I INTRODUCTION

Inspite of the spectacular development of industry, the Indian economy continues to be highly dependent on agriculture. The growth of agriculture production during the past three decades has been impressive. The development of agriculture as seen today is contributed mainly by the foodgrains which have registered high production compared to other crops.¹

1.1 FOODGRAIN PRODUCTION, DISTRIBUTION AND CONSUMPTION

Foodgrains form the major part of the agriculture produce in India. The dominance of foodgrains over other crops has been primarily because of the need to grow adequate food crops to feed a fast increasing population. The aggregate production of foodgrains was about 101 million tonnes in 1979-80. In terms of production, rice and wheat constitute the major crops and the coarse grains—maize, jowar, bajra, barley, ragi and millets—are the minor crops. Production of both rice and wheat increased rapidly during the period after 1966-67, which has been termed as green revolution. The rice production was about 42 million tonnes in 1979-80 and wheat came next with about 32 million tonnes.

Distribution of foodgrains assumes importance because of several factors. The production of foodgrains has been fluctuating widely.

¹The term 'foodgrains' used in the thesis refers to cereals only, i.e. rice, wheat and coarse grains.
over time. Moreover, the production varies over different parts of the country. Imports, whenever necessary are resorted to and a proper distribution of it, again is essential. The ownership pattern of farm lands is highly skewed and vast sections of the country's population are too poor to have a square meal, a day. The private trade, on which the distribution of grains is highly dependent, is not much conscious of its social responsibilities. Its role in creating artificial high prices especially during the scarce years had been observed. The influence of the government has been increasing over the years through the expanding public distribution system (PDS). Nevertheless, the PDS is restricted mostly to the urban areas and only rice and wheat are generally covered by it.

Foodgrains are the major food of the Indians. Rice and wheat, considered as superior grains, are mostly consumed by the relatively rich and the coarse grains are the food of the low income people. It has also been observed that the consumption of the fine cereals goes up when the income increases while in most cases an increase in income is associated with a fall in the intake of coarse grains. There is a considerable divergence in the pattern of consumption of foodgrains in the country. An imbalance between consumption (demand) and production (supply) has been an important feature of our food economy. While the foodgrain production had increased, the demand had also been increasing and the difference between these two in the
form of deficits was growing over time. We had to depend on large
imports of foodgrains in the past. The fact that imports were made
even during the period of 1981-83 shows that we have not been able
to dispense with them altogether. The magnitudes of deficits vary
among the states and the PDS has been useful to reduce them.

1.2 ROLE OF PUBLIC DISTRIBUTION SYSTEM

The public distribution system conceived and organized to
meet several objectives had been an important instrument of
government policy right from the early days of independence. The
system as obtaining in India, perhaps, has no parallels anywhere
in the world.

1.2.1 ORIGIN AND OBJECTIVES

The origin of public distribution system can be traced back
into the Second World War years. The need for mobilization of
food for the war during the early 1940s and the severe drought in
some parts of the country during 1942 resulted the evolvement of
a food policy at the national level. Broadly, they were (a) in­
creasing the food production and (b) curbing the consumption. A
number of specific programmes were taken up to achieve the former
and rationing was introduced to restrict consumption. After
independence, the first component of the policy essentially
remained the same, although the strategies to achieve it changed.
The second one, a negative approach in spirit and taste, had to be
modified in view of the acceptance of economic development with social justice as the policy of the new born State.

The period immediately after freedom, was characterised by the rising grain prices and supply shortages. Dependence on imports was substantial. The grain issues through the fair price shops were subsidized and only the urban centres were covered. During this time, the willingness of the US government to supply grain at concessional rates was an important event in the history of PDS. The very substantial quantities of wheat and rice thus imported were fed into the rationing system and the open market prices were considerably depressed. The US food aid resulted in a shift of emphasis from increasing the internal availability of foodgrains to the general price control in the economy as a whole.

By the end of 1964, prices started rising. Next year, the Food Corporation of India was set up and the government decided to create a buffer stock of five million tonnes of grains. Rationing which was abandoned during the previous years was reintroduced. Again, the improvement in the food production in the country during 1968-69 forced the Agriculture Price Commission to recommend a curtailment of PDS. The substantial increases in the grain production on the eve of the green revolution during the initial years of the 1970s depressed the demand for PDS supplies resulting in overflowing stocks. The scarcity years of 1973-74 and 1974-75 wiped out
the government stocks and prices started rising. Once again imports were made. Next four years saw increasing production of foodgrains and reasonable price stability, and the volume of transactions under PDS increased. Grain stocks were also used for the food for work programme in many parts of the country. Once again, the poor rainfall in several parts of the country caused a low production and a run on the PDS during 1979-80. The stocks built up in the past depleted fast. But the PDS, by and large, withstood the stress and strains of poor production even in the next year. In fact, some grain was imported and according to the government, it was used solely for building up the exhausted buffer stock.

Nowhere the precise objectives of PDS have been spelt out. They were changed at times in response to the immediate crises developed in the food economy of the country. Sometimes, the emphasis had been on the protection of the interests of the consumers, especially the poorer sections and at some other period the interests of producers received priority. During the period of easy availability of grains under PL 480 agreement, the PDS was used to achieve stable prices in the economy as a whole realising that the control of foodgrain prices was absolutely essential to check inflation. But a close study of the various objectives had revealed that the following two of them have been the most important ones:

(a) Protection of the low income sections of the population from hunger and starvation by guaranteeing them supply of certain minimum quantities of foodgrains at reasonable prices.

(b) Maintenance of relative stability in the prices of foodgrains.

1.2.2 PERFORMANCE

Broadly, the PDS has three major components, viz., procurement, distribution and buffer stock. Internal purchases and imports are the sources for procurement. While imports are the prerogatives of the Central government, the internal procurements are done by both the Central and state governments. But a major share of it is handled by the Food Corporation of India (FCI) on behalf of the Central government and in some cases also for the states. The FCI supplies grains to the state governments as per the allocations made by the Centre. It also manages the wholesale distribution network in a few states. The state governments distribute the grains through the fair price/ration shops. There were about 2,38,727 fair price/ration shops in the country during 1978 covering about 6,143 lakhs of people.3 Except in states like Kerala, where both rural and urban areas are entirely covered, the PDS exists mostly in urban areas. The magnitude of the operation of PDS can also be gauged from

---

the fact that the credit advanced by the commercial banks for the procurement of foodgrains was about Rs 1,759 crores (7 per cent of the total credit) during 1980-81. The foodgrain subsidy incurred by the Central government for maintaining the PDS had been increasing rapidly over years and it was about Rs 600 crores during 1978-79. There are a number of organizations dealing with PDS. While the Ministries of Food and Agriculture, and Civil Supplies at the Centre along with the FCI are important agencies, at the state level, apart from the state Ministries, Food and Civil Supplies Corporations are also involved in one way or other. The Agriculture Price Commission (APC) also plays a prominent role as it advises the fixation of procurement/support prices of foodgrains, among other things related to agriculture policy formulation.

Irrespective of the changing emphasis and adhoc nature of the policy shifts, the PDS had been able to provide relief at times. During the lean periods, to an extent, issues through the fair price shops were useful to protect the people in the urban areas from the soaring prices. The poorer sections of the areas where the PDS was in operation were able to prevent sharp falls, however, inadequate it might be, in their consumption standards, Gupta (1977) had found

---


5 The Times of India, Food Subsidy, Ahmedabad, December 4, 1980.
that the PDS had not been able to fulfil its twin objectives of price stabilization and guaranteed supply of a minimum quantity of grains to the vulnerable groups. One of the important reasons for this may be the inadequacy of the quantity of grains transacted through the PDS. But we cannot get away from the impression that the system has helped in a very modest way in achieving the objectives. Shubh Kumar (1979) studied the impact of ration rice on food consumption and nutrition in Kerala. It was found "...lower income households on average suffered a deficiency of both calories and protein in terms of norms established by FAO. Rice from the ration system contributed one-fifth of both calories and protein in the household diet. Even though the cost of a calorie from ration rice was nearly equal to the cost of one from tapioca, one gram of protein from ration rice cost only one-fifth as much as one from tapioca. Without ration rice, a net decline in calorie and protein supply would occur for these households as they used that portion of consumption expenditure to purchase some tapioca but mainly open market rice."  

George (1979) analysed the impact of foodgrain issues through PDS on the consumption levels of the poorer sections and on the interests of both the producers and consumers of the state of Kerala. The consumption of rice was found to be lower in the absence of rationing for all the consumers. But the low income consumer groups

---

were the worst affected. The excess of income accrued to the producers in the absence of PDS was lower than the additional expenses borne by the consumers. Further, in the short-run, the objective of the protection of the consumption level of the low income groups could be met better through grain supplies through PDS than the income transfers. The PDS in Kerala is acclaimed to be one of the reasonably well managed government programmes compared to these in other states. Impact of PDS in these states in which its management may not be as efficient as in Kerala is not known.

This does not mean that the PDS has been successful. The question of its cost and benefit and the alternatives available to PDS will have definitely to be taken into account for a thorough evaluation of PDS in India. The spread of agriculture growth, especially related to the foodgrain output, had been uneven among the states. A number of states deficient in grains are depended on a few surplus ones to meet their requirements. Procurements under the Central government from surplus states and the allocation of foodgrains from the central pool to the needy states under the PDS were helpful in meeting the requirements of the deficit states.

On the eve of market gluts, the procurement mechanism under PDS had helped the producers by checking a fall in prices. During

---

the early sixties when the concessional grain was used to influence the open market prices, the producers might have been adversely affected. But the fact remains that after the 70s, the PDS operations were able to help the farmers both by offering higher prices and procuring even the damaged grains.

Given the achievements and drawbacks of PDS, there have been views for and against it. But, it seems that for the short term management of food policies, where there are severe production constraints, the system has been found useful by the government, and as such the relevant question to be addressed is as to how we can make the system effective and efficient.

1.2.3 LITERATURE

Gupta (1977) studied the effectiveness of PDS. He examined the price stability achieved through the operation of PDS, using econometric models and found that the quantities required to meet it would be very much higher than what could be generated internally through procurement. The additional requirements were several times of the total foodgrains distributed through the PDS. Gulati and Krishnan (1975) outlined a scheme to cover all the people under poverty, both rural and urban, on a permanent basis with an assured supply of 100.80 kgs of grains per person per annum. The quantity required to feed such a large number of people came to about 30 million tonnes in 1973. The estimates of foodgrains made in both of these
studies were found to be too large to the extent that they could not be mobilized either from internal production, from imports or from both.

A few studies, instead of widening the public distribution system to cover large areas and populations, attempted to provide estimates within the given resources. But they were essentially based on the restrictions on coverage of areas and the number of people. National Commission on Agriculture (NCA) (1975) sought to cover only the urban areas and the distressed parts of the country, such as drought-prone and flood-affected regions. The estimated quantity of foodgrains to meet the minimum needs of the people of these areas was about 12 million tonnes annually. Vyas and Badyopadhyay (1975) worked out estimates under different assumed alternatives in terms of coverage as follows:

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>Foodgrains required in million tonnes (1975)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) All cities above 1 lakh of population</td>
<td>4.50</td>
</tr>
<tr>
<td>(b) Entire urban population</td>
<td>9.90</td>
</tr>
<tr>
<td>(c) Entire urban and rural non-cultivating population</td>
<td>33.28</td>
</tr>
</tbody>
</table>

Gupta (1977) extended the analysis of Vyas and Badyopadhyay to include a few more alternatives and arrived at several different estimates. They are summarised as follows:
As referred to earlier, Shubh Kumar (1979) and George (1979) studied the impact of PDS on the consumption level of the people of Kerala. It had been found that the PDS had helped in maintaining the consumption standards of the poorer sections of the people of the state. The rice supplied had been useful in rising the nutrition level of the low income groups who would have otherwise suffered because of the high prices of the substitutes in the open market.

1.3 NEED FOR THE STUDY

There are wide variations both in consumption and production of foodgrains among different states in the country. It is essential that the available supplies are used to correct the demand-supply imbalances. The existence of wide gaps between demand and supply may adversely influence the prices apart from promoting discontentment among the states which may prove contrary to the objectives of PDS. The role of PDS in influencing the foodgrain availabilities in
different states by bridging the gap between the demand and supply has been increasing over time. The chronically deficit states look at the PDS, especially at its central stock component, as the most crucial source for meeting their unfulfilled demand for grains. The problem of devising a suitable demand-supply management policy will have to be examined in the light of the public distribution system. This will ensure a maximum bridging of the demand-supply gap among the states in the short run. In the long run, increasing the production to the level of aggregate demand is the only feasible solution.

1.4 OBJECTIVES OF THE STUDY

The dissertation aims at analysing the demand-supply gap in foodgrains over time and states, and at suggesting the ways to alleviate the gap. The specific objectives are:

(a) To review the objectives and performance of PDS;
(b) To estimate the demand for and supply of foodgrains in the next few years for each state;
(c) To estimate the demand-supply gap in the past and next few years by state, and to review the role of PDS in bridging the gaps; and
(d) To suggest a model for the allocations of foodgrains from the central pool to the states under PDS, incorporating the demand-supply factors.
1.5 METHODOLOGY

The study is based upon published data. A variety of methods have been applied to pursue various objectives.

A thorough study of all the available literature on PDS, and the demand for and supply of foodgrains has been carried out to review the objectives and performance of the PDS.

The demand has been estimated through the regression analysis. The NSS household consumption data of 27th Round (1972-73) have been used for the purpose. Supply functions are estimated through the regression analysis using the time-series data published by the Ministry of Agriculture, Government of India. Demand-Supply gap can be zero, positive or negative for different states at the same time and at different times for the same state. The influence of demand-supply gap on price variations is tested through the regression analysis. Time-series data published by the Ministry of Agriculture, Government of India have been used in this case too.

A model for the correction of the demand-supply gap is suggested. The objective of the model is to equate the per capita demand-supply gap over states during the given period through a reallocation of the available stock. Since the aggregate stock cannot be changed by reallocation, the constraint to this objective would be the total availability of foodgrains.
All the major states, numbering fifteen, are included in the study. They are Andhra Pradesh, Assam, Bihar, Gujarat, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. Punjab, Haryana, and Chandigarh have been considered as one state. Meghalaya and Mizoram are included in the state of Assam. The shares of the remaining states and union territories both in production and consumption of foodgrains are very marginal.

1.6 ORGANIZATION OF THE THESIS

The thesis is presented in five chapters. In the first chapter a brief overall review of foodgrain production, distribution and consumption is given, the origin and the objectives of the PDS are discussed and its performance is analysed. This chapter also describes the need, objectives and the methodology of the study.

The second chapter examines the pattern and trend of consumption of foodgrains, statewise. Demand for foodgrains is estimated and forecasts are made. Chapter three deals with the supply of foodgrains. The behaviour of production over time in different states is analysed. Estimates of supply and forecasts are made.

The fourth chapter estimates the demand-supply gap of foodgrains in the past and future in different states. A review of the performance of PDS with reference to the objectives is made. The role of
public distribution system in the correction of the gap is examined. A model for achieving a maximum bridging of the demand-supply gap is suggested and tested using the data for the past few years.

The fifth chapter contains a summary of findings and their policy implications. Areas for future research are also indicated.