Relief	Total Coverage	Total Popu- lation	Coverage as % of total Population
1975/76	3,534	675	2,223	6,432	7,908	81	8,315	2,507	1,638	12,460	72,509	17
1976/77	3,688	401	1,495	5,584	8,462	66	3,613	1,789	1,443	6,845	74,249	9
1977/78	3,665	533	2,290	6,488	9,054	72	4,794	3,379	2,066	10,239	76,031	13
1978/79	3,667	471	2,338	6,476	9,688	67	4,235	2,894	1,892	9,021	77,856	12

Notes:

SR: Statutory Rationing coverage is determined by the number of ration cards issued. Figures for fiscal years are average for the number of cards on July 1 of each year (only in urban areas).

MR: Modified Rationing - 7.5% urban for 1975/76 and 10% for other years. The number of beneficiaries is calculated from total allotment and per capita ration entitlement.

EP, OP & LE: Essential Priorities, other priorities and employees of large establishments are divided into urban/rural as 40%, 40% & 75% urban respectively. The number of beneficiaries is calculated from total allotment and per capita ration entitlement.

FFW & Relief: Food-for-Work and Relief; based on wages in kind, implied man-years of employment consisting of 250 man-days each are calculated. Each man-year of employment supports a family of five. Total beneficiaries, thus, equal man-years of employment multiplied by five.

Population growth rates: 7% for urban areas, 2.4% for rural areas.

Source: Mission estimates, based on information supplied by the Ministry of Food.

ASADD  
December 17, 1979

Table 10.6

BANGLADESH: ESTIMATED POPULATION OF CITIES HAVING STATUTORY RATIONING, 1974-79  
(in thousands)

<u>City</u>	<u>Census (March 1, 1974)</u> <sup>/a</sup>		<u>Mid-Year Estimates (July 1)</u> <sup>/b</sup>					
	<u>Census Count</u>	<u>Adjusted</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Dacca	1,680	2,004	2,050	2,194	2,347	2,511	2,687	2,875
Narayanganj	271	323	330	353	378	404	433	463
Chittagong	890	1,061	1,085	1,161	1,242	1,329	1,422	1,522
Khulna	437	522	534	571	611	654	700	749
Rajshahi	133	142	145	155	166	178	190	203
Rangamati	20	22	23	25	26	28	30	32
<u>Total</u>	<u>3,431</u>	<u>4,074</u>	<u>4,167</u>	<u>4,459</u>	<u>4,770</u>	<u>5,104</u>	<u>5,462</u>	<u>5,844</u>

<sup>/a</sup> Corrected for underenumeration of 19.3 percent in Dacca, Narayanganj, Chittagong, and Khulna, and of 6.5 percent in other cities.

<sup>/b</sup> Assuming a growth rate of 7 percent a year.

Source: BBS and mission estimates.

ASADD  
Nov. 6, 1979

Table 10.7

BANGLADESH: NUMBER OF RATION CARD HOLDERS IN DEFINED STATUTORY RATIONING AREAS, 1975-79

<u>City</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Dacca	1,781,881	2,087,237	2,066,089	2,068,599	2,094,000
Narayanganj	227,349	281,972	270,596	268,175	266,533
Chittagong	572,666	565,629	570,666	553,426	555,137
Khulna	625,195	623,238	594,549	589,180	577,305
Rangamati (Chitt. H.T.)	-	18,919 <sup>/b</sup>	29,741	31,159	33,859
Rajshahi	159,918 <sup>/a</sup>	125,096	142,219	145,656	150,907
<u>Total</u>	<u>3,367,009</u>	<u>3,702,091</u>	<u>3,673,860</u>	<u>3,656,195</u>	<u>3,677,741</u>

/a Rajshahi was included in the Statutory Rationing Area in April 1975.

/b Rangamati was included in the Statutory Rationing Area in October 1976.

Source: Directorate of Supply, Distribution and Rationing, Ministry of Food.

ASADD  
Oct. 25, 1979

Table 10.8

## BANGLADESH: POPULATION COVERED BY STATUTORY RATIONING, 1975-1979

City	1975			1976			1977			1978			1979		
	Popu- lation ( <sup>'000</sup> )	No. of ration cards ( <sup>'000</sup> )	Popu- lation covered (%)	Popu- lation ( <sup>'000</sup> )	No. of ration cards ( <sup>'000</sup> )	Popu- lation covered (%)	Popu- lation ( <sup>'000</sup> )	No. of ration cards ( <sup>'000</sup> )	Popu- lation covered (%)	Popu- lation ( <sup>'000</sup> )	No. of ration cards ( <sup>'000</sup> )	Popu- lation covered (%)	Popu- lation ( <sup>'000</sup> )	No. of ration cards ( <sup>'000</sup> )	Popu- lation covered (%)
Dacca	2,194	1,782	0.81	2,347	2,087	0.89	2,511	2,066	0.82	2,687	2,069	0.77	2,875	2,094	0.72
Narayanganj	353	227	0.64	378	282	0.74	404	271	0.67	433	268	0.62	463	267	0.58
Chittagong	1,161	573	0.49	1,242	566	0.46	1,329	571	0.43	1,422	553	0.39	1,522	555	0.36
Khulna	571	625	1.09	611	623	1.02	654	595	0.91	700	589	0.84	749	577	0.77
Rajshahi	155	160	1.03	166	125	0.75	178	142	0.79	190	146	0.77	203	151	0.74
Rangamati	25	-	-	26	19	0.73	28	30	1.07	30	31	1.03	32	34	1.06
<u>Total</u>	<u>4,459</u>	<u>3,367</u>	<u>0.75</u>	<u>4,770</u>	<u>3,702</u>	<u>0.77</u>	<u>5,104</u>	<u>3,674</u>	<u>0.72</u>	<u>5,462</u>	<u>3,656</u>	<u>0.70</u>	<u>5,844</u>	<u>3,678</u>	<u>0.63</u>

Source: Tables 10.6, 10.7 and 10.9

ASADD  
December 17, 1979

Table 10.9

BANGLADESH: DISTRIBUTION OF CEREALS IN STATUTORY RATIONING AREAS, 1975-79

<u>Year</u>	<u>Rice ( '000 tons)</u>	<u>Wheat ( '000 tons)</u>	<u>Actual Rice/wheat ratio</u>	<u>Rice/wheat ratio allowed</u>	<u>Average daily cereals drawn per ration card (oz.)</u>	<u>Average daily cereals<sup>/a</sup> allowed per ration card (oz.)</u>
1975/76	212.7	135.5	1:0.63	1:4	9.6	8.8
1976/77	262.6	114.2	1:0.43	1:0.7	10.0	11.5
1977/78	279.7	171.3	1:0.61	1:0.7	12.1	10.6
1978/79	245.7	171.4	1:0.69	1:1	11.2	10.6

/a The quota for children up to 8 1/2 years of age is one-half of that for adults.

Source: Directorate of Supply, Distribution and Rationing.

ASADD  
Nov. 6, 1979

Table 10.10

BANGLADESH: AGRICULTURAL WAGES AND VALUE OF ENTITLEMENT UNDER FOOD-FOR-WORK

<u>Year</u>	<u>Daily agricultural wages without food (Tk/day)</u>	<u>Current value of wheat<sup>/a</sup> under FFW (Tk/day)</u>	<u>Payment under FFW as % of agricultural wages</u>
1974/75	9.05	10.57	117
1975/76	8.82	5.76	65
1976/77	8.93	5.46	61
1977/78	9.44	6.86	72
1978/79	10.82	6.90	64

<sup>/a</sup> Workers are paid 3 seers of wheat for 70 cubic feet of earth moved, which is expected to be completed in one day. Wheat is valued at average wholesale price.

Source: Bangladesh Bureau of Statistics.

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Nov. 1, 1979

Table 10.11

BANGLADESH: FOOD DISTRIBUTION UNDER FOOD-FOR-WORK  
AND ITS EMPLOYMENT EFFECT, 1974/75-1978/79

<u>Year</u>	<u>Annual wheat disbursements under FFW (metric tons)</u>	<u>Estimated employment generated (million person-days)</u>	<u>Approximate number of families affected /a ('000)</u>	<u>Number of schemes</u>
1974/75	31,991	11	253	..
1975/76	208,625	75	1,725	1,554
1976/77	222,557	80	1,840	2,328
1977/78	275,400	98	2,254	2,087
1978/79 (target)	300,792	107	2,461	2,493

.. = Not available.

/a Assuming an average FFW worker works for 33 days during the dry season and that, on average, 1.3 members per family are involved in such activities.

Source: Ministry of Relief and Rehabilitation

ASADD  
December 2, 1979

Table 10.12

## BANGLADESH: DISTRIBUTION OF FOODGRAINS FROM GOVERNMENT STOCKS BY DISTRICTS, 1977/78 AND 1978/79 (SUMMARY)

Division/District	1977/78						1978/79					
	Rice a/ (maunds)	Wheat (maunds)	Total (maunds)	% of Total Distribution	Rice/Wheat Ratio	% of Rice in Total	Rice a/ (maunds)	Wheat (maunds)	Total (maunds)	% of Total Distribution	Rice/Wheat Ratio	% of Rice in Total
<b>Rajshahi</b>	<b>2,633,618</b>	<b>4,845,984</b>	<b>7,479,602</b>	<b>14.88</b>	<b>0.54</b>	<b>35.21</b>	<b>2,730,264</b>	<b>5,914,482</b>	<b>8,644,746</b>	<b>17.67</b>	<b>0.46</b>	<b>31.58</b>
Dinajpur	397,779	528,921	926,700	1.84	0.75	42.92	352,109	711,823	1,063,932	2.18	0.49	33.10
Rangpur	657,055	1,398,598	2,055,653	4.09	0.47	31.96	836,171	1,768,070	2,604,241	5.32	0.47	32.11
Bogra	391,523	575,937	967,460	1.92	0.68	40.47	365,146	525,943	891,089	1.82	0.69	40.98
Rajshahi	858,741	1,317,435	2,176,176	4.33	0.65	39.46	835,296	1,695,833	2,531,129	5.17	0.49	33.00
Pabna	328,520	1,025,093	1,353,613	2.69	0.32	24.27	341,542	1,212,813	1,554,355	3.18	0.28	21.97
<b>Khulna</b>	<b>2,664,791</b>	<b>6,270,196</b>	<b>8,934,987</b>	<b>17.77</b>	<b>0.42</b>	<b>29.82</b>	<b>2,376,428</b>	<b>5,949,148</b>	<b>8,325,576</b>	<b>17.02</b>	<b>0.40</b>	<b>28.54</b>
Kushtia	228,618	1,039,451	1,268,069	2.52	0.22	18.03	206,967	1,119,618	1,326,585	2.71	0.18	15.60
Jessore	336,182	1,268,088	1,604,270	3.19	0.27	20.96	282,369	1,414,412	1,696,781	3.47	0.20	16.64
Khulna	1,595,545	2,059,536	3,655,081	7.27	0.77	43.65	1,308,357	2,049,525	3,357,882	6.86	0.64	38.96
Barisal	364,738	1,395,266	1,760,004	3.50	0.26	20.72	438,407	1,014,545	1,452,952	2.97	0.43	30.17
Patuakhali	139,708	507,855	647,563	1.29	0.28	21.57	140,328	351,048	491,376	1.00	0.40	28.56
<b>Dacca</b>	<b>7,551,201</b>	<b>13,369,928</b>	<b>20,921,129</b>	<b>41.61</b>	<b>0.56</b>	<b>36.09</b>	<b>6,961,271</b>	<b>13,523,968</b>	<b>20,485,239</b>	<b>41.88</b>	<b>0.51</b>	<b>33.98</b>
Jamalpur b/	} 793,754	} 1,580,756	} 2,374,510	} 4.72	} 0.50	} 33.43	} 705,267	} 2,016,055	} 2,721,322	} 5.56	} 0.35	} 25.92
Mymensingh c/												
Tangail	205,349	718,909	924,258	1.84	0.29	22.22	254,305	775,465	1,029,770	2.11	0.33	24.70
Dacca	6,156,959	9,485,273	15,642,232	31.11	0.65	39.36	5,714,864	9,293,161	15,008,025	30.68	0.61	38.08
Faridpur	395,139	1,584,990	1,980,129	3.94	0.25	19.96	286,835	1,439,287	1,726,122	3.53	0.20	16.62
<b>Chittagong</b>	<b>3,389,263</b>	<b>9,558,048</b>	<b>12,947,311</b>	<b>25.75</b>	<b>0.35</b>	<b>26.18</b>	<b>3,226,279</b>	<b>8,231,725</b>	<b>11,458,004</b>	<b>23.43</b>	<b>0.39</b>	<b>28.16</b>
Sylhet	442,596	2,123,436	2,566,032	5.10	0.21	17.25	408,578	1,569,269	1,977,847	4.04	0.26	20.66
Comilla	563,956	2,315,265	2,879,221	5.73	0.24	19.59	592,865	1,959,534	2,552,399	5.22	0.30	23.23
Noakhali	222,005	1,228,870	1,450,875	2.89	0.18	15.30	450,982	1,259,816	1,710,798	3.50	0.36	26.36
Chittagong	1,957,701	3,749,462	5,707,163	11.35	0.52	34.30	1,620,312	3,346,672	4,966,984	10.15	0.48	32.62
Chittagong Hill Tracts	203,005	141,015	344,020	0.68	1.44	59.01	153,542	96,434	249,976	0.51	1.59	61.42
<b>TOTAL</b>	<b>16,238,873</b>	<b>34,044,156</b>	<b>50,283,029</b>	<b>100.00</b>	<b>0.48</b>	<b>32.29</b>	<b>15,294,242</b>	<b>33,619,323</b>	<b>48,913,565</b>	<b>100.00</b>	<b>0.45</b>	<b>31.27</b>

a/ Including paddy (converted to rice equivalent).

b/ Jamalpur was a subdivision of Mymensingh until December 31, 1978.

c/ Distribution in Jamalpur is included in Mymensingh, as separate statistics for Jamalpur are available only for March-June 1979. For this four-month period, the relevant statistics for Jamalpur and Mymensingh are as follows:

	Rice (maunds)	Wheat (maunds)	Total (maunds)	% of Total Distribution	Rice/Wheat Ratio	% of Rice in Total
Jamalpur	73,766	333,548	407,314	2.14	0.22	18.11
Mymensingh	184,148	626,495	810,643	4.25	0.29	22.72
<b>TOTAL</b>	<b>5,272,746</b>	<b>13,778,813</b>	<b>19,051,559</b>	<b>100.00</b>	<b>0.38</b>	<b>27.68</b>

Source: Ministry of Food.

ASADD  
October 29, 1979

Table 10.13

BANGLADESH: TOTAL MONTHLY OFFTAKE OF FOODGRAINS FROM THE RATION SYSTEM, 1972/73-1979/80  
(<sup>'000</sup> long tons)

<u>Month</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>
July	251	151	155	163	114	160	118	200
August	292	153	184	166	97	168	118	225
September	302	170	180	188	104	186	145	248
October	280	187	154	205	143	202	160	277
November	193	145	157	151	112	151	121	
December	152	123	122	116	68	115	114	
January	143	127	143	136	106	143	154	
February	157	121	127	139	147	155	166	
March	176	131	143	117	148	166	179	
April	206	137	129	102	156	149	163	
May	253	130	123	95	136	127	167	
June	214	153	140	88	141	127	190	
<u>TOTAL</u> (Monthly Average)	<u>2,619</u> (218)	<u>1,728</u> (144)	<u>1,757</u> (146)	<u>1,666</u> (139)	<u>1,472</u> (123)	<u>1,849</u> (154)	<u>1,795</u> (150)	<u>      </u> ( )

Source: World Food Programme, Dacca.

ASADD  
Dec. 18, 1979

Table 11.1

BANGLADESH: ESTIMATES OF THE GOB-FINANCED FOODGRAIN SUBSIDY<sup>/a</sup>

	1977/78			1978/79 (est.)			1979/80 (proj.)		
	Rice	Wheat	Total/Average	Rice	Wheat	Total/Average	Rice	Wheat	Total/Average
1. Quantity sold <sup>/b</sup> (tons)	499,514 <sup>/c</sup>	148,349	647,863	508,000	55,172	563,172	500,000	200,000	700,000
2. Unit cost <sup>/d</sup> (Tk/md)	157.90	97.08	...	160.0	106.0	...	195.0 <sup>/e</sup>	125.0 <sup>/e</sup>	...
3. Issue price <sup>/f</sup> (Tk/md)	87.0, 97.0	67.0, 77.0	...	97.0	77.0	...	{ 117.0 <sup>/g</sup> 127.0	{ 87.0 <sup>/g</sup> 92.0	...
4. Unit loss (Tk/md)	70.9; 60.9 (65.3) <sup>/h</sup>	30.08, 20.08 (23.6) <sup>/h</sup>	(55.7)	63.0	29.0	(59.7)	{ 78 68	{ 38 33	{ (66.4) (57.8)
5. Total loss (million Taka)	887.25	95.13	982.38	871.15	43.55	914.7	{ 1,062 926	{ 207 180	{ 1,269 1,106 <sup>/g</sup>

... = not applicable.

<sup>/a</sup> Excluding subsidies on salt and edible oil (which are included in the Food Budget subsidy estimates).

<sup>/b</sup> Sale of foodgrains purchased with the Government's own resources (domestic procurement and foreign commercial purchases).

<sup>/c</sup> Out of the 499,514 tons of rice, 217,500 tons (44%) were sold at Tk 87/md and 282,014 tons (56%) at Tk 97/md.

Out of the 148,349 tons of wheat, 51,585 tons (35%) were sold at Tk 67/md and 96,764 tons (65%) at Tk 77/md.

<sup>/d</sup> GOB estimate of "pooled price," which includes all incidental costs.

<sup>/e</sup> Rough estimates; the large increase is mostly due to the recent domestic procurement price increases.

<sup>/f</sup> Issue price ex MoF godown, i.e., ration price less Tk 3/md for dealer's margin.

<sup>/g</sup> The lower prices are now in effect; the higher prices are averages, assuming mid-year price increases to Tk 137/md for rice and Tk 97/md for wheat.

<sup>/h</sup> Averages weighted by volume of sales at the two prices.

Source: Ministry of Food and Mission estimates.

ASADD  
December 15, 1979

Table 11.2

## BANGLADESH: LOSS ON DOMESTIC FOODGRAIN PROCUREMENT

	1977/78			1978/79			1979/80		
	Rice	Wheat	Total/Average	Rice	Wheat	Total/Average	Rice	Wheat	Total/Average
1. Procurement Quantity ('000 tons)	539	11	550	305	50	355	400	100	500
2. Sale from Procurement <sup>/a</sup>	376	8	384	446	44	490	227	48-59	275-280
3. Procurement Price (Tk/md)	132	84	(131)	134 <sup>/b</sup>	90	(125)	170	110	(146)
4. Incidental Cost (Tk/md)	23 <sup>/c</sup>	14 <sup>/c</sup>	-	26 <sup>/d</sup>	16 <sup>/c</sup>	-	28 <sup>/d</sup>	18 <sup>/d</sup>	-
5. Unit Cost (3+4) (Tk/md)	155	98	-	159	106	-	198	128	-
6. Issue Price <sup>/e</sup> (Tk/md)	92 <sup>/f</sup>	71 <sup>/f</sup>	-	97	77	-	{ 117 <sup>/g</sup> 127	{ 87 <sup>/g</sup> 92	-
7. Unit Cost (5-7) (Tk/md)	63	27	-	63	29	-	{ 81 71	{ 41 <sup>2</sup> 36	-
8. Loss on Procurement <sup>/h</sup> (1x7) (million Taka)	924	8	932	523	39	562	{ 881 772	{ 111 97	{ 992 869
9. Loss on Sales from Procurement (2x7) (million Taka)	645	6	651	765	34	799	{ 500 438	{ 53-60 46-53	{ 553-560 484-491

<sup>/a</sup> Mission estimate. See line 2, Table 11.4.

<sup>/b</sup> Average of Tk 132/md for Aman and Aus, and Tk 140/md for Boro, weighted respectively by a share for Aman and Aus of 74% and Boro's share of 26% in total procurement.

<sup>/c</sup> MoF estimate.

<sup>/d</sup> Assuming 10% annual cost increase from the 1977/78 estimate.

<sup>/e</sup> Ex MoF godown.

<sup>/f</sup> Tk 87/md up to December 1977 and Tk/md since January, weighted by the shares of sales.

<sup>/g</sup> The lower prices are now in effect; the higher prices are averages, assuming mid-year price increases to Tk 137/md for rice and Tk 97/md for wheat.

<sup>/h</sup> Assuming all procurement is sold in the same year.

Source: Ministry of Food and mission estimates.

ASADD  
December 15, 1979

Table 11.3

BANGLADESH: FINANCIAL IMPACT OF FOODGRAIN OPERATIONS  
(millions of Taka, unless indicated otherwise)

	1977/78			1978/79 (est.)			1979/80 (proj.)		
	Rice	Wheat	Total	Rice	Wheat	Total	Rice	Wheat	Total
1. Quantity of Domestic Procurement ('000 tons)	539	11	550	305	50	355	400 <sup>/a</sup>	100 <sup>/a</sup>	500
2. Procurement Price (Tk/md)	132	84	...	134 <sup>/b</sup>	90	...	170	110	...
3. Procurement Cost (1x2)	1,937	25	1,962	1,112	122	1,234	1,851	299	2,150
4. Cash Import Cost	...	..	921	..	..	330	..	..	1,411
5. Incidental Cost	..	..	822	..	..	973	..	..	1,769
6. Total Expenditure (3+4+5)	..	..	3,705	..	..	2,537	..	..	5,330
7. Quantity sold <sup>/d</sup> ('000 tons)	590	972	1,562	559	977	1,536	675	1,100	1,775
8. Issue Price <sup>/e</sup> (Tk/md)	87.97	67.77	...	97	77	...	{ 117 <sup>/c</sup> { 127	{ 87 <sup>/c</sup> { 92	... ...
9. Total Receipts, excl. FFW (7x8)	1,474 <sup>/f</sup>	1,874 <sup>/f</sup>	3,348	1,477	2,047	3,524	{ 2,150 { 2,334	{ 2,605 { 2,755	{ 4,756 { 5,089
10. Financial Impact, excl. FFW (9-6)	..	..	-357	..	..	+1,009	..	..	{ -580 { -241
11. Financial Impact, incl. FFW <sup>/g</sup>	..	..	+201	..	..	+1,348	..	..	{ +195/+669 <sup>g</sup> / { +573/+1,074

.. = not available.  
... = not applicable.

<sup>/a</sup> Mission projections.

<sup>/b</sup> Weighted average for Aman, Aus and Boro.

<sup>/c</sup> The lower prices are now in effect; the higher prices are averages, assuming mid-year price increases to Tk 137/md for rice and Tk 97/md for wheat.

<sup>/d</sup> Excluding FFW and Relief.

<sup>/e</sup> Ex MoF godown.

<sup>/f</sup> Out of the 590,000 tons of rice, an estimated 310,000 tons were sold at Tk 87/md and 280,000 tons at Tk 97/md. Out of the 972,000 tons of wheat, 597,000 tons were sold at Tk 67/md and 375,000 tons at Tk 77/md.

<sup>/g</sup> A range of 325,000 - 525,000 tons under FFW for FY80 is assumed.

Source: Ministry of Food and mission estimates.

Table 11.4

BANGLADESH: ESTIMATED "FULL ECONOMIC SUBSIDY" ON FOODGRAINS SALES <sup>/a</sup>

	1977/78			1978/79 (estim.)			1979/80 (proj.)		
	Rice	Wheat	Total	Rice	Wheat	Total	Rice	Wheat	Total
1. Total Foodgrain Distribution <sup>/b</sup> ( '000 tons)	596	1,251	1,847	562	1,235	1,797	675	1,425-1,625	2,100-2,300
2. Distribution from Domestic Procurement <sup>/c</sup> ( '000 tons)	376	8	384	446	44	490	227	48- 53	275- 280
3. Distribution from Imports <sup>/c</sup> ( '000 tons)	220	1,243	1,463	116	1,191	1,307	448	1,377-1,572	1,825-2,020
4. Domestic Procurement Price (Tk/md)	132	84	..	134	90	..	170	110	..
5. Domestic Procurement Cost (2x4) (million Taka)	1,354	18	1,372	1,627	108	1,735	1,050	144- 159	1,194-1,209
6. Import Price c.i.f. <sup>/d, /e</sup> (Tk/ton)	5,510	1,972	..	5,394	2,640	..	6,727	3,275	..
7. Import Cost (3x6) <sup>/f</sup> (million Taka)	1,212	2,451	3,663	626	3,144	3,770	3,014	4,510-5,148	7,524-8,162
8. Local Incidental Cost <sup>/g</sup> (Tk/ton)	230	391	621	251	401	652	600	650	1,250
9. Total Cost (5 + 7 + 8) (Tk/ton)	2,796	2,860	5,656	2,504	3,653	6,157	4,664	5,304-5,957	9,968-10,621
10. Issue Price <sup>/h</sup> (Tk/md)	87.97	67.77	..	97	77	..	{117 <sup>/i</sup> {127	{87 <sup>/i</sup> {92	..
11. Total Receipts, Incl. FFW (1x10) <sup>/i</sup> (million Taka)	1,491	2,415	3,906	1,485	2,378	3,863	{2,150 {2,334	{3,375-3,849 {3,569-4,070	{5,525-5,999 {5,903-6,404
12. "Full Economic Subsidy" on Foodgrain Distributed (9-11) (million Taka)	1,305	445	1,750	1,019	1,275	2,294	{2,514 {2,330	{1,929-2,108 {1,735-1,887	{4,443-4,622 <sup>/i</sup> {4,065-4,217
13. "Full Economic Subsidy" per Unit Distributed (12 ÷ 1) (Tk/md)	80.4	13.1	34.8	66.6	41.3	46.9	{136.8 {126.8	{49.7-47.7 {44.7-42.7	{77.7-73.8 <sup>/i</sup> {71.1-67.4

<sup>/a</sup> These estimates overstate the subsidy because imports in this table are valued at world market c.i.f. which usually refer to higher quality grains than those received under aid (Annex 5, para. 21; see also footnote f below).

<sup>/b</sup> Subsidy is calculated on the volume of distribution ; the cost and potential receipts of stock buildup in any given year are ignored.

<sup>/c</sup> Actual sales separately out of domestic procurement and imports are not known; in these calculations, it is assumed that sales from domestic procurement and imports are equal to total sales multiplied by the ratios of, respectively, domestic procurement and imports to total procurement. For 1977/78 and 1978/79, the ratios are based on actual domestic procurement and imports, except that in 1978/79 total rice sales out of domestic procurement is constrained not to exceed what was carried over (net of losses) from 1977/78 plus domestic procurement in 1978/79. For 1979/80, domestic procurement is assumed to consist of 400,000 tons of rice and 100,000 wheat, while imports are assumed to include 787,000 tons of rice and 2,000,000 tons of wheat.

<sup>/d</sup> IBRD estimates; see footnote (a) above and Annex 5, para. 21.

<sup>/e</sup> 1 long ton equals 27.222 maunds.

<sup>/f</sup> If based on donors' price of imports, the total import cost would be about Tk 3,294 million in 1978/79; on this basis, the full economic subsidy would be Tk 476 million less than indicated in this table.

<sup>/g</sup> Based on MoF estimates of the cost of handling and distribution.

<sup>/h</sup> Ration price less Tk 3/md for dealer's margin (i.e., issue price ex MoF godown).

<sup>/i</sup> The lower prices are now in effect; the higher prices are averages assuming mid-year price increases to Tk 137/md for rice and Tk 97/md for wheat.

<sup>/j</sup> These estimates include FFW offtakes valued at the issue price as well.

Source: Ministry of Food and mission estimates.

AGADD  
December 16, 1979

Table 11.5

BA<sup>N</sup>GLADESH: ESTIMATED "OPPORTUNITY LOSS" ON SUBSIDIZED SALES OF FOODGRAINS

	1977/78			1978/79 (est.)			1979/80 (proj.)		
	Rice	Wheat	Total	Rice	Wheat	Total	Rice	Wheat	Total
1. Quantity distributed <sup>/a</sup> ('000 tons)	596	1,251	1,847	562	1,235	1,797	675	1,425-1,625	2,100-2,300
2. Actual Sale Receipts incl. value of (million Taka) FFW <sup>/a</sup>	1,491	2,415	3,906	1,485	2,378	3,863	{ 2,150 { 2,334	{ 3,375-3,849 { 3,569-4,070	{ 5,525-5,999 { 5,903-6,404
3. Potential Sale Price <sup>/b</sup> (Tk/md)	125	90	...	137	100	...	155	120	...
4. Potential Sale Receipts (1x3) (million Taka)	2,028	3,065	5,093	2,096	3,090	5,186	2,848	4,655-5,308	7,503-8,156
5. Opportunity Loss (4-2) (million Taka)	537	650	1,187	611	712	1,323	{ 698 { 514	{ 1,280-1,459 { 1,086-1,238	{ 1,978-2,157 { 1,600-1,752 <sup>/a</sup>
6. Opportunity Loss Per Unit Distributed (Tk/md)	33.1	19.1	23.6	40.0	23.0	27.0	{ 38.0 { 28.0	{ 33.0 { 28.0	{ 34.6 { 28.0 <sup>/a</sup>

... = not applicable.

<sup>/a</sup> See Table 11.4.

<sup>/b</sup> Rough estimates of country average wholesale price for the year, less 10% for rice and about 20% for wheat to allow for the effect of government market sales (instead of ration sales) on market prices.

Source: Ministry of Food and mission estimates.

ASADD  
December 12, 1979

Table 11.6

BANGLADESH: GOB ESTIMATE OF "FULL ECONOMIC SUBSIDY"<sup>/a</sup> ON FERTILIZER SALES, 1977/78

	Actual Offtake ( <u>'000 tons</u> )	Offtake Price ( <u>Tk/ton</u> )	Total Receipts ( <u>crore Taka</u> )	Unit Procurement Price (c.i.f. or ex factory ( <u>Tk/ton</u> )	Unit Incidental Cost ( <u>Tk/ton</u> )	Total Imputed Unit Cost ( <u>Tk/ton</u> )	Total Imputed Cost ( <u>crore Taka</u> )	Full Economic Subsidy ( <u>crore Taka</u> )	Unit Subsidy ( <u>Tk/ton</u> )
<u>UREA</u>									
Imported	-	1,633.20	-	2,773.29	816.11	3,589.40	-	-	
Domestic	-	1,633.20	-	1,761.74	718.24	2,479.98	-	-	
Pooled	<u>479.8</u>	1,633.20	<u>78.37</u>	-	-	3,078.59	<u>147.72</u>	<u>69.35</u>	
Sub Total	<u>479.8</u>		<u>78.37</u>				<u>147.72</u>	<u>69.35</u>	<u>1,445.3</u>
<u>TSP</u>									
Imported	-	1,306.56	-	2,761.53	816.11	3,577.64	-	-	
Domestic	-	1,306.56	-	4,419.60	718.24	5,137.84	-	-	
Pooled	<u>192.0</u>	1,306.56	<u>25.09</u>	-	-	3,532.34	<u>67.83</u>	<u>42.74</u>	
Sub Total	<u>192.0</u>		<u>25.09</u>				<u>67.83</u>	<u>42.74</u>	<u>2,226.04</u>
<u>MP</u>									
Imported	-	1,088.80	-	1,641.53	816.11	2,457.64	-	-	
Pooled	<u>41.2</u>	1,088.80	<u>4.49</u>	-	-	2,598.37	<u>10.71</u>	<u>6.22</u>	
Sub Total	<u>41.2</u>		<u>4.49</u>				<u>10.71</u>	<u>6.22</u>	<u>1,509.71</u>
Total	<u>713.0</u>		<u>107.95</u>				<u>226.26</u>	<u>118.31</u>	<u>1,659.32</u>

/a These loss estimates probably overstate the subsidy because the total cost does not necessarily reflect the total revenue that could possibly have been received.

Source: BADC.

ASADD  
November 9, 1979

Table 11.7

BANGLADESH: GOB ESTIMATE OF "FULL ECONOMIC SUBSIDY"<sup>/a</sup> ON FERTILIZER SALES, 1978/79

	Actual Offtake ( <sup>'000 tons</sup> )	Offtake Price (Tk/ton)	Total Receipts (crore Taka)	Unit Procurement Price (c.i.f. or ex factory) (Tk/ton)	Unit Incidental Cost (Tk/ton)	Total Imputed Unit Cost (Tk/ton)	Total Imputed cost (crore Taka)	Full Economic Subsidy (crore Taka)	Unit Subsidy (Tk/ton)
<u>UREA</u>									
Imported	-	1,905.4	-	3,194.19	744.29	3,938.48	-	-	-
Domestic	-	1,905.4	-	1,761.74	744.29	2,506.03	-	-	-
Pooled	<u>470.6</u>	1,905.4	<u>89.67</u>	-	-	3,362.01	<u>158.22</u>	<u>68.55</u>	-
Sub Total	<u>470.6</u>		<u>89.67</u>				<u>158.22</u>	<u>68.55</u>	<u>1,456.65</u>
<u>TSP</u>									
Imported	-	1,497.1	-	3,383.40	744.29	4,127.69	-	-	-
Domestic	-	1,497.1	-	4,419.60	744.29	5,163.89	-	-	-
Pooled	<u>177.7</u>	1,497.1	<u>26.60</u>			4,155.51	<u>73.84</u>	<u>47.24</u>	-
Sub Total	<u>177.7</u>		<u>26.60</u>				<u>73.84</u>	<u>47.24</u>	<u>2,658.41</u>
<u>DAP</u>									
Imported	-	1,905.4	-	3,383.40	744.29	4,127.69	-	-	-
Pooled	<u>37.7</u>	1,905.4	<u>7.18</u>			4,155.51	<u>15.67</u>	<u>8.49</u>	-
Sub Total	<u>37.7</u>		<u>7.18</u>				<u>15.67</u>	<u>8.49</u>	<u>2,251.99</u>
<u>MP</u>									
Imported	-	1,224.9	-	1,705.00	744.29	2,449.29	-	-	-
Pooled	<u>46.9</u>	1,224.9	<u>5.74</u>			2,469.43	<u>11.58</u>	<u>5.84</u>	-
Sub Total	<u>46.9</u>		<u>5.74</u>				<u>11.58</u>	<u>5.84</u>	<u>1,245.20</u>
Total	<u>732.9</u>		<u>129.19</u>				<u>259.31</u>	<u>130.12</u>	<u>1,775.41</u>

<sup>/a</sup> These loss estimates probably overstate the subsidy because the total cost does not necessarily reflect the total revenue that could possibly have been received.

Source: BADC.

Table 11.8

BANGLADESH: GOB ESTIMATE OF "FULL ECONOMIC SUBSIDY" <sup>a</sup> ON FERTILIZER SALES, 1979/80

	Offtake Target (1000 tons)	Offtake Price Before Increase (Tk/ton)	Offtake After Increase (Tk/ton)	Total Receipts (crore Taka)	Unit pro- curement Price (c.i.f. or ex-factory) (Tk/ton)	Unit Incidental Cost (Tk/ton)	Total Imputed Unit Cost (Tk/ton)	Total Imputed Cost (crore Taka)	Full Economic Subsidy (crore Taka)	Unit Subsidy (Tk/ton)
<u>URFA</u>										
Imported	-	1,905.4	2,449.8	-	3,100.00	700.00	3,800.00	-	-	-
Domestic	-	1,905.4	2,449.8	-	1,761.74	700.00	2,461.74	-	-	-
Pooled	480(600)	1,905.4	2,449.8	114.71(144.10)	-	-	3,275.77	157.24(196.55)	42.53(52.45)	-
<u>Sub-Total</u>	<u>480(600)</u>			<u>114.71(144.10)</u>				<u>157.24(196.55)</u>	<u>42.53(52.45)</u>	<u>886.04</u> (874.17)
<u>TSP</u>										
Imported	-	1,497.1	1,905.4	-	3,100.00	700.00	3,800.00	-	-	-
Domestic	-	1,497.1	1,633.2	-	4,419.60	700.00	5,119.60	-	-	-
Pooled	144(180)	1,497.1	-	25.65(32.23)	-	-	4,244.02	61.11(76.39)	35.46(44.16)	-
<u>Sub-Total</u>	<u>144(180)</u>			<u>25.65(32.23)</u>				<u>61.11(76.39)</u>	<u>35.46(44.16)</u>	<u>2,462.5</u> (2,453.33)
<u>DAP</u>										
Imported	-	1,905.4	2,449.8	-	3,875.00	700.00	4,575.00	-	-	-
Pooled	96(120)	1,905.4	2,449.8	22.87(28.74)	-	-	4,244.02	40.74(50.93)	17.87(22.19)	-
<u>Sub-Total</u>	<u>96(120)</u>			<u>22.87(28.74)</u>				<u>40.74(50.93)</u>	<u>17.87(22.19)</u>	<u>1,861.46</u> (1,849.17)
<u>MP</u>										
Imported	-	1,224.9	1,497.1	-	2,080.0	700.00	2,780.00	-	-	-
Pooled	80(100)	1,224.9	1,497.1	11.84(14.83)	-	-	2,767.58	22.14(27.68)	10.30(12.85)	-
<u>Sub-Total</u>	<u>80(100)</u>			<u>11.84(14.83)</u>				<u>22.14(27.68)</u>	<u>10.30(12.85)</u>	<u>1,287.5</u> (1,285.0)
<u>Total</u>	<u>800(1000)</u>			<u>175.07(219.90)</u>				<u>281.23(351.55)</u>	<u>106.16(131.65)</u>	<u>(1,327)</u> (1,317)

Note: The figures in parentheses correspond to BADC's target offtake and procurement during FY80.

<sup>a</sup> These loss estimates probably overstate the subsidy because the total cost does not necessarily reflect the total revenue that could possibly have been received.

Source: BADC.

ASADD  
December 16, 1979

Table 11.9

BANGLADESH: FINANCIAL IMPACT OF FERTILIZER OPERATIONS, 1977/78

	Actual Offtake ( <u>'000 tons</u> )	Offtake Price ( <u>Tk/ton</u> )	Total Receipts ( <u>crore Taka</u> )	Unit pro- curement Price (c.i.f. or <u>ex factory</u> ) ( <u>Tk/ton</u> )	Unit Inci- dental Cost ( <u>Tk/ton</u> )	Procurement ( <u>'000 tons</u> )	Cash Outlay ( <u>crore Taka</u> )	Financial Impact ( <u>crore Taka</u> )
<u>UREA</u>								
Imported	-	1,633.20	-	-	816.11	256.2	27.31 <sup>/a</sup>	-
Domestic	-	1,633.20	-	1,761.74	718.24	226.2	56.10	-
Pooled	479.8	1,633.20	78.37	-	-	-	-	-
<u>Sub-Total</u>	<u>479.8</u>		<u>78.37</u>			<u>482.4</u>	<u>83.41</u>	<u>-5.04</u>
<u>TSP</u>								
Imported	-	1,306.56	-	-	816.11	112.8	9.20	-
Domestic	-	1,306.56	-	4,419.60	718.24	37.8	19.40	-
Pooled	192.0	1,306.56	25.09	-	-	-	-	-
<u>Sub-Total</u>	<u>192.0</u>		<u>25.09</u>			<u>150.6</u>	<u>28.60</u>	<u>-3.51</u>
<u>MP</u>								
Imported	-	1,088.8	-	-	816.11	36.9	3.01	-
Pooled	41.2	1,088.8	4.49	-	-	-	-	-
<u>Sub-Total</u>	<u>41.2</u>		<u>4.49</u>			<u>36.9</u>	<u>3.01</u>	<u>1.48</u>
<u>Total</u>	<u>713.0</u>		<u>107.95</u>			<u>669.9</u>	<u>115.02</u>	<u>-7.07</u>

<sup>/a</sup> Including cash import of 28,000 tons valued at Tk 6.4 crores

Source: BADC

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Table 11.10

## BANGLADESH: ESTIMATED FINANCIAL IMPACT OF FERTILIZER OPERATIONS, 1978/79

	Actual Offtake ( <sup>'000 tons</sup> )	Offtake Price (Tk/ton)	Total Receipts (crore Taka)	Unit pro- curement Price (c.i.f. or ex factory) (Tk/ton)	Unit Inci- dental Cost (Tk/ton)	Procurement ( <sup>'000 tons</sup> )	Cash Outlay (crore Taka)	Financial Impact (crore Taka)
<u>UREA</u>								
Imported	-	1,905.4	-	-	744.29	343.0	31.09 <sup>/a</sup>	-
Domestic	-	1,905.4	-	1,761.74	744.29	278.8	69.87	-
Pooled	470.6	1,905.4	89.67	-	-	-	-	-
<u>Sub-Total</u>	<u>470.6</u>		<u>89.67</u>			<u>621.8</u>	<u>100.96</u>	<u>-11.29</u>
<u>TSP</u>								
Imported	-	1,497.1	-	-	744.29	103.4	7.70	-
Domestic	-	1,497.1	-	4,419.60	744.29	60.2	31.09	-
Pooled	177.7	1,497.1	26.60	-	-	-	-	-
<u>Sub-Total</u>	<u>177.7</u>		<u>26.60</u>			<u>163.6</u>	<u>38.79</u>	<u>-12.19</u>
<u>DAP</u>								
Imported	-	1,905.4	-	-	744.29	82.4	6.13	-
Pooled	37.7	1,905.4	7.18	-	-	-	-	-
<u>Sub-Total</u>	<u>37.7</u>		<u>7.18</u>			<u>82.4</u>	<u>6.13</u>	<u>1.05</u>
<u>MP</u>								
Imported	-	1,224.9	-	1,705.00	744.29	75.6	5.63	-
Pooled	46.9	1,224.9	5.74	-	-	-	-	-
<u>Sub-Total</u>	<u>46.9</u>		<u>5.74</u>			<u>75.6</u>	<u>5.63</u>	<u>0.11</u>
<u>Total</u>	<u>732.9</u>		<u>129.19</u>			<u>943.4</u>	<u>151.51</u>	<u>-22.32</u>

<sup>/a</sup> Including cash import of 20,000 tons valued at Tk 5.56 crores

Source: BADC

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November 17, 1979

Table 11.11

BANGLADESH: PROJECTED FINANCIAL IMPACT OF FERTILIZER OPERATIONS, 1979/80

	Offtake Target ( <u>'000 tons</u> )	Offtake Price		Total Receipts ( <u>crore Taka</u> )	Unit pro- curement Price (c.i.f.) or ex factory) ( <u>Tk/ton</u> )	Unit Inci- dental Cost ( <u>Tk/ton</u> )	Procurement ( <u>'000 tons</u> )	Cash Outlay ( <u>crore Taka</u> )	Financial Impact ( <u>crore Taka</u> )
		Before Increase ( <u>Tk/ton</u> )	After Increase ( <u>Tk/ton</u> )						
<u>UREA</u>									
Imported	-	1,905.4	2,449.8	-	-	700.00	400(390)	28.00(27.30)	-
Domestic	-	1,905.4	2,449.8	-	1,761.74	700.00	275(275)	67.70(67.70)	-
Pooled	480(600)	1,905.4	2,449.8	114.71(144.10)	-	-	-	-	-
<u>Sub-Total</u>	<u>480(600)</u>			<u>114.71(144.10)</u>			<u>675(665)</u>	<u>95.70(95.00)</u>	<u>19.01(49.10)</u>
<u>TSP</u>									
Imported	-	1,497.1	1,905.4	-	-	700.00	120(190)	8.40(13.30)	-
Domestic	-	1,497.1	1,633.2	-	4,419.60	700.00	50( 50)	25.60(25.60)	-
Pooled	144(180)	1,497.1	-	25.65(32.23)	-	-	-	-	-
<u>Sub-Total</u>	<u>144(180)</u>			<u>25.65(32.23)</u>			<u>170(240)</u>	<u>34.00(38.90)</u>	<u>-8.35(-6.67)</u>
<u>DAP</u>									
Imported	-	1,905.4	2,449.8	-	-	700.00	95(140)	6.65( 9.8 )	-
Pooled	96(120)	1,905.4	2,449.8	22.87(28.74)	-	-	-	-	-
<u>Sub-Total</u>	<u>96(120)</u>			<u>22.87(28.74)</u>			<u>95(140)</u>	<u>6.65( 9.8 )</u>	<u>16.22(18.94)</u>
<u>MP</u>									
Imported	-	1,224.9	1,497.1	-	-	700.00	85(144)	5.95(10.08)	-
Pooled	80(100)	1,224.9	1,497.1	11.84(14.83)	-	-	-	-	-
<u>Sub-Total</u>	<u>80(100)</u>			<u>11.84(14.83)</u>			<u>85(144)</u>	<u>5.95(10.08)</u>	<u>5.89( 4.75)</u>
<u>Total</u>	<u>800(1000)</u>			<u>175.07(219.90)</u>			<u>1025(1189)</u>	<u>142.30(153.78)</u>	<u>32.77(66.12)</u>

Note: The figures in parentheses correspond to BADC's target offtake and procurement during FY80

Source: BADC

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November 17, 1979

Table 12.1

BANGLADESH: REGIONAL DIFFERENCES IN CONSUMPTION AND PRODUCTION OF FOODGRAINS, 1973/74 (SUMMARY)  
( '000 tons)

<u>Division</u>	<u>Consumption Requirement /a</u>	<u>Estimated Apparent Consumption /b</u>	<u>Net Production /c</u>	<u>Production Gap /d</u>	<u>Additional Grain Arrivals /e</u>	<u>Availability Gap /f</u>
Rajshahi	2,937	2,866	2,878	-58	-12	-70
Khulna	2,414	2,523	1,835	-579	+688	+109
Dacca	3,635	3,624	2,817	-818	+807	-11
Chittagong	3,168	3,247	3,081	-87	+166	+79
<u>Bangladesh</u>	<u>12,153</u>	<u>12,260</u>	<u>10,611</u>	<u>-1,542</u>	<u>+1,649</u>	<u>+107</u>

+ indicates "surplus".

- indicates "deficit".

/a Based on population estimates and a minimum per capita requirement of 15.5 ounces per day.

/b Net production minus Government procurement plus distribution from public grain stocks plus net inflow on account of private trade; total consumption estimate by IBRD, regional shares from a BBS survey.

/c Gross production less 10% for seed, feed and waste.

/d Net production minus consumption requirement.

/e Combined net effect of Government procurement, public grain distribution, and private inter-regional grain trade.

/f Production gap less grain arrivals, equal to apparent consumption minus consumption requirement.

Source: Table 12.5.

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December 13, 1979

Table 12.2

## BANGLADESH: REGIONAL DIFFERENCES IN CONSUMPTION AND PRODUCTION OF FOODGRAINS, 1977/78 (SUMMARY)

('000 tons)

<u>Division</u>	<u>Consumption Requirement /a</u>	<u>Estimated Apparent Consumption /b</u>	<u>Net Production /c</u>	<u>Production Gap /d</u>	<u>Additional Grain Arrivals /e</u>	<u>Availability Gap /f</u>
Rajshahi	3,243	3,045	3,161	- 82	-116	-198
Khulna	2,654	2,697	2,310	-344	+387	+43
Dacca	3,987	3,891	3,019	-968	+867	-101
Chittagong	3,473	3,491	3,306	-167	+185	+18
<u>Bangladesh</u>	<u>13,357</u>	<u>13,121</u>	<u>11,796</u>	<u>- 1,561</u>	<u>+1,325</u>	<u>-238</u>

+ indicates "surplus".

- indicates "deficit".

/a Based on population estimates and a minimum per capita requirement of 15.5 ounces per day.

/b Net production minus Government's procurement plus distribution from public grain stocks plus net inflow on account of private trade; regional consumption estimates calculated by applying the 1973/74 regional shares of total consumption for 1977/78.

/c Gross production less 10% for seed, feed and waste.

/d Net production minus consumption requirement.

/e Combined net effect of Government's procurement, public grain distribution, and private inter-regional grain trade.

/f Production gap less grain arrivals, equal to apparent consumption minus consumption requirement.

Source: Table 12.6.

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December 13, 1979

Table 12.3

## BANGLADESH: REGIONAL DIFFERENCES IN PER CAPITA FOODGRAIN CONSUMPTION AND PRODUCTION, 1973/74

<u>"Surplus" Production Districts /a</u>				<u>Deficit Production Districts /a</u>			
<u>District</u>	<u>Per Capita Production Gap (lbs/yr)</u>	<u>Per Capita Availability Gap (lbs/yr)</u>	<u>Apparent Effect of Marketing and Public Distribution</u>	<u>District</u>	<u>Per Capita Production Gap (lbs/yr)</u>	<u>Per Capita Availability Gap (lbs/yr)</u>	<u>Apparent Effect of Marketing and Public Distribution</u>
Sylhet	+ 43	+22	Reduce "Surplus"	Dacca	-194	+22	Create "Surplus"
Rangpur	+ 36	+ 3		Faridpur	-145	+ 5	
Bogra	+ 27	+ 2		Tangail	- 95	+39	
-----				Chittagong	- 41	+10	
Mymensingh	+ 77	-39	Create Deficit	Rajshahi	- 50	+18	
Dinajpur	+129	-25		Comilla	- 34	+15	
-----				Barisal	- 40	+17	
-----				Patuakhali	- 60	+71	
-----				Kushtia	-137	+41	
-----				-----			
-----				Pabna	-175	-63	Reduce Deficit
-----				Khulna	- 44	- 2	
-----				Jessore	- 80	0	
-----				Noakhali	- 7	-22	Increase Deficit
-----				-----			
-----				Chittagong H.T.	0	0	No change

/a + indicates "surplus".  
- indicates deficit.

Source: Table 12.5

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Table 12.4

## BANGLADESH: REGIONAL DIFFERENCES IN PER CAPITA FOODGRAIN CONSUMPTION AND PRODUCTION, 1977/78

<u>"Surplus" Production Districts /a</u>				<u>Deficit Production Districts /a</u>			
<u>District</u>	<u>Per Capita Production Gap (lbs/yr)</u>	<u>Per Capita Availability Gap (lbs/yr)</u>	<u>Apparent Effect of Marketing and Public Distribution</u>	<u>District</u>	<u>Per Capita Production Gap (lbs/yr)</u>	<u>Per Capita Availability Gap (lbs/yr)</u>	<u>Apparent Effect of Marketing and Public Distribution</u>
Tangail	+ 17.5	+29.6	Increase "Surplus"	Dacca	-193.6	+ 5.5	Create "Surplus"
				Faridpur	- 16.6	+ 7.2	
				Kushtia	-108.0	+16.8	
				Comilla	- 68.1	+11.9	
				Barisal	- 43.9	+12.3	
Patuakhali	+104.8	+54.9	Reduce	Khulna	- 86.7	-11.4	Reduce
Sylhet	+ 38.5	+11.9	"Surplus"	Pabna	- 84.9	-69.4	Deficit
				Chittagong	- 59.1	- 3.8	
				Rajshahi	- 35.6	- 2.2	
				Jessore	- 35.4	-11.2	
				Chittagong H.T.	- 11.4	0.0	
Mymensingh	+ 42.1	-43.4	Create	Rangpur	- 5.8	- 9.4	Increase
Dinajpur	+ 70.1	-41.0	Deficit				Deficit
Noakhali	+ 51.0	-28.0					
Bogra	+ 40.1	- 6.0					

/a + indicates "surplus".  
- indicates deficit.

Source: Table 12.6

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December 16, 1979

Table 12.5

## BANGLADESH: REGIONAL DIFFERENCES IN RELATIVE FOODGRAIN PRODUCTION AND CONSUMPTION, 1973/74

Division/District	(1) Population {'000} /a	(2) Gross Production	(3) Net Production /b	(4) Consumption Requirement /c	(5) Apparent Consumption /d	(6) Production Gap (3)-(4)	(7) Additional Grain Arrivals /e (5)-(3)	(8) Availability Gap (6)+(7)=(5)-(4)
<u>Rajshahi</u>	<u>18,604</u>	<u>3,198</u>	<u>2,878</u>	<u>2,936</u>	<u>2,866</u>	- 58	- 12	- 70
Dinaipur	2,758	660	594	435	404	+159	-190	- 31
Rangpur	5,847	1,130	1,017	923	930	+ 94	- 87	+ 7
Bogra	2,396	452	407	378	380	+ 29	- 27	+ 2
Rajshahi	4,583	689	620	723	760	-103	+140	+ 37
Pabna	3,020	267	240	477	392	-237	+152	- 85
<u>Khulna</u>	<u>15,305</u>	<u>2,039</u>	<u>1,835</u>	<u>2,414</u>	<u>2,523</u>	-579	+688	+109
Kushitia	2,018	217	195	318	355	-123	+165	+ 37
Jessore	3,574	486	437	564	564	-127	+127	0
Khulna	3,875	446	401	611	600	-210	+199	- 11
Barisal	4,221	655	590	666	698	- 76	+108	+ 32
Patuakhali	1,617	235	212	255	306	- 43	+ 94	+ 51
<u>Dacca</u>	<u>23,040</u>	<u>3,131</u>	<u>2,817</u>	<u>3,635</u>	<u>3,624</u>	-818	+807	- 11
Jamalpur /f	...	...	...	...	...	...	...	...
Mymensingh	8,127	1,736	1,562	1,282	1,140	+280	-422	-142
Tangail	2,226	286	257	351	390	- 94	+133	+ 39
Dacca	8,327	659	593	1,314	1,396	-721	+803	+ 82
Faridpur	4,360	450	405	688	698	-283	+293	+ 10
<u>Chittagong</u>	<u>20,082</u>	<u>3,423</u>	<u>3,081</u>	<u>3,168</u>	<u>3,247</u>	- 87	+166	+ 79
Syhet	5,115	1,007	906	807	857	+ 99	- 49	+ 50
Comilla	6,255	998	898	987	1,030	- 94	+132	+ 43
Noakhali	3,482	598	538	549	515	- 11	- 23	- 34
Chittagong	4,683	725	653	739	759	- 86	+106	+ 20
Chittagong H.T.	547	95	86	86	86	0	0	0
<u>Bangladesh</u>	<u>77,031</u>	<u>11,791</u>	<u>10,611</u>	<u>12,153</u>	<u>12,260</u>	-1,542	+1,649	+107

+ indicates "surplus".

- indicates "deficits".

/a Population on 1 July 1974; BBS estimates.

/b Gross production less 10% for seed, feed and waste.

/c Population multiplied with a daily per capita consumption requirement of 15.5 ounces.

/d Net production minus Government's procurement plus public grain distribution plus net inflow on account of private grain trade.

/e Net impact of Government's procurement, distribution from public stocks, and private inter-District grain trade.

/f Included in Mymensingh.

Source: BBS, Ministry of Agriculture, and mission estimates.

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Table 12.6

## BANGLADESH: REGIONAL DIFFERENCES IN RELATIVE FOODGRAIN PRODUCTION AND CONSUMPTION, 1977/78

Division/District	(1) Population ( '000) / <u>a</u>	(2) Gross Production	(3) Net Production / <u>b</u>	(4) Consumption Requirement / <u>c</u>	(5) Apparent Consumption / <u>d</u>	(6) Production Gap (3)-(4)	(7) Additional Grain Arrivals / <u>e</u> (5)-(3)	(8) Availability Gap (6)+(7)=(5)-(4)
<u>Rajshahi</u>	<u>20,555</u>	<u>3,512</u>	<u>3,161</u>	<u>3,243</u>	<u>3,045</u>	- 82	-116	-198
Dinaipur	3,065	644	580	484	428	+ 96	-152	- 56
Rangpur	6,434	1,109	998	1,015	988	- 17	- 10	- 27
Bogra	2,633	513	642	415	408	+ 47	- 54	- 7
Rajshahi	5,096	803	722	804	799	- 82	+ 77	- 5
Pabna	3,321	493	399	525	422	-126	+ 23	-103
<u>Khulna</u>	<u>16,821</u>	<u>2,567</u>	<u>2,310</u>	<u>2,654</u>	<u>2,697</u>	-344	+387	+ 45
Kushtia	2,260	276	248	357	374	-109	+126	+ 17
Jessore	3,987	629	566	629	609	- 63	+ 43	- 20
Khulna	4,292	568	512	677	655	-165	+143	- 22
Barisal	4,530	696	626	715	740	- 89	+114	+ 25
Patuakhali	1,752	398	358	276	319	+ 82	- 39	+ 43
<u>Dacca</u>	<u>25,271</u>	<u>3,355</u>	<u>3,024</u>	<u>3,987</u>	<u>3,891</u>	-968	+867	-101
Jamalpur / <u>f</u>	...	...	...	...	...	...	...	...
Mymensingh	8,830	1,733	1,562	1,393	1,222	+166	-337	-171
Tangail	2,429	447	403	383	415	+ 19	+ 13	+ 32
Dacca	9,304	737	664	1,468	1,493	-804	+827	+ 23
Faridpur	4,708	438	395	743	761	-349	+364	+ 15
<u>Chittagong</u>	<u>22,008</u>	<u>3,673</u>	<u>3,306</u>	<u>3,473</u>	<u>3,491</u>	-167	+185	+ 18
Sylhet	5,570	1,083	975	879	917	+ 96	- 58	+ 38
Comilla	6,773	959	863	1,069	1,105	-206	+242	+ 36
Noakhali	3,773	757	681	595	548	+ 86	-133	- 47
Chittagong	5,299	773	696	836	827	-140	+131	- 9
Chittagong H.T.	593	101	91	94	94	- 3	+ 3	0
<u>Bangladesh</u>	<u>84,655</u>	<u>13,107</u>	<u>11,796</u>	<u>13,357</u>	<u>13,121</u>	<u>-1,561</u>	<u>+1,323</u>	<u>-238</u>

+ indicates "surplus."  
- indicates "deficit."

/a Population on July 1, 1978; BBS estimates.

/b Gross production less 10% for seed, feed and waste.

/c Population multiplied with a daily per capita consumption requirement of 15.5 ounces.

/d Net production minus Government procurement plus public grain distribution plus net inflow on accounts of private grain trade. consumption by districts estimates by applying the 1977/78 shares of regional foodgrain consumption in country total.

/e Net impact of Government procurement, distribution from public stocks, and private inter-District grain trade.

/f Included in Mymensingh.

Source: BBS, Ministry of Agriculture, and mission estimates.

Table 13.1

BANGLADESH: SELECTED INDICATORS OF RAILWAY CAPACITY AND PERFORMANCE, 1969/70-1978/79

	(Unit)	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79
<i>/a</i>											
Route Mileage	(miles)	1,776	1,776	1,776	1,786	1,786	1,786	1,786	1,786	1,786	1,786
Broad Gauge	( " )	554	574	574	599	599	599	599	599	599	599
Meter Gauge	( " )	1,202	1,202	1,202	1,187	1,187	1,187	1,187	1,187	1,187	1,187
Narrow Gauge	( " )	20	-	-	-	-	-	-	-	-	-
<i>Locomotives, total</i>											
Diesel, total	(number)	492	498	501	500	516	491	450	445	420	416
Broad Gauge	( " )	143	152	155	162	178	173	173	173	173	180
Meter Gauge	( " )	18	27	30	34	34	32	32	32	32	32
Steam, total	( " )	125	125	125	128	144	141	141	141	141	148
Broad Gauge	( " )	349 <i>/b</i>	346 <i>/b</i>	346 <i>/b</i>	338	338	318	277	272	255	236
Meter Gauge	( " )	121	118	118	115	115	115	92	91	..	74
	( " )	222	222	222	223	223	203	185	181	..	162
<i>Freight Wagons</i>											
Broad Gauge	( " )	..	..	..	3,246	3,017	2,989	3,134	..	..	4,476
Meter Gauge	( " )	..	..	..	10,972	10,109	10,241	9,292	..	..	11,120
(Total "Units") <i>/c</i>	( " )	16,835	16,290	16,071	16,100	16,081	15,626	16,802	16,925	16,656	16,550 <i>/e</i>
<i>Freight Carried, total</i>											
Rice	('000 tons)	4,802	3,347	...	2,830	2,768	2,898	3,333	3,110	3,510	3,157 <i>e</i>
Paddy	( " " )	452	..	..	157	104	114	230	348	262	..
Wheat	( " " )	71	..	..	42	69	87	179	284	199	..
	( " " )	613	..	..	670	613	486	595	271	495	..
Raw Jute	( " " )	654	..	..	355	355	333	381	263	278	..
Jute Goods	( " " )	46	..	..	16	17	20	19	24	24	..
Sugar Cane	( " " )	242	..	..	..	..	417	379	409	471	..
Sugar	( " " )	85	..	..	49	41	95	57	70	113	..
Salt	( " " )	99	..	..	66	89	104	99	110	115	..
Fertilizer	( " " )	210	..	..	..	..	188	284	216	291	..
Cement	( " " )	287	..	..	112	50	101	87	113	117	..
Coal	( " " )	136	..	..	175	121	54	156	173	255	..
Petroleum Products <i>/d</i>	( " " )	362	..	..	128	108	114	132	89	167	..
Total Ton-Miles	('000)	773,659	512,045	...	408,105	390,615	408,907	456,851	435,692	480,742	499,782 <i>e</i>

e = Preliminary estimate.  
 .. = Not available.  
 ... = Not comparable.

*/a* Total track mileage in 1978/79 was 2,798 miles.

*/b* including 6 narrow gauge steam locomotives.

*/c* "Units" = all freight wagons expressed in terms of 4-wheelers.

*/d* Excluding fuel for the railways and for the military.

Source: BBS; Ministry of Railways, Roads, Highways, and Road Transport.

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Table 13.2

## BANGLADESH: SELECTED INDICATORS OF ROAD AND INLAND WATER TRANSPORT CAPACITY

	(Unit)	1969/70	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79
<u>Road Transport</u>									
Trucks operating, private	( No. )	9,608	8,442	9,347	9,457	9,329	9,904	9,712	8,778
Bullock carts (est.)	( '000 )	..	85	86	87	89	89	90	90
<u>Inland Water Transport</u>									
Vessels Registered with BIWTA									
Cargo	( No. )	1,285	..	..	743	..	..	..	..
(Self-propelled)	( No. )	(202)	..	..	(743)	..	..	..	..
(Barges)	( " )	(1,083)	..	..	( - )	..	..	..	..
Passenger and Cargo	( " )	811	..	..	617	..	..	..	..
BIWTC Fleet									
Total	( No. )	-	-	-	705	753	642	639	633
- Self-propelled barges	( " )	-	-	-	11	11	10	9	9
- Inland & river barges/ <sup>a</sup>	( " )	-	-	-	412	406	316	314	313
- Inland tugs	( " )	-	-	-	33	34	28	28	28
- Mainland tugs	( " )	-	-	-	18	23	23	25	24
- Coasters/ <sup>b</sup>	( " )	-	-	-	25	24	24	24	
Country Boats									
- Cargo	( No. )	..	85	86	87	88	89	90	90
- Passenger	( " )	..	156	158	161	163	165	167	170

.. = not available.

<sup>/a</sup> Including "jute boats" and "floats."<sup>/b</sup> Can travel up the main river routes.

Table 13.3

BANGLADESH: TRUCK FLEET OPERATED BY THE MINISTRY OF FOOD  
(as of September 1, 1979)

<u>Station</u>	<u>Operating</u>	<u>Repairable</u>	<u>Subtotal</u>	<u>Already Condemned</u>	<u>To be Condemned</u>	<u>Subtotal</u>	<u>Total</u>
Dinajpur	7	7	14	-	10	10	24
Rangpur	8	2	10	-	2	2	12
Bogra	4	3	7	2	4	6	13
Rajshahi	3	-	3	-	4	4	7
Pabna	5	4	9	3	5	8	17
Santahar (Pabna)	3	-	3	-	4	4	7
Kushtia	6	2	8	-	-	-	8
Jessore	2	-	2	-	4	4	6
Khulna	33	14	47	1	9	10	57
Barisal	-	-	-	-	4	4	4
Mymensingh	3	2	5	-	-	-	5
Dacca	9	4	13	-	5	5	18
Faridpur	2	-	2	-	-	-	2
Sylhet	2	-	2	-	1	1	3
Ashuganj (Comilla)	1	1	2	-	1	1	3
Comilla	3	4	7	-	6	6	13
Noakhali	4	3	7	-	2	2	9
Chittagong	18	9	27	-	74	74	101
<u>TOTAL</u>	<u>113</u>	<u>55</u>	<u>168</u>	<u>6</u>	<u>135</u>	<u>141</u>	<u>309</u>
<u>For comparison:</u>							
Total, Nov. 1, 1978	135	102	237	30	70	100	337
Total, Nov. 15, 1977	124	121	245	65	50	115	360

Source: Ministry of Food, Directorate of Movement and Storage.

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Dec. 18, 1979

Table 14.1

BANGLADESH: FOODGRAIN REQUIREMENTS AND SUPPLIES, 1972/73-1979/80  
( '000 long tons, unless indicated otherwise)

	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80 p
<u>Population, mid-year /a ('000)</u>	74,266	76,055	78,043	79,880	81,765	83,678	85,645	87,657
<u>Foodgrain Requirements /b</u>	<u>11,723</u>	<u>12,006</u>	<u>12,319</u>	<u>12,644</u>	<u>12,907</u>	<u>13,209</u>	<u>13,519</u>	<u>13,875</u>
<u>Domestic Production</u>								
Aus	2,273	2,802	2,859	3,230	3,011	3,104	3,288	2,650 e
Aman	5,587	6,699	6,000	7,045	6,906	7,422	7,326	7,100
Boro	2,071	2,220	2,250	2,286	1,650	2,239	1,929	2,400 /d
Wheat	90	109	115	215	255	343	486	800 /e
Total, gross	10,022	11,830	11,224	12,776	11,822	13,107	13,029	12,950
Total, net /c	<u>9,018</u>	<u>10,647</u>	<u>10,102</u>	<u>11,498</u>	<u>10,640</u>	<u>11,796</u>	<u>11,726</u>	<u>11,655</u>
(-) Government Procurement	.	71	128	415	314	550	355	500
(+) Government Distribution	2,618	1,728	1,757	1,669	1,473	1,847	1,797	2,300 p
<u>Foodgrain Availability</u>	<u>11,636</u>	<u>12,304</u>	<u>11,731</u>	<u>12,752</u>	<u>11,799</u>	<u>13,093</u>	<u>13,168</u>	<u>13,455</u>
Apparent Consumption per Caput per day (ounces)	15.38	15.89	14.76	15.63	14.17	15.36	15.10	15.03
<u>Availability Gap/Surplus</u>	<u>-87</u>	<u>+301</u>	<u>-588</u>	<u>+108</u>	<u>-1,108</u>	<u>-116</u>	<u>-351</u>	<u>-60</u>
<hr/>								
<u>Government Operations</u>								
Opening Stocks	274	297	214	749	823	376	591	209
(+) Domestic Procurement	.	71	128	415	314	550	355	500 /f
(+) Imports	2,825	1,667	2,293	1,493	779	1,653	1,146	2,791 r
(-) Distribution	2,618	1,728	1,757	1,669	1,473	1,847	1,797	2,300 p
(-) Losses	184	93	129	165	66	141	87	200
Closing Stocks	297	214	749	823	376	591	209	1,000 t

. = Less than 500 long tons,  
p = Projected.  
e = Preliminary estimate.  
t = Target.  
r = Recommended.

/a BBS estimates, referring to January 1 of each year.  
/b Corresponding to the Government's target of 15.5 ounces per capita per day  
/c Gross production minus 10% for seed, feed and waste.  
/d The Government's target is 2,700,000 tons.  
/e The Government's target is 1 - 1.2 million tons  
/f The Government's target is 700,000 tons.

Sources: Ministry of Food; Bangladesh Bureau of Statistics; World Food Programme, Dacca; and mission estimates.

Table 14.2

**BANGLADESH: ALTERNATIVE FOODGRAIN SUPPLY AND REQUIREMENTS SCENARIOS FOR 1980/81**  
(in long tons, unless indicated otherwise)

	Superior	Probable	Dis- appointing	Bad Aman	Mediocre Aman	Mediocre Aman, Bad Boro & Aus	Bad Aus & Aman, Good Boro and Wheat	Good Aus, All Others Bad	Disaster: All Bad	Catastrophe
<b>A. Domestic Production (gross)</b>										
Aus	3,500	3,400	3,200	3,400	3,400	3,000	3,000	3,400	3,000	#
Aman	7,600	7,500	7,300	7,000	7,300	7,300	7,000	7,000	7,000	#
Boro	2,600	2,500	2,300	2,500	2,500	2,200	2,500	2,200	2,200	#
Wheat	1,200	1,100	800	1,100	1,100	1,100	1,100	800	800	#
<u>Total, gross</u>	14,900	14,500	13,600	14,000	14,300	13,600	13,600	13,400	13,000	↓
<u>Total, net /a</u>	13,410	13,050	12,240	12,600	12,870	12,240	12,240	12,060	11,700	11,000
Consumption Requirement /b	14,152	14,152	14,152	14,152	14,152	14,152	14,152	14,152	14,152	14,152
<u>Production Gap /c</u>	- 662	-1,102	-1,912	-1,552	-1,282	-1,912	-1,912	-2,092	-2,452	-3,152
<b>B. Government Operations</b>										
Opening Stocks	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Domestic Procurement	800	700	500	600	500	500	500	400	300	100
Imports	1,665	1,765	1,865	1,865	1,865	2,065	2,165	2,165	2,500	2,700
Distribution	2,000	2,000	2,000	2,000	2,000	2,200	2,200	2,200	2,400	2,600
Losses	165	165	165	165	165	165	165	165	200	200
Closing Stocks	1,300	1,300	1,200	1,300	1,200	1,200	1,300	1,200	1,200	1,000
<b>C. Apparent Consumption /d</b>										
Total	14,610	14,350	13,740	14,000	14,370	13,940	13,940	13,860	13,800	13,500
Daily Average per Person (ounces)	16.00	15.72	15.05	15.33	15.74	15.27	15.27	15.18	15.11	14.79

/a Gross production minus 10% for seed, food and waste.

/b Estimated at the Government's minimum target level of 15.5 ounces per person per day.

/c Domestic net production minus consumption requirement.

/d Domestic net production minus Government procurement plus public distribution. This assumes that there is no net change in privately held stocks.

Source: Mission estimates.

ASADD  
Dec. 5, 1979



Table A-2  
 BANGLADESH: FOODGRAIN SUPPLY AND DISTRIBUTION SCHEDULE FOR 1977/78 (PRELIM)

Month	Domestic Production <sup>a</sup>		Imports <sup>b</sup>	Exports <sup>c</sup>	Total Supply <sup>d</sup>	Government Stocks <sup>e</sup>	Open Market Stocks <sup>f</sup>	Total Stocks <sup>g</sup>	Total Demand <sup>h</sup>	Surplus/Deficit <sup>i</sup>	% of Total Supply	% of Total Demand	Stocks as % of Total Demand	Stocks as % of Total Supply
	Million Tons	Million Tons												
<b>1977/78</b>														
July	1,087	1,087	253	1,138	1,167	1,121	17	78	1,179	560	47.9	40.8	4.1	3.4
Aug.	1,707	1,707	103	1,604	1,607	1,488	119	384	2,191	660	30.1	25.6	11.5	10.8
Sept.	2,100	2,100	202	1,898	1,898	1,732	166	566	2,304	660	28.7	24.3	10.7	9.2
Oct.	2,233	2,233	136	2,100	2,100	1,932	168	568	2,700	660	24.4	20.4	7.6	6.4
Nov.	3,711	3,711	101	3,610	3,610	3,444	166	566	4,177	660	15.8	13.6	5.2	4.5
Dec.	3,777	3,777	181	3,596	3,596	3,420	176	576	4,173	660	15.8	13.6	5.2	4.5
Jan.	3,311	3,311	143	3,168	3,168	2,992	176	576	3,764	660	17.5	14.6	6.1	5.2
Feb.	3,111	3,111	113	2,998	2,998	2,822	176	576	3,400	660	19.4	16.2	6.2	5.3
Mar.	1,539	1,539	6	1,545	1,545	1,419	126	36	1,581	660	41.8	35.4	26.5	23.0
Apr.	1,159	1,159	6	1,165	1,165	1,039	126	36	1,201	660	55.0	45.8	46.6	38.2
May	1,275	1,275	105	1,380	1,380	1,254	126	36	1,410	660	46.8	39.0	32.7	27.2
June	1,453	1,453	131	1,614	1,614	1,488	126	36	1,614	660	40.9	33.5	24.8	20.4
TOTAL	3,104	3,104	1,427	3,176	3,176	2,992	184	584	3,580	660	18.4	15.4	4.8	4.0
<b>1978/79</b>														
July	1,151	1,151	118	1,269	1,269	1,111	158	6	1,275	660	51.8	40.4	32.1	25.1
Aug.	1,808	1,808	76	1,732	1,732	1,566	166	6	1,742	660	37.8	29.3	23.0	18.0
Sept.	1,759	1,759	186	1,573	1,573	1,407	166	6	1,585	660	42.6	33.5	26.5	20.4
Oct.	2,200	2,200	289	1,911	1,911	1,745	166	6	1,921	660	33.3	25.6	20.0	15.3
Nov.	3,663	3,663	289	3,404	3,404	3,238	166	6	3,444	660	19.2	14.8	11.5	8.8
Dec.	3,777	3,777	34	3,743	3,743	3,577	166	6	3,743	660	17.6	13.8	10.7	8.1
Jan.	3,111	3,111	16	3,095	3,095	2,929	166	6	3,095	660	18.1	13.9	10.8	8.2
Feb.	3,111	3,111	24	3,087	3,087	2,921	166	6	3,087	660	18.2	14.0	10.9	8.3
Mar.	2,977	2,977	62	3,039	3,039	2,873	166	6	3,039	660	17.4	13.4	10.4	7.9
Apr.	1,979	1,979	3	1,982	1,982	1,816	166	6	1,982	660	17.8	13.7	10.6	8.0
May	1,275	1,275	3	1,278	1,278	1,112	166	6	1,278	660	100.0	78.3	61.5	48.3
June	1,275	1,275	190	1,465	1,465	1,299	166	6	1,465	660	123.3	95.6	74.8	58.2
TOTAL	3,288	3,288	1,427	3,176	3,176	2,992	184	584	3,580	660	18.4	15.4	4.8	4.0
<b>1980/81</b>														
July	1,100	1,100	206	1,306	1,306	1,099	207	18	1,317	660	49.7	37.2	29.5	22.8
Aug.	1,870	1,870	225	1,645	1,645	1,479	166	6	1,645	660	33.2	25.3	19.9	15.3
Sept.	340	340	290	630	630	564	66	6	630	660	100.0	78.3	61.5	48.3
Oct.	2,250	2,250	220	2,030	2,030	1,864	166	6	2,030	660	30.5	23.4	18.3	14.0
Nov.	3,850	3,850	50	3,800	3,800	3,634	166	6	3,800	660	18.7	14.4	11.1	8.6
Dec.	3,150	3,150	130	3,020	3,020	2,854	166	6	3,020	660	18.2	13.9	10.7	8.1
Jan.	3,750	3,750	100	3,650	3,650	3,484	166	6	3,650	660	17.5	13.4	10.2	7.7
Feb.	3,150	3,150	25	3,125	3,125	2,959	166	6	3,125	660	18.1	13.9	10.7	8.1
Mar.	440	440	185	625	625	559	66	6	625	660	94.4	72.2	56.3	43.8
Apr.	500	500	185	685	685	619	66	6	685	660	103.6	79.0	61.5	48.3
May	1,650	1,650	99	1,749	1,749	1,583	166	6	1,749	660	100.0	78.3	61.5	48.3
June	1,650	1,650	40	1,690	1,690	1,524	166	6	1,690	660	100.0	78.3	61.5	48.3
TOTAL	2,650	2,650	2,413	3,176	3,176	2,992	184	584	3,580	660	18.4	15.4	4.8	4.0
<b>1981/82</b>														
July	1,245	1,245	185	1,430	1,430	1,202	228	18	1,420	660	46.5	35.3	27.8	21.4
Aug.	1,875	1,875	200	1,675	1,675	1,509	166	6	1,675	660	34.4	26.3	20.5	15.6
Sept.	350	350	250	600	600	534	66	6	600	660	100.0	78.3	61.5	48.3
Oct.	2,211	2,211	220	1,991	1,991	1,825	166	6	1,991	660	29.7	22.6	17.7	13.7
Nov.	3,850	3,850	50	3,800	3,800	3,634	166	6	3,800	660	18.7	14.4	11.1	8.6
Dec.	3,234	3,234	130	3,104	3,104	2,938	166	6	3,104	660	17.5	13.3	10.2	7.7
Jan.	3,450	3,450	100	3,350	3,350	3,184	166	6	3,350	660	17.3	13.1	10.0	7.5
Feb.	3,111	3,111	56	3,055	3,055	2,889	166	6	3,055	660	18.2	13.9	10.7	8.1
Mar.	2,150	2,150	25	2,175	2,175	2,009	166	6	2,175	660	100.0	78.3	61.5	48.3
Apr.	605	605	544	1,149	1,149	1,083	66	6	1,149	660	173.3	133.2	103.6	80.0
May	1,650	1,650	99	1,749	1,749	1,583	166	6	1,749	660	100.0	78.3	61.5	48.3
June	1,650	1,650	40	1,690	1,690	1,524	166	6	1,690	660	100.0	78.3	61.5	48.3
TOTAL	3,650	3,650	2,413	3,176	3,176	2,992	184	584	3,580	660	18.4	15.4	4.8	4.0

General Note: This table attempts to depict the month-by-month developments concerning the major components of foodgrain supply and disposition for the country as a whole and for the public sector specifically. The data shown for 1977/78 and 1978/79 are for the first three months of 1979/80 are actuals (or estimated actuals), while those for the subsequent months and years are indicative mission projections. ...

Source: Ministry of Food, Bangladesh Bureau of Statistics, World Food Programme, Dhaka, mission estimates and projections.



Table 14.4

BANGLADESH: NATIONAL AND GOVERNMENT FOODGRAIN BALANCES, 1979/80-1981/82  
(in '000 long tons, unless indicated otherwise)

	Highest Previous Level	1979/80 (Forecast)	1980/81 (Projected)	1981/82 (Projected)
<b>A. National Balances:</b>				
<u>Production:</u> <sup>/a</sup>				
Aus	3,288 (FY78)	2,650 (prel.)	3,400	3,500
Aman	7,422 (FY78)	7,100 (est.)	7,500	7,700
Boro	2,286 (FY76)	2,400 (proj.)	2,500	2,600
Wheat	486 (FY79)	800 (proj.)	1,100	1,300
<u>Gross Production</u>	<u>13,107 (FY78)</u>	<u>12,950</u>	<u>14,500</u>	<u>15,100</u>
Less 10% feed, seed & waste	1,311 (FY78)	1,295	1,450	1,510
<u>Net Production</u>	<u>11,796 (FY78)</u>	<u>11,655</u>	<u>13,050</u>	<u>13,590</u>
<u>Domestic Procurement:</u> <sup>/b</sup>				
Public Distribution (incl. OMS)	550 (FY78)	500	700	900
<u>Apparent Consumption, total</u> <sup>/c</sup>	..	<u>13,455</u>	<u>14,350</u>	<u>14,890</u>
" " , per capita (oz/day)	17.11 (FY70)	15.0	15.7	15.9 <sup>/f</sup>
<b>B. Government Operations</b>				
<u>Opening Stocks, July 1</u>	...	209	1,000	1,300 (-1,500) <sup>/e</sup>
(+) Domestic Procurement	551 (FY78)	500	700	900
(-) Public Distribution	2,618 (FY73)	2,300	2,000	2,200
(-) Storage and Handling Losses <sup>/d</sup>	...	200	165	170
<u>Required Imports (+)</u>	<u>2,825 (FY73)</u>	<u>2,791</u>	<u>1,765 (-1,965)<sup>/e</sup></u>	<u>(1,470-) 1,670</u>
<u>Closing Stocks, June 30</u>	...	<u>1,000</u>	<u>1,300 (-1,500)<sup>/e</sup></u>	<u>1,500</u>

... = Not applicable.

<sup>/a</sup> Assumes good growing conditions from December 1979 onwards and steady improvement in the availability of production inputs.

<sup>/b</sup> Estimated procurement if the procurement price is maintained in real terms and as an effective support price.

<sup>/c</sup> Calculated as net production plus public distribution minus procurement, or alternatively as net production plus imports minus increase in Government stocks and stock losses.

<sup>/d</sup> Calculated as approximately 3.6 percent of turnover of public stocks, defined as imports plus procurement plus distribution.

<sup>/e</sup> Depending on limits imposed by storage capacity.

<sup>/f</sup> Successful OMS will imply and, in fact, require stabilizing average consumption levels above the traditional minimum consumption target of 15.5 oz/day/person.

Source: BBS, and mission estimates.

ASADD  
Dec. 18, 1979

Table 15.1

BANGLADESH: SUMMARY OF EXTERNAL ASSISTANCE  
(in millions of US Dollars)

Fiscal Year <sup>/a</sup>	Food Aid		Commodity Aid		Project Aid		Cash Aid		Total	
	Committed	Disbursed	Committed	Disbursed	Committed	Disbursed	Committed	Disbursed	Committed	Disbursed
1971/72	145	103	259	117	187	7	-	-	591	227
1972/73	250	121	327	217	396	82	-	-	973	420
1973/74	180	300	205	186	202	154	-	-	587	640
1974/75	460	379	419	386	406	145	14	14	1,299	924
1975/76	257	307	355	378	318	129	-	-	930	814
1976/77	130	106	228	188	238	147	61	61	657	502
1977/78	140	190	414 <sup>/b</sup>	352 <sup>/b</sup>	606	255	.. <sup>/c</sup>	.. <sup>/c</sup>	1,160	797
1978/79	309	187	652 <sup>/b</sup>	472 <sup>/b</sup>	904	357	.. <sup>/c</sup>	.. <sup>/c</sup>	1,865	1,016

<sup>/a</sup> July 1 to June 30; except 1971/72 where data refer to the period from December 17, 1971 to June 30, 1972.

<sup>/b</sup> Includes cash aid.

<sup>/c</sup> Included in commodity aid.

Source: Ministry of Finance, External Resources Division.

ASADD  
Nov. 18, 1979

Table 15.2

BANGLADESH: FOODGRAIN IMPORTS AND OFFTAKE FROM PUBLIC STOCKS, FY72-FY79  
('000 tons)

	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>Total</u> <u>1972/73-1978/79</u>
<u>Imports</u>								
Rice	390	82	266	396	192	304	58	1,688
Wheat	2,435	1,534	2,202	1,040	603	1,341	1,123	10,278
<u>Total</u>	<u>2,825</u>	<u>1,616</u>	<u>2,468</u>	<u>1,436</u>	<u>795</u>	<u>1,645</u>	<u>1,181</u>	<u>11,966</u>
<u>Internal Procurement</u>								
Rice	0.05	71	127	343	306	539	305	1,691
Wheat	-	-	-	7	3	11	50	71
<u>Total</u>	<u>0.05</u>	<u>71</u>	<u>127</u>	<u>350</u>	<u>309</u>	<u>550</u>	<u>355</u>	<u>1,762</u>
<u>Offtake</u>								
Rice	422	123	130	509	773	596	562	3,115
Wheat	2,196	1,604	1,577	1,159	677	1,252	1,236	9,701
<u>Total</u>	<u>2,618</u>	<u>1,727</u>	<u>1,707</u>	<u>1,668</u>	<u>1,450</u>	<u>1,848</u>	<u>1,798</u>	<u>12,816</u>
<u>Imports as % of Offtake</u>								
Rice	92	67	205	78	25	51	10	54
Wheat	111	96	139	90	89	107	91	106
<u>Total</u>	<u>108</u>	<u>94</u>	<u>144</u>	<u>86</u>	<u>55</u>	<u>89</u>	<u>66</u>	<u>93</u>

Source: Ministry of Food.

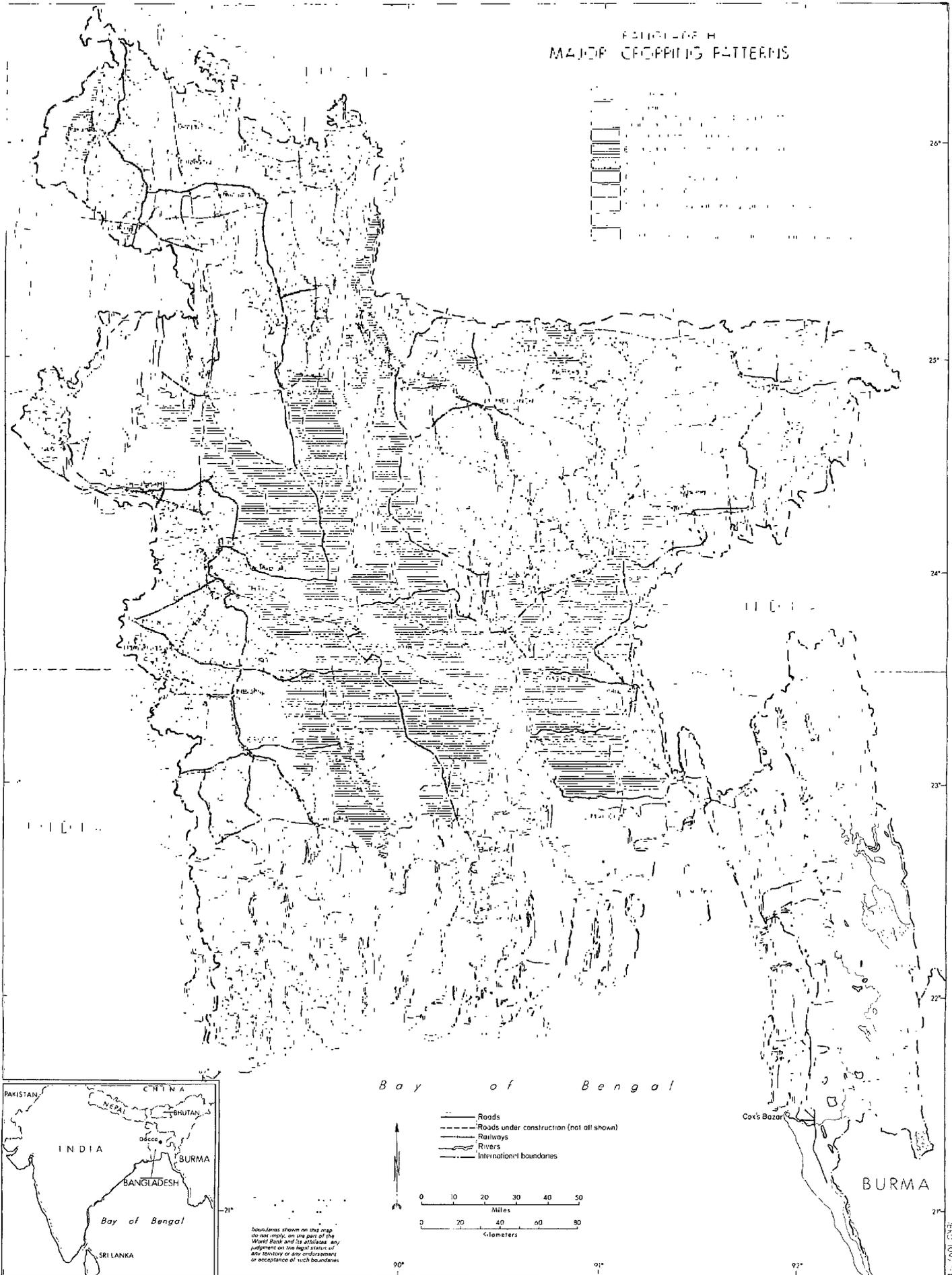
ASADD  
Nov. 1, 1979







FIGURE 11  
MAJOR CROPPING PATTERNS

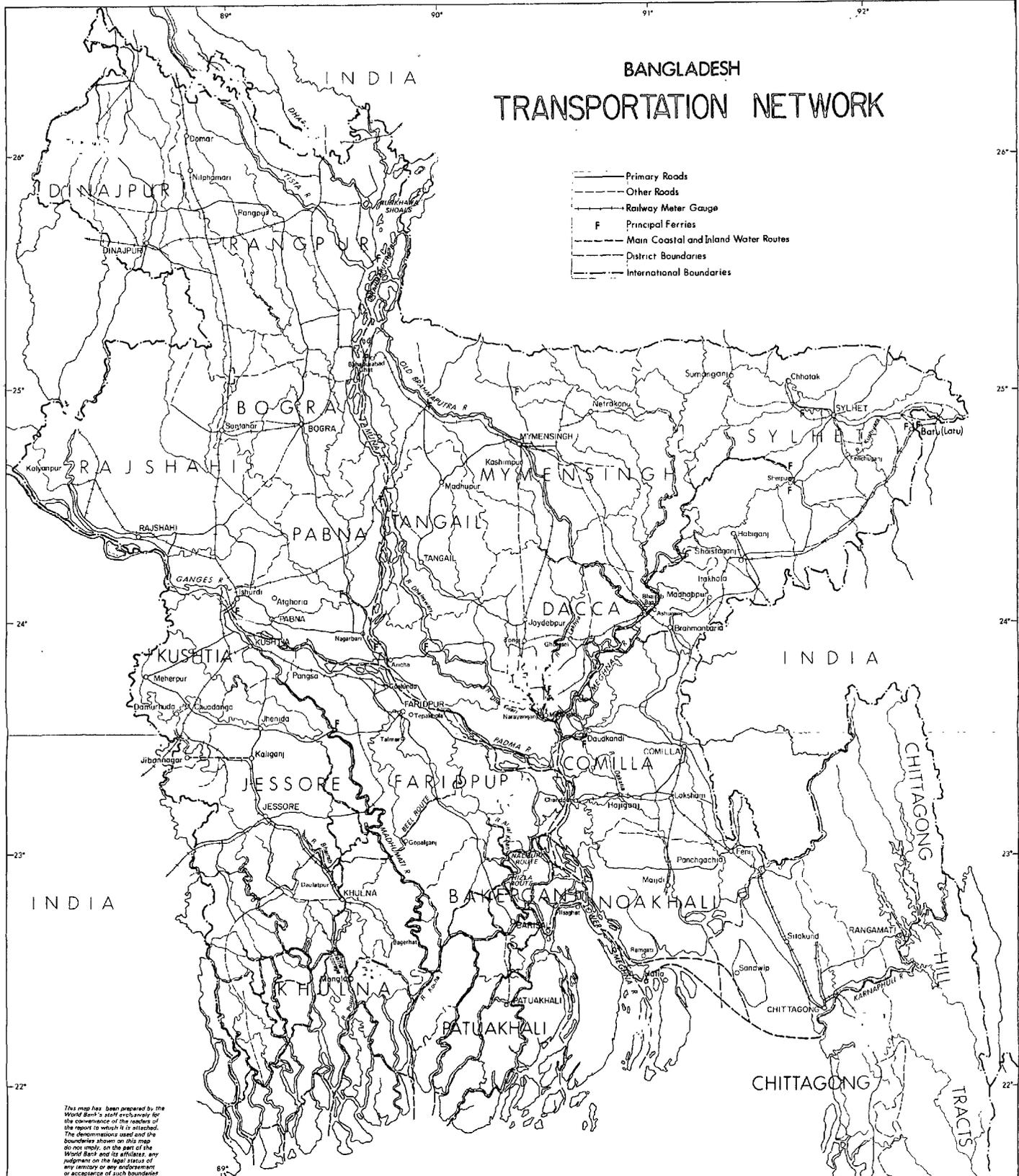


Boundaries shown on this map do not imply, on the part of the World Bank and its affiliates, any judgment on the legal status of the territory or any endorsement or acceptance of such boundaries.

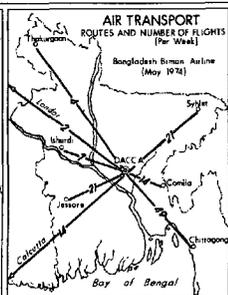


# BANGLADESH TRANSPORTATION NETWORK

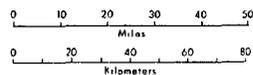
- Primary Roads
- - - Other Roads
- Railway Meter Gauge
- F Principal Ferries
- - - Main Coastal and Inland Water Routes
- - - District Boundaries
- - - International Boundaries



This map has been prepared by the World Bank's staff exclusively for the convenience of the readers of the report to which it is attached. The dimensions used and the boundaries shown on this map do not imply, on the part of the World Bank and its affiliates, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries.



Bay of Bengal





### BANGLADESH SECOND FOOD GRAIN STORAGE PROJECT LOCATION OF EXISTING AND PROPOSED GODOWN SITES

- Agreed locations for new godown sites
- ▨ Project core area
- Existing local storage depots
- ⊙ Existing central storage depots
- Silos
- Primary roads
- - - Other roads
- - - Railways
- - - District boundaries
- - - Division boundaries
- - - International boundaries

