Chapter Two

REVIEW OF LITERATURE

The problem of food security needs to be viewed basically in two dimensions, viz., macro level and micro level. Earlier studies on food security have focused on either of these two dimensions. The macro level studies generally deal with aggregate demand for and supply of foodgrains and other macro economic variables at the national level. The micro level studies, generally deal with the question of household food security.

There are several issues related to food security. Going by the broad definition of food security, the main issues relate to two aspects, viz., availability of foodgrains (physical access) and purchasing power (economic access). There is also a time dimension to the problem of food security, i.e., transitory food insecurity (short term) and chronic food insecurity (long term).

The macro level studies related to food security in India deal mainly with growth in foodgrain production and self sufficiency in relation to population growth. In the light of above discussion, an attempt is made to review various studies related to food security or alternatively, food insecurity. Foodgrains production in India is largely
dependent on the rainfall pattern. As a result, there have been year to year fluctuations in the levels of output.

Bhatia (1967) highlights the nature and causes of famines from 1860 to 1943 in detail. The study has focused mainly on the government's role in overcoming the scarcity of food during periods of famine. In the study, famine has been defined as a state of extreme hunger suffered by the population of a region as a result of the failure of accustomed food supply. The study finds that famines and food scarcity used to be a local phenomenon, but, the situation improved comparatively with the introduction of railways after 1853. During food crisis, the prices were so high that poor people were unable to buy food. Thus, a direct relation is found between poverty and incidence of famine. The causes of famines have been mainly attributed to the failure of monsoons and resulting in failure of crops. The main reason is that, in a country with tropical climate and most of its cultivated area being subjected to artificial irrigation, rainfall plays an important role in determining crop yields and food supplies. During times of famine, food scarcity was overcome by imports and distribution of food through relief camps. According to Bhatia, the Bengal Famine - 1943 was a tragedy of total unpreparedness. The Famine Enquiry Commission commented that there was a moral and social breakdown as well as administrative breakdown.

Prior to the Bengal famine in 1943, during the second world war, demand for
foodgrains increased and thus pushing up prices. The government sought to balance the demand by encouraging shift in cropping pattern from non-foods crop to food crops. The higher requirement of foodgrains by the defence personnel, increased the pressure on its supply as well as prices. The situation worsened following the Japanese occupation of Burma in 1942 (NCA, 1976). India had to depend on more imported foodgrains to meet its needs, after the separation of Burma in the mid-thirties, further increasing the pressure on the lower availability of foodgrains (Dasgupta, 1977).

On the contrary, Sen (1981, 1987 and 1995), has analysed famines in terms of failure of entitlement relations. Sen defines entitlement set of a person as original bundle of ownership (land and labour) and the various alternative bundles he can acquire from each of the original bundles (land and labour) through the use of trade and production (exchange entitlement mapping). Sen argues that the entitlement approach to study famines has advantages over the use of per capita availability, by analysing the variations in endowments and exchange entitlement mappings during each occurrence. The argument is supported by examples of few famines, wherein, the per capita food availability had reduced in Sahel famine in early seventies where as, in the Bengal famine, 1943 and Bangladesh famine, 1974, the per capita food availability had not reduced significantly. Thus, famines can be anticipated by making better use of economic analysis that focuses on entitlement failures of particular groups rather than output fluctuations in the economy.
After independence, with commencement of Plans in India, the problem of food security was given a high priority and emphasised increase in domestic foodgrain production. A comprehensive food policy was made in the 1960s, with a view to reduce imbalances in the production, distribution and consumption of foodgrains in the country, besides increasing self sufficiency which were achieved in the following two decades. Studies by Bhatia(1970), C.H.H Rao(1975), NCA(1976), Biplab Dasgupta (1977), Ramachandran (1982), Tyagi(1990) and Tyagi and Vyas(1990) highlight these issues.

Bhatia(1970) has analysed India’s food problem and related policies since independence. With the scenario of famines and shortages in foodgrains, Bhatia has analysed the food situation in India keeping the change in demand due to increase in population and incomes in view. Policies related to imports and PL-480 Agreement and its impact have been discussed in the study. Relating food demand with population growth, Bhatia concludes that population growth was responsible for 60 per cent of the increase in total demand for food. He is of the opinion that the food problem in India was more due to lack of economic development than population explosion. During the plan periods, the growth rate in production was less than the growth rate in demand for food. In the initial periods of independence, there was a short fall in production of foodgrains. The supply was restored through *Grow More Food Campaign* (GMFC). The GMFC was a beginning of a sustained national effort at improving agricultural production and agricultural development in general. There were
no targets set for food production during the early phase of the GMFC. However, increase in foodgrain production was brought about through reduction in area under cotton and increase in area under minor irrigation (NCA, 1976). In the efforts made by the government to increase foodgrain production, Rs.675 million were spent on GMFC. In return, an additional 3.4 million tonnes of foodgrains were achieved, compared to the target of 4.5 million tonnes. However, the GMFC covered only four per cent of total area under cultivation (Dasgupta, 1977).

In the pre-green revolution period, the growth rate of foodgrains production and agricultural commodities as a whole, decelerated during the decade 1960-61 to 1970-71 as compared to the period 1949-50 to 1959-60. The gross cropped area grew at 2.1 per cent between 1949-50 and 1959-69. While production increased at 3.3 per cent during the same period. However, during the period, 1960-61 to 1970-71, gross cropped area increased only at 0.6 per cent while production increased at 2.1 per cent. Similar results were obtained for districts covered under Intensive Agricultural Development Programme (Rao, 1975).

The post-green revolution period is divided into two phases, 1966-67 to 1970-71 and 1970-71 to 1974-75. In the first phase, area under HYV crops - wheat, paddy, maize and bajra - increased by nearly eight times. Although the yields of rice crop did not increase as much as wheat, yet, the production of these two crops together helped to increase the overall food availability. In the second phase, after a peak level of 108
million tonnes in 1971, the production declined in the following two years. All the problems of pre-green revolution period cropped up again. The HYV programme reached a stage of stagnation till 1975-76 (Dasgupta, 1977).

In order to maintain food stock levels, the government had an agreement with the U.S Government for import of wheat under PL-480 Program. On the impact of wheat imports, Bhatia observes that cereal consumption increased twice as fast as cereal production in the country. Wheat substituted millet and other minor cereals. The impact of PL-480 Program were mainly on the local prices and on production of wheat. The price of wheat was low, but could not affect the general price level. On the production side, there was a shift from foodgrains to non-foodgrains.

Tyagi(1990), emphasises that a well structured food policy is necessary along with successful management of the policy in ensuring physical and economic access to food. The study examines the achievements and failures of the system of managing India’s food economy. The study also examines the role and impact of free market and the alternatives to reduce government intervention and subsidies without affecting the objectives of food policy. The study shows that the growth in foodgrain production has been higher than the growth of population in the post-independence period. Thus, there has been a reasonable increase in the degree of self sufficiency in foodgrains through domestic production. This fact is corroborated by the national statistics on import of foodgrains, which have declined in the 1980s.
Despite achievements of higher growth of production resulting in an increase in economic access to food, food policy has not been able to effectively meet the needs of the poorer section of the society. There have been certain drawbacks in the food policy. First, in poorer states like Bihar, Orissa and Madhya Pradesh, the share of per capita requirements of foodgrains met through the PDS was very small. The rank correlation coefficient between the share of PDS supplies and share of all-India population is low and statistically insignificant (Rao, et.al, 1987). Comparing the procurement prices, open market prices and PDS prices, it was observed that the average price paid by the poor in certain states - Bihar, Orissa and Madhya Pradesh, were higher than the price that would have prevailed in the absence of a dual market system. Second, the producers could not gain from higher production due to sharp fall in the harvest prices during years of peak harvest. Thus, the food policy could not protect the vulnerable sections of the population, both among producers and consumers. Tyagi, is of the opinion that, on the issue of the role of government, there is no doubt that the intervention should continue. But the extent of intervention has to be revised.

The buffer stocks maintained have helped in averting crisis during drought periods. However, Tyagi suggests that since the world market prices of wheat and rice may not show an increasing trend in the long run, it is advisable to purchase cereals during years of need and maintain minimum levels of foodgrain stocks.
The study by Tyagi and Vyas (1990), focuses on the aspect of food security in Asian countries due to the fact that there existed periodic food shortages. These countries being net exporters of cereals till the second world war, became net importers of food due to shortfalls in foodgrains production since the 1950s.

During the late sixties, an impression was created that the new technology of *miracle seeds* would solve the food problems of most Asian countries. This optimism soon faded and famine in Asian countries by 1980 was predicted. However, the green revolution followed by various modifications in technological innovations, government policies and infrastructure for raising the production of foodgrains some countries became self sufficient. The government policy measures had played a significant role, for example, in India it was the interaction of technology and price policy on one hand, and the system of PDS on the other, that contributed significantly in increasing physical and economic access to food. Nearly 64 per cent of the growth in output of foodgrains in IADP districts were due to growth of capital and knowledge (technology and agricultural extension). Thus, the contribution of capital and knowledge was higher in the IADP districts as compared to the all-India average. Approximately 27 per cent to 40 per cent of growth in output of foodgrains can be attributed to technological change.

According to Ramachandran (1982), there has been a collective effort of farmers, scientists, government and other agencies in taking full advantage of the green
revolution and increasing foodgrains production. Despite higher agricultural production compared to population, the overall food deficits have been increasing substantially. He analysed the FAO data for cross-country comparison of per capita consumption of food and concludes that India ranks last in terms of quantity consumed per capita as well as nutritional value. According to him, the other problem facing the country was food scarcity which was mainly due to high fluctuations in the output levels. The author is of the view that, substantial increases in population is not a problem as long as employment is provided to all in the working age group and each active worker is capable of producing much more than what he consumes. There is unequal distribution of food items across the sections of the population.

VKRV Rao (1985), has discussed the problem of food self-sufficiency in India from nutritional point of view. The study finds that comparing India to the rest of the world, the Indian position was comparatively comfortable in relation to cereals, pulses and sugar, but significantly deficient in other food items such as starchy food, fruits, vegetables, milk, fish and eggs. Thus a large difference in per capita consumption in calorie terms, was found between India and the rest of the world, i.e., 1970 k.calories and 2420 k.calories respectively.

In the study, VKRV Rao has analysed the NSS data for 1973-74 on household expenditure and food consumption by per capita expenditure class. The analysis reveals that the proportion of total expenditure spent on food decreases with increasing
consumption expenditure class. The calorie distribution by expenditure classes given by NSS data for 1971-72 showed that if 2750 calories is taken as the minimum required intake per consumer, 51.4 per cent of consumer in rural areas and 65.5 per cent in the urban areas were not getting adequate nutrition. This vastness of nutritional poverty is undoubtedly linked with the high inequality that exists in the distribution of purchasing power.

Anna Burger (1985), has dealt with the economics and management of food in a socialist pattern of government. Thus, planning for food production and its development is determined by external economic factors, besides internal factors - mainly the major inputs. The principal external factors are those of state management. In a socialist economy, the economic policy is realised within the framework of a planned economy. The state management guides the enterprises - farms - in the interest of realisation of a given policy. There exists two models for planned management, viz., direct plan instruction and indirect planned guidance system. The farms are characterised by indirect system of planned management. The state influences the activity of enterprises mainly by price policy, price control, wage policy, subsidies and levies, tax and credit policy, etc., In all, price policy and subsidies play a major role in the production process. The growth in demand has outstripped the growth in supply in almost all the developing countries in the world. Taking the average for the world as a whole, production growth rate is marginally higher than the growth in demand
for food.

At macro level, to determine the causes of food insecurity, Dimtris Diakoasavvas (1989), provides an empirical analysis of the causes of short run food insecurity for 49 countries. Two external factors, viz., export earnings and food imports and two internal factors, viz., cereal production and food prices, were considered. Variables were associated with fluctuations in food consumption. As a measure of food instability, an index based on the consumption theory was used. The external and internal factors had a significant bearing on instability in food consumption. But, instability in domestic food production was the most single factor. The same factor can also hold good at the household level.

There have been some important contributions trying to analyse the problem of food security in the years to come with the help of estimation of future food demand vis-a-vis future supplies. Radhakrishna and Ravi (1990), primarily attempt to project the demand for food for the years 2000 and 2010, keeping population growth, growth in incomes and change in rural-urban trends in view. The study postulates that the population would increase from 816 million in 1990 to 1016 million in 2000 and 1185 million by 2010. Similarly the share of urban population would increase from 26 per cent in 1986-87 to 37 per cent in 2010.

The study develops a model taking population growth, rate of urbanisation, economic
growth, population distribution and change in prices into consideration. The forecasting exercise has been carried out for the years 1995, 2000 and 2010. The projection has been made taking certain factors into consideration. For instance, the values of the variables have been assumed - four per cent increase in total expenditure, population projections of the World Bank, historical trends of urbanisation and rural-urban disparity ratio.

As a background, the Radhakrishna and Ravi have analysed the consumption pattern of households using the NSS data for the base year of the study i.e., 1986-87. In analysing the food consumption pattern, the study estimates the expenditure pattern in caloric terms. The consumption analysis focuses on the rural-urban differences in levels of food intake across expenditure groups, keeping the shifts in consumption pattern in view. Grouping the households as very poor, moderately poor, non-poor(lower) and non-poor(higher), the authors infer that 80 per cent of the poor and 61 per cent of the non-poor are in the rural areas. It implies that there is a great potential for increase in demand for food in the rural areas.

Based on the 1986-87 consumption level, the study forecasts an increase in per capita per month expenditure in total food from Rs.100.92 in 1986-87 to Rs.140.52 in 2010. In the case of total cereals, the expenditure would increase from Rs.39.14 to Rs.43.36 during the same period. The average annual growth rate is projected higher for non-cereals than for cereals. At aggregate level, the household demand for foodgrains will
reach 205 million tonnes by the year 2000, i.e., an additional of 53 million tonnes over 1986-87 level. Accounting for non-household demand, the net demand is projected at 209 million tonnes for cereals and 235 million tonnes for total foodgrains.

Radhakrishna and Ravi have made projections under alternative scenarios, viz., changes in expenditure growth, reduction in poverty, reduction in rural-urban disparity and change in price levels. Based on the effect of expenditure growth, the total demand for food is projected between 200 to 213 million tonnes for the year 2000. Reduction in poverty by about 30 per cent by the year 2000, projected an increase in demand by 3.3 per cent. The effect of reduction in rural-urban disparity would increase the demand for food in the rural areas and is estimated at 1.3 million tonnes of which one million tonne would be accounted by coarse cereals. With change in prices after adjusting for inflation with respect to 1986-87 prices, the study forecasts a change in the composition of food demand. While the aggregate demand for foodgrains would increase by six per cent, i.e., 12.3 million tonnes, the demand for wheat alone would increase by 8.3 million tonnes. The demand for non-cereal food however, decrease by 14.02 per cent.

Pradeep Sharma (1994), has estimated the demand for rice and wheat using the availability approach based on time series data. The demand functions for rice and wheat are estimated using real final consumption expenditure prices of rice and wheat and the prices of their substitutes. The study has estimated total absorption (defined
as net output minus procurement plus distribution) and commercial absorption (defined as net output minus procurement). The study finds that, in growth rates of demand for wheat is higher compared to growth rate of demand for rice. The growth rates of demand for the period 1966-90, have been estimated at 4.12 per cent in case of total absorption of wheat and 5.12 per cent in case of commercial absorption of wheat. Similarly in the case of rice, the growth rates are estimated at 2.84 per cent in case of total absorption of rice and 2.55 per cent in case of commercial absorption of rice.

Aggregate level studies have also been carried out on the role of public distribution system in providing food security to the poor. George (1983), has studied the rationale, components and functioning of the public distribution system in India, with case studies of Kerala and Gujarat, and its impact on the consumers through income transfers. The components of PDS discussed mainly are procurement and distribution operations. The types of policy decisions regarding procurement are monopoly procurement, competition with trade, pre-emption and levy operations. According to the study it was observed that rice and wheat accounted for major share of procurement of foodgrains. The relative share of rice and wheat varied according to the share in the percentages of production. With regard to impact of rationing on producers and consumers was determined through income gains or losses of rationing. For the state of Kerala, the impact of rationing on producers and consumers resulted in substantial gains to the state. The offtake from PDS was high with respect to rice and less with respect to wheat due to the substitute - tapioca. The rationing helped the
lower strata of consumer expenditure class. In Gujarat, the lower strata of consumer expenditure depended much on PDS for wheat than for rice.

Similarly, Bhagbat Misra (1985), has carried out a study for Orissa. The study attempts to provide a critical account of measures undertaken in Orissa for equitable distribution of foodgrains till the 1970s. The findings of the study reveal that buffer stock in Orissa has been inadequate after the inception of Food Corporation of India in the state. It had failed to stabilise the price of foodgrains in the state. The procurement price had been equal to that prevailing in the neighbouring states. The prices fixed by the government did not influence either the offtake in PDS or the market prices. The fair price shops in the state have failed to meet the demands of the consumers all through the year. The PDS had failed in its objectives since it covered only three per cent of total per capita requirement of rice. Bhagbat Misra suggests that procurement price should be made closer to market prices and decrease the distribution costs. The procurement of rice required to be beyond the level of five per cent, prevailing in the seventies. While the people in the lower income brackets consumed less rice than the standard requirement, the higher income households consumed more.

The producer's price of rice did not benefit the large section of small farmers who in fact made distress sales in post harvest or in way of forward contracts with the traders. With regard to marketing of rice by farmers, Bhagbat Mishra observes that middlemen and traders monopolise the entire marketed surplus and the size of public
In a study by Osmani (1988), the question of food security is brought under a broader frame work of social security. The study inquires into the nature of social security in Bangladesh, India and Sri Lanka, by classifying social security into three types:

(i) security through control over land;
(ii) security through wage employment; and
(iii) security through public provision of basic needs.

In the predominantly agrarian economies of south Asia, security of livelihood of a majority of people clearly depends on control over land and its produce. This accords a position of pre-eminence to the policies relating to land control in any discussion of social security in this region. Three types of policies are relevant, viz., ceiling-cum-redistribution policy, tenancy reform and alienation of state of owned land.

Making a comparative study of two employment programmes, one each in Bangladesh - Food for Work Programme (FFW) and India - Employment Guarantee Scheme (EGS), Osmani observes that, FFW was successful in fulfilling its objectives to a great extent. Firstly, the benefit of employment went to functionally landless category. Secondly, the net gain of participating households amounted to roughly 10 per cent of their annual wage income, i.e., 7 to 8 per cent of their total household income.
income. Lastly, the consumption of food\(^1\) improved significantly for those who were more or less regularly involved in the FFW projects. Similarly, for India, taking a case of EGS in Maharashtra, it was found that, only unskilled manual work was made available. The wage rate was kept below the agricultural wage rate. In addition, in the total work force of EGS, 45 per cent of the workers belonged to landless category and 42 per cent belonged to deprived social groups of scheduled caste and scheduled tribe. Comparing the benefits of wage employment programmes in states, Osmani observes that EGS contributed two-thirds of annual income of the workers. While the NREP in Gujarat and Karnataka was found to be one-fifth.

Bina Agarwal (1990), examines how poor families in India cope up with food insecurity associated with seasonal troughs in agricultural production cycles and with calamities such as drought and famines, the effectiveness of coping mechanisms adopted by families themselves. The study is dealt in a sociological perspective, for instance, the sociological relations during drought and famine - both intra and inter family relations. The mechanisms adopted by the families themselves for coping with seasonal shortages are broadly categorised as (i) diversifying the sources of income; (ii) drawing upon communal resources; (iii) drawing upon social relationships; (iv) adjusting current consumption; and (v) drawing upon assets.

Compared to macro level studies which focus more on the food supply and self

\(^1\)Specially foodgrains.
sufficiency aspects, the micro level studies emphasis more on the question of physical access to the different sections of population, fluctuations in the consumption levels and economic access to food. Besides, the role of government intervention, especially the public distribution system, in providing food security to the poor are also discussed. Studies by Alderman and Gracia(1993), Kabra and Ittyerah(1992), Amartya Sen(1986, 1990) have highlighted these issues.

In a study on poverty, household food security and nutrition in rural Pakistan, Alderman and Gracia(1993) have attempted to relate economic and social policies with food security, with special emphasis on nutrition. The study postulates that agricultural policies affect not only food supply and incomes, but also the acquiring of food and coping with food insecurity of households. Keeping this in view, the study analyses the sources of household income and their fluctuations. Later, the study relates the fluctuations in household incomes to consumption, poverty measures, savings and investments. The study also discusses the household food security aspects, across seasons and categories of households from nutritional point of view. Finally, the study analyses the relationship between nutrition and health in the context of the roles of public and private resources.

The study shows that, despite the fluctuations in incomes, consumption in terms of calorie intake were not significantly affected. Similarly, no seasonal fluctuations were observed during the three reference years. There were variations in the items
consumed across the months in a given year, i.e., between rice and wheat, but no changes in the caloric values were observed. The households cope with vulnerability especially seasonal low stocks and higher food prices through savings, storage of grains and sharing through family networks. Informal credit from friends, relatives, etc., was used for daily expenditures during shortfalls in income.

In the recent past the public distribution system in India has gained importance as one of the important measures of providing food security to the poor. In addition to studies by Kabra and Ittyerah(1992), several studies analysing the access to PDS in rural as well as urban areas by different sections of the society have been carried out using the data on 42nd round of NSS. Prominent among them are Indrakant(1995), Nair and Sivanandan(1995) and Sharma(1995), having undertaken studies on the utilisation of PDS by households in rural areas.

The NSSO had included information on the utilisation of public distribution system in the 42nd Round of survey in 1986-87. Based on the NSS data, the main debate was whether PDS was urban biased or rural biased. Secondly, whether PDS was pro-rich or pro-poor. Mahendra Dev and Suryanarayana(1991), initiated the debate probed into the matter for all commodities across the states and income groups. The main objectives of their study were (i) to establish a criterion for measuring urban biasness (ii) to know if there was an urban bias in the PDS (iii) if there was a bias, whether it was true for all the commodities under the PDS (iv) whether the question of biasness
was similar at all-India and state levels (v) who benefited from the PDS. To analyse
the issue of urban or rural bias, seven criteria had been followed - (i) visit any village
and verify (ii) number of ration shops per 1000 population (iii) relative proportions of
total PDS supplies accruing to the rural and urban sectors (iv) relative dependence on
PDS (v) per capita PDS quantity purchased (vi) per capita implicit subsidy (vii) PDS
quantity per market dependent.

From the study Mahendra Dev and Suryanarayana observed that, for all-India, more
than 50 per cent of total quantity of items purchased under PDS was in the rural
sector. Purchase from PDS was rural biased for sugar and coarse cereals - bajra and
jowar, with respect to per capita purchase from PDS. For PDS purchase per market
dependent, PDS is rural biased at the all-India level for rice, coarse cereals, sugar and
cloth. These items accounted for more than 60 per cent of total PDS purchases. The
state wise analysis showed that, PDS is rural biased for majority of the states and with
regard to most of the items, except in Harayana and Rajasthan where less than 50 per
cent of PDS purchases were made in the rural sector and 13 per cent of wheat quantity
in rural Andhra Pradesh. With respect to rice, relative dependence on PDS was higher
in the rural sector of Andhra Pradesh, Gujarat, Kerala and Tamil Nadu. It was
however, comparatively lower in Rajasthan and West Bengal. With respect to wheat,
the relative dependence was higher in rural sectors of Assam, Gujarat, Maharashtra
and Rajasthan. It was lower in Bihar, Orissa and West Bengal. Similarly, for sugar,
the dependence was higher in rural sectors of all states except Bihar, Karnataka, Orissa
and Uttar Pradesh. With respect to PDS purchase per market dependent, rice purchase was rural biased in seven states, eight states in the case of wheat and four states in the case of sugar. According to fractile group, dependence of poor in the rural area on the PDS for rice, wheat, oil, cloth, etc., was less than 16 per cent. The urban poor purchased more of rice, sugar and oil compared to the rich.

Stephen Howes and Shikha Jha (1992), have also analysed the data of NSS 42nd Round, and are of the opinion that subsidised food is mainly confined to the politically more powerful population, implying that the less powerful-rural poor- are discriminated. In their study three different variables are used to measure the bias, (i) levels of PDS quantity consumed (ii) implicit subsidies, and (iii) accessibility.

The first measure of quantities consumed showed a massive urban bias across all states and union territories. The recorded ration consumption was two-thirds of recorded supply. The subsidies calculated from the data, confirmed an overall urban bias, with urban-rural per capita subsidy rate of 1.36. On the accessibility of ration shops, suggests that rural dwellers are disadvantaged relative to their urban counter parts only to the extent that shops are on an average more distant. Urban bias in the utilisation was found in 11 states, rural bias in 3 states and mixed results in 6 states.

Kundu (1992), argues that there may be an urban bias because the difference between open market price and issue price is lower in the rural areas compared to the urban
areas. Hence, the offtake in rural area can be consequently lesser. However, rural areas cannot be neglected due to high incidence of poverty and higher coverage of population and thus supply of foodgrains compared to urban areas.

According to Kundu, at all-India level, rural purchases per buyer was less than the urban for rice, wheat and pulses. Similarly, it was higher in the case of coarse cereals and sugar. In the case of edible oil, coal and kerosene, the rural per capita average quantity of distribution is very much lower than the urban average. The comparatively higher figure of sugar purchase from PDS in rural areas is due to their low affordability from open market. The five backward states viz., Bihar, Orissa, Rajasthan, Madhya Pradesh and Uttar Pradesh accounting for 48 per cent of the rural population of the country the impact of PDS is marginal. In states such as, Andhra Pradesh, Kerala, Karnataka, Himachal Pradesh, Tamil Nadu and Gujarat, where the PDS is better implemented, show a larger coverage of rural demand, both in terms of population and purchases from PDS.

Kabra and Ittyerah(1992), have discussed on PDS in India in detail focusing on the utilisation of PDS in rural and urban areas covering all States and Union Territories. The study has also discussed the administrative aspects, mainly the administrative set up and operation of fair price shops.

The utilisation of PDS is based on a primary survey conducted in 2100 households all
over the country. The main focus of the analysis was to study the extent to which the PDS meets the requirements of the households. Since rice, wheat and sugar are the three main commodities, the analysis of the study is restricted to these three commodities. The main findings of the study are as follows. The aggregate survey results showed that the PDS provided only 13 per cent of the family requirement in the case of wheat, 17 per cent in the case of rice and 36 per cent in the case of sugar. PDS functioned better with respect to sugar as compared to rice and wheat. Its performance was better in urban and deficit areas. At the state level, the proportion of family needs for wheat met by PDS was negligible in Madhya Pradesh, Gujarat, Harayana, Karnataka, Punjab and Rajasthan. In West Bengal, Tamil Nadu, Kerala and Delhi, 50 to 80 per cent of the wheat needs was provided by the PDS. With respect to rice, in Delhi, Kerala, West Bengal, Jammu & Kashmir, Uttar Pradesh, Andhra Pradesh 22 to 50 per cent of the requirements was met by PDS. The supply of sugar through PDS accounted for a substantial proportion of the household needs, all over the country.

The authors observe that, the states where PDS performed well with respect to all the three commodities include Andhra Pradesh, Kerala, Jammu & Kashmir and Delhi. Tamil Nadu and Uttar Pradesh fared well with two of the three commodities. The states where PDS performance was poor with respect to all the three commodities include Rajasthan, Punjab, Maharashtra, Karnataka, Haryana, Gujarat and Madhya Pradesh. On the possible reasons for not being able to purchase the commodities form
the fair price shop in part or full, the study observed that about 25 per cent of the total households did not purchase due to non-availability of stocks. Five per cent did not purchase due to irregular timings, 27 per cent due to poor quality of items supplied. 21 per cent of the households did not purchase due to lack of purchasing power. On the extent to which PDS were not utilised by the households, from the study it was observed that lapsing of entitlement was higher in western, central and northern regions of the country, with respect to rice. It varied from nearly 50 per cent for northern region to 80 per cent for the western region. In the case of wheat, the lapsing of entitlement was 23 per cent for the eastern region, 90 per cent for the western region and 70 per cent for the central and northern regions. Utilisation of PDS with respect to consumer expenditure class was analysed by grouping the households into five expenditure classes, with monthly per capita consumer expenditures varying from Rs.80 to Rs.500 p.m. The study observes that the first two groups obtained 11 per cent and 16 per cent of total wheat consumption respectively, from PDS. Thus, wheat requirements of the lowest expenditure group is met to a lower extent than the all-India average of 14 per cent. For the people just around the poverty line is marginally higher. The rural rich had a higher utilisation compared to the urban rich. In the case of rice, it was quite similar to that of wheat, but, the lowest expenditure group had higher percentage of utilisation than that of national average.

The absolute level of purchases of lower expenditure group was observed to be lower than that of higher expenditure group. Since all the families are entitled to uniform
scales of ration supplies, the lower expenditure classes would be spending a higher proportion of incomes on PDS. But the study observes that proportion of incomes spent on PDS by the lower expenditure class is only marginally higher than that of higher expenditure class, thus have a lower utilisation of PDS supplies. Due to low level of utilisation, the study infers that PDS cannot be considered as supplementary source of food supply.

In a study conducted by Indrakant (1995), for Andhra Pradesh, the main objective was to examine the extent of food security provided by PDS across different regions and different socio-economic groups in the state. The study for Andhra Pradesh was carried out in the light of the special Rs.2/- per Kg. Scheme, initiated by the state government. The study was based on a primary survey of 200 sample households from five villages with different levels of economic development. Out of the five villages selected, two villages were backward, of which one was declared as drought prone area. Two other villages were well developed and one village was moderately developed. In the study, utilisation of PDS is measured in two ways, viz., percentage of PDS purchase in total purchases and percentage of purchases in total consumption. The households have been categorised using different criteria, viz., land holding, consumer expenditure level and employment level.

From the study it was observed that in all the five villages, the share of purchases from PDS in the agricultural labour and small farmer households, is higher compared
to that of medium and large farmer households. The utilisation of PDS was higher in the backward villages compared to moderate and well developed villages. It may be inferred that PDS is useful in providing food security to the vulnerable sections of population. It was observed that the share of PDS purchases in total consumption reduces with consumer expenditure level in four out of five villages surveyed. However, the extent of decline was small in the case of middle expenditure classes, but sizable in the case of higher expenditure classes. With regard to employment, the observation was that lack of access to employment was a big constraint for poor households to have access to PDS. In other words, households with no employment or low level of employment have lower access to PDS.

Nair and Sivanandan (1995), have attempted to study the role of PDS in Kerala in increasing the availability of food. Kerala has been a food deficit state despite efforts to increase foodgrain production through investments in irrigation, supply of subsidised inputs and increase in the use of high yield varieties. The study is mainly based on primary survey conducted in four villages in Kerala. The utilisation of PDS has been analysed by grouping households according to size of land holding and per capita expenditure class.

From the study it was observed that in three out of four villages surveyed, nearly 50 per cent of rice consumed was obtained from PDS. The utilisation was relatively lower in one village due to poor quality of rice supplied through the fair price shop. Despite
a higher share of area under paddy in two villages, higher proportion of rice purchase from PDS was observed. Out of the two villages, in one village, high quality rice was produced and sold in the market and purchased lower quality rice at the fair price shop and open market at lower prices. In the other village, rice had to be sold immediately after harvest for meeting immediate cash requirements. With regard to size of land holdings, an increase in the purchase from PDS with increase in the land size was observed in two villages and no clear trend was observed in two other villages. However, with regard to per capita expenditure class, no systematic variations were observed across the expenditure classes.

The basic purpose of the study by Sharma (1995) was to evaluate the functioning of the PDS with reference to low offtake particularly in the rural areas of UP and Bihar. The study was based on primary survey conducted in four villages each of Bihar and Uttar Pradesh. The study concludes that although PDS is very useful especially for the vulnerable groups, has failed at the implementation stage to fully achieve its stated objectives. The study clearly shows that foodgrains were not distributed in seven out of the eight surveyed villages in UP and Bihar. One of the reason generally being cited by the scholars as well as the administrators and PDS dealers is that the market prices for foodgrains are equal to or little higher than the PDS prices. However, during the last seven to eight years the PDS prices of rice and wheat have almost doubled. Thus making it out of reach of the poorest of the poor. Another important reason is that the foodgrains are not supplied at all by the PDS dealers. The reason is
that it is not at all profitable for the PDS dealers to supply foodgrains. Another important reason for low off take for the foodgrains is that these are not supplied at all due marginal difference in PDS and open market prices which is a disincentive to PDS dealers. In the RPDS areas, where the price difference is substantial the commodities are not supplied as it also involves a subsidy by the state government, which are not in a position to pay due to paucity of resources. Although the PDS is available to all the households, however, it is only the labourer and marginal farmer households who buy foodgrains from the PDS. The small, medium and large farmers generally bank upon their own sources (home grown) and partly on open market. It is interesting to find that the dependency on the open market is much higher for labour households than that observed in the case of the farmers in both the states. Another important source for the labourers is to acquire foodgrains some times through kind wages also. However, due to the structure of landholding, which is dominated by tiny holdings in Bihar as well as UP. There is not much scope for employment.

The other reasons for low off take is that the majority of the sample households in UP and Bihar does not have the ration cards. Even in cases where a household had ration cards it has not been renewed for almost ten to fifteen years. As a consequence the entitlement of the households gets under specified. The study shows that even among those who are having ration cards are not able to get the full quota due to the fact that most of time commodities are either not available or not available in sufficient supply at the ration shops. This practice is quite prevalent in Bihar and to a some what lesser
extent in UP. People from the lower strata cannot buy because of shortage of funds at that particular moment of time. Another draw back is that the quantities supplied of various items are quite insufficient and quality is not good. Vulnerable sections of the society does not have the requisite money to buy foodgrains as well as other commodities being distributed through PDS.

For a more efficient working of FPS outlets, Sharma suggests that, there is a strong need for creating a district level or block level cooperative federation having an establishment in each village. Distribution through the PDS should include all other commodities of daily use besides the essential commodities. Infact these village cooperatives should be patronised by the Government for even supplying fertilizers, seeds and pesticides to make them viable economic enterprises. This will ensure the fair price shops opening every day.

Mahendra Dev(1995), examines the utilisation of PDS and Employment Guarantee Scheme and compares the cost effectiveness of these two programmes. The study is carried out for Maharashtra and West Bengal. The study examines the poverty and food security issue using the NSS 43rd Round, 1987-88 on employment and unemployment and 42nd Round, 1986-87 on PDS. The main objectives of the study are-
(i) to study the composition of poor in both rural and urban areas; (ii) whether the poor suffer from chronic unemployment; (iii) the extent of coverage of the poor; (iv) the proportion of the PDS quantities reaching the poor in rural and urban areas; (v)
the cost effectiveness of PDS compared to EGS; and (vi) whether targeting of food subsidies to employment programmes solve the problem of rural and urban poverty.

The findings of the study show that in Maharashtra, the agricultural labour households reported 57.3 per cent poverty incidence compared to 71.2 per cent in West Bengal. In both the states, agricultural labour households constituted nearly 50 per cent of the poor in rural areas. In Maharashtra, around 82 per cent of the persons located in the casual labour households were below the poverty line. Correspondingly it was 68 per cent in West Bengal. Maharashtra had a much lower person day unemployment rate as compared to West Bengal. In both the states, the per capita expenditure and person day unemployment rate were inversely related in rural and urban areas.

With regard to PDS, Mahendra Dev finds that, the estimates on per capita PDS quantities per market dependent persons showed that there was urban bias in both Maharashtra and West Bengal. In Maharashtra the bias was higher for rice as compared to wheat. In West Bengal, the urban bias was of a higher order in the case of rice. Comparing the two states in relation to targeting the poor, it is observed that, inclusion of non-poor was less in Maharashtra rural, for all commodities. In urban areas, inclusion of non-poor was less in West Bengal as compared to Maharashtra in the case of rice and total cereals. The exclusion of poor was very high for West Bengal rural as compared to Maharashtra rural. In the case of rice, wheat and cereals, more than 75 per cent of the poor were not covered under PDS network in West
Bengal rural areas.

Comparing the effectiveness of PDS and EGS, Mahendra Dev observes that, PDS is a better option due to its wider coverage despite several leakages. But considering the secondary benefits from EGS, both the programmes may be of equal importance. Similarly, Guhan(1995), is also of the opinion that PDS is more cost effective compared to employment programmes. However, the employment generated from EGS may not help in reducing poverty. This is true of all wage employment programmes(Nayyar, 1995).

Suryanarayana analyses alternatives for the present form of PDS. The main reason is the inability in reducing the government budget deficit and food subsidy. The options include commodity based retargeting, dismantle of FCI and food stamps. Suryanarayana(1995a), examines the empirical bases for some of the suggestions for PDS reform and in particular how far the premises underlying the commodity based retargeting are empirically valid. The study postulates that, the poorer groups’ marginal food choices are governed more by commodity characteristics than their calorie content and are likely to respond to relative price changes through food subsidies. The study finds that, the PDS has a commodity basket consists largely of superior cereals like rice and wheat. Where as, inferior cereals are minimal. The study also finds that in both rural and urban areas, the shift in consumption pattern has move from inferior cereals in favour of superior cereals due to relative price difference and
taste changes. Thus, coarse cereals are equi-proportionately consumed by all the deciles groups in rural India, but disproportionately more by the poorest three deciles groups in urban India. The study concludes that, commodity based targeting and reducing leakages in distribution by reorienting in favour of coarse cereals is limited, especially in rural India. The system is not feasible in urban India also since the share of coarse cereals in total cereals is very small.

Suryanarayana (1995b), suggests food stamps as one of the alternative options to the PDS. The study analyses the impact of the food stamp programme (FSP) implemented in Sri Lanka, Jamaica and Zambia and its implication for India. According to the study, one of the major problems faced by all the reference countries in implementing the FSP was the identification of beneficiaries. The author is of the opinion that similar problem would also be faced in India due to lack of information on labour force unorganised sector and proper income records of these households who form the potential beneficiaries. Suryanarayana thus argues that, FSP cannot be implemented as in the U.S, which is done in a more organised manner or like in that of Sri Lanka or Jamaica, which is based on self-reported income. Hence, one option that India could consider is that of Zambia, whereby the urban informal sector workers with households per capita incomes below a specified level are asked to register for food stamps through their employers. This option can be combined with the Jamaican strategy of self targeting through public health care system and municipal schools. The
study further suggests that, as followed in Jamaica food stamps can be used in any private outlet against specific basic food item. This is applicable due to the fact that in India the consumption pattern of households shift away from basic cereals with increase in income. This will reduce the fixed cost being incurred on maintenance of food stocks and other operations by the FCI. Giving example of the Sri Lanka, the author suggests that food stamps should be price indexed to offset the inflation. This would other wise defeat the objective of protecting the poor from inflation.