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DOMESTIC FOODGRAIN MARKETS**

Background paper (9b):

**PRELIMINARY FOODGRAIN CREDIT ASSESSMENT**

*Wednesday, May 4, 9:00-10:30*

*Presenter: Curtis Slouwer, IFDC*

**A SEMINAR ON  
EVOLVING FOOD MARKETS  
AND FOOD POLICY  
IN BANGLADESH**

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# **PRELIMINARY FOODGRAIN CREDIT ASSESSMENT**

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# PRELIMINARY FOODGRAIN CREDIT ASSESSMENT

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## PRELIMINARY FOODGRAIN CREDIT ASSESSMENT

Three major lines of argument have been presented supporting the liberalization and targeting of credit to the foodgrain sector through the development of a credit delivery system. The credit delivery system would make the following contributions: minimize Government expenditure in procuring foodgrain stocks for food-security and price stabilization programs through large scale public tender; improve the performance of the price stabilization program by utilizing the savings achieved through using large scale public tender to procure foodgrain; and in the long-run eliminate the marketing problems typically associated with high production (a supply-led finance approach).

The objective of this preliminary assessment of existing credit patterns, practices and performance is to determine the need to develop a credit delivery system (CDS) targeting the foodgrain sector<sup>1</sup>.

An overview of the food sector in Bangladesh is presented in the first section. The second section looks at the demand for financial services--both formal and informal--by foodgrain millers/traders and analyzes their financial liability portfolios. Section III examines the supply of formal financial services (credit) currently supporting the foodgrain millers/traders. The fourth section is a critical analysis of the arguments supporting the liberalization and targeting of credit to the foodgrain sector through the development of a credit delivery system. The final section presents recommendations.

### I. OVERVIEW OF THE FOOD SECTOR IN BANGLADESH<sup>2</sup>

Major changes have occurred over the past several years in the structure of food production and trade, and in the policy environment.

#### A. Growth in Rice Production and Marketing

The green revolution in seed-fertilizer-pesticide-irrigation technology has made possible larger, as well as multiple rice crops

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<sup>1</sup>A credit delivery system includes the institutions that lend, the sets of procedures involved in making, servicing and recovering loans, and the terms and conditions associated with the loans.

<sup>2</sup>Sections I and II are based on two reports: Liberalization of Credit for Growth: Foodgrain Marketing in Bangladesh, Mahfoozur Rahman, and Credit and Bangladesh's Foodgrain Market: Is More Targeting of Credit Needed?, Nuimuddin Chowdhury.

each year<sup>3</sup>. Recently the most important factor contributing to the higher rice production has been the increase in output of dry-season Boro rice, accomplished by increasing irrigation (Figure 1 and Figure 2). Farmer investment in minor irrigation has expanded the amount of irrigated area from an average of 0.5 percent of net cultivable area per year during the 1970s, to about 2.5 percent per year at the end of the 1980s.

In addition, Government policies and reforms have contributed heavily to the production gains. The Government has increased market liberalization of agricultural inputs, which include fertilizer and irrigation equipment.

Along with the rise in agricultural production, privately held grain stocks have increased<sup>4</sup>. They have tripled since the late 1960s. On the average, private stocks now account for approximately 75 percent of domestic foodgrain stocks, while public stocks account for the remaining 25 percent. Among private stocks, on-farm stocks account for three-quarters of all stocks, while traders' stocks account for the remaining quarter.

From the marketing perspective, such factors as infrastructure development, expansion of the banking sector to the rural areas, large scale mechanization of water and road transport, and a nationwide telephone network have enhanced the profitability of rice market investments in a way scarcely imaginable a few years ago.

## B. Rice Prices

With such significant increases in production, foodgrain prices are expected to fall, and have. The real prices of rice and wheat have declined over a 20-year period (Figure 3).

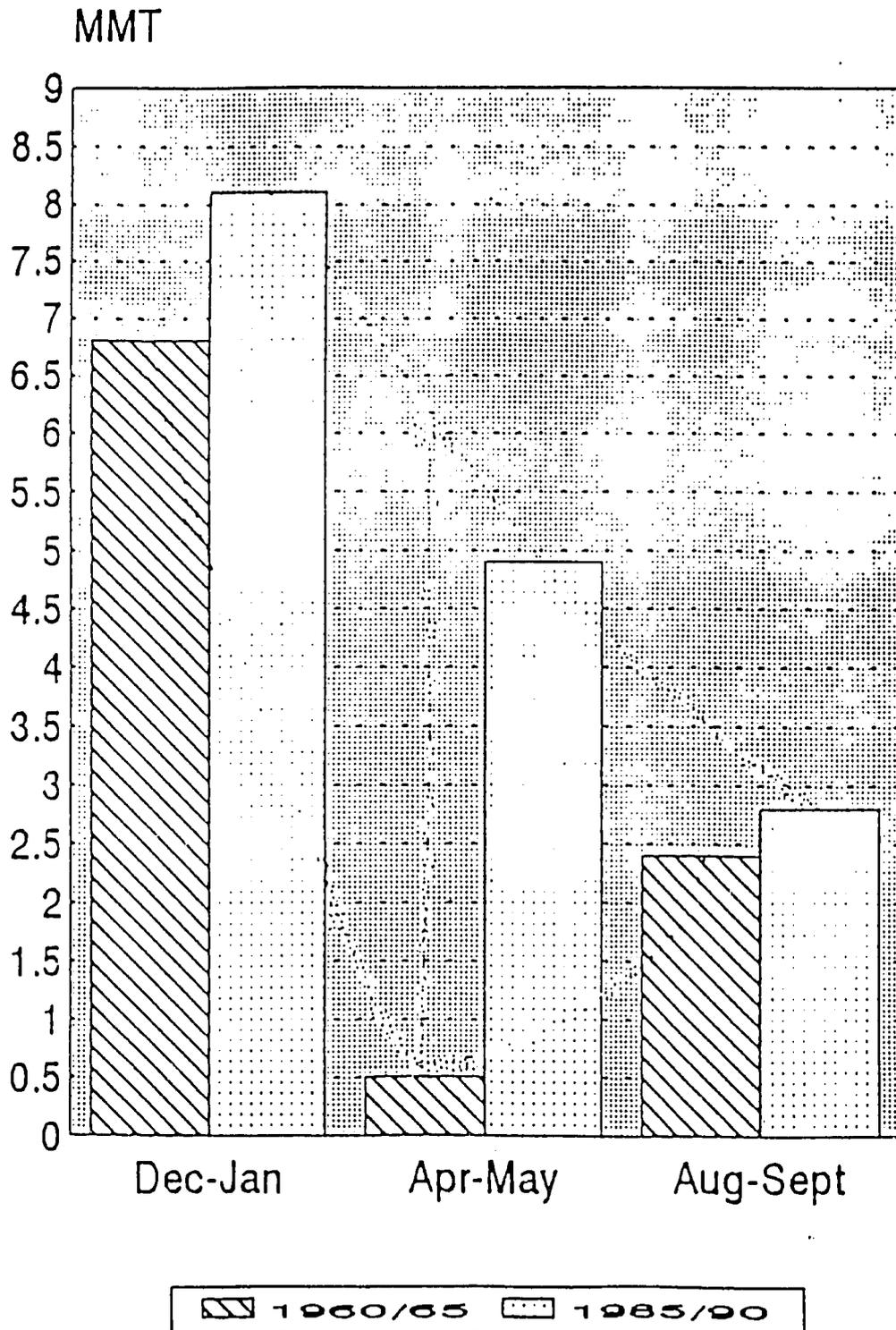
The introduction of a winter crop has altered the pattern of price seasonality. Instead of a single peak in September-October (before the Aman harvest), a second peak has emerged. The second peak occurs in April-May, before the Boro harvest. In addition, the amplitude of the September-October peak has diminished. In the early 1970s, the peak-to-trough price spread averaged 25 percent. Today, the peak-to-trough price spreads are between 10 and 15 percent.

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<sup>3</sup>Rice accounted for 25 percent of GDP during the FY 1992/93. It constituted the largest single market in Bangladesh with Tk 22,000 crore (US\$ 5.6 billion) produced. Approximately 50 percent of the rice produced was marketed.

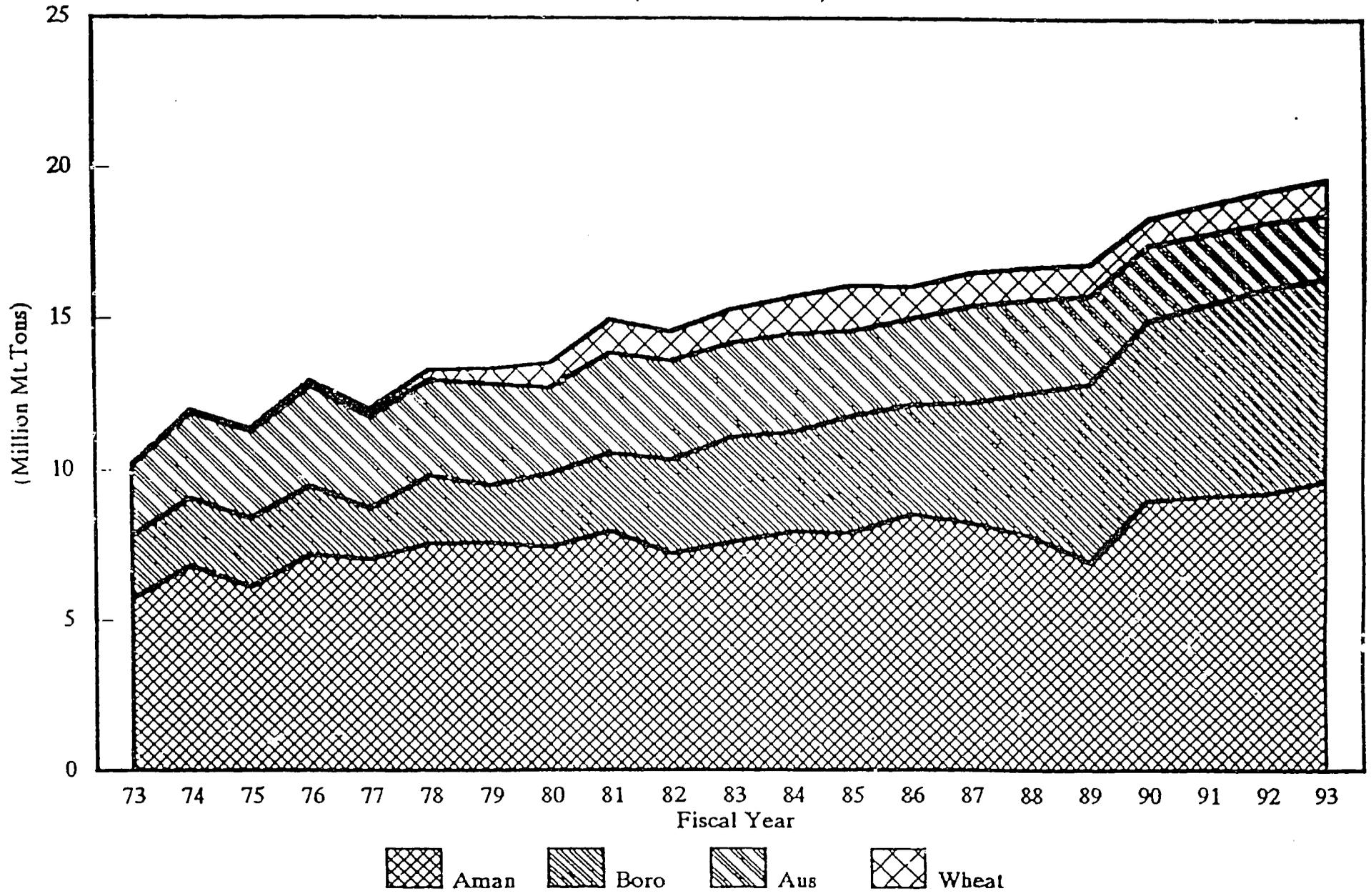
<sup>4</sup>The primary grain is paddy/rice.

Fig. 1 - Changes in output seasonality,  
1960s, 1980s



# Figure 2—Total Production of Foodgrains

(1972/73–1992/93)

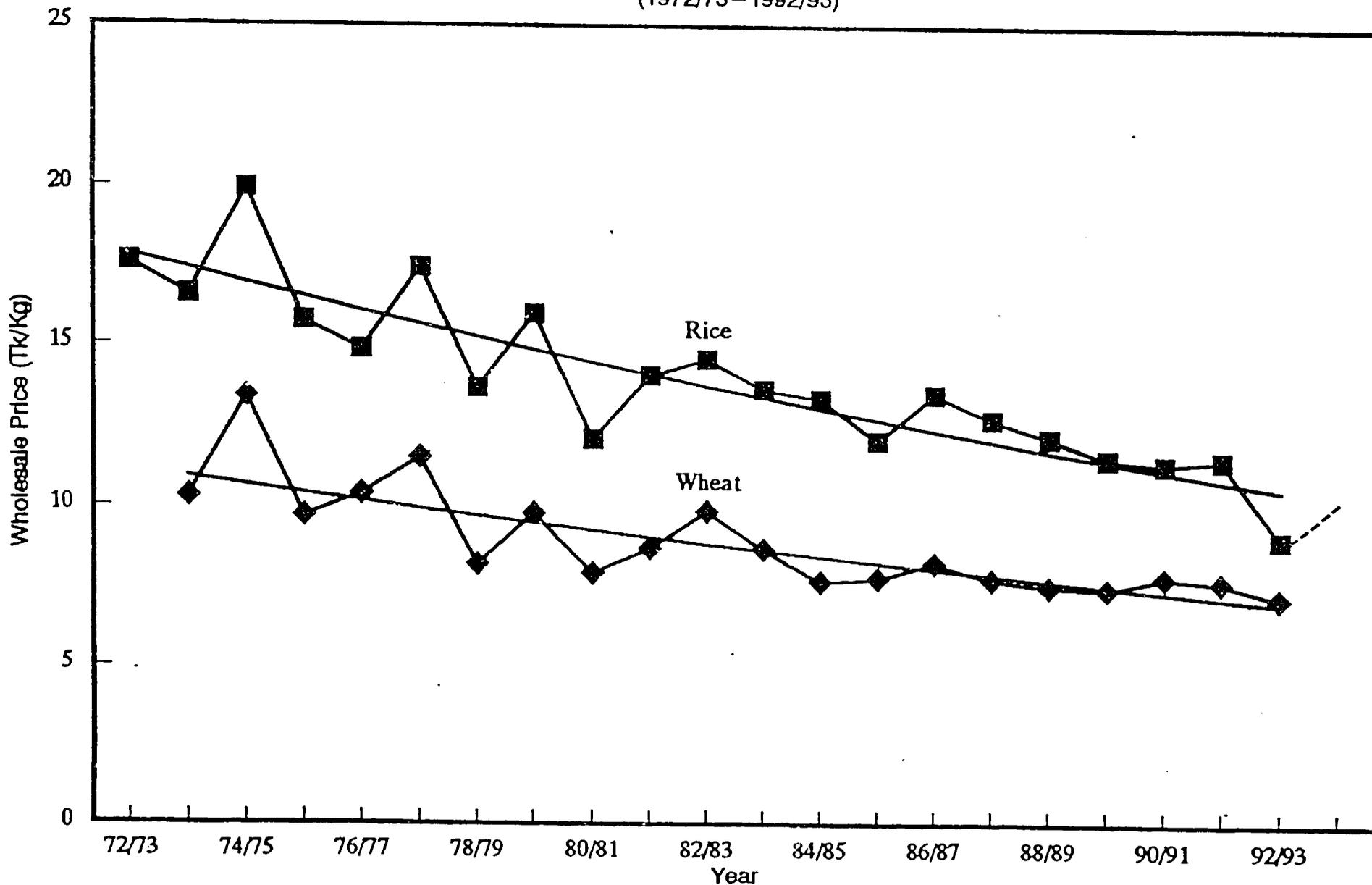


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Source : BBS

# Figure 3—Trends in Real Foodgrain Prices

(1972/73–1992/93)



Note : Deflated by Implicit GDP Deflator, Base Year 1992/93=100.

Source : DAM & BRS

--- Projected

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The Boro harvest of 1992/93 was of special concern. The record low prices set during June/July 1993 affected many interest groups. The low paddy prices affected the farmers' incomes and subsequently affected their demand for agricultural inputs<sup>5</sup>. The following factors contributed to the lower prices and decreased demand for inputs:

- i) Boro harvest was larger than expected;
- ii) Dry monsoon weather lowered post-harvest crop loss;
- iii) Large Aus harvest led to lower rice prices in July and August in areas usually rice-deficient;
- iv) Millgate contracting, with its above-market, fixed government procurement price, induced speculative stock building by millers early in the season;
- v) The concentration of government purchases in the months of May and June increased the intensity of procurement and made the market vulnerable to speculative letdown; and
- vi) The unanticipated early stoppage of government procurement, necessitated by the suspension of rural rationing, precipitated two waves of falling prices-- the first due to the suspension of government purchases and the second due to millers' sale of unwanted stocks.

Since October 1993, prices have again increased in all major markets of Bangladesh without government intervention. Though many traders and millers sustained heavy losses, they have exhibited remarkable resiliency in surviving and recovering.

### C. Market Structure of Rice

The number of traders--in other words, the competition--in the rice market has more than tripled since 1971. Markets that were thin and fragmented are now highly competitive. For example, the Badamtoli wholesale market in Dhaka, the largest rice market in the country, opened with only four wholesalers in 1968. It now houses over 300.

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<sup>5</sup>The International Fertilizer Development Center (IFDC) demand forecasting model found that income--proxied by paddy production multiplied by paddy prices--was significant in explaining variations in fertilizer demand.

Rice markets can be divided into two categories: paddy and rice. A feature shared by both divisions is the presence of a large class of itinerant traders and a smaller class of wholesalers. The five classes of paddy processors that straddle both divisions are small rice mills (SRMs), major rice mills (MRMs), automatic rice mills (ARMs), crushers and kutials.

**Paddy Marketing.** Itinerant traders, called farias, paikers and beparis, number over 45,000. They purchase the majority of their paddy at the farmgate, and then sell most of their purchase to paddy wholesalers and rice mills. SRMs and crushers purchase 19 and 27 percent, respectively, of their paddy supply directly at the farmgate. Paddy wholesalers, called aratdars, also purchase at the farmgate, but indirectly through agents.

In 1988, there were approximately 19,000 SRMs in Bangladesh. SRMs demand the largest market share of paddy from traders, both itinerant and wholesalers.

An important characteristic of the paddy market is that, at any given time, farmers own more than 75 percent of private paddy stocks. With the purchase of paddy at the farmgate as competitive as it is, the farmers have some control over prices. Not surprisingly, market supply has been responsive to price changes. Since farmers control most of the private stocks of paddy and have adequate storage facilities, they benefit from the price differentials by holding onto stock.

**Rice Marketing.** The largest flow of rice is from small mills to itinerant traders (paikers). The paikers sell almost all of their purchases to rice wholesalers (aratdars) in terminal markets. These aratdars market 92 percent of their supply through retailers. It is estimated that 80 to 90 percent of all privately-traded rice flows through the aratdars.

The second largest route is from crushers to itinerant traders and wholesalers. Crushers are paddy processors: they purchase paddy, husk the paddy and then sell the rice.

The third route is through the Directorate of Food (DOF). The size of the Government's rice procurement is dictated by the needs of its targeted distribution, i.e. food-security, and price stabilization programs.

During 1989/90, 8.7 million metric tons (MMTs) of rice were marketed. Of that amount, the DOF procured 0.92 MMTs, obtaining it through Millgate Purchase from automatic rice mills (ARMs) and major rice mills (MRMs). The Government's procurement accounted for 70 percent of the rice milled by ARMs and MRMs. The remaining portion of their milled paddy went to the private market. ARMs and MRMs mill approximately 15 percent of the paddy surplus marketed,

or about 10 percent of the rice privately marketed. SRMs and crushers account for about 90 percent of the rice privately marketed<sup>6</sup>.

The Government introduced the Millgate Purchase in 1984-85. Because of the economic and administrative advantages that it gave mill owners, and because of its complicated administrative procedures, the Millgate Purchase system resulted in huge monetary losses to the Government and low-quality grain procurement. The Millgate Purchase was suspended following the Boro season of 1992.

The government is again paying a fixed procurement price for specified grades of paddy, rice and wheat. Recently, an experiment was conducted to procure grain through open tender. Although the results of the tenders were encouraging, the procedures of tender have not been employed effectively to procure large-scale government purchases.

#### D. Marketing Margins and Profits

Speculatory foodgrain stocks were a minor part of the foodgrain traders' inventories. A 1992 World Bank report stated that privatization may not lead to speculative holding of rice because of the limited storage life and the general short-term outlook of rice traders, and where stocking decisions are based on expected production shortfall, the average period of stocking is one week. Profits are made through high turnover at relatively low margins. Speculative arbitrage, it seems, has become a less attractive option than storage arbitrage.

Investment in foodgrains is profitable.

**Marketing Margins.** In the early 1970s, marketing margins were approximately 24 percent of the retail price for all types of rice. By 1982/83, marketing margins increased to 26 percent for all types of rice. The marketing margin for coarse rice (the type of rice marketed in Bangladesh) was 21 percent during the 1989/90 season.

The farmer's share of the retail price has not changed significantly during the past 20 years. Not surprising, since farmers now market more than two-thirds of their production.

**Profits.** Net, before-tax profits averaged 44 percent of total assets for the 1989/90 growing season. Earnings at the wholesale level were significantly lower than at the retail level. Showing the least profit were the ARMs, followed by MRMs and SRMs (in that

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<sup>6</sup>Since FY 1990, the government has procured from the domestic market between 0.7 and 1 MMTs of rice per year.

order)<sup>7</sup>.

The rates of return are high but not excessive when risks are considered. It is important to note that the rates of return are high because of the high turnover of stocks and not because of high marketing margins.

## II. DEMAND SIDE: FINANCIAL SERVICES (CREDIT) DEMANDED BY FOODGRAIN MILLERS/TRADERS

Financial markets are contractual in nature, and characterized by information asymmetries: usually one of the parties involved in a transaction has more information regarding the conditions that surround the transaction than the other. It is often difficult to decide if the parties involved are being honest and forthright (adverse selection); and if the parties will honor the contract (moral hazard). Recognizing that contracts can be costly (due in part to information asymmetries), all parties involved will try to minimize transaction costs, i.e. the costs of negotiating, monitoring and enforcing contracts. Hence, portfolio allocation decisions are influenced by the characteristics of the transactions as well as the financial instruments involved.

These decisions regarding the type of financial liabilities to hold involve the foodgrain traders ranking and evaluating various debt instruments<sup>8</sup>. Debt instruments are ranked and evaluated on the basis of their endowed characteristics, the nature and terms of the contract, and the relationship between the contracting parties. The most important characteristics of debt instruments include the following: interest, maturity, transaction costs, rank of obligation in paying back the credit, collateral and the quickness that a loan can be provided.

### A. Trade Credit

Trade credit, that is, supplier-financing of assets, is not usually considered a source of capital. But trade credit is

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<sup>7</sup>ARMs have the greatest need for entrepreneurship because of the technology employed, and the scale and scope economies that accompany the technology.

<sup>8</sup>The preference for internal, versus external, financing guides decisions made by foodgrain traders. Observers forget that equity financing often is, and should be, the most important means of financing investment because of its lower cost. Unfortunately, the statistics on debt-to-equity ratio of foodgrain traders (by class of traders) is unavailable.

actively disbursed and received in all tiers of the foodgrain market and provides 46 percent of the borrower's working capital for all foodgrain millers/traders (Table 1). Consignment of paddy/rice is the most common form of trade credit. This short-term liquidity--in the form of credit--flows back and forth among foodgrain traders and is triggered by market demand. More than 75 percent of all agents disburse trade credit and approximately two-thirds receive it (Table 2). Its importance cannot be denied--market-wide disbursement of trade credit amounted to Tk 16.3 billion. The formal financial sector disbursed only Tk 270 million.

[note: farmers were not included as a trade agent in the IFPRI Rice Market Survey 1989/90, though they are traders due to the high percentage of marketable surplus that they hold.]

As Table 1 indicates, trade credit constitutes 30 percent of SRMs' debt financing and 10 percent of ARMs'. Trade credit provides more than 60 percent of the debt financing for the paddy traders and rice wholesalers, and over 50 percent for paddy wholesalers. Rice retailers rely on trade credit for 60 percent of their debt financing.

Trade credit is usually unsecured. And although trade credit is considered short-term credit, it is not unusual for it to be automatically and continuously renewed if payments are current. Trade credit often substitutes for bank borrowing if the terms and conditions are more favorable. Since trade credit acts as a line of credit, and is often interest-free, unsecured and automatically renewable, the preference for this type of debt financing is understandable.

Terms and conditions of trade credit include reciprocity. Terms and conditions are also flexible--the maturity of the trade credit can be indefinite, or open-ended. While trade credit is interest free, there may be cash discounts and reciprocal obligations of greater value than the original credit transaction. If in fact, foodgrain millers/traders employ an agent to collect/enforce the repayment, and there is no cash discount, trade credit is a more costly means of doing business than cash. And, trade credit minimizes the costs of default through a governing mechanism that suggests a more appropriate utilization of information than the formal financial sector employs (can employ).

Access to formal finance, and especially its effect on the magnitude of trade credit that flows from that access, is of interest to aid practitioners. As Table 2 indicates, rice mills with a formal line of credit are just as likely to disburse and receive trade credit as rice mills without formal access. This finding is also true of paddy/rice wholesalers and paddy/rice itinerant traders. Note, this finding does not indicate the

magnitude of trade provided and received to different marketing agents.

The ratio of accounts payable from trade to total accounts payable is 0.3, and is an indication of the importance of trade credit received by SRMs from paddy wholesalers. This is reflected in the high ratio (greater than 2) of accounts receivable to accounts payable to trade.

Conversely, the high ratio of accounts receivable from trade to accounts payable to trade by SRMs is 1.95, and is an indication of the magnitude of the flow of trade credit to rice wholesalers. This is reflected in the high percentage (64 percent) that trade credit/total accounts payable of rice wholesalers.

For paddy wholesalers and rice wholesalers, the ratios of accounts receivable from trade to accounts and notes payable are greater than 2. By comparison, the mills' low ratios may indicate the importance of debt in financing assets, and less reliance on trade credit to fuel business.

The importance of trade credit is not an indication of inefficiency in the capital market.

#### B. Bank Credit

Table 3 describes foodgrain traders' access to formal financial institution lines of credit for rice in 1989/90.

Forty-seven percent of SRMs and 56 percent of MRMs have access to a bank line of credit, yet only 30 percent of paddy wholesalers and 16 percent of rice wholesalers have access (Table 3). Rice wholesalers' access to formal finance is lower because trade credit is provided to them by the SRMs. On the other hand, the net flow of trade credit is from the paddy wholesalers to the SRMs.

Loans from the formal financial sector constituted more than 30 percent of rice marketing agents' outstanding debt in 1989/90. ARMs finance the 89 percent of their debt by borrowing from the formal financial sector. MRMs and SRMs finance 65 and 56 percent of their debt, respectively, by borrowing from the formal financial sector. Overall, two-thirds of the current bank loans to foodgrain traders that are outstanding were made to mills.

The average line of credit was sanctioned for Tk 377,600 (US\$ 11,800 in 1989 exchange rates). SRMs' line of credit was sanctioned for Tk 249,100 (US\$ 7,781). Rice and paddy wholesalers average line of credit was Tk 180,000 (US\$ 5,625).

Paddy wholesalers financed 33 percent of their debt through the formal financial sector. Rice wholesalers financed only 20

percent of their debt through the formal financial sector.

C. Government Credit (Millgate Purchase)

Table 1 details the liability portfolio of rice/paddy traders and millers. Not included are the advances made through the Millgate Purchase to ARMs and MRMs.

Government purchases of grain were a major source of financing for the ARMs and MRMs, particularly during the Boro season. Government procurement accounted for more than 50 percent of total market purchases during the months of May and June, 1992. DOF financed its procurement through borrowing from the commercial banks, particularly NCBs.

Since Millgate Purchase has been discontinued, other sources of financing (either equity or debt) must be found. And new buyers must be found.

TABLE 1 ECONOMY-WIDE RECEIVABLES AND PAYABLES, RICE TRADE, 1989/90

Agent type	Receivable from trade	Payable to trade	Payable to bank	Noninstitutional credit		Total payable	Payable to bank as % all payable	Payable to trade as % of all payable
				Other non-interest	Interest bearing			
Paddy Trader	729	592	27	193	164	976	3	61
Paddy Wholesaler	2534	641	391	146	9	1188	33	54
Automatic mill	22	9	79	0	1	89	89	10
Major rice mill	38	29	93	15	6	144	65	20
Small rice mill	1527	782	1468	266	118	2634	56	30
Kutial	132	32	0	14	12	58	0	54
Crushers	570	411	104	120	60	695	15	59
Rice Wholesalers	2291	565	176	105	31	877	20	64
Rice Retailer	160	149	0	78	22	249	0	60
Other	1624	556	160	385	89	1190	13	47
All	9626	3765	2498	1323	514	8099	31	46

Source: IFPRI Rice Market Survey 1989/90

Note: Population weighted estimates.

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**TABLE 2 SWITCHING BETWEEN DISBURSING AND RECEIVING TRADE CREDIT IN RICE MARKETS, 1992/93**

Name of Business	% of Establishments			% of Establishments		
	Only receiving	Only Disbursing	Both Receiving & Disbursing	Only Receiving	Only Disbursing	Both Receiving & Disbursing
	Units with CC			Units with CC		
Paddy Itinerants	33.3	0.0	66.7	21.5	7.7	64.6
Paddy Wholesaler	0.0	21.4	78.6	0.0	18.2	81.8
Automatic Mills	0.0	30.0	70.0	10.0	60.0	10.0
Major Rice Mills	15.8	10.5	73.7	6.7	6.7	86.7
Small Rice Mills	20.0	14.3	65.7	5.0	15.0	72.5
Kutial	0.0	0.0	100.0	15.6	17.2	48.4
Crusher	0.0	0.0	100.0	1.9	10.4	84.9
Rice Wholesaler	0.0	7.7	92.3	1.5	10.3	86.8
Rice Retailer	0.0	0.0	0.0	12.1	3.4	74.1
Rice Itinerants	0.0	12.5	75.0	0.0	29.6	52.1
All	10.3	14.0	74.8	7.2	14.3	70.2

Source: IFPRI Rice Market Survey.

**TABLE 3 PERCENTAGE OF AGENTS IN RICE MARKETS WITH BANK CREDIT CEILINGS, 1989/90**

Agent Type	Number of Agents	% of Agents with CC	Average Credit Ceiling (Tk.000)
Paddy Itinerants	68	4.4	14.7
Paddy Wholesaler	47	29.8	172.5
Automatic Mills	20	50.0	1805.0
Major Mills	34	55.9	347.4
Small Mills	75	46.7	249.1
Kutial	65	1.5	40.0
Crusher	110	3.6	181.3
Rice Wholesaler	81	16.0	183.8
Rice Retailer	58	-	-
Rice Itinerants	79	10.1	176.9
All	637	16.8	377.6

Source: IFPRI Rice Market Survey 1989/90.

### III. SUPPLY SIDE: FORMAL FINANCIAL SERVICES (CREDIT) SUPPORTING THE FOODGRAIN SECTOR

Macroeconomic and political stability, prudential regulation (regulation aimed at maintaining the viability of the banking system, i.e. capital adequacy), financial market efficiency, a sufficient legal framework and the proper structuring of incentives in financial institutions are the broad set of issues that are naturally bound up in the question of how to properly support the financial market and institutions.

#### A. Effects of Policy and Regulation on the Commercial Banking System

**Macroeconomic Performance.** The macroeconomic situation has a decisive bearing on the viability of the financial market. The

Bangladesh macroeconomic performance during the transition from a centrally planned system to an emerging market economy has been impressive. The overall strategy of the macroeconomic policies is macroeconomic stabilization and further promotion of the role of the private sector through the privatization effort and by strengthening the legal and regulatory framework. Key macroeconomic performance indicators projected for the FY 1993/94 include the following:

- i) Fiscal deficit as a percent of GDP was lowered from 7.8 percent in FY 1989/90 to an expected 4.5 percent in FY 1993/94;
- ii) Inflation rate fell from 9.3 percent in FY 1990 to 1.3 percent as of December 1993;
- iii) The current account deficit as a percent of GDP fell from 6.9 percent in FY 1989/90 to an expected 3.0 percent in FY 1993/94;
- iv) Foreign exchange reserves increased from 1.9 months of imports to a more than comfortable 7.9 months as of March 1994; and
- v) Exchange rates in both official and parallel markets have been stable over the last two years and with a very small spread between them<sup>9</sup>.

Despite the significant progress made, several problems persist. First, the low level of domestic resource mobilization places continued reliance on external financial assistance. Second, poverty is still widespread in both urban and rural areas. Domestic investment has fallen to 10 percent of GDP in FY 1991/92 and the real growth rate has remained at 3 to 4 percent, which is not sufficient to bring about a significant reduction in poverty. Finally, there needs to be an increase in the quantity and quality of public investment, with emphasis on increasing public expenditures on education, health, family planning and expanding social safety net programs.

**Financial Market Performance.** The banking system is under financial distress--for all practical purposes, it is insolvent. The three major macroeconomic issues that affect the performance of financial markets are the following: interest rates; exchange rate policies; and the development of a competitive commercial banking

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<sup>9</sup>Bangladesh's trade weighted real effective exchange rate depreciated by 19 percent between 1985 and 1991. However, this depreciation was insufficient to maintain competitiveness in export markets.

system.

Lending and deposit interest rates should be positive<sup>10</sup>. This is currently the situation. However, in an efficiently operating formal financial system, the presence of excess liquidity--the Bangladesh banking sector was holding excess liquidity of around Tk 7 billion in FY 1992--would signal the banks to lower both deposit and lending interest rates. But in fact, real deposit interest rates have increased and real lending interest rates have increased.

The benefit of a stable exchange rate to the financial market is that there is less incentive to buy foreign currency and goods as a form of savings or investment, thereby reducing the drain of loanable (investible) funds from the domestic financial market. The Government has pursued a flexible exchange rate policy since the 1980s. The result has been a relatively stable exchange rate. As the investment rate increases and a greater proportion of the investment is financed by domestic resources, the recent convertibility of the taka will prove to be of great benefit.

The development of a competitive commercial banking system is a key component of Government policy. The Government, recognizing the situation facing the formal financial sector, has initiated the Financial Sector Reform Project (FSRP). The FSRP has pursued the following activities: interest rate liberalization; the introduction of new monetary instruments; the discontinuation of directed credit and subsidized refinancing facilities; the imposition of more stringent bad debt and interest accrual accounting regulation; and the establishment of financial courts and a Credit Information Bureau. In addition, the FSRP has also addressed the microeconomic issues of weak bank management, inadequate bank supervision and political influence.

**Legal and Regulatory Environment.** The Bangladesh Bank acts as the central bank of Bangladesh and operates under the Ministry of Finance, thereby, eliminating its political autonomy. The Bangladesh Bank's primary responsibilities include the prudential regulation of the formal financial sector.

A 1993 World Bank report is highly critical of the performance of the Bangladesh Bank: staff productivity is low due to the policy of promotion through clerical ranks and the low civil service salary structure; Banking Inspection and Banking Control Departments are deficient in technical quality and capacity; and information systems are rudimentary.

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<sup>10</sup>The Bangladesh Bank continues to involve itself in regulating the pricing of deposits--Bangladesh Bank sets a floor on deposit interest rates and regulates the lending interest rate for agriculture, small enterprise and export lending.

The financial sector regulatory framework has been strengthened recently with amendments made to the Banking Companies Act (BCA) 1991, Bangladesh Bank Order 1972 and the Financial Loan Courts Act 1991. Although further amendments to the BCA 1991 are under consideration along with other more detailed bank regulations, can they be consistently and effectively enforced?

Simply stated, the legal system has been a detriment to developing a competitive commercial banking system. The Government has; in response to the loan delinquency problems, done the following: empowered the Development Finance Institutions to foreclose on the assets of delinquent enterprises without court process (although there is no known case where this has happened); and enacted the Financial Loan Courts Act 1991.

## B. Commercial Banking System

**Market Structure.** The commercial banking system, the heart of the formal financial sector is dominated by four nationalized commercial banks (NCBs) and two de-nationalized commercial banks (that operate very much like the NCBs)<sup>11</sup>. The market structure can be characterized as oligopolistic. The four NCBs account for 63 percent of the commercial banking system's branch network, 60 percent of deposits and over 50 percent of loans outstanding.

**Size of Asset Portfolio.** The lower lending level reached during the past three years has resulted in a liquidity surplus in the commercial banking system. This is the result of several factors, including depressed demand for investment funds; more responsible lending, meaning a drastic decline in lending to the public-sector and agriculture; and poor management policies and practices.

**Quality of the Loan Portfolio and Capital Adequacy.** The problems of non-performing loans and inadequate capital dominate any assessment of the commercial banking system. This is especially important in Bangladesh, since the commercial banking system is technically insolvent.

Under the BCA 1991, capital adequacy is defined as having paid-up capital and reserves of not less than six percent of total current and time liabilities. As defined, the capital base of most commercial banks is inadequate. As early as 1989, the Government

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<sup>11</sup>There are four NCBs and four government owned specialized banks. There are 11 private commercial banks (PCBs) that include two relatively large denationalized banks. Six foreign banks operate in Bangladesh, and their lending activities are focused on external trade, commodity financing and donor transactions.

provided Tk 17.29 billion to recapitalize the NCBs. Within two years, an additional Tk 3.2 billion was provided to the NCBs.

As of June 30, 1991, about 25 percent of NCBs' loan portfolios were classified as non-performing. Agricultural loans (generally unclassified) and non-performing jute loans are not included in this figure. The poor performance of the NCBs' loan portfolios has resulted in low bank profitability and capital inadequacy. The high risks in lending have induced credit rationing and acted to restrict the lowering of the lending interest rate.

There are two factors that will contribute to a repeat of this scenario in the near future. First, commercial banks (and especially the NCBs) combine commercial activities with development and social objectives. And second, the NCBs are politicized. The Government continues to be directly involved in the NCB's and Bangladesh Bank's operations through controlled lending, dictated interest rates and political manipulation of bank staff--appointments are based mostly on political considerations and not on competence or professional qualifications, i.e. NCB personnel are civil servants. This results in the poor quality of human resources at these banks and, therefore, weak bank management and inadequate bank supervision.

**Asset Pricing and Lending Margins.** The market structure has had a strong effect on market interest rates (both deposit and lending). Interest rates have fallen only slightly for several reasons. The NCBs face high financial intermediation costs; loan portfolios are of poor quality; political pressure is applied to keep deposit interest rates high; and interest income has declined because of non-performing loans (accrued interest is no longer included as interest income).

Theoretically, the partial liberalization of interest rates should enhance the competitiveness of the commercial banking system. In reality, the oligopolistic nature of the commercial banking system allows the NCBs to influence the market interest rate. And because of Government involvement in the operations of the NCBs, liberalization of interest rates is a smokescreen, and interest rates are still regulated<sup>12</sup>.

Lending margins were calculated during an IFDC study of the fertilizer sector interest rate spreads of Participating Banks under the Commercial Credit Program of FDI-II (Table 4). The stated bank lending interest rate minus the cost of funds plus financial intermediation costs make the lending interest margin

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<sup>12</sup>The politicization of the formal financial sector goes beyond the Government's ownership of the NCBs. The Bangladesh Bank is under the control of the Ministry of Finance and is not politically autonomous.

four percent, on the average. This four percent must cover risk, inflation, and a real rate of return for the bank's investment. It is difficult to imagine that the banks are earning a reasonable rate of return on their investments. Bank's are compensating for lending interest rate restrictions by charging differential cash margins on financial transfer instruments, i.e. Letters of credit (international and domestic), and differential valuation of collateral to diversify risk.

**Profitability.** The poor quality of the commercial banks' loan portfolios is the primary cause of low profitability. The low bank profitability is also caused by inadequate interest rate spreads. The average cost of funds per year were 7.2 percent for both NCBs and PCBs as of February 1994 compared to 7.6 percent in October 1993 (Table 4). Financial intermediation costs average 2.8 percent of average liabilities (deposits) as of February 1994. Financial intermediation costs would be much higher if operating costs were considered as a percentage of earning assets and slightly less if total assets were considered. Factoring in risk and inflation, the interest rate spread is low.

### C. Foodgrain Credit Delivery System<sup>13</sup>

**Legal Environment.** Foodgrain trade is governed by the following statutes: The East Pakistan Control of Essential Commodities Act 1956, the Bengal Rice Mills Control Order 1943 and the following three anti-hoarding laws: The East Bengal Price Control and Anti-Hoarding Order 1953, The East Bengal Essential Foodstuffs Anti-Hoarding Order 1956 and the Hoarding and Black Market Act 1948.

The East Pakistan Control of Essential Commodities Act 1956 indirectly controls all foodgrain trading in the private sector. This act provides for the control of production, treatment, keeping, storage, movement, transport, supply, distribution, acquisition, use or consumption of, and trade and commerce in essential commodities within East Pakistan, now Bangladesh. An essential commodity is defined to include foodgrains. The most

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<sup>13</sup>There were 654 branches of commercial banks that had loans outstanding to the foodgrain sector as of October 31, 1993. Eightythree branches were randomly selected for the IFDC Foodgrain Credit Survey, November 1993, from the major rice trading and producing areas (27 were identified). Thirty-seven branches refused to provide information on their foodgrain loan portfolio. Janata Bank provided information on their entire foodgrain loan portfolio--74 branches had 340 accounts.

TABLE 4 COMMERCIAL BANKING SYSTEMS' COST OF FUNDS AND FINANCIAL INTERMEDIATION COSTS AS OF FEBRUARY 28, 1994

BANK	February 1994	February 1994		October 1993	
	LENDING INTEREST RATE	COST OF FUNDS	FINANCIAL INTERMEDIATION COSTS*	COST OF FUNDS	FINANCIAL INTERMEDIATION COSTS*
NCBs					
Agrani	13.5	6.5	2.20	6.78	2.86
Sonali	13.5	8.5	2.12	8.78	1.67
Janata	12.5	6.5	2.51	7.18	1.95
Rupali	13.5	NA		7.22	2.48
PCBs					
Pubali	14.5	6.86	2.42	7.24	2.87
Uttara	14.5	7.42	2.45	8.81	1.46
City	14.5	7.09	3.84	7.39	1.61
UCBL	14.5	7.24	3.62	7.67	3.65
NBL	14.5	6.94	2.56	7.12	2.69
AB	14.5	7.12	3.80	6.50	4.00
IFIC	14.0	7.78	1.88	8.63	1.85
Islamic Banks*					
Islami	15.0	4.84	2.76	5.04	2.48

Source: Head Offices of the Commercial Banks.

\* Financial intermediation costs are calculated as total expenditure (excluding interest payments) to average deposits and average borrowing.

\*\* The Islami Bank operates on a profit-sharing basis based on a profit mark-up.

important provision of this Act is that it gives the Government power to increase supplies of any essential commodity, or to secure its equitable distribution and availability at fair prices.

These laws are in the statute books but not being enforced by the Government, either by choice or inability to enforce. The extent that these laws have effected foodgrain millers/traders behavior is unknown. Clearly, regulatory avoidance or structural arbitrage has occurred in order to minimize the costs imposed on the foodgrain millers/traders.

**Banking Regulations.** BCD Circular No. 4, February 2, 1990, summarizes credit restrictions and credit policies in existence as of December 31, 1989.

The Bangladesh Bank removed the prohibition on credit to foodgrain traders through BCD Circular No. 4. All commercial banks are free to extend credit to foodgrain traders.

Working capital loans to rice, paddy or flour mills can be extended against a recommended primary security of hypothecated or pledged stock with a margin of 30 percent---BCD Circular No. 13, June 27, 1989. Furthermore, BCD Circular No. 13 recommends that the line of credit be adjusted every 60 days based on the schedule proposed, though it is ambiguous whether the outstanding balance must be fully adjusted, i.e. outstanding balance brought to zero. As stated in the Circular, "It may be mentioned that credit norms drawn up by the committee may be used as general guidelines for determining the amount of working capital. It is not mandatory to strictly follow these guidelines in every case. The actual amount of working capital may be determined in the light of real need of industrial units of relevant sector and in view of realistic assessments." In other words, there are no BCD regulations on extending working capital to foodgrain millers, only recommendations.

**Commercial Banking System Participation.** BCD Circular No. 27, October 17, 1992, reiterated a previous BCD Circular that removed the embargo imposed on credit to foodgrain traders. With removal of the embargo on credit to foodgrain traders, all commercial banks can now extend credit to this sector.

The following commercial banks have extended credit to foodgrain traders since the lifting of the credit ban: Sonali Bank, Agrani Bank, Janata Bank, Pubali Bank, Rupali Bank, IFIC Bank, United Commercial Bank, Islami Bank, City Bank, National Bank and Bangladesh Krishi Bank.

There is no specific credit program which targets the foodgrain sector. Bangladesh Bank has provided no restrictions or

guidelines on lending to the foodgrain sector, with the exception of the guidelines for loans made to millers. There is no explicit account at the Bangladesh Bank rediscount window that targets the foodgrain sector.

**Size of Lines of Credit.** In a sector that is driven by rapid turnover investments, foodgrain millers/traders demand short-term working capital. The banks have effectively responded by offering lines of credit, the most appropriate financial instrument available. The amount of the line of credit is determined by the following: banker-customer relationship; past performance of the borrower; turnover in the account; branch manager's recommendation; and adequacy of the collateral security offered.

Current foodgrain borrower's average line of credit was Tk 640,000 (US\$ 16,000) (Table 5). The average loan amount outstanding was Tk 380,000 (US\$ 9,500). Average utilization of the credit line was over 90 percent. Credit utilization is expected to be high during the harvest of the Aman crop.

Wheat millers received the largest average line of credit--over Tk 1.5 million (US\$ 40,300) compared to Tk 650,000 (US\$ 16,200) for rice millers.

Rice and paddy traders' lines of credit currently average nearly Tk 250,000 (US\$ 6,250). This figure is less than 10 percent higher than traders received during 1989/90.

**Loan Pricing.** Lending interest rates from the commercial banking system, as of November 30, 1993, range from 13.5 percent to 17 percent per year, compounded quarterly for loans to the foodgrain sector. NCBs were charging between 13 and 15.5 percent per year, compounded quarterly. PCBs were charging between 15 and 17 percent per year, compounded quarterly. The pricing of these investments is not explicitly regulated, and falls under the category of working capital.

**Loan Maturity.** Working capital loans to the foodgrain sector generally have a maturity of one year. These working capital loans are lines of credit and, in most bank's lending procedures, are fully adjusted after 90 days. It was recommended by the Bangladesh Bank that working capital loans to millers be adjusted every 60 days.

**Collateral.** Loans to the foodgrain sector are given against the primary security of stocks-in-trade, i.e. rice/paddy or wheat, and collateral security.

One form of primary security is a pledge of rice/paddy/wheat in gunny bags of standard size, quality and specification that is stored in the borrower's godown under the bank's control. Less

than 10 percent all lines of credit were secured by pledges of primary security. The second form of primary security is the hypothecation of rice/paddy/wheat in gunny bags of standard size, quality and specification that is stored in the borrower's godown under the borrower's control. Over 90 percent of all lines of credit were secured by hypothecating primary stock.

The primary security has a margin of between 30 and 50 percent of the value of the pledged/hypothecated stocks. In other words, if the loan outstanding is Tk 1000, then the pledged/hypothecated stock must have a value of between Tk 300 to 500. The amount of "drawing power" is calculated on the basis of the primary security margin and the current loan amount outstanding.

A statement confirming the availability of hypothecated stocks is provided monthly to the Head Office/Regional office by the branch manager/staff. The statement is based on a physical inspection that occurs at irregular intervals, but at least once a month.

Collateral security is usually taken in the form of mortgaged land with or without buildings. The bank requires the registered mortgage deed or a registered irrevocable general power of attorney for the property equitably mortgaged to the bank. In addition, the banks will accept the personal guarantee of the owner of the mortgaged property if the property stands in the name of a third party, and any other securities acceptable to the bank, i.e. gold, financial/security bonds, shares, etc. (see the Annex on the Summary of Credit Restrictions and Credit Policies as of March 27, 1994.)

Information on the ratio of collateral to loan amount sanctioned was not available for foodsector loans. In the fertilizer sector, where lines of credit are provided, the ratio of collateral to loan amount sanctioned was 2.76 at the NCBs, 3.14 at the DNCBs and 1.39 at the PCBs<sup>14</sup>. The low ratio of the collateral to loan amount sanctioned at the PCBs can be partially explained by the reliance on pledged primary security at the Islami bank, where 72 percent of current loans outstanding are pledged. In fact, the ratio of collateral to loan amount sanctioned under pledged primary security was 0.52 at the NCBs, 0.24 at the DNCBs and 0.21 at the PCBs. Obviously, loans with pledged primary security received higher lines of credit than loans pledged with hypothecated primary security.

**Insurance.** Pledged/hypothecated stocks are to be insured in the joint names of the bank and borrower against the risk of fire, theft, flood and other natural calamities, for the full value of the stocks pledged/hypothecated to the bank, plus 10 percent. This

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<sup>14</sup>Information collected as of February 28, 1994.

is a cost to the borrower.

**Quality of Foodgrain Sector Loan Portfolio.** The most important indicator of the quality of the foodgrain sector loan portfolios is the delinquency ratio, which is measured by the following formula:

$$\frac{\text{Outstanding Balance of Loans with Overdue Payments}}{\text{Total Loans Outstanding}}$$

The delinquency ratio presents the most accurate representation of the quality of a portfolio.

Table 6 presents a comprehensive picture of foodgrain loans made by the commercial banks surveyed. The loan amount sanctioned in the 481 accounts surveyed totalled Tk 363 million (or US\$ 9 million). The outstanding balance was Tk 194 million (or US\$ 5 million).

Forty percent of foodgrain loans were overdue. Overall, the delinquency rate was 81 percent, with the foodgrain loan portfolio for Janata Bank having a delinquency rate of 98 percent and loans outstanding totalling US\$ 3.22 million. The total loan overdue was Tk 156 million (or US\$ 3.9 million) for these 120 branches. A closer examination of the delinquency rate reveals that nearly one half of all overdue accounts and 72 percent of the loan amount overdue are aged greater than one year (Table 7), revealing a very serious problem. The longer a loan is delinquent, the lower the probability of recovering the overdue amount.

The ratio of the loan amount overdue to the loan amount sanctioned was close to 1.3, a figure substantially higher than that found in the fertilizer sector, 0.73 (Table 8). Eighteen percent of delinquent borrowers made some repayment of their overdue loan amount during the previous month. The magnitude of the repayment for active accounts--repayment divided by the loan amount overdue at the beginning of the month--was 0.25 (Table 9). Overall, the loan amount recovered was four percent of the loan amount overdue.

**TABLE 5 CURRENT BORROWER PROFILE---LOAN AMOUNT SANCTIONED, LOAN AMOUNT OUTSTANDING, CREDIT UTILIZATION AND TYPE OF PRIMARY SECURITY AS OF OCTOBER 31, 1993**

TYPE OF MILLER/TRADER*	LOAN AMOUNT SANCTIONED (in millions of taka)**	LOAN AMOUNT OUTSTANDING (in millions of taka)	CREDIT UTILIZATION	PRIMARY SECURITY (Percentage of Loans)	
				Hypothecated	Pledged
Rice Traders	0.25	0.18	80%	100%	0%
Paddy Traders	0.2	0.028	14%	100%	0%
Rice and Paddy Traders	0.23	0.21	91%	98%	2%
Rice Millers	0.65	0.41	83%	88%	12%
Wheat Millers	1.61	0.69	87%	77%	23%
Rice and Wheat Millers	0.63	0.5	134%	89%	11%
Rice and Wheat Traders	0.15	0.09	66%	100%	0%
Overall	0.64	0.38	91%	91%	9%

Source: IFDC Foodgrain Credit Survey, November 1993.

\* 300 current borrowers: 20% rice traders, 22% paddy and rice traders, 27% rice mills, 18% wheat mills, 12% rice and wheat mills, 1% rice and wheat traders.

\*\* Loans secured by hypothecated stock had an average loan size sanctioned of Tk 0.48 million. Loans secured by pledged stock had an average loan size sanctioned of Tk 1.96 million.

TABLE 6 FOODGRAIN SECTOR LOAN PORTFOLIO OF COMMERCIAL BANKS AS OF OCTOBER 31, 1993 (loan amount in millions of taka)

NAME OF BANK	NO. OF BRANCHES	NO. OF BORROWERS	AMOUNT SANC-TIONED	AMOUNT OUTSTAN-DING	NO. OF OVERDUE ACCOUNTS	LOAN AMOUNT OVERDUE	DELINQUENCY RATE
Agrani	6	21	5.51	4.89	12	2.81	57
Al Baraka	2	4	8.30	7.36	4	7.36	100
AB Bank	1	2	0.28	0.06	0	- 0 -	0
City Bank	1	1	0.75	1.36	1	1.36	100
IFIC Bank	1	3	5.10	1.27	0	0	0
Pubali	5	9	6.34	4.25	1	0.18	4
National	6	22	14.74	14.15	8	5.90	42
Janata	74	340	280.75	128.85	132	126.52	98
UCBL	2	7	2.30	1.53	0	0	0
IBBL	4	14	9.07	5.71	2	0.21	4
Sonali	18	58	29.89	24.34	30	12.08	50
Total	120	481	363.03	193.78	190	156.42	81

Source: IFDC Foodgrain Credit Survey, November 1993.

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Handwritten notes and corrections:

- 5.7
- 1.5
- 14.15
- 4.25
- 1.36
- 6.78
- 21
- 5.9
- 18
- 1.36

TABLE 7 FOODGRAIN SECTOR LOAN PORTFOLIO OF COMMERCIAL BANKS---AGING OF ARREARS AS OF OCTOBER 31, 1993 (loan amount in millions of taka)

NAME OF THE BANK	AGING OF ARREARS									
	UPTO THREE MONTHS		GREATER THAN THREE MONTHS TO ONE YEAR		GREATER THAN ONE YEAR TO TWO YEARS		GREATER THAN TWO YEAR		TOTAL	
	NO. OF ACCOUNT	LOAN AMOUNT OVERDUE	NO. OF ACCOUNT	LOAN AMOUNT OVERDUE	NO. OF ACCOUNT	LOAN AMOUNT OVERDUE	NO. OF ACCOUNT	LOAN AMOUNT OVERDUE	NO. OF ACCOUNT	LOAN AMOUNT OVERDUE
Al Baraka	1	3.49	10	0.90	0	0	2	2.96	4	7.36
Pubali	0	0	1	0.18	0	0	0	0	1	0.18
Janata	38	6.04	46	27.92	15	70.03	33	22.52	132	126.52
Sonali	1	0.02	3	0.38	1	0.13	25	11.55	30	12.08
Agrani	1	0.50	0	0	0	0	11	2.31	12	2.81
Islami	0	0	0	0	2	0.21	0	0	2	0.21
NBL	1	0.82	4	2.80	0	0	3	2.28	8	5.91
City	0	0	0	0	0	0	1	1.36	1	1.36
Total	42	10.88	55	32.18	18	70.37	75	42.98	190	156.42

Source: IFDC Foodgrain Credit Survey, November 1993.

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\* Summi  
out summi  
us  
other

TABLE 8 DELINQUENT BORROWER PROFILE---LOAN AMOUNT SANCTIONED, LOAN AMOUNT OVERDUE, RATIO OF LOAN AMOUNT OVERDUE TO LOAN AMOUNT SANCTIONED AND TYPE OF PRIMARY SECURITY AS OF OCTOBER 31, 1993

TYPE OF BORROWER*	LOAN AMOUNT SANCTION (in millions of taka)	LOAN AMOUNT OUT-STANDING (in millions of taka)	LOAN AMOUNT OVERDUE TO LOAN AMOUNT SANCTION	PRIMARY SECURITY	
				Hypo-thecate	Pledge
Rice Trader	0.22	0.24	1.12	100%	<del>100%</del> 0
Paddy Trader	13.36	0.02	0.32	33%	67%
Rice and Paddy Trader	0.35	0.37	1.1	96%	4%
Rice Mills	0.42	0.32	1.4	84%	16%
Wheat Mills	2.36	1.09	1.32	81%	19%
Rice and Wheat Mills	0.6	0.3	1.45	100%	<del>100%</del> 0
Rice and Wheat Traders	0.08	0.16	2.02	100%	<del>100%</del> 0
Government	195	24.5	0.11	100%	<del>100%</del> 0
Total	4.11	0.83	1.28	88%	12%

Source: IFDC Foodgrain Credit Survey, November 1993.

\* There are 184 delinquent accounts: rice traders 11%, paddy traders 2%, rice and paddy traders 15%, rice mills 43%, wheat mills 17%, rice and wheat mills 9%, rice and wheat traders 2%, and Government 2%.

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LOAN AMOUNT O.V.  
LOAN A.

TABLE 9 DELINQUENT BORROWER PROFILE---LOAN RECOVERY AS OF OCTOBER 31, 1993

TYPE OF BORROWER	NUMBER OF ACCOUNTS WITH REPAYMENT DURING OCTOBER 1993	LOAN AMOUNT RECOVERED/LOAN AMOUNT OVERDUE (ACTIVE ACCOUNTS ONLY)	LOAN AMOUNT RECOVERED/LOAN AMOUNT OVERDUE (ALL OVERDUE ACCOUNTS)
Rice Traders	1	0.09	0.004
Paddy Traders	1	0.56	0.36
Rice and Paddy Traders	4	0.15	0.02
Rice Mills	25	0.26	0.08
Wheat Mills	1	0.54	0.02
Rice and Wheat Mills	0	0.0	0.0
Rice and Wheat Traders	0	0.0	0.0
Government	0	0.0	0.0
Total	32	0.25	0.04

Source: IFDC Foodgrain Credit Survey, November 1993.

#### IV. A CRITICAL ANALYSIS OF THE ARGUMENTS SUPPORTING THE LIBERALIZATION AND TARGETING OF CREDIT TO THE FOODGRAIN SECTOR

The Great Bengal Famine of 1943, in which over a million people died of starvation, and the equally devastating famine of 1974 have left an indelible mark on the people of Bangladesh. In this country where food-security is now a major part of Government policy, there exists a strong relationship between the Government's price stabilization and food-security programs and the behavior and efficiency of foodgrain millers/traders. Therefore, the pattern of increasing stocks of private foodgrain justify decreasing the Government's food-security program. Likewise, the impact of the increasing size of the Boro rice crop on smoothing out seasonal price variations is an argument to reduce the magnitude of the Government's price stabilization program. IFPRI recommends that to minimize government expenditure for the procurement of foodgrain stocks and make the Government's price stabilization program more effective, the wide spread use of large-scale public tender should be employed.

It is expected in the near future that Bangladesh will move from a deficit rice producing country to a surplus rice producing country. Increasing production will be accompanied by numerous marketing problems, similar to that of other countries who have gone through the transition Bangladesh is expected to go through. A supply-led finance approach is being advocated to ease the transition.

##### A. Large-Scale Public Tender to Minimize Government Expenditure in Procuring Foodgrain Stocks for Food-Security and Price Stabilization Programs

It is IFPRI's position that public tender has not been effectively employed to procure large-scale government purchases of foodgrain. In the latest tender, the Government set the minimum bid at 100 metric tons (MTs). If public tender was exclusively used in this mode of operation, the government would be unable to procure a sufficient amount of foodgrain for its food-security and price stabilization programs. They further argue that the cost effectiveness achieved by large-scale public tender would be lost. A key constraint is the availability and size of credit currently available to foodgrain millers/traders.

**Economies of Scale.** If the government were to procure through public tender all 300,000 metric tons (MTs) of rice (Government's 1993/94 target), with a minimum quantity of 1000 MT allowed per bid, there would have to be 300 suppliers capable of providing such quantities. At current prices, this translates into a minimum capital requirement of Tk 9.5 million per bidder and would require that formal financial credit to foodgrain millers/traders increase

by an average of 15 times<sup>15</sup>.

The lines of credit presently available to foodgrain millers/traders are inadequate to finance the minimum-scale bid of public tender that has been proposed by IFPRI. According to the credit need-investment cost approach--and assuming 100 percent debt financing for additional capital, borrowed from formal finance to supply the minimum-scale bid of public tender proposed--the increases in the lines of credit (from 1989/90 figures) would have to be 38 times what SRMs access, 27 times what MRMs access, 51 times what rice wholesalers access, 5 times what ARMs access and 55 times what paddy wholesalers access.

On the other hand, this credit need-investment cost approach to determine the financing gap under the proposed minimum-scale bid of public tender does not factor in potential borrowers' efficient scale of operations. Efficient scale is a function of entrepreneurial skill, technology, storage capacity and financing options available.

Of course, the question from the supply side is whether the formal financial sector can satisfy the demand for credit as well as make good loans, bringing up issues of sustainability, subsidy and allocative efficiency<sup>16</sup>. There is strong evidence that the economies of scale required for the large-scale public tender are considerably beyond the present financing capacity of foodgrain millers/traders. This makes credit relatively important when approaching the problem through the credit need-investment cost approach. From the supply side, although foodgrain millers/traders' marketing margins and the rate of return are high because business risk is low, attractive prospects for the use of investment funds do not alone justify a credit program. Rather, investment risk is high because borrowers do not have experience in

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<sup>15</sup>All of the United States wheat donations to Bangladesh connected with Care are expected to be bulk sold. It is argued that the policy of monetization of wheat aid also depends upon increasing the magnitude of formal financial loans to wheat millers/traders. As with rice, the prevailing scale of financial liabilities held in bank loans is inadequate to finance proposed efficient minimum-scale bids under public tender for wheat. Formal financial credit to wheat millers/traders would have to increase by 10 to 30 times.

<sup>16</sup>There are sufficient investment funds available for loans. But past experiences in lending by the commercial banks, i.e. quality of the loan portfolio, have led to credit rationing. The excess liquidity available for investment is, therefore, not very transparent.

managing operations of the scale and complexity implied by the minimum-scale bid under public tender and the growing debt to equity ratio. Further, the lending risk is high because the banks have difficulty in making good loans.

If the minimum-scale bid under public tender cannot be fully financed by profits, borrowed funds or new equity capital, perhaps it would be reasonable to consider the possibility of trade credit making up the difference.

There is a belief that among the many inputs for growth, credit is the key to a thriving and robust rice-market. In the credit need-investment cost approach, credit is the essential factor. But is it more important than entrepreneurship, that is, the ability to synchronize the procurement, processing, distribution and financing of foodgrain stocks required in meeting the minimum-scale bids under public tender? The answer is no.

**Competition.** For large-scale public tender to be efficient, the bidding process must be competitive. But minimum-scale bid under public tender will introduce an indivisibility/lumpiness to investment. This indivisibility/lumpiness presents a barrier to entry, and will reduce the competition for providing paddy/rice for government procurement.

IFPRI also argues that competition is being stifled because only 56 percent of SRMs, 30 percent of paddy wholesalers and 16 percent of rice wholesalers have access to credit according to their 1989/90 survey. This line of thinking does not consider that decisions regarding the type of liabilities to hold involve the millers/traders ranking and evaluating various debt instruments. It is conceivable that foodgrain millers/traders have internally self-selected themselves out of the formal financial market. Borrowing from the formal financial sector is costly compared to financing investment using equity or profits which do not have to be repaid or have interest costs. Also, it is unclear to what extent foodgrain millers/traders are being quantity-rationed or loan-sized rationed out of the formal financial market and whether differences in capital structure reflect differences in the growth opportunities facing the different foodgrain millers/traders.

**Downward Price Stability.** A 1993 World Bank Report concludes that the Government's price stabilization program has not significantly affected producer or consumer prices and recommends that the private sector induce price stabilization by encouraging private sector foodgrain storage, transport and trade. Yet it is clear that Government involvement in targeted distribution programs and price stabilization programs will continue for political reasons. Therefore, the question of minimizing the costs associated with Government procurement of foodgrain stocks for its food-security and price stabilization programs is important.

According to IFPRI, for a given quantity of government-procured stocks, large-scale public tender will have the same impact on farmgate prices as the Millgate Purchase. Under both systems, farmers receive the market price, and not the official procurement price, for their paddy. But that market price is higher than it would be otherwise. If the cost savings from large-scale public tender permit greater quantity procurement, then tendering will potentially offer greater farm price support than Millgate contracting.

But recent history supports the World Bank position that private sector price stabilization is effective. The reduction in aggregate demand during the Boro season of 1993 was a short-term phenomenon. Since October 1993, prices have reversed themselves in all major markets of Bangladesh, without government intervention. One explanation for the quick adjustment in prices is the efficiency and speed of the private sector to fill the void left by the Government's exit from demand for foodgrain. In other words, government procurement through Millgate Purchases at higher-than-market prices had effectively crowded out private sector investment.

#### B. A Supply-Led Finance Approach To Solve Marketing Problems Associated with High Foodgrain Production

Marketing problems are inevitable as Bangladesh moves closer to self-sufficiency in rice production, and eventually to a surplus position. The history of countries in Asia that have gone through a similar green revolution indicate that Bangladesh will face the following problems, because the marketing system will not develop in synchronicity with production: low prices; inefficient technology to process the foodgrain; financial constraints; inability to transport marketed surplus; low supply of export quality foodgrain because no specific grades and standards are in effect; and lack of entrepreneurial ability. Fresh capital infusion to upgrade the technology, by providing new mill machineries, storage, silos and transportation, are needed to handle what is expected to grow into a large rice market.

As with large-scale public tender, loans from the formal financial sector, which are small relative to investment costs, are the binding financial constraint in the development of export market for foodgrain, according to IFPRI.

A supply-led finance, designed specifically for the foodgrain sector, is being advocated as the prime response to the problems of marketing surplus (in advance of the inevitable change of Bangladesh to a surplus-producing rice country). Supply-led finance would include the creation of financial programs and an accompanying credit delivery system providing targeted credit for the foodgrain sector. Financial instruments such as lines of

credit, financial transfer instruments, i.e. international and domestic letters of credit, would be provided in advance of demand to stimulate economic growth that does not exist. The thesis being forwarded by proponents of supply-led finance is that economic development will be impeded by the absence of financial services (credit), and that because credit was not readily available, investments would not be made. Other constraints are secondary.

In fact, millers/traders are beginning to upgrade their technology and improve the quality of rice that is being processed. This includes introducing fans in the husking process to better clean the rice, and new procedures aimed at whitening milled rice.

A credit delivery system that services the foodgrain sector already exists. The major problem in the implementation of a supply-led finance strategy in Bangladesh is the shallow and fragile formal financial sector (see section III). Designing a specific, targeted credit program with more liberal terms and conditions will only contribute to the problems ongoing in the formal financial sector as long as the formal financial sector remains weak.

## OBJECTIVE OF THE PRELIMINARY FOODGRAIN CREDIT ASSESSMENT

- The existing credit patterns, practices and performance have been assessed to determine the need for a credit delivery system targeting the foodgrain sector. The credit delivery system would make the following contributions: minimize Government expenditure in procuring foodgrain stocks for food-security and price stabilization programs by initiating large scale public tender; improve the performance of the price stabilization program by procuring foodgrain stocks with the savings achieved by using large scale public tender; and in the long-term, eliminate the marketing problems typically associated with high production (a supply-led finance approach).

## SYNTHESIS OF MAJOR FINDINGS

- The record low prices set during June/July 1993 affected many interest groups. Low paddy prices reduced farmers' incomes and subsequently affected their demand for agricultural inputs. Since October 1993, prices have increased in all major markets of Bangladesh without Government intervention.
- Privately held foodgrain stocks have increased; they have tripled since the late 1960s. On the average, private stocks now account for approximately 75 percent of domestic foodgrain stocks. Among private stocks, on-farm stocks account for three-quarters of all stocks, while traders' stocks account for the remaining.
- The market structure of rice is competitive. Profits are relatively high because of the high turnover, not because of high marketing margins. The marketing margins from farmgate to the retail level--21 percent for coarse rice during the 1989/90 season--are not excessive.
- The farmer's share of the retail price has not changed significantly over the past 20 years, one reason being that farmers now market more than two-thirds of their production. Supply of foodgrain to the market was found to be responsive to changes in market price.
- Trade credit is actively disbursed and received in all tiers of the foodgrain market and provides 46 percent of the borrowed working capital for all foodgrain millers/traders, based on the IFPRI Rice Market Survey 1989/90. Market-wide disbursement of trade credit amounted to Tk 16.3 billion, compared to the Tk 270 million that banks disbursed as loans to the foodgrain sector. But the characteristics of informal finance that make it successful--information economies,

reciprocity and social sanctions--also prevent it from developing into larger-scale operations and operations that could extend term-loans.

- Nearly 50 percent of small rice mills have access to a line of credit from the formal financial sector based on the IFPRI Rice Market Survey 1989/90. IFPRI claims that the rice wholesalers do not have access to bank credit (only 16 percent of rice wholesalers have access). One reason for this low access to formal finance is that rice wholesalers prefer the trade credit made available by small rice mills. The terms and conditions are more favorable than bank loans. In other words, lower access is a demand-side phenomena as well as supply-side phenomena.
- The East Pakistan Control of Essential Commodities Act 1956 indirectly controls all foodgrain trading in the private sector. Clearly, regulatory avoidance or structural arbitrage has occurred in order to minimize the costs imposed by this Act. The extent that this law has affected foodgrain millers/traders behavior and the commercial banking system is unknown.
- There is already a credit delivery system for the foodgrain sector. Nearly two-thirds of the banks in the commercial banking system extend credit to the foodgrain sector. There are no banking regulations that directly affect lending to the foodgrain sector.
- Banks have effectively responded to the demand for short-term working capital by offering lines of credit. The foodgrain borrowers' average line of credit was US\$ 16,000. Lending interest rates range from 13.5 percent to 17 percent per year with a loan maturity of one year. Collateral takes the form of primary security of stocks-in-trade, mortgaged land with or without buildings, personal guarantee, gold, financial/security bonds, shares, etc.
- Despite the relative profitability of investing in the foodgrain sector, the quality of the banks' foodgrain loan portfolios is poor, based on the IFDC Foodgrain Credit Survey, November 1993--the overall delinquency rate is 81 percent, with 98 percent of Janata Bank's foodgrain sector loan portfolio delinquent. Furthermore, a large percentage of delinquent loans are aged over one year, indicating a low probability of loan recovery.
- The proposed large scale public tender is not feasible. The credit need-investment cost approach used to determine the financing gap, and therefore the importance of credit, does not factor in potential borrowers' efficient scale of

operations as well as the inability of the banks to make good loans. Clearly, access to a larger amount of credit (working capital) will not increase the efficient economies of scale.

Under the present conditions that underlie the foodgrain sector, large-scale public tender may introduce an indivisibility or lumpiness to investment that presents a barrier to entry, and may reduce competition for providing foodgrain stocks for government procurement.

- Recent history supports the World Bank position that private sector price stabilization is effective. The reduction in aggregate demand during the Boro season of 1993 was a short-term phenomenon. One explanation of the quick adjustment in prices is the efficiency and speed of the private sector in filling the void left by the Government's exit from demand for foodgrain. The Government's procurement at higher-than-market prices had effectively crowded out private sector investment.
- The development of a credit delivery system that targets the foodgrain sector is being proposed as a response to the future problems of marketing surplus. It has been shown that a credit delivery system already exists that services the foodgrain sector. The major problem that confronts a supply-led finance approach is the weak foundation that the commercial banking system rests on.

## RECOMMENDATIONS

**Should a Credit Delivery System be Developed to Support Large-Scale Public Tender and Solve the Marketing Problems Associated with High Production?**

- i) A credit delivery system for the foodgrain sector exists, and therefore there is no need to develop a new credit delivery system; rather the present credit delivery system should be strengthened; and
- ii) The minimum-scale bid under public tender should be determined on the basis of the scale economies of potential suppliers of foodgrain to the Government to promote competition. Determination of the minimum-scale bid under public tender should not be based on the credit need-investment cost approach.

The performance of loans made to the foodgrain sector is extremely poor--81 percent loan delinquency with over one-half of delinquent loans aged more than one year. How can the credit delivery system be improved?

- i) Strengthen the institutional base of the credit delivery system by developing the human resources (bank staff) involved in the foodgrain sector. This technical assistance should be sector-specific and focus on the banks that are most involved in lending to the foodgrain sector;
- ii) Enforce the existing credit delivery system, i.e. adjust accounts at least once every 90 days and randomly verify both pledged and hypothecated primary security;
- iii) Introduce variable lending interest rates and variable term-to-maturity loans to adjust for risk, i.e. good borrowers should receive loans with lower interest rates and longer term-to-maturity loans than risky borrowers. Borrowers should be classified by risk characteristics; and
- iv) Banks should extend lines of credit to only their best customers and provide short-term loans to new borrowers until they prove themselves.

Forty-seven percent of small rice mills, 30 percent of paddy wholesalers and 16 percent of rice wholesalers have access to credit. What can be done to increase foodgrain millers/traders access to formal finance<sup>18</sup>?

- i) Foodgrain millers/traders may believe that they will be rejected because of the conditions associated with the granting of a loan or they may not know how to apply, thus self-selecting themselves out of applying for a loan. Therefore, train would-be borrowers to apply for a loan and explain the concept of collateral in an asset-based lending system.
- ii) Establish a dialogue between foodgrain millers/traders, the Bangladesh Bank and the commercial banking system. Potential borrowers must be made aware of their obligations; and the commercial banking system must be informed about the foodgrain sector to understand that overall business risk is low; there

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<sup>18</sup>IFPRI states the rice traders do not have access to the commercial banking system and that banks largely refuse to grant credit for foodgrain trade. There is little evidence to support or refute this contention.

are high rates of return to capital.

- iii) There may not be a true demand by foodgrain millers/traders for bank loans because of high transaction costs, or the millers/traders poor business skills and low levels of education. It is possible that of the available financing options, the bank is one of many and perhaps the least attractive. Rather than considering credit as the only binding constraint, focus should be placed on developing entrepreneurship by extending training to entrepreneurs, as well as providing technical assistance, i.e. International Executive Service Corps (IESC). This action serves to reduce the banks' risk in lending to foodgrain millers/traders, thereby, increasing their ability to borrow.
- iv) Increase the value of collateral as a means of increasing the size of the loan. The obvious means to accomplish this is to reduce the transaction costs of securing assets. In other words, make collateral more liquid and less risky. One means of accomplishing this is further development of the Loans Courts, i.e. speed up the process by giving the Courts more power to enforce decrees. In addition, the development of a capital market, thereby increasing the availability of liquid collateral in the form of shares, would be helpful.
- v) The ratio of collateral to loan amount sanctioned is affected by the type of primary security (pledged or hypothecated stock) the loan is secured with. The ratio is higher for hypothecated stock. Therefore, in order to increase the size of the line of credit, a borrower could pledge the primary security rather than hypothecate it.
- vi) Utilize back-to-back Inland Letters of Credit (ILCs) to increase confidence and reduce business risk. Back-to-back ILCs give the banks first right to any payment made to the borrower and assures banks that the borrower has a buyer. Loan advances can be made under an ILC secured by goods in transit to buyers.

## RESEARCH QUESTIONS

- How have foodgrain millers/traders avoided regulation, i.e. anti-hoarding acts?
- Are foodgrain millers/traders self-selecting themselves out of the formal financial (credit) market? Why?
- What proportion of working capital is being financed by equity (the degree of financial risk)?
- What is the magnitude of credit rationing, in its various forms, being practiced by the commercial banking system?
- What is the effective demand for formal financial credit (versus false demand)?
- Does the scale of operations for small rice mills, and rice and paddy wholesalers provide a reasonable living for the entrepreneur? Within the bounds of the credit delivery system, i.e. collateral requirements, lending interest rates, is it more logical to increase the scale of operations incrementally?
- How did rice mills finance their entry into the market? How have they financed their expansion and technological improvement?
- Can the financial portfolios (liabilities) of foodgrain millers/traders be explained? Are the differences in capital structure explained by differences in the relative importance of growth opportunities?

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