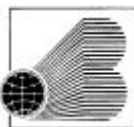


**Bangladesh Agricultural Research
Council (BARC)**
New Airport Road, Farmgate, Dhaka

Assessing the Problems of
**Foodgrain Marketing and Food Distribution System
in relation to Achieving Food Security in Bangladesh**

Summary Report
2000



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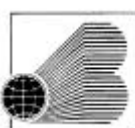
Bangladesh Agricultural Research Council (BARC)

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1. Introduction

Bangladesh achieved much progress in production of foodgrain in the last two decades, but majority of the population cannot have adequate food on their plates everyday. Because, most of them are either underemployed, or unemployed and they do not have enough purchasing capacity. Food security means adequate food actually available on the plates of every child, woman and man for their healthy and active life. The production or supply of sufficient food is one side of food security while the other pivotal side is entitlement of all, primarily of the poor, marginal and disadvantaged people to available foods in a given space and time. It is essentially a match of required production and marketable quantities for a given population against their needs coupled with their entitlement to such foods. In this nexus, the market plays a very vital role in achieving food security for the poor and marginal, because, the market determines the availability as well as the price of foodgrains.

Karim (1997) reported that Bangladesh had annual food deficit of around 1.5 million metric tons, varying from year to year. The deficit is met by importing foodgrains through both public and private sectors. Rice is the staple food, which provides 68 percent of the calorie and 54 percent of the protein intake of an individual on an average. The total food consumption is estimated 868 g/day/person, of which 58 percent consists of cereals, 34 percent vegetable and plants foods and 8 percent animal food. It was also found that more than 50 percent of the total population suffered from malnutrition for lack of adequate diet those who live below the poverty line.

In a subsistence economy like Bangladesh's, food security at both national and individual levels is closely related to population, growth of agriculture, socio-economic condition of the farmers (employment, earning, wellbeing, purchasing capacity) and the market situation. A very dynamic and active market system can sometime enhance food security, particularly during natural calamity as well as during lean period of cereal production (Khaliquzzaman, 1997).

Hossain (1989) found that there have been difference and discrepancies in food consumption among the different social strata in the society. The poor have a just adequate intake of grains but their consumption of vegetables was only about 15 percent, which is lower than the requirement. But, for the types of food which are rich in protein or provide balanced nutrition, the intake of the poor is less than 50 percent of the minimum requirement. Also, the differences in food intake between the poor and the rich are not very large for grains and vegetables, but are substantial for other types of food. For example, for meat and eggs, the bottom 50 percent of the population in 1985/86 satisfied only about one-third of the requirement, while the top 15 percent of the households managed to get about five times more; their consumption was about two-thirds higher than the minimum consumption norm.

Further, it was felt that growth in food production is a necessary, but not in itself a sufficient condition for achieving food security. Food has to reach different social classes. In this context (a) the degree of inequality in the distribution of assets and income, (b) their changes over time and (c) entitlement to employment become important issues.

The Ministry of Food, GOB (1999) in its paper on " Food Security in Bangladesh: Current Policies and Future Plan" described the major issues involving Food Security as: (i) the availability of food determined by domestic production, external trade and the efficiency of distribution through markets and other channels; (ii) access to food (determined by a

household's income and government transfers, assistance from relatives and friends, remittances from abroad, and assistance from NGO's); and (iii) the utilization of food (determined by individual food preference and health and environmental factors affecting absorption of food).

The market plays a very vital role in achieving food security, because it is the market, which determines the availability as well as the price. Even though there is money in the hands of the people, non-availability of foodgrains would shoot the price up beyond the consumer's reach. On the other hand even if there are huge stocks in the market, the lack of purchasing power would make it impossible for the people to buy. Market failure sometimes causes disruption and such failure leads to non-availability as well as higher price. The inter seasonal and inter market variations of prices of foodgrains also cause disruption in the market and puts hurdle in the way of people reaching to food supply. A very dynamic and active market system can enhance food security particularly during natural calamity as well as lean period of cereal production.

With the gradually increasing commercialization and the application of modern inputs like HYV (high-yielding varieties) seeds, chemical fertilizers, pesticides, irrigation technologies etc., the market of foodgrain in Bangladesh has significantly expanded due to sale by surplus farmers as a result of increased production per unit of land. The basic agricultural marketing policy of the government of Bangladesh has been seeking to promote free play of the market forces in determining the prices, remove controls and regulations, and encourage larger participation of the private sector and provide reasonable facilities for its proper performance in recent years. Side by side with the private sector the government operates public sector agencies and policies with the following objectives:

- operating price support measures in respect of selected crops to ensure fair returns to the farmers to sustain the tempo of increased production;
- maintaining security food reserve and buffer stock of foodgrains/ fertilizers to stabilize the price;
- operating Public Food Distribution System (PFDS) to maintain the foodgrain price within the reach of the common people;
- operating relief and social welfare measures for generation of income and alleviation of poverty;
- providing market infrastructures like growth centres, transportation, communication, storage and processing facilities;
- improving bargaining power of the growers through provision of credit and warehousing, promotion of cooperatives, provision of market information, regulation of malpractice etc.; and
- adopting appropriate tariff and fiscal measures to ensure markets for the local crops and promote export of the surplus crops.

The dominant marketing channel of paddy/rice beside the government's PFDS is the private sector, which includes *beparis*, miller, *aratdars*, wholesalers, retailers and the consumers. In this chain, the marginal producers and the poor are the affected groups. Due to the faulty market systems, once they have to sell their products at low price and again, they have to purchase their necessary food at high price in the lean time. In such a situation neither the gradual increase of production of rice, nor the availability of foodgrain in the market ensures the food security for large marginal and poor people of the country (Hossain, 1991).

Shahabuddin and Dorosh (1998) showed that very often price increase is determined by the seasonal pattern and not always by the market anomalies. Study has shown that spatial difference and market anomalies did not determine the price of rice market and rice market is integral in nature. Price difference is not only determined by the seasonal pattern it also depends on atmospheric changes. A paper of FAO shows that frequent changes in atmospheric conditions caused to vary agricultural outputs year to year and season to season. Due to this changes price of food commodities display wider inter- year and intra-year dispersion (FAO, 1983).

Besides market, the distribution system also plays a vital role for enhancing greater access to food by the poor. In Bangladesh, the Public Food Distribution System (PFDS) has a long history dating back to the time of the Great Bengal famine in 1943, when a distribution system based on ration cards was introduced. The PFDS reached its peak during 1980s. At present, there are large number of food distribution and food aid development programmes operating in the country. Some of these systems involve sales of grains to specific group of beneficiaries, others include distribution of food. The PFDS has now taken the form of FFW, FFE,GR, VGD, RMP, VGF etc. These programmes have aimed at creating a 'Safety Net', while programme like VGF is disaster-centric. During and after the flood of 1998, VGF played most important role in stabilising food situation in the country. But these programmes cannot answer the question of Food Security as a whole.

Thus, both market and distribution system have ample scopes to improve in future. The market systems can be streamlined by providing infrastructure for storage and movement of foodgrains while the distribution system can further be improved by getting it out of political patronage and institutionalising the distribution system.

2. The Objectives of the Study

The main objectives of the study included the following:

- i) Assessing the availability and quantity of foodgrains in the selected markets in three districts;
- ii) Assessing the temporal and locational variation of prices of foodgrains at different markets (primary, assembly and secondary markets);
- iii) Understanding the foodgrain marketing systems (the nature and level of integration among the markets);
- iv) Investigating the food consumption patterns, buying capacity and household food deficit, particularly of the poor and marginal groups;
- v) Examining the food distribution systems of the government and the institutional bottlenecks that create barriers to achieving food security in Bangladesh; and
- vi) To find out ways and means that may help reformulating policies to initiate further programmes and activities at different levels of decision making for achieving food security in the country.

3. Methods of the Study

The study employed a set of methods and techniques of social science for collection of both quantitative and qualitative information through census, sample survey, stakeholder consultation, interviewing, case study etc. Market census and survey were conducted to assess the availability and quantity of foodgrain in the three types of markets (primary, assembly

and secondary markets) in districts with distinct character feature in terms of production of crops and remoteness. The three districts were Kishoreganj, Rangpur and Gopalganj. Sample survey with different types of foodgrains traders in the selected markets were undertaken for examining the variations of prices of foodgrain by years and seasons at different types of markets in different regions. Further, stakeholder consultations as well as key informant interviews were done to understand the foodgrain marketing systems i.e., the nature and flow of foodgrain and level of integration in the foodgrain marketing and how it affects the efficiency of the market with respect to foodgrain pricing. Three medium size villages from the three districts mentioned above were also taken for the study to assess the household production of foodgrain and to understand the food consumption patterns, buying capacity and food deficit of the households from different social categories, particularly of the poor. Views regarding the government food distribution systems were also sought from the recipients and the people involved in the process.

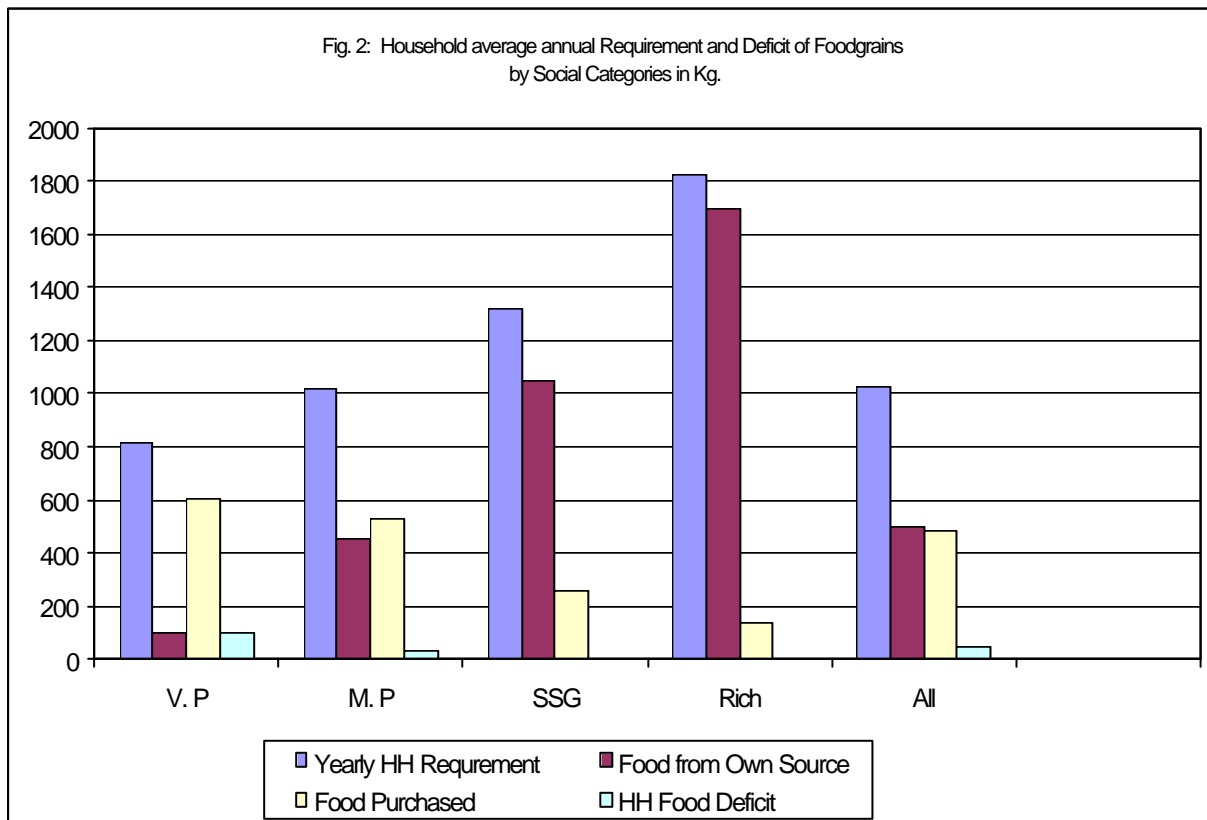
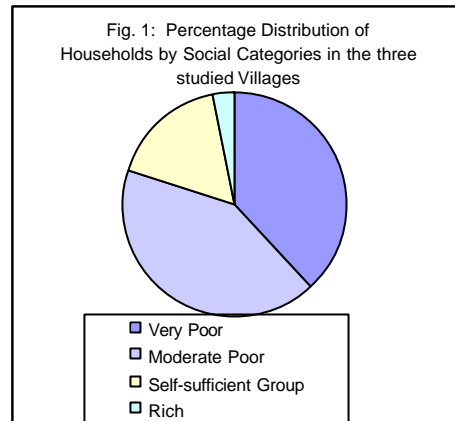
4. Key Findings

4.1 Household Foodgrain Production, Consumption and Food Insecurity at the Village Level

The Household Census confirmed that the poor and marginal people are the majority in every village while the medium and rich are the few. About 38 per cent households were found very poor. They are landless and involved mainly in wage labour and have very inadequate income. They face food deficit round the year. The moderate poor households have little amount of own land and very often they are involved in share-cropping. They earn their livelihood mainly from agriculture and wage labour. Few of them were also involved in small business and trading. The income of this group was low and they have to face food deficit for 4-6 months in every year. The remaining two groups have enough land and adequate income from different sources and do not have any food deficit. Further, the very poor and the moderate poor constitute about 80 percent households of the surveyed villages. Only 20 percent households were found well-to-do. Of them, 17 per cent were self-sufficient and only 3 per cent households were rich.

The survey results of 365 households in the three villages covering all social categories reveal that the average annual household production of foodgrains was of 30.34 maund in 1998 and 1999, which included *Aman* of 1998 and *Irri/Boro*, wheat and *Aus* of 1999. The production of *Irri* was the highest in the villages studied i.e., on an average of 21.87 maund (72 percent of the total production) followed by *Aman* (7.98 maund, or 26 percent of the production). The production of both wheat and *Aus* was very low - only 0.21 maund and 0.28 maund respectively. The production of foodgrains varies across the regions as well as the social categories. The annual total foodgrain production was high at *Gannarpar* (43.39 maund) in Rangpur while it was the lowest at *Adampur* (20.22 maund) in Kishoreganj. The household average foodgrain production at *Bangram* in Gopalganj was 27.64 maund in 1998-99. The production at *Gannarpar* was the highest, because the people of that locality cultivate two major crops (*Irri* and *Aman*). The annual production of foodgrain by the very poor (few are involved in share-cropping) was very low among the surveyed households (4.68 maund only). The annual household production of foodgrains was 22.09 maund, 73.35 maund and 152.5 maund for the marginal, self-sufficient and rich farmers respectively in the three villages.

The surveyed households consumed on an average of 18 maund of paddy and wheat in 1998-99 from their own sources. They sold on an average of 8 maund and stored 5 maund of foodgrain (mainly paddy) in that year. A greater amount of paddy was consumed at Gannarpar in Rangpur (23.81 maund) followed by the people at Bangram (17.53 maund) while people at Adampur consumed lower amount of paddy and wheat (12.18 maund only), because their annual production was also very low compared to other villages. The consumption of paddy from own sources differed greatly across the social categories. The very poor consume on an average only 3.75 maund in all three villages, while these were 17 maund, 38 maund and 64 mounds for the marginal, self-sufficient and rich group respectively in three villages.



The survey reveals that the annual average rice requirement of the surveyed households was 1030 kg in the 1998-99. Of the total requirements, they had taken 498kg (about 50 percent of the requirement) from their own sources while they purchased 487kg from the markets to meet their household food needs. Further, about 50 percent households could not meet their total requirements either from their own sources, nor they could buy the required amount of food. Of the surveyed 365 households, 183 reported that they had food deficit ranging from four to ten months in 1998-99.

The average annual household food-deficit of the all the 365 households was 46kg in the surveyed year. About 50 percent households had food deficit. Only the poor and marginal households had food deficit while the other two groups i.e., the self-sufficient and the rich did not have any food deficit in that time. There are variations in terms of food requirements and food deficit across the regions and social categories. The very poor 136 households of the three villages required 813.33 kg of rice in 1988-99. They had taken 101kg (only 12 per cent of the requirement) from their own sources, while, they had to buy on an average 610kg to meet their need. But they could not either purchase, or take from any other source on an average of 103.4kg, which was 13 per cent of their total annual foodgrain requirement. The moderate poor and the marginal group also had food deficit on an average of 35kg. They had taken quite a good amount of food from their own sources (453kg), which was 45 per cent of their total requirements.

The poor and the marginal people listed a number of causes that were functioning against their household food security. These included lack of gainful employment or under-employment, low income and wage, lack of purchasing power, high price of foodgrain in the markets during the lean period (between two harvesting periods), inadequate supply of foodgrains in the markets, crop failure (due to flood and drought), inadequate crop production etc.

It was learnt from the consultations that food is generally prepared by the women in every family. They not only prepare food, but they are also primarily responsible for producing vegetable for household consumption and sometimes for sale. The very poor families normally cannot take three meals a day. In the morning, they take some rice or '*Ruti*' with little vegetable. Sometimes, few of them take little amount of *Pantabhath* (rice preserved with water) at noon and they take the main meal in the evening with rice, vegetable, pulses and little small fish. They hardly take milk and meat once or twice in a year. The moderate poor and the marginal households take three meals in a day. In the morning, they take rice or *Ruti* with vegetables and in the evening, they take the main meal of the day with enough rice, vegetables, pulses and little fish. They take eggs, milk and meat very occasionally. Few of them take eggs and milk from their own sources.

It was learnt from the FGDs with the women that the male members always take food first while the females take it afterwards. Further, the females of the very poor households often pass day without taking food during the lean period. The male members and the children are served with the good items of food adequately and the females take later and take less amount compared to their requirement. This is the practice for the poor and marginal groups in the villages studied. There is little difference among the middle educated and service holder families. They sometime, take food sitting all family members together and try to make almost fair and equitable distribution of food items among the members. But this practice is very limited only to few households.

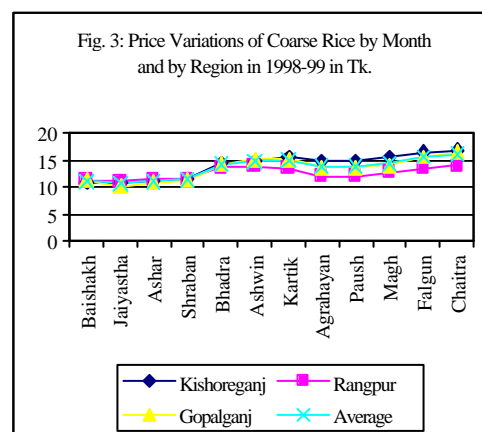
4.2 Foodgrain Marketing: Price Variation and Integration of Market

For the purpose of market survey, three types of market, viz. Primary Market (PM), Assembly Market (AM) and Secondary Market (SM) were selected in Kishoreganj, Rangpur and Gopalganj districts. Rangpur was found a food-surplus district while Kishoreganj as marginally surplus or self-sufficient district and Gopalganj was a food deficit area. The three types of markets in these regions have been selected on the basis of their locations, areas, radius, infrastructure, attendance and annual auction rate/value.

From the viewpoint of domestic availability, Bangladesh is a food deficit country. The foodgrain supply consists of domestic production of foodgrain, foodstuff import including food aid and the net Public Food Distribution System (PFDS). Out of the produced foodgrain, a small portion (usually 10 percent) is used for seeds, cattle feed and wastage. With the growing demand due to population increase, production becomes insufficient compared to requirement. Then import of foodstuff becomes essentially inevitable every year. The surplus in the hand of the government in excess of public procurement over the distribution under the PFDS is added with the national availability of the foodgrain. The extent of food deficit (shortage of foodgrain beyond production) is on an average 10 percent of the total requirement, where market plays a crucial role due to regional disparity in food production and the main participant in the foodgrain import. In case of food-import, private sector with its increasing participation has been playing a dominant role.

The overall findings of the market survey regarding the prices of rice over the twelve months indicate that there had been seasonal variation of prices of rice and other foodgrains. The average retail price of coarse rice in the selected three regions reached its peak (Tk.16.05/kg) in Chaitra (mid-March to mid-April) and went down to its minimum (Tk.11.12/kg) in Jaiyastha (mid-May to mid-June). This means pre-harvesting price of rice was the highest and the immediate post-harvesting price was the lowest with a 44.3 percent difference from the minimum to maximum prices. The lower prices prevail during the harvesting period which can be a period of only three months – Baishakh to Ashar (mid-April to mid-July). But the retail prices in Rangpur during the harvesting period (in the survey time) were higher than both Kishoreganj and Gopalganj. This was because the markets of Rangpur are integrated with national foodgrain market and public procurement. The retail prices of rice in Gopalganj during the harvesting period were the minimum due to declining demand of less number of consumers in the markets and the markets (particularly primary markets) are there totally isolated. During the harvesting period, average retail prices in Kishoreganj were lower, but they were slightly lower than Rangpur area. During the pre-harvesting period which can be traced as a period of three months – Magh to Chaitra (mid-January to mid-April), the region-specific retail prices were very high in all the regions. From the month of Shraban (mid-July to mid-August), retail prices started to increase till to its moderate peak in Kartik (mid-October to mid-November), then again started to decline with the harvesting of Aman up to the month of Paush (mid-December to mid-January). After Paush, the prices become very high till Chaitra compared to any other period.

The annual price variation has been examined in respect to rice only and their prices were taken from the retailers only since they were the direct sellers to the consumers. The highest price of rice was found in 1998 in every region in the last five years. Average annual highest and lowest prices during the past five years were usually at a higher level in Kishoreganj and at a lower level in Rangpur. The prices in Gopalganj region were slightly higher than Rangpur. The trend analyses show that there have been a trend of increasing price over the past five years, both in Rangpur and Gopalganj regions.



In the **primary markets** of the selected regions, the degree of monthly variation of retail prices was minimum in Rangpur during the twelve months with a difference of 25.9 percent. The monthly price variation in Gopalganj was the maximum for the corresponding months with a difference of 61.0 percent. The monthly price variation in Kishoreganj area was much more than Rangpur area and slightly higher than the overall primary market retail price variation. In Kishoreganj, the highest average retail price in the primary markets was Tk.16.80/kg in Chaitra and the lowest average price was Tk.11.00/kg in Baishakh and Jaiyastha. In the primary markets, seasonality in retail prices of rice also exists. The price level becomes very low during the Boro harvesting period (Baishakh to Ahsar), then starts to rise in a moderate scale till the Aman harvesting months of Agrahayan and Paush when price falls slightly. Again, the price level starts to be very high during the pre-harvesting period of Boro (Magh to Chaitra), i.e., in lean period.

In the **assembly markets** of the selected regions, the retail prices were less fluctuating than in other markets. Price levels were found to be higher in the assembly markets than primary markets, but lower than secondary markets. The price levels were similar in assembly markets of Kishoreganj and Gopalganj areas and those were higher in general than Rangpur area except in the harvesting period when large-scale government procurement keeps the price levels moderately higher.

In the **secondary markets** of the selected three regions, the price levels in Kishoreganj were at higher levels also with high degree of variation over the months ranging from Tk.10.50/kg (in Baishakh) to Tk.17.00/kg (in Chaitra). The difference from the minimum price to maximum price was 61.9 percent, which was the highest difference and hence variability in price levels. The price levels in Rangpur had less variability over the selected months.

It is clear from the survey and consultations at different levels that the market plays a very crucial role. It was found that during and after the prolonged flood of 1998, the inter-region price difference of rice was very high. The average per kg price of rice in both Kishoreganj and Gopalganj was Tk.17 in September, October and November while it was Tk 14 in Rangpur at that time at primary markets. There had been also inter market price variations between the primary, assembly and secondary markets within the same regions. So, market was not that much integrated and responsive to the situation to stabilize the price of rice. It certainly affected the poor by decreasing their purchasing capacity and access to food ultimately

Since the foodgrain traders are well concerned about the fluctuating nature of foodgrain price level, they have better understanding about the reasons thereof. The opinions of the traders have been surveyed in this regard. The overall findings show that the causes of foodgrain price-fluctuation mentioned by the traders (according to the priority) were as follows: natural calamity (flood, cyclone, etc.), creation of artificial food crisis, control of market monopoly, less supply compared to requirement, damage of crops, less production of crops, necessity to buy rice/paddy from other districts, political instability in the country, problem of communication system, and causes other than above (hartal/strike, etc.).

The respondents' opinion about the major causes of price hike in all regions (according to priority) have been: natural disaster (flood, cyclone, drought etc.), inadequate supply of foodgrain in the market, less production of foodgrain/damage of crops, hoarding by traders and creation of artificial food crisis in the market, less supply and more demand in the market, problem of communication system, need to buy foodgrains from other

districts/countries during lean period and other causes: political instability like hartal/general strikes, increase in fuel price (for transportation /irrigation etc.).

Keeping price-stable in the food markets would be the main concern for government to remove the market bottlenecks for ensuring food security. From the opinion survey of the traders, various priority options have been found. According to the overall results, following are the priority options for keeping foodgrain price stable (prioritized for all regions and markets): strengthening 'open market sale' (OMS) operation, effective procurement after harvesting, better preservation and continued supply of foodgrain when required, strengthening public food distribution, encouraging food-import by private sector (by reducing duty, financial support, simplifying the import procedures), food-import by government during crisis period, and others including better communication, action against traders for hoarding, political stability etc.

The traders suggested that different measures be taken by the government to maintain the price-stability of foodgrain and to increase the efficiency of foodgrain market. According to the priority, the measures are : supply of sufficient foodgrain in the market during crisis, food purchase by government and OMS during crisis, improvement of communication system, prohibition of artificial food crisis through hoarding by traders, food distribution through rationing, maintaining political stability in the country, operating food programmes by honest officials and employees, reduction of agricultural input prices, converting fallow land into cultivable one, providing agricultural credit, other steps (resisting the tyranny, violence and subscription-mongering, reducing electricity prices for millers, etc.).

4.3 Status of Public Food Distribution System (PFDS) in the Study Villages

PFDS was initiated to increase access to food for the vulnerable group through price subsidies on foodgrain and targeted income transfer. PFDS contributed a lot to mitigate the food crisis of the vulnerable poor. It helped to increase a certain level of access to food by many deficit households. It also influences the market. The supply of foodgrains of the PFDS helps to stabilize price of foodgrain in the market. Specially in the lean period, PFDS can stop increase of price by the operation of OMS.

Procurement is the supply side of PFDS for building public food stock. It has also a relation to market. Procurement of foodgrains at the harvesting period with increased of foodgrain might provide price incentive to the real growers. But the existing procurement system was found anomalous where growers did not have easy access to LSDs. The problems in the procurement system identified by the survey included: deception in weight, extra payment, higher transportation cost, time delay, non-acceptance of paddy, political pressure, anomalies in slip distribution, delayed payment, shortage of crushing mill, late procurement and inadequate storage facility that hindered the target of procurement particularly in Gopalganj and Kishoreganj.

Besides procurement, PFDS is beset with many difficulties. The amount of food distributed under PFDS was inadequate and insufficient in comparison to the vast need of the poor. The system of public food distribution was reported faulty, where nepotism and corruption were found in the selection process as well as leakage and manipulation in distribution was high. Often the quality of foodgrains was bad. The selection of area for PFDS was also manipulated by influential persons. The OMS for price stabilization was appreciated, but it was not functional in the study areas after the flood of 1998. Further the programme of fair

price through rationing was not competitive with market and it was found ineffective. Finally, PFDS was found almost occasional and disaster centric. The stakeholder consultation suggested that for meeting the need of food for the food deficit households there should be regular programmes throughout the year. There is a need for strengthening PFDS on institutional basis. The whole system should be made more efficient, effective and corruption free for its better performance. The study suggested to initiating village level cooperative approach for building public food bank for mitigating food crisis like 'Dharmogola' which was a part of our past rural tradition. That can be an alternative participatory coping strategy to survive without external assistance. The study also suggested cooperative approach to impede distress sale and price support for the growers..

4.4 Integration of Market and PFDS for Increasing Food Security

The market and the PFDS have important links. The PFDS of the government, particularly OMS can help improve the situation. It can increase food security to the poor and marginal as well as increase availability of food in the market through OMS and rationing etc, and thus stabilize the price of food. So, the government food distribution systems are to be made more effective, timely and pro-poor as well as the market situations are to be controlled, in a way that would benefit the vast majority of poor people and the marginal farmers. There should be more meaningful interactions and integration among the government departments and agencies dealing with PFDS and food market with the common goal of making the market efficient, responsive and pro-people and that may contribute to pave the way for ensuring greater access to food by the majority poor of the country.

5. Policy Recommendations

The respondents and the stakeholders of all categories (farmers, traders, poor, women, representatives of the local government and community leaders) felt that stabilizing the price of food in the market and continued supply of foodgrains in the rural markets are the best options for increasing household food security. The second priority option for mitigating household food insecurity was to improving PFDS (procurement for LSD and distribution of food items) by making it efficient and effective. The third major recommendation was to increase household income through productive employment generation and enhancing their purchasing capacity. They also suggested to modernizing agriculture and increasing the productivity of the sector through continued supply of agri-input such irrigation devise, fertilizer, pesticide, fuel etc. Further, they suggested to improving rural communication for better transportation of goods and that would certainly benefit the locality as well as the community. The important recommendations for increasing efficiency of both market and PFDS aiming at to enhancing food security for the poor have been furnished here.

5.1 Stabilization of Foodgrain Prices: During the harvesting period, the public procurement programme at a stipulated higher price can be an apparent remedy to stabilize the price. But in case of public procurement, it is often affected by late issue of GO from the higher authority and although the government instruction for the LSD procurement is to purchase paddy from real growers, but in the name of quality control, real growers are kept outside the public procurement system and the businessmen and *farias* (brokers) are given preference in exchange of bribe for public procurement. Thus the public procurement system should be made transparent and effective by early launching of procurement at the harvesting period (if

possible through media campaign), reintroducing 'temporary purchasing centre' (TPC) at Union levels, creating temporary storage facility at LSD for farmers, increasing *chatal* (drying place) facility at LSD for farmers, and introducing training program for the growers about the foodgrain quality.

To stop distress sale by the poor growers at lower market price, co-operative system can be formed which would buy the produce of the farmers at the harvesting period at the market price and sell it to them when price will increase and share the profit with the growers. Cooperative system can provide credit to growers to stop distress sale, which will also increase growers' long storing capacity.

During pre-harvesting period, effective public distribution of food during the lean (pre-harvesting) period through OMS (open market sale) operation or like intervening program can ensure foodgrain price-stability to a great extent. To stabilize food crisis during emergency period and also to prevent seasonal price hike (particularly during pre-harvesting period), OMS is a very good instrument in the hands of the Government. But as a centrally decided measure only for crisis period, OMS is a very lengthy and infrequent process for implementation and often there is allegation that businessmen were able to purchase the food from OMS to quickly wipe out the measure. In the study area, no OMS program was seen since the flood of 1998. OMS should be operated at a regular basis during the pre-harvesting period at the dwelling areas of the poor (e.g., slum area) and hence the market price can be kept within the reach of the poor.

5.2 Encouraging Private Sector Initiatives: Private sector is now allowed to import food and timely import of food during emergency or any other desired time (say, in pre-harvesting period) by the private sector should be encouraged through lowering import duty and easing the import process in terms of legal formalities. During the cultivation period, encouraging private sector import of agri-inputs can also help in reducing the input prices.

Sometimes, private sector plays a cruel role in crisis period by motivated hoarding of food. Strong vigilance form the part of the government is here necessary. Stringent ethical standards for the traders can be articulated and also the traders can be motivated in this regard by urging their social responsibility.

5.3 Strict Regulatory Measures: In case of emergency, timely import of required food by the private sector is sometimes contributing to stabilize the foodgrain price level (even below the OMS price level). But to ensure food security for the poor, food markets should not be a free rider, rather in a country like ours, government should be the all-time *Watch-dog* in monitoring the foodgrain market. To develop a striking balance between the government role and the market participation, strict regulatory measures are necessary not only in literal sense, but also in whole-hearted implementation.

5.4 Strengthening PFDS: To make the VGD, VGF and GR programmes (where food is distributed free of cost to the poor) under PFDS effective and efficient, the poor and the destitute (i.e., the real vulnerable people) should be fairly selected with the direct participation of the people and not at the whims of the UP Chairmen/Members.

To solve the problem of lack of remunerative work and reduced wage level in the pre-harvesting period which cause another threat to the buying capacity of rural people and thereby creating food insecurity, the programmes like TR and FFW (where food is distributed against work) under the PFDS can be undertaken during the pre-harvesting period. In each programme under PFDS, there are numerous complains about the quality and quantity of food distributed. Leakage in quantity starts from LSD godown and continues to the final distribution to the ultimate recipients. Here a transparent distribution process with effective accountability should be implemented through pre-publishing the quantity to be distributed, the names of the recipients, and the amount received by them.

5.5 The existing Fair Price System (such as rationing) to be improved and made timely which can help market by stabilizing price of food as well as the poor giving more access to food.

5.6 Establishment of Community based Public Food Bank: For building public food stock, initiating village level cooperative approach as an effective alternative and establishing a *Dharmogola* in the line of past tradition can be a better solution for the crisis period.

5.7 Ensuring smooth Supply of Agri-input: During the cultivation period, higher price of the agricultural inputs (seeds, fertilizers, seedlings, irrigation cost, etc.) usually prevails in the market and the poor farmers often incur credit from the informal sources of credit with high rate of interest to meet their input costs. To repay these loans after harvest by selling their crops, the poor farmers are again deprived by the market with the prevailing lower prices at that time. To keep the market price of inputs during the cultivation period, measures *inter alia* subsidizing input prices with ensuring the sufficient availability thereof and providing agricultural credit with low interest rate can be taken.

5.8 Development of Communication Infrastructure: Due to lack of better communication and information system on foodgrain prices, market becomes the impediment by sudden and sometimes artificially created high level of price. Hence, food price information system should be made effective, timely and quickly to any sudden price-hike in any region and to take quick remedial measures. Through developing better road communication system, inter- and intra-regional markets can spatially be integrated as per expectation and in that case, transport costs will also be lowered.

6. The study tried to explore the two interrelated areas namely market and food distribution systems in relation to achieving food security for the poor and marginal people. The findings are very encouraging and the study suggested policy responses for improving both the market and the PFDS. The study also identified few interesting key issues relating to food security, such as gender role in household food security, intra-household food distribution and nutritional status of the rural poor, specially of the women and children in terms of their food intake that require further intensive and long term investigation.

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