CHAPTER 1

INTRODUCTION

"The day that hunger is eradicated from the earth, there will be the greatest spiritual explosion, the world has ever known. Humanity cannot imagine the joy that will burst into the world on the day of that Great Revolution" - Federico Garcia Lorca

1.1 CONCEPT OF FOOD SECURITY

Food security, as an issue, became prominent in the 1970s, with the World Food crisis of 1972-74 and has been a topic of considerable attention since then. The concept of food security would have more meaning if it is understood in line with the legal commitments of the United Nations: the Universal Declaration of Human Rights (1948), which accepts the "right to adequate standard of living," including food; the International Covenant on Economic, Social, and Cultural Rights (1966), which ensures "an equitable distribution of world food supplies in relation to need"; and the Universal Declaration on the Eradication of Hunger and Malnutrition (1974), which declares that "every man, woman, and child has an inalienable right to be free from hunger and malnutrition." Although member countries accepted these declarations, responding to food needs of other countries has been left to the discretion of individual surplus-producing countries and the UN has no power to enforce such declarations. Therefore, a global concept of food security does not guarantee food security at either the household or the national level.

The concept of Food Security has been evolving over the last decades with academicians, policy makers and the NGO activists contributing substantially to the debates on what constitutes food security, the determinants of food security and how it can be ensured at the global, regional, national, state, household and the individual levels. The World Food Conference of 1974, which was organized in the wake of the world food crisis of 1972-74, was largely concerned with world food security wherein it was recognized that it was the common responsibility of all the nations and that international
approaches were needed to achieve the improved world food security. Similarly, the International Conference on Population and Development (1994) highlighted the linkage between the population and the need to evolve global measures to satisfy the growing food needs.

Food Security has also been a recurring theme raised in specific contexts in the various fora convened by the United Nations. The Conference on Environment and Development held in Rio de Janeiro in 1992 emphasized the need to ensure food security at all levels within the framework of sustainable development. The joint FAO/WHO Conference on Nutrition held in Rome in 1992 declared, “Hunger and Malnutrition are unacceptable in a world that has both knowledge and resources to end this human catastrophe” and recognized that, “access to nutritionally adequate and safe food is a right of each individual” (Srinivas & Thaha, 2004). The World Conference on Human Rights held in Vienna in 1993 emphasized the need to ensure that everyone enjoyed a right to food. The World Summit on Social Development held at Copenhagen in 1995 made a strong commitment to the campaign against hunger through its emphasis on poverty eradication. During the World Food Summit in 1996, the NGOs declared “Food Security is a human right which must take precedence over macroeconomic and trade concerns, militarism and the dictates of the market place”. And that achieving food security for all demands the “full engagement of all the stakeholders” - civil society, governments, international organizations and multilateral institutions.

The Right to Food has in formal terms, been accorded universal recognition as a human right. It is articulated in the Universal Declaration of Human Rights, the International Covenant on Economic, Social and Cultural Rights, the Convention on the Rights of the Child and several other international instruments. The term ‘food security’ has been variously defined in the literature:

“Access to food for healthy life by all people” (NAM, 1994). “Access to adequate food for all people at all times” (World Bank, 1986). “Food is available at all times, all persons have the means to access to it, it is
nutritiously adequate in terms of quality, quantity and variety and is acceptable within the given culture". (FAO, 1996).

The operational part of the definition of food security drawn on the World Food Summit (1996) may be described as the interplay of three components of food security – availability, access to adequate food and its absorption for an active healthy life. The definition adopted at the World Food Summit has been referred in numerous texts and resolutions and forms the basis of the international consensus on the actions required at the global, regional and national levels to achieve world food security. Thus food security deals with production in relation to food availability, it addresses distribution in that the produce should be accessed by all, and it covers consumption in the sense that individual food needs are met for an individual to be active and healthy. The availability and the accessibility of food to meet food needs should also be sustainable implying that the early warning systems of food insecurity should monitor the indicators related to food production, distribution and consumption.

Access to food in turn is determined by entitlements (Jha and Srinivasan, 2004). Four types of entitlements generally define access to adequate food – production based, exchange based, labour based and transfer based entitlement. Government policies impact production based entitlements through production support policies such as credit, subsidies and capital formation and exchange based entitlement by food price stabilization policies, market development and parastatal reforms. Similarly labour-based entitlements are protected by enhancing the employment base and promoting high value export crops and small and medium enterprises, while support for labour intensive public work programmes and targeted feeding programmes enhances the transfer based entitlements.

According to Vyas (2003), the concept of food security in its wider connotation comprises of four elements, availability of food, households entitlement of food, stability in the supply of food throughout the year and protection against malnutrition. Dutt (1999) defines food security as the ability to assure on a
long-term basis that the food system provides the total population with a timely, reliable and nutritionally adequate supply of food.

On a general note, the following five dimensions can be used to evaluate food security:

First, a food system offering security for its participants should have the capacity to produce, store, import or otherwise acquire sufficient food to meet the needs of all its members at all times. Second, it should provide maximum autonomy and self-determination (without implying autarchy), thus reducing the vulnerability to market fluctuations and other social & political pressures. Third, it should be reliable, so that seasonal, cyclical and other variations in the access to food are minimal. Fourth, a secure food system should be equitable, meaning as a minimum, dependable access to adequate food for all individuals and groups both now and in the future. Finally it should be socially and environmentally sustainable so that the ecological systems on which all societies and food production depend are protected and enhanced overtime.

In policy design, a distinction is made between transitory and chronic food insecurity (Radhakrishna & Reddy, 2004). Transitory food security is associated with the risks related to either access or the availability of food during the off-season, drought, inflationary years and so forth. Policies such as those relating to price stabilization, credit, crop insurance and temporary employment creation are initiated for stabilizing the consumption of vulnerable groups. In contrast the problem of chronic food insecurity is primarily associated with poverty and arises due to continuously inadequate diet. The strategy to overcome this problem is intervention (agricultural production programme, infrastructure, human resource development) to raise the purchasing power of the poor through endowments of land and non-land assets and by generating employment opportunities, as well as long-term growth mediated interventions to improve food availability and incomes of the poor.
The focus of most of the definitions of household food security is its transitory components. It tends to save the vulnerable groups from the adverse impact of wide fluctuations in the agricultural production by first, making foodgrains accessible nearby and second, protecting them from the sharp increases in the foodgrains prices.

Food Security is closely related to poverty and chronic food insecurity translates into high degree of vulnerability to famine and hunger. According to Sen (1981), the poor are vulnerable because they do not have adequate means or entitlements to secure their access to food, even if food is available in the local or regional markets. Sen points out that the major factor responsible for food insecurity of the people is the lack of purchasing power or 'exchange entitlement'. In his words," Starvation is the characteristic of some people not having enough to eat. It is not the characteristic of there being not enough to eat. While the latter can be cause of the former, it is but of many possible causes". Vyas (2003) pointed out that food security is too complex an issue to be left only to the state to resolve. The markets and the civil society institutions also have a role to play towards achieving these objectives. It is only when the civil society institutions, markets and the state policies converge that we will come closer to the ideal of food security for all.

Food Policy has indeed been a widely researched topic and there are numerous historical overviews and evaluations of the PDS in the country. This is because food is one of the basic necessities in human life and food distribution affects the whole population. Also rising food prices and food scarcities are problematic to all. Thus as long as food is still scarce and expensive for some categories of people, food policy will remain an important topic of in the academic studies.

In India, food security comes under Directive Principles of State Policy (DPSP) as embodied in the constitution. Article 47 of DPSP states, "The state shall regard raising the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties (Suryanarayana, 2001).
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Ameliorating chronic as well as transient food insecurity is the foremost responsibility of food policy in India as in any other country. Augmented food production is contemplated to be a necessary but not a sufficient requirement to ameliorate food insecurity of the poorest segments of the population. Unless the poor have adequate entitlement and have improved human capital with them, the higher levels of food production alone may not be an effective instrument for food security. In the absence of such pre-conditions, the shortfalls of any domestic production or the failure of the market would put the burden on the poorest families.

India is one of the few countries, which has experimented with a broad spectrum of programmes for improving food security. It has already made substantial progress in terms of overcoming transient food security by giving priority to self sufficiency in the foodgrains, employment programmes etc. Despite a significant reduction in the incidence of poverty, chronic food insecurity persists amongst large proportion of India's population. While the mounting food stocks have solved the problem of food security at the national level, there are still millions of food insecure and undernourished people in India. The limitation here is hence food distribution and not food supply. This study is precisely concerned with the distribution aspects of food.

The policies and the programmes generally considered for solving food insecurity include the income generating programmes like the public works including the food for work programmes, the direct income transfer programmes that deal with the economic aspects of food insecurity like food stamp programme, unemployment compensation, food price subsidies like PDS that increase the nutritional status through income effect by increasing the purchasing power of beneficiary households and also by substitution effect by reducing the price of food relative to the prices of other goods, by food supplementation schemes like the SNP in Kerala, programme to expand the subsistence food production like the one in Kerala (whereby women are trained to develop kitchen gardens) etc.
1.2 FOOD SECURITY AND PDS IN INDIA

“There is no true food security, no matter how much is produced, if the food producing resources are controlled by a small minority and used only to profit them. In such a system, the greater profit will always be found in catering to those who can pay the most—not the hungry” (Frances Moore Lappe & Joseph Collins, Food First: The Myth of Scarcity, Souvenir Press (E&A) Ltd, London, 1977, p.119)

Food insecurity is one of the most persistent problems in India. Despite the Green Revolution and several decades of food market interventions, there are still millions of people in India whose daily intake of calories is insufficient. The self-sufficiency in food production has not removed widespread chronic malnutrition and starvation deaths.

“If we presume for the sake of argument that those who consume less than 1900 Kcal are hungry, then we can see that the number of hungry increasing from the 70's to the 90's even though staple food production has reached record levels. The growth in the numbers of hungry appears to outpace growth in food production. The problem which prevents them from being able to eat and digest more is that of affordability of food and not the problem of availability of food”

Until the beginning of the 70's, it was believed that the problem was of slow economic growth and that, if adequate food was produced, the market forces would operate in such a way that the poor would be able to obtain food (Bapna, 1990). However continued widespread undernutrition is proof of the failure of the benefits from the development process to percolate among the poor. Prior to the 70's, the food problem was mainly considered as one of protein deficiency but subsequent researchers have shown that it is an energy or calorie deficiency.

1 Quoted from M.S.Swarinathan Research Foundation and World Food Programme, 2001
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The Indian rural population spends about 55 percent and the Indian urban population about 43 percent of the total expenditure on food on an average (NSS, 61st Round for 2004-05). Despite the decreasing share of food in the total expenditure from the earlier periods, it still continues to occupy a major share in the households' budgets implying that food security should be the major focus of policies concerned with welfare particularly of the poor. On an average, at the All India level, cereals account for more than 67 percent calorie intake in the rural sector and about 56 percent in the urban sector (NSSO, 61st Round).

Despite the achievement of self sufficiency in foodgrains and the prevalence of subsidized distribution of grains since the World War II, per capita consumption of the poorest sections of the population continues to be lower than the recommended nutritional levels and large percentage of children remain underweight (Jha & Srinivasan, 2001). At historical growth rates the estimated gap between the demand for and supply of cereals to be 25 million tones by 2020 (Bhalla, 2001). Even though consumption preferences are shifting towards non-cereal foods, the food gap may still be substantial.

Of all the safety net operations that exist in India, the most far reaching in terms of coverage as well as the public expenditure, with an amount of 50 percent of the spending on the anti poverty programmes and 2.5 percent of the overall Central Government expenditure. The scale of the programme is evident from the fact that it handles 15 percent of rice and wheat (Dutta & Ramaswami, 2001). It is therefore considered as an essential component of India’s food security policy.

The food subsidy is incurred by the governments to help the vulnerable sections of society maintain a certain level of nutritional intake. Through its vide network of fair price shops established all over the country, the government also tries to protect the consumers from the high open market prices. The food subsidy assumes a critical role in a food deficit situation, particularly in those areas where poverty is widespread and purchasing power is low.
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A differential pricing policy is adopted by the GOI to implement its food security system i.e. by procuring the foodgrains from the market and distributing the grains through the PDS at a price which should ideally be lower than the open market price. The PDS and its impact on the prices can be explained through the traditional demand supply framework. The PDS, which is a significant component of the food security system in the country, is expected to influence the market prices and reduce the fluctuations therein, by regulating the supply in line with the demand. (Jharwal, 1999).

Fig 1.1 Peak season: State intervention through procurement operations

The theoretical considerations underlying the functioning of the PDS and the procurement operations is protecting the farmers at the time of excess production and supply and the consumers during the lean season. Thus when the availability of foodgrains increases in the market during the peak marketing period resulting in the depression in the market prices, the government steps in through its public agencies viz. Food Corporation of India (FCI) to undertake purchase operations at pre-determined prices thereby not allowing the price to fall to un-remunerative levels. This is with a view to protecting the interests of the farmers. During the lean season, foodgrains are
distributed on a large scale to ensure adequate availability and reduce the pressure on the open market prices thereby protecting the interests of the consumers.

Fig 1.1 shows the changing prices situation due to state intervention during the peak marketing season. The equilibrium price, $P_1$ is determined by the intersection of $D_1$ and $S_1$. Owing to greater availability of rice in the market, the supply curve shifts to $S_2$, resulting in the new equilibrium price $P_2$ at quantity $Q_2$. By undertaking price support / procurement operations at predetermined price which is higher than the open market price, it reduces the availability of the grain in the market and consequently shifts the market supply curve towards the left. The intersection of the new supply curve and the demand curve gives a new price which is higher than the original price. Thus it is ensured that prices do not fall to un-remunerative levels following an abundant harvest. The offer of remunerative prices to the farmers also enables them to adopt improved techniques of production and encourage further production in the future, thereby causing a rightward shift in the supply curve in the long run. This is depicted by the leftward shift in the supply curve i.e. from $S_2$ to $S_3$, bringing the equilibrium price to $P_3$.

Fig 1.2 Lean season: State intervention through PDS
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The state intervention during the lean season through the PDS is shown in Fig 1.2. The equilibrium price, P1 is determined by the intersection of D1 and S1. During the lean season, due to reduced availability, the supply curve shifts leftwards i.e. from S3 to S4, resulting in a rise in the open market price, P5. The high open market prices adversely affect the vulnerable sections of the society and the consumers in the food deficit states. The large scale distribution of grains through the fair price shops increases the availability of foodgrains in the market and pushes back the supply curve to the right, bringing down the open market price to P6.

In food deficit States, the Government keeps a control on the open market price of essential commodities like food grains through the above mechanism of PDS. The magnitude of difference in the two prices would depend on the scale of state intervention. A large proportion of total quantity of food grains distributed to the poor and the deficit areas helps bring down the price to a more reasonable level. Efficiently functioning PDS can hence go a long way in promoting equity in the inter-regional distribution of food through the minimization of price differentials.

The above gives a simple explanation of the government's intervention in the food grain market and the impact on the prices. In other words, the explanation given above only shows how during the periods of surpluses and deficit, the government tries to stabilize the prices through its procurement operations and supply through the PDS. Practically, any change in the issue prices (prices fixed by the government at which the foodgrains are distributed from the fair price shops) in turn has its effect on the open market prices and vice-versa. Studies related to PDS show both the prices to be positively related. In other words, increase in the issue prices and the resultant change in the relative prices, results in more people shifting to the market. This pushes up the market demand and in effect raises the open market prices in the short run assuming inelastic supply.
The Indian PDS has a very long history dating back to before independence. Originally conceived as an instrument to achieve food price stabilization only in few centres, it gradually widened its reach and evolved into a poverty alleviation programme, with the specific proclaimed task of providing food security to the vulnerable households.

The evolution of the PDS in India is explained below in various phases.

1939-60: In response to war time scarcities, the British Govt. introduced rationing and other price control measures in 1939, prior to which India had no experience of food rationing or any other form of food control. The Government had adopted a laissez faire policy and refrained from interference with the trade and prices of foodgrains. Between 1939 and 1960, a number of price control conferences took place.

The first scheme for centralized purchase of foodgrains was discussed by the 6th Price Control Conference in September 1942. During this Conference, the basic principles of a Public Distribution System was laid down for the first time, besides the conceptualization of a central government organization that would make its purchases in surplus provinces and allocate the supplies to deficit provinces and its eventual distribution through fair price shops and cooperative societies in industrial areas and big cities. In December 1942, a separate Food Department was set up and in 1943 the Department formulated an All India Basic Plan that gave further form to the developing food policy. The Basic plan included issues such as procurement, contracts for purchasing agents, distribution of supplies received under the scheme, inspection, storage and finance, all meant to keep prices down. Price stabilization was thus the principal objective of food distribution policy during this period of war-induced scarcity.

The system grew slowly from the initial 7 cities to 13 cities in 1943 to 771 cities and towns by 1946. The first area where rural rationing was introduced

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2 The history and functioning of the PDS is explained in detail in Bapna (1990), Mooij (1999) and Swaminathan (2000). The above section on the history of PDS in India has been highly benefited from these sources.
was Malabar, in the present Kerala. Rationing was abolished in 1947 at the recommendation of the Second Food Grain Policy Committee but was reintroduced in 1950 as a welfare measure with the onset of planning. In the 1950s, PDS was extended to certain rural areas, which were mainly viewed as food deficit regions. The expansion of PDS since 1957 in terms of both the food distributed and expansion of shops was greatly facilitated by large scale imports from US under US Public Law 480 (PL-480). For most of this period i.e. till the early 1960s, the quantity distributed through PDS was greater than the quantity procured domestically.

1960-78: The experience during 1961-64 was summed up by the Dandekar Committee³ “The prices of domestic grains in general continued to rule considerably above the price at which the imported grains were being issued through the fair price shops. Under the circumstances, one might say that the policy succeeded in achieving its second objective namely to protect the poor and vulnerable sections of the society from the relative high prices of food grain”. The Foodgrains Prices Committee set up in 1964 marks a watershed in the establishment of the PDS.

The Committee recommended the setting up of the Food Corporation of India (FCI), which would enable the government to undertake trading operations through which it could influence the market prices. In 1965, two new organizations, the Agricultural Prices Commission (later renamed the Commission on Agricultural Costs and Prices) and the FCI were set up. In this period, food policy in India acquired its third objective i.e. to guarantee reasonable prices to the farmers and thereby increase production. The emphasis was on establishing price levels, which would act as an incentive to domestic production. The objectives of food policy thus widened. The source of the PDS supplies thus changed from imports to domestic foodgrains.

While the food policy was initially considered as a means of tackling food emergency situations through price stabilization, after 1957, the idea of providing food at reasonable prices to the poor came up. From 1964-65

³ Dandekar Committee was set up by GOI to study the working of the FPS’s in India and submitted its report in 1966.
onwards, the protection of farmers income and thereby stimulating agricultural production became the third objective. The analysis of its working from 1939 shows that the food distribution was strategically employed by the government in a number of political and economic projects. During the war period, food was distributed in the important urban centres such as Calcutta where strategic industries, the central and provincial government and defence works were located. During the period, 1957 to the early 60s, food distribution was concentrated entirely on the urban centres, which contributed to economic growth and political stability. The PDS thus seemed to be a part of the low wage policy meant to support industrial growth, if necessary at the expense of agriculture (Swaminathan, 2000). Thirdly, with the rise of political activism of capitalist farmers, the interests of this class were also incorporated in government food policy and a more producer friendly regime took shape.

From the 1960s onwards, the PDS became a permanent and universal programme. The droughts of 1965-66 and 1966-67 provided a strong impetus for the expansion of PDS. Food grain distributed in PDS grew to more than 10 million tones in 1965. While the purchases from PDS fell during the period, the distribution of PDS grains picked up again after the drought of 1972-73.

1978-91: This phase is marked by the growth of comfortable buffer stocks, which provided the basis for the large scale expansion of PDS as well as employment programmes of the 'food for work' type. During the late 1970s and 1980s, PDS was viewed as a component of the strategy to alleviate poverty. The network of fair price shops grew in the 1970s as did the number of commodities supplied in these shops.

However greater availability does not guarantee accessibility especially to the poor. As Sen (1981) emphasized that the major reason for food insecurity is the lack of purchasing power or 'exchange entitlement' with the poor. Even the ability to buy will not guarantee food security unless there is an effective delivery system (Venugopal, 1992). During the 1980s, the PDS network expanded to the rural areas. Between 1971 and 1991, the number of Fair
Price Shops (FPSs) tripled to over 4 lakhs, with greater part of the increase going to the rural areas. More than 70 percent of the PDS rice and more than 55 percent of the PDS wheat was sold in the rural areas (Swaminathan, 2000). Moreover, the number of special schemes through which food was distributed increased over the years, like the “Food for work” and the “Noon Meal” Schemes. These schemes introduced an element of targeting within the public distribution policy. While PDS was basically a universal programme, these special schemes aimed to guarantee that part of the food grain supply reached the neediest people. Various State Governments also took initiatives as food became an increasingly important issue in the political processes of these states.

There have been quite a large number of micro as well as macro level studies on the various aspects of food security and PDS policy in India. The existing literature includes several insightful and descriptive studies that analyses the functioning of PDS and evaluates its ability to reach the poor, besides estimating the implicit subsidy it offers viz. Dev & Suryanarayana (1991), Howes & Jha (1992), Vyas (1993), Ahluwalia (1993), Parikh (1994), Indrakant (1997), Radhakrishna et al (1997), Mooij (1999), Dutta & Ramaswami (2001), collected essays in Krishnaji & Krishnan (2000) & Asthana & Pedrano (2001) and Dev, Mahendra, Kannan, K.P & Ramachandran, Nira (2003) etc. There has also been a long and intense debate on the role and efficacy of the PDS in India including its efficacy vis-à-vis other anti poverty programmes such as the EGS.

The beneficial impact of the PDS has been brought out in a number of other studies viz. George (1979), Ray (1994), Isaac (1993), Gulati & Krishnan (1975), Vyas & Bandopadhyay (1975). These studies have shown that the system can indeed make a big dent in providing the basic minimum to the vulnerable sections of the society, helping the producers in view of the effective procurement and consumers in view of the price stabilization in the market, help in dampening inflationary pressures and contributing to the alleviation of poverty and reducing the disparities in food consumption (Krishnan, 1992), help in the reverse the declining trend of cereal
consumption and change the consumption basket of the poor, thereby raising their calorie intake. The poor it has been argued are not calorie conscious (Suryanarayana, 1995). It has been shown that the increased food intake through the PDS could result in better nutritional and health outcomes leading to greater human resource development. The PDS is advocated since it is felt that undernutrition cannot be removed by income transfers alone. Empirical evidences pointed out that the System is not only economically viable but also has a positive impact on the incomes of the consumer, besides improving their nutritional status (George, 1979). Infact the greatest achievement of the PDS in India has been in fighting famines.

As explained above, the PDS serves a dual purpose; it not only provides subsidy to the consumers but also helps in the process of providing price support to the farmers. PDS combined with the food grain procurement policy of the Government has also brought about stability in the price of foodgrains contributing to the macroeconomic stability. Besides, the increased demand for foodgrains resulting from the food subsidies results in multiplier effects raising the overall growth of the economy. There are also non-quantifiable benefits like stabilization of aggregate consumption of foodgrains and aggregate producer revenue in the face of year to year fluctuations in production. The expansion of the rural network of PDS improved access in some of the remote and economically underdeveloped regions of the country. It has also been established that in the years of low production, PDS supplies have been considerably higher than usual (Radhakrishna & Subbarao, 1997).

However, studies on the PDS using the computable general equilibrium models showed that open market prices would have been lower but for the PDS (Radhakrishna & Indrakanth, 1987). The effects of the open market prices become important since out of the bottom 20 percent less than 14 percent buy all their rice from the PDS, 56 percent buy only part of their requirements and the other 30 percent rely entirely on the open market (Parikh, 1994).
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The last phase: 1991 to Present: Though the PDS was seen as an essential component of India’s food security policy, it was widely criticized on several grounds and changes in the policy with regard to PDS have been considered necessary for a number of reasons - its failure to serve the population below the poverty line, biasedness in favour of urban regions, ineffectiveness in providing subsidised food grains to the poorer groups in low income/ high poverty regions, high fiscal burden due to general entitlement of food grains to all households, the relative inefficiency and distribution costs of the FCI/ PDS vis-à-vis the private markets, diversion and deteriorating quality of the grain supplied etc. Critics have also pointed out that the distribution of food grains to the states has not been proportionate to the number of poor people in each state and within the states and the available supplies have not gravitated in favor of the poor (Tyagi, 1990).

The large budgetary commitment for the inefficiently run PDS evoked sharp criticism from several quarters which many pointed out was not be feasible considering the state of finances in the country. The evidences of leakages of subsidised grains diverted to the open market further lent credence to the above argument. The PDS was also argued to be less cost effective in relation to the other anti poverty programmes implemented in the country (Radhakrishna & Subbarao, 1997). Parikh (1994) showed that in a state like Uttar Pradesh, 98 percent of the rural households did not make any purchase from the PDS. He pointed out that PDS delivered only a meagre support to the poor and according to him a targeting programme such as EGS would deliver much more benefit to the poor than the PDS does through the cereals. He advocated that food coupons be given only to the workers under the EGS type programme. The value of the subsidy is very little even for those households who make all their purchases of cereals from the ration shops. For the bottom 20 percent of the rural population the subsidy is no more than Rs. 2.08 per capita per 30 days. With the average household size taken as 6, the subsidy per family is almost Rs.12.5 per month. In other words, he pointed out that one person day of additional employment per family per month would provide the same income support as provided by the cereals distributed under the PDS. Ahluwalia (1993) pointed out that targeting within the states is also
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weak. Only about 40 percent of the total quantity of wheat and 47 percent of the rice supplied through the PDS is consumed by the poorest 30 percent people in India. Similarly Basu (1993) pointed out that it is better to reach the poor directly increasing their incomes (for e.g. through employment programmes) and leaving it to them to buy goods and services they need at market prices. The available alternatives included the extreme suggestion of a total abolition of food subsidies to reduce the fiscal deficit (Bhagwati & Srinivasan) to the comparatively more moderate one of introduction of targeting the food subsidy to the poorer groups in the low income/ high poverty regions (Parikh, 1994).

PDS was also criticized for not providing adequate nutritional support to the poor and further showed that the participation rate in the PDS is similar across income groups. The regional distribution of the PDS has been very uneven, there being a greater density of the Fair Price Shops (FPSs) in the urban than in rural areas and also the better developed distribution network in some states compared to the others (Howes & Jha, 1992). As the states with a weak PDS were the relatively poor states and as the poor were disproportionately located in the rural areas, it was argued that the access through the PDS had disfavored the poor.

Besides, it was also pointed out that food that is meant to be sold at the FPSs never reached the cardholders as it is lost or sold illegally to others. Ahluwalia (1993) estimated that only 17 percent of the wheat lifted by the FPSs actually reached the consumers. A study was conducted by the Tata Economic Consultancy Services\(^4\) to ascertain the extent of diversion of commodities supplied under PDS from the system. At the national level, the study assessed that there was 36 percent diversion of wheat, 31 percent diversion of rice and 23 percent diversion of sugar. Appendix Table 6.9 shows the extent of diversion in various states and union territories of India. Table A. 6.9 shows that diversion is more in the northern, eastern and northeastern

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\(^4\) The study was sponsored by Planning Commission and was part of the wider Report by the Commission on 'Public Distribution and Food Security.'
regions. On the other hand, diversion is comparatively less in the southern and western regions.\textsuperscript{5}

A growing body of literature (Pursell & Gulati (1993), Radhakrishna (1996), Thamarajakshi (1997), Jha & Srinivasan (2003) etc also emerged on the need to place greater reliance on the market for grain trade. Thamarajakshi (1997) pointed out the need for rethinking on the role of the state in the foodgrains market, especially against the backdrop of the ongoing economic reforms, suggesting delinking the support operations from the PDS and tuning the state intervention in the foodgrains market to the limited task of making available cereals at low prices to the really needy and the poor and allowing the private sector to cater to the requirements of the non-poor.

In the context of Kerala, it has been observed that private trade has been emerging as an important source of supply of food-grains. However, due to zonal restrictions, such private trade takes place through illegal channels such as the variety of rice preferred in Kerala and produced in Andhra Pradesh and Tamil Nadu. Farmers in these two rice supplying states have so far required permits from their governments for direct sales outside the state. Moreover with rising production in other states, rice is also smuggled into Kerala from states as distant as Maharashtra, Punjab, Haryana, Madhya Pradesh and Uttar Pradesh. The traders have been arguing for freeing of the domestic trade in foodgrains so that open market supply could be increased, prices reduced and supply equalized among deficit states (Nair 2000)

It is however pointed out that the efficient functioning of the private agents would require the removal of restrictions introduced under the Essential Commodities Act (ECA) such as limits on stock holdings and controls on the movement of grains outside the state boundaries. It is well established that the private traders move grain from surplus to deficit areas and store grain from peak to lean season taking advantage of the arbitrage benefits arising from the price differences. In consequence, they stabilize prices across

\textsuperscript{5} The huge extent of leakages as brought out in the report has however been disputed by several state governments. A view has also been expressed that the sample size used in the study was small and therefore was not truly representative.
regions and overtime. It is also argued that an environment for private traders to operate on level playing field would bring about overall social welfare gains to the economy (Jha & Srinivasan, 1999). The Expenditure Reforms Commission (2001)\(^6\) too pointed out that the induction of the private sector in procurement operations will indirectly lead to a reduction in the cost of procurement to FCI. The Report points out that some costs due to statutory and non-statutory charges paid to the agencies which adds up to more than 9 percent of the MSP of wheat can in the process be avoided.

The arguments in favour of greater role for the market does not however dilute the case for government intervention under market failure. For e.g. though the private operations will lead to market efficiency under perfect competition, the distributional considerations may require government intervention. Also under conditions of famines, limited opportunities to exploit spatial arbitrage may result in localized scarcities and may require public intervention. Although private retail trade would iron out price differentials in the course of time but during the famines, markets may take much longer than usual to do so.

Also though it is generally believed that the retail margins of the private traders are much lower than the post procurement costs incurred by the FC, Tyagi (1990) analyzing the data for the period 1970-71 to 1988-89 pointed out that while some of the cost items of FCI such as administrative costs are signs of inefficiency, yet others may not be so. For instance, the marketing costs of the FCI are higher owing to the transportation of grain over longer distances to meet its procurement obligations and the PDS requirements in distant consuming areas. Also part of their economic cost is due to the statutory and non-statutory charges paid to the state government and other agencies.

Hence though greater role for the grain markets than what has been allowed hitherto is desirable, one should not lose sight of the fact that the market

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\(^6\)Concerned over the fast deteriorating fiscal situation, the Finance Ministry set up an Expenditure Reforms Commission (ERC) in February 1999. The ERC, in its various reports suggested a detailed roadmap to cut down subsidies and reduce unproductive expenditure. To deal with the problem of burgeoning food subsidy, it recommended the entry of State Governments and the private sector in procurement, trade and export of foodgrains. Expenditure Reforms Commission (2001)
alone does not take us very far, particularly in providing access to the poor. As pointed out by Radhakrishna (1997), an over reaction to the past failures of excessive and inappropriate government intervention should not lead to the other extreme of a passive role for the government and intervention of a different type would be required.

The GOI's Economic Survey 1992-93 stated that while the PDS has to be continued to help the poor, the burden of subsidy on the Central Budget has also to be restrained and that a phased withdrawal of food subsidies by targeting the PDS would help in the control of inflation. Following widespread criticism of the universal PDS, the GOI introduced a new scheme termed the Revamped PDS in 1992 that was targeted at the selected backward areas of the country. Under the Scheme, special preference given to the population living in the most difficult areas of the country such as drought prone areas, desert areas, tribal areas, certain designated hilly areas and urban slum areas. The objectives of RPDS were to increase the coverage of the population in the target areas, to improve the access of income poor consumers to the PDS, to increase the range of commodities supplied by fair price shops and to provide selected commodities at prices lower than in the general PDS.

Following the recommendations of the Chief Ministers Conference in July 1996, the government decided to streamline the PDS in the form of Targeted PDS (TPDS). The essential features of the guidelines for TPDS are:

1. States to identify below the poverty line families who would be issued 10 Kgs. of foodgrains per month per family at prices less than the Central Issue Price (CIP).

2. Population above the poverty line now under the PDS to continue to receive normal entitlement at the full CIP.

3. Supply of foodgrains for the BPL at 10 Kg. per month per family shall be guaranteed to states by the Centre. Additional quantities required by the States would depend on the availability of stocks in the central pool.

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2 Economic Survey (1993-94) pointed out that "whereas elimination of food subsidy is neither desirable nor feasible in the short run and medium term, there is a strong reason to contain it"
4. States will be free to add to the quantum, coverage and subsidy from their own resources.

5. Subsidised foodgrains will also be issued to all beneficiaries under the EAS / Jawahar Rozgar Yojana as per the guidelines at the rate of 1 Kg. per man day for which food coupons would be issued to beneficiaries for exchanging at the FPS.

Targeted PDS differs from all earlier programmes in certain major respects. First a distinction between BPL and APL population is introduced with the two groups treated differently in terms of quantities and prices. Secondly, the principle of entitlements has been altered from a per capita norm to per family norm i.e. each poor family is entitled to a uniform quantity of food grain irrespective of their size and need. Thirdly, the monthly entitlement for the poor was fixed at the meager level of 10 Kg. Additional allocations demanded by the state from the central pool were to be provided at commercially viable prices.

TPDS is operated under the joint responsibility of the Centre and the State Governments. The Central Government takes the responsibility for procurement, storage, transportation and bulk allocation of foodgrains at subsidized prices. GOI supplies grains at CIP to the states for distribution to consumers. The responsibility of the distribution to consumers rests with the State Governments. State governments are also responsible for identification of the BPL families as per the poverty estimates of the Planning Commission. State TPDS food grain allocations are sold at subsidized prices through a network of fair price shops. The TPDS foodgrains are allocated to the states according to their shares of the population living below the official poverty line based on 1993-94 poverty estimates. While the GOI finances the TPDS price subsidy associated with the foodgrains that it allocates to each state, the state government finances the intra state TPDS distribution costs (e.g. storage, transport, losses). However, some states give additional price subsidy to the consumers. There is a three level targeting under the TPDS. The Government first targets the quantities to be allotted to the states based on the states poverty estimation. The state then targets the distribution of foodgrains to the
local district which in turn targets the fair price shops and quantities to the population. The major consequence of TPDS is that it ties the Central government subsidy to the BPL population within a state.

TPDS too presented its share of problems during the implementation of the programme. Some states failed to establish an effective mechanism for identification of BPL families and issue ration cards to the identified households. Also in the light of criticisms, GOI increased the allocation to each BPL family from 10 Kg to 20 Kg per month at 50 percent of FCI's economic cost from April 1, 2000 with no changes in the APL allocation. From December 1, 2000, the allocation of foodgrains under BPL quota has been based on the population of the states as in March 2000, the average size of the households in the state as in 1991 and the Poverty ratio as in 1993-94. From July 2001, the BPL allocation of foodgrains was increased from 20 to 25 Kg per family per month with the CIP at 48 percent of the economic cost. GOI also introduced a discounted rate of 70 percent of the economic cost for allocation of the foodgrains to the APL families. From 2001-02 onwards Antyodaya Anna Yojana (AAY) is also being implemented in the country, whereby each family categorized as poorest of the poor is classified under AAY category. At the time of the launch of the Scheme, the Antyodaya families were provided 25 Kgs. of food grains per family per month.

From April 1, 2002, the allocation of foodgrains was increased to 35 Kg per family for the APL, BPL and AAY households.

1.3 THE TARGETED PUBLIC DISTRIBUTION SYSTEM IN INDIA

There have been a number of studies by prominent researchers and academicians on the working of the TPDS and whether the system was able to provide the benefits as intended by the Government and as to whether it was able to cater to the needs of the poor and the vulnerable sections of the society. Some of the studies conducted during the period on different aspects of TPDS include that of Mooij (1999, 2000 & 2001), Srivastava (2000), Shikha et al (2001), Swaminathan & Mishra (2001), Swaminathan (2000, 2003), Datta & Ramaswami (2001), Jain S.K. (2004), Shankar (2004) etc.
While there are few studies showing the benefit of the system, most of these studies have pointed out that the system has not worked for the benefit of the poor as expected. The studies belonging to the former category, point out that although targeting is leading to high exclusion errors, the relative probability of inclusion of the poorer groups compared to the non-poor has increased post the introduction of TPDS. For instance as pointed out by Srivastava (2000), 19 percent of the households in the poorest quintile purchased wheat compared to 6.94 percent in the highest quintile. Also 51 percent of the PDS wheat and rice have been purchased by 40 percent of the households in the bottom two consumption quintiles (Srivastava, 2000).

However most of the studies pointed out the failure of the TPDS in achieving its avowed objectives. It is seen that several assumptions made by the policy makers have been proved wrong when the system was actually implemented. Firstly, the assumption of the poor in the poor states benefiting from the improved allocation can materialize only when there is a reasonably well functioning PDS in these States, which was clearly not the case as pointed out by several of the above studies. Secondly, the delivery system cannot by itself cope with targeting as is assumed since insufficient income for the PDS dealers adds to poor service and illegal sales of the commodities. Thirdly, targeting by itself will not reduce food subsidy bill as is assumed and is possible only in some instances i.e. when the food grain prices for the BPL families are substantially lower than the PDS prices before the introduction of targeting. Further the subsidy bill does not only depend on the number of beneficiaries and the price they pay but also the amount of foodgrains purchased by the GOI and the procurement price. This is because PDS subsidy is not only a consumers' subsidy but also a producers' subsidy. According to Mooij (2002), there has been a significant increase in the subsidy from 1997-98 onwards. It has also been observed that that it is not possible to organize a proper selection of the beneficiaries as assumed by the policy makers and there is a wide gap between the policy formulation and policy implementation arena in the country.
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A detailed study on the TPDS carried out from a sample of 2250 households across 120 villages in 25 districts and 4 economic regions of UP (Srivastava, 2000) has pointed out that the operative constraints on the demand as well as the supply side have significantly reduced the efficacy of the TPDS. The supply side constraints have been analysed in detail by Kreisal and Zaidi (1999). The supply constraints include the excessively small margins of PDS shopkeepers and the illegal demands of influential persons increasing the inducement to siphon the grain off to the black market; dual pricing being a hefty incentive for leakage; lack of political commitment to PDS in the states, administrative cynicism; little transparency in the system. The demand side constraints include the sharp seasonality in the purchase of cereals by rural households, smaller price wedge between the PDS and market prices when production is good and shortage of cash in the hands of the poor, lack of knowledge among the poor regarding the availability of PDS cereals, lack of sufficient cash to purchase the quota and the time taken to effect the purchases. Hence a well designed PDS would need to take care of these factors in order to maximise the impact and have a high demand among the rural poor.

Leakages from TPDS: The recent studies have also shown that there is large scale diversion of food grains from the TPDS to the open market. The dual price regime under TPDS and the large differences between the BPL issue prices and open market prices provides the dealers with greater incentive to illegally divert the grains to the open market, than in the regime of universal PDS. In some States like Arunachal Pradesh, the diversion of wheat and rice from the PDS system meant for BPL and AAY category (poorest even among the BPL) was seen as an abysmal 100 percent (TOI, 2003). The study by ORG-Marg finds that the diversion of PDS grains was extremely high in certain States. The study pointed out that 83 percent of BPL wheat and 77 percent of AAY wheat was being diverted in West Bengal. In Gujarat, 41 percent of rice meant for AAY category was diverted. Similarly, in Haryana, 80

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8 The ORG-Marg study was commissioned by the Government and conducted in 2005, covering a sample of 25,000 people spread over all the states.
percent of the total wheat distributed to the poor was diverted to either the non-deserving or the black market.

At the All India level, according to the Economic Survey, 2002-03, only 21 percent of wheat and 22 percent of rice allotted to shopkeepers was lifted by them. PEO (2005) pointed out that in the year 2003-04, out of the 14.07 million tones of foodgrains issued to the 16 states at BPL issue prices from the Central pool, only around 5.93 million tones was delivered to the poor families and of the remaining 8.14 million tones, 5.12 million tones leaked out from the supply chain because of corruption in the delivery system, while 3.02 million tones were delivered to unintended beneficiaries (APL households). In other words for every Kilogram of grains delivered to the poor, the GOI released 2.4 Kgs from the Central pool.

NIRD (2003)\(^9\) study on leakages in PDS found that not drawing and partial drawing of the quota by the households have been substantially contributing to the leakages. The large difference between open market and the TPDS price provided a great incentive for the diversion of grain to the black market. The selection of beneficiaries was not transparent and the basis for selection was too complicated for the local officials to administer.

The major conceptual and practical drawback lie in using income poverty line as an indicator of eligibility of a family for access to foodgrains through the PDS. To estimate annual family incomes in an economy where the majority of workers do not earn regular monthly salaries is a difficult task and also without continual reassessment of incomes, a one time definition of the poor or target group is likely to be unfair (Swaminathan, 2000). Further official poverty line in India refers to a near destitution level of income and a substantial proportion of the households above the poverty line are likely to be vulnerable to income poverty and to food insecurity.

\(^9\) The study focused on the functioning of PDS network in the three States viz. Madhya Pradesh, Maharashtra, Tamil Nadu and analysis various aspects of food delivery system.
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**Errors of targeting:** The measurement of targeting errors is important to understand whether and to what extent the benefit of TPDS is reaching the target group. The reference of targeting errors can be found in a number of studies viz. Swaminathan & Mishra (2001), Jain S.K. (2004), Mooij (2001), Datta and Ramaswami (2001). Cornia & Stewart (1993) demonstrated with evidence from nine developing countries that a shift from universal coverage to targeted programmes increased errors of exclusion, also called F mistakes that are on account of failure to reach the target population) while lowering the errors of inclusion (also called E mistakes or mistakes of excessive coverage). They pointed out that an evaluation of the impact of the scheme on the welfare of the population requires that the magnitude of the errors be measured and that appropriate weights be assigned to them. They argued in favour of a weighting system that places higher weights on the F mistakes i.e. errors of exclusion than on the E mistakes, the errors of inclusion.

In a study of one village of Maharashtra, Swaminathan and Mishra (2001) measured the targeting errors and found the evidence in support of the Cornia-Stewart hypothesis i.e. a shift from universal to targeted coverage led to a fall in the E mistakes. At the same time there was a significant rise in F mistakes. While errors of wrong inclusion results in fiscal/financial cost i.e. higher expenditure due to the inclusion of ineligible beneficiaries, errors of exclusion results in welfare costs – costs to the individual and the society due to inadequacy of food, malnutrition, ill health etc. While the fiscal costs are known and easy to measure, it is difficult to measure the welfare costs of undernutrition. Further, while exclusion errors would necessary exclude the poor households from the ambit of the System, not all households included under the targeted category would access the system. Swaminathan et al (2001) pointed out that in a poor country, the most important cost is the cost of exclusion. If the errors of exclusion are large and costs attached to these are high, then the universal programmes are desirable.

PEO (2005) describes other errors (apart from the exclusion error and the inclusion error resulting from the targeting viz. double Counting error i.e. the proportion excess of ration cards over the number of households, the Shadow
Ownership error i.e. the proportion of the BPL cards being held by persons/agencies other than the original owners etc. Among the states having high rates of exclusion of BPL families from the TPDS, almost all of them were seen to have high identification errors, reflecting the quality of BPL identification surveys by the respective states. Another important argument against the TPDS is that the new system has jeopardized the food Security system in food deficit states like Kerala and Tamil Nadu. The lesson learnt from Kerala is that if a near universal system of distribution works well, it could effectively reach the poor households. The introduction of the TPDS has also led to the perverse outcomes where the allotment of the foodgrains was increased to the states with weak delivery system and reduced to those states with greater administrative efficiency since the allotment was to be solely based on the poverty levels in these states.

Viability of Fair Price Shop's: The reduction of PDS foodgrains only increased the financial problems of the fair price shop dealers. The decreasing interest in APL foodgrains has a negative impact on the viability of both the retail and wholesale dealers harming the delivery system and affecting the BPL food distribution. While the incomes of the honest PDS dealers is decreasing, others try to compensate by selling part of the BPL commodities in the black market. In the qualitative analysis of the FPSs profitability, PEO (2005) pointed out that about 76 percent of the FPS owners across the sample states felt that running FPS was not profitable. The reasons attributed were low FPS commissions (93.3 percent), high cost of overheads (38.46 percent), under weighment at the supply point (25.13 percent) and poor quality of the PDS items (13.85 percent). Given the above, it was assessed that the GOI spends about Rs. 3.65 to transfer Rs. 1 to the poor.

10 Jain (2004) and Mooij (2001) for e.g. have explained the gross irregularities in the BPL census (1997, 2002).
Further in the absence of regular assured income, the mere availability of cheap foodgrains through the PDS is no guarantee that the poor can avail it. What is crucial is to provide job opportunities to the poor which can enhance their economic condition. Some of the major costs of targeting that are relevant to the Indian situation are the high costs of administration (as the target group has to be identified on the basis of specified criteria which would require administrative organisations to collect accurate information), decline in quality overtime, loss of social cohesion (exclusion of genuinely poor households could create divisions among the poor, etc, as pointed out by Swaminathan (2001). Further, any programme that targets the poor is likely to get less political support than a universal programme resulting in lower allocations for a targeted programme. It is pointed out that the inclusion of middle classes in a welfare programme may be done in purely pragmatic grounds for they play a crucial role in creating, expanding, sustaining, reforming and dismantling the welfare state. Given the experience of TPDS and its shortcomings, the High level Committee on Long Term Grain Policy11 recommended that the Central Government should return to a system of universal subsidy.

1.4 THE FOOD SECURITY AND PDS IN KERALA.

The study attempts to evaluate the working of the TPDS in the state of Kerala, which was once known for its celebrated PDS. The two main components of food security in Kerala are the PDS and the Supplementary Nutrition Programme (SNP). SNP targets the vulnerable among the poor— the pregnant women, the preschool children and the school meals programme for children in the primary schools. Both these programmes have been in existence for more than three decades now. The study however aims at the evaluation of the PDS in Kerala, the most comprehensive scheme under food distribution in the State, the coverage of which was almost universal, unlike the other States of the country. Given the food deficit nature of the state, the availability of foodgrains at subsidised / reasonable prices is important not only for the

11 Ministry of Food and Public Distribution set up a High Level Committee in 2002 on Long Term Grain Policy, chaired by Professor Abhijit Sen, to examine all major aspects of grain policy, including procurement and price support to cultivators, storage and distribution.
officially declared population below the poverty line but also the vast majority of the people. Kerala is an exceptional case in food security matters, the reason being first, its food deficit nature and second its good record in food distribution matters. The achievements of the PDS in Kerala before the introduction of targeting is given below:

Kerala has been the only state in India with near-universal coverage of the PDS. Kerala was in a class of its own both in terms of participation in the PDS and in terms of the quantity of foodgrains distributed. All households that did not have land holdings sufficient to produce food grain for their own consumption are eligible for a ration card in Kerala. In 1991, around 95 percent of all households were covered by the PDS and possessed a ration card (Kannan 1995).

Secondly, the monthly entitlement of food grain per adult was 13.8 kg in Kerala (or 460 grams per day), satisfying the minimum requirement of 370 grams of cereals per person per day recommended by the Indian Council of Medical Research (ICMR, 1990).

Thirdly, the vast network of FPSs ensured physical access. The first economic Census of India carried out in 1977 showed that 99 percent of the villages in Kerala were covered by a FPS within two kilometers, while the all India average was just 35 percent (Kabir 2005).

Fourthly, the quantity of food grain purchased from the PDS has been much higher than the other states, making a significant contribution to household nutrition in the State. In 1991, the annual offtake of food grain from the PDS averaged 69.6 kg per person in Kerala, providing about one-half of the cereal requirements of a person. Given the scale and effectiveness of the PDS, it has been noted that the PDS has contributed to an improvement in consumption and nutrition in Kerala (Ramachandran, 1996). On a general plane, the effectiveness of a PDS to reduce the poverty depends on a number of factors- the availability of essential commodities on a regular basis, the affordability to the poor in terms of the prices of these commodities vis-à-vis in the open market, the share of these items on the total purchase, spatial
coverage of the PDS as between rural and urban areas, physical access to
the shops and above all the credibility of the PDS as a food security system to
the poor. Obviously to a great extent, these conditions had been better served
in Kerala (Kannan 2000). It has also been established on studies in Kerala
that PDS has had a significant effect in reducing poverty in Kerala, the
magnitude of reduction being much more as compared to other States.
(Appendix Table 1.1).

Fifthly, evidences showed that the system was progressive and that the poor
depended relatively more on the PDS than the rich (UN/ CDS, 1975; George
1979; Koshy et. al. 1989, Kannan, 1995) at the time of the universal PDS.
George (1979) pointed out that about half of the total incomes of the low
income families was accounted for by ration income and the removal of
rationing would have a very serious impact on them and further that the
subsidised PDS was better than the direct income transfer for raising
consumption levels of low income consumers from the point of view of
feasibility and cost effectiveness. Analyzing the results of a household survey
on PDS in Kerala conducted in 1987, Ramachandran (1995) showed that the
dependence on the ration shops was higher among the relatively poor
households. Beneficiaries who earned less than Rs. 100 a month purchased
71 percent of their rice entitlements while the beneficiaries with the monthly
incomes of over Rs. 3000 purchased only 6 percent of their quota.

Sixthly, unlike other states, PDS in Kerala was rural based (George 1979,
Suryanarayana 1996, Kannan 2000). This is reflected from the higher share of
the rural areas in the total purchase of rice, wheat, sugar and kerosene. Infact
Kerala was the only state where the rural cereal consumption increased and
that too by 8 percent between 1961-62 and 1990-91 (Suryanarayana, 2000).
Hence, with a well established PDS, the rural population in Kerala were seen
to be insulated from the vagaries of the market.

Finally, the functioning of ration shops and the delivery system was better
than in other parts of the country and this is reflected in consumer surveys
(Swaminathan 2003).
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The historical origin of the PDS in Kerala and the specific factors that contributed to its success are outlined below:

1.4.1 PROMINENT ROLES IN THE EVOLUTION OF PDS IN KERALA

Role of the Trade Unions & Peasants / Agricultural Workers Unions: The evolution of Trade Union Movement in Kerala, a new expression of solidarity amongst the working class against the capitalist wage labour, marked a unique and significant phase in Kerala's development experience. These movements had an important role in providing the necessary impetus to the introduction of rationing in the food deficit state of Kerala and the antecedents of the rationing system in the State lie in the concerted efforts of the struggles waged by the workers unions.

Kerala’s first trade union was the Travancore Labour Association (TLA) formed among the Coir Workers in Alappuzha in 1922. There was a phenomenal expansion in the export demand for coir fabrics during the interwar period. Alappuzha with its efficient network of canals, necessary financial and trade infrastructures, port facilities, adequate supply of weaving yarn and positive incentives provided by the Travancore Government like land leases to firms willing to set up their concern at Alappuzha – soon emerged as the Centre of Mat and Matting industry on the Malabar Coast. Labor scarcity was the problem faced by the industry from its inception and higher wages than those prevalent in the traditional occupation had to be offered to attract sufficient hands in the industry. The Indian Manufacturers saw in the TLA, the first Union to be formed in the industry a possible instrument to decrease the labour turnover. TLA was formed in 31st March 1922 in a Meeting convened by P.K.Jawa, the Yard Superintendent in a leading Gujarati firm, along with a number of other manufacturers. Thus the first Trade Union (TU) formed in the State was thus essentially a Company Union, and did not have much role in raising the demands related to food matters.

12 The discussion of the origin of trade unionism in Kerala and the Coir Workers Union in particular is heavily indebted to Dr. Thomas Isaacs doctoral thesis “Class struggle and industrial structure: a study of coir weaving industry in Kerala, 1859-1980.”
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The Coir Workers were predominantly of the Ezhava Caste with a high level of literacy (66 percent). The labour conditions of the rural manufacturers of Ezhava Capitalists were the worst, and the excess labour supply situation in the rural areas tended to depress the wage rates. Given the close connection between the workers in the rural industry and the agricultural sector, the wages in the country manufacturers tended to conform more to the low wages prevalent in the other traditional occupations than the urban wage rate prevalent in the industry. The TU Movement in Alappuzha realized that existence of an unorganized sector in the rural countryside, where the wages were low was a major threat to their bargaining power and began to actively organize the rural workers by establishing the rural branches of TU Organisation at Shertallai and Muham.

The increasing dominance to demands for adequate food at reasonable prices had its origins in the activation of TUs in the countryside, where the wages were comparatively low and the living conditions poor. The rural wages further declined during the inter-war period and the increasing DA was inadequate to neutralize the escalation of the cost of living, a fact acknowledged by the Labour Investigation Committee of GOI that conducted a detailed enquiry into the economic conditions of the workers during the period. The situation worsened due to the absolute scarcity of food materials and essential articles and the consequent escalation of the prices. The rice imports to Travancore were disrupted with the spread of war to Burma. The situation was less harsh in the town since the Workers agitation forced the authorities to open grain shops for them. The meal of an average household comprised half a pound of tapioca boiled in water or half a pound of worst quality of broken rice locally called “Kanji”. It was during this period that tapioca replaced rice as its cheap substitute. The worsening condition of the workers was essentially due to the price escalation which even the rising nominal earning of the rural households was unable to neutralize.

The TUs began their agitation for relief works in the countryside and the benefits from the famine relief campaigns conducted by them were not confined to the workers alone but shared with the other sections of the
people. The general strike called by the TUs in August 1946 resulted in the allocation of ration for 70000 meals at subsidized rates to 14 hotels in Shertallai and Alappuzha. It was the Coir Workers Union that supervised the distribution of coupons for subsidized meals through their Offices and special Centres opened in main centres of the town. Close on the heels of the TLA was the formation of other Unions. In Malabar, the Railway Workers struck in 1928. During the 1930s, Unions sprang up amongst the tile and textile workers, the toddy tappers, coconut tree climbers, harbour workers, beedi rollers, cashewnut processors, head load workers and others (Kannan 1988). During the early 1940s, the Workers formed a labour federation called the All Travancore Trade Union Congress (ATTUC).

In 1938, out of the growing strength of the TLA, the Travancore Agricultural Labour Union (TALU) was organized among the farm workers in Alappuzha (Alexander, 1980). During the Indian Independence Movement, at a high point of local struggles in 1946, the Kerala Peasants Front in Malabar organized a campaign against the hoarding and black marketing of food. This also included forcible prevention of movement of grain from the area so that it had to be kept in the local ration shops. In 1942-43, the All Malabar Karshaka Sangam, set up a Food Committee which organized unofficial ration shops. This helped the creation of official rationing through the Consumer Cooperatives in 1944. In 1948, the Malabar Peasant Activists inspired in part by the Telangana Uprising in AP region forced the landlords to sell their surplus grain at a fair price (Oommen, 1985). In 1966, 54 Agricultural Labour Unions were registered with the Kerala Labour Department and by 1976, this had risen to 205 (Jose, 1984). By 1985, the CPM Oriented Kerala State Karshaka Thozhilali Union claimed a membership of 4,85,000. Krishnan (1991) pointed out that the agricultural laborers of Kerala were probably the best organised in India.

Although the struggles of these unions involved other issues such as land reform, the idea of a non-exploitative price for food was a mass popular demand to which the successive Kerala Governments had to respond. The TUs continuously campaigned for food and struggled against black marketing
and complete rationing. In fact the masses began to look upon the coir workers as their political leaders and fighting allies. The struggles of the coir workers were not merely for their economic gains as they campaigned for the demands of the farmers and the rural poor. The TUs and the peasant organisations played an important role in highlighting the need for a universal rationing system in the State and their sustained campaigns kept the successive state governments vigilant with regard to food matters.

Role of the State Government: The poor never ate well, "Emaciated, disease stricken, worn-out and depressing specimens of humanity' despaired the Survey of an Ernakulam slum in 1929" (Jeffrey, 1992). Though rationing prevented widespread deaths, the food shortages of the Second World War worsened the nutritional level of most people. The vast majority of population, according to Superintendent of Travancore Public Health Laboratory in 1945 lived on diets which were quantitatively insufficient and qualitatively unsatisfactory. "The masses have got attuned to the chronic undernourishment that there is a grave risk of physical deterioration which successful generations are already manifesting, going on unchecked"13.

As explained above, Kerala had the strength of the unionized work force which pressed the demand for a reasonable price for foodgrains and once the war ended, democratically elected governments struggled to provide people with food especially rice at affordable prices. Two factors have resulted in giving priority for food security by the Government of Kerala: First the generalized nature of food shortage, especially that of foodgrains and the consequent political implications. Second, the peoples priority in social development including social security, so that successive governments are compelled to accord a high priority for food security as part of the wider system of social security for the people.

Even as early as in 1948, the newly elected Government of Travancore expected an annual loss of Rs. 23 million as a result of subsidizing the price of rice. Elected politicians recoiled from the prospect of raising prices or

13 Food, famine and Nutritional diseases in Trivandrum (1943-44): Coimbatore Servindia Keralas Relief Centre, 1945, pp 105
lowering ration\textsuperscript{14}. When the Central Government pressed the State Government to raise the price of rice in 1951, the Congress Members of Legislature unanimously resolved that the Ministry should resign if the GOI presses to raise the price (Mathrubhumi, 1948). Though rationing was abolished in 1952 in Madras, the Government of Travancore retained it through the FPS and so also in Malabar. The rice was sold at a lower price than the open market levels through these fair price shops.

The Coalition Government of 1960 put the total number of FPSs operating in the State at 5900 and promised to open more. However the foodgrains viz. rice and wheat for the FPS came from outside Kerala which required constant co-operation between the Centre and the State Government. Disappointing harvests in 1957 led the Communists to make hasty purchases of rice from Andhra Pradesh (without calling for tenders). This was followed by allegations of payoffs that prompted a judicial enquiry which too did not tow with the official line that the purchase was solely dictated by the pressing need for food.

While Keralites had changed their eating habits during Second World War, in a free India, the people expected the Governments to provide food at affordable prices. Thus under the successive State Governments, food security was placed at the top of the political agenda, given the latent fear of food security in the State getting threatened one day. While rationing existed in Kerala prior to 1960s, its coverage was expanded statewide in 1964. Several States had imposed arbitrary restrictions on the food grain movement and the private traders had used the opportunity to make their piles. In 1964, while there was a food shortage in the whole of India, the problem was more acute in the rice deficient state of Kerala. The decision to extend the rationing system in Kerala was taken at the Centre level at a Conference of the Chief Ministers' of all the states (Mooij, 1999), whereby it was agreed that the quantity of rice required for issue under the Scheme would be made available to the State from the respective central storage depots and that it would not

\textsuperscript{14} Travancore Information and Listener (1948), Volt VIII, No. 9, , Pp 8
be generally necessary for the State Government to procure any quota direct
from the other states. In other words, the Centre would be taking the
responsibility of the food supplies in Kerala.

The State elections were held in March 1965 which however did not lead to
the formation of a Government but Kerala was brought under the President's
rule. Food rationing was temporarily stopped, following which strikes were
held throughout the State against the Central Governments policy of
withholding PDS food from Kerala. For the opposition parties, the experience
of organizing joint struggles against the food policy of the Indian Government
served as a prelude to the formation of an anti-Congress Government to fight
the 1967 elections on a common programme which concentrated on food and
land reforms. The first act of the anti-congress coalition ministry formed in
1967 consisted of approaching the centre for food allotment to sustain the
normal rationing system. The twin strategy of agitation cum administration
proved to be highly effective in the State and meant that rationing remained
high on the political agenda in the subsequent time periods.

The State Government took steps to universalize the System and established
a wide network of FPSs at both the urban and rural areas to ensure physical
accessibility of foodgrains across the State. As Dutt (1999) pointed out that it
was only the social commitment of the State Government that was
responsible for the higher per capita offtake of the foodgrains from the FPS in
the State.

Kerala also developed a second tier of public distribution outlets, a chain of
MAVELI provision stores and MAVELI Medical Stores which worked outside
the Central Government - FCI ration shop system whereby rice and wheat
products, sugar, pulses, vegetables and a range of consumer goods are
procured independently from the market for distribution at reasonable prices.

**Role of the public:** The process by which the Keralites had acquired the
entitlement to food - a ration card had been intensely political. Governments
ever threatened with the loss of office have had to demonstrate their
commitment to the good of the people. The struggle for food in the course of
years also resulted in the general perception amongst the public that the citizens have a right and government’s a duty to secure a decent living in which food at fair prices takes a prominent place. This awareness was the most developed in Kerala where the struggles and agitations around this issue had been organized for more than 30 years.

The effective rationing system introduced during the Second World War was both pushed and pulled by popular demand. It was pushed as the Governments feared disorder if they failed to distribute food fairly. Forceful agitations against the colonial governments for food by the workers and peasant organizations were a constant reminder. The pull came from various organizations particularly the Communists in setting up Food Committees and involving eager citizens in attempts to secure their most fundamental need, ‘food’. As the war ended, the practice of looking to government to supply basic needs was established and democratic governments excited greater expectation than their imperial predecessors.

Perhaps a unique feature about Kerala had been the proverbial awareness and involvement of the general public in the policy implementation. The nearly cent percent coverage in Kerala with relatively transparent procedures had probably a lot to do with the high literacy rate and the well developed sense of rights and entitlement, which had made people more assertive and apt to resist unlawful procedures restricting access. The well-developed awareness about the food matters in Kerala also helped matters in the sense that many Keralites realized how dependent the state was on outside markets. Thus the consumer’s participation in food policy implementation is that unique feature of Kerala which helped it considerably in the smooth and efficient functioning of the System.

**Vibrant local governments:** Mooij (1999) pointed out that in Kerala, the complaints by the cardholders were usually taken seriously by the officials owing to the threat of the local organizations pursuing the matter and approaching the higher authorities.
The law relating it PDS (ECA and KRO 1966) lays down the procedures of PDS, which prescribes the distribution of ration cards, appointment of Authorized Wholesale Dealers (AWDs), Authorized Retail Dealers (ARDs). The law in the State had functioned as a resource in the hands of consumer's cardholders and the active local governments to improve food rationing as well as in the hands of the political parties to increase their local popularity.

1.4.2 Introduction of Targeted Public Distribution System in Kerala

The celebrated PDS in the State was greatly affected by the decision of the Central Government to restrict the PDS subsidy to the BPL population since 1997 and further the raising of issue prices of foodgrains in the subsequent years.

Following the above policy changes, the offtake from the fair price shops which was the highest amongst all the States in India prior to targeting have decreased manifold. In fact, the shift in the pricing of food-grains announced by the Central Government through its budget proposals for 2000-01 constituted a major departure with regard to the food security system of the country as a whole, as it sought to restrict the coverage of the subsidized PDS to the officially declared poor population. Kannan (2000) pointed out that one of the hard-hit states of this policy shift is the food grain deficit state of Kerala, as its PDS assiduously built over a long period of time and hailed as a model one, have started facing survival problems (Kannan, 2000). Kerala because of its food deficit nature did not restrict the coverage of TPDS to 25 percent of the population (recognized as the proportion of BPL by the GOI) but extended the coverage to 42 percent as identified by the State Government through the local bodies. Given the financial difficulties, Kerala Government discontinued with the provision of additional subsidies since 2001.

The regional perspective on food security from the point of view of a food deficit state like Kerala is that the region may remain vulnerable even when national self reliance is achieved in terms of availability (Kannan, 1995). In Kerala's case, the increasing specialization of its agriculture towards nonfood grain crops has meant a sharp decline in the regional availability of
foodgrains. While the better of sections in the state are able to take care of their food grain requirements through the open market, a large section of the population, both absolutely poor and nearly poor have come to depend on the PDS for a major part of their food grain requirements. Hence a significant point to note is that the State has to depend on the Centre for the allocation of foodgrains for the PDS and therefore the system is also vulnerable to changes in national policy. Given the increasing procurement prices and its effect on the issue prices of ration grains, Balakrishnan (1999) pointed out that the price at which the people of deficit states are to receive grain is essentially determined by the influence of the surplus farmers elsewhere. The decline of the grain producing capacity of the State has further made it extremely vulnerable to the fluctuations in the supplies of food grains that are essentially imported from outside. Kerala’s food situation has been affected by the reduced allotment and raise in issue prices (particularly for the APL consumers) by GOI. The offtakes from the system has reduced manifold, though the absolute demand for the cereals is seldom likely to decline (Kabir, 2005). The dependence on the outside supplies for cereals has made the food security in the State vulnerable to fluctuations in production elsewhere and therefore any fall in the cereal supplies has its effect on inflationary pressures on the grain in Kerala. Available evidences show that the dependence of the APL population has become marginal and their withdrawal has raised the degree of market dependence in the State. Given the above, it is widely feared that left to the manipulations of the private traders, the food security in Kerala would be exposed to greater vulnerability and uncertainty.

The shift in the government policies has not only affected the consumers and the state government but also the ration dealers. With smaller number of ration cards to serve and the upper bounds on margins that can be charged to BPL consumers, the net profits of FPS dealers are lower under the TPDS (the economies in costs are also less likely such as in the case of transport), making many shops unviable. Apprehensions have been raised by academicians and researchers about the impending breakdown of the PDS; post the policy changes introduced by the GOI i.e. with the introduction of the Targeted PDS.
Given the above, this study is conducted on the current scenario of the food security system in the state, the objective being the thorough analysis of the working of the PDS in the state in the Pre-TPDS and the Post-TPDS phases in terms of its effect on the beneficiaries. A detailed study in this regard would in all likelihood help the policy makers to take effective steps so that an efficient distribution system initiated by the State Government and made successful by the vigilant, educated and rights conscious public does not end in shambles.

1.5 Objectives of the study

The main objectives of the study are the following:

1. To study the administrative system of the PDS in Kerala in the light of the changes in the policy since 1997.

2. To examine the effectiveness of the PDS/TPDS in increasing the food security of the households in Kerala particularly the poor.

3. To examine the viability of the PDS in the present scenario in Kerala.

4. To investigate possible alternatives or options for reform in the PDS, keeping in view the food deficit nature of the state.

1.6 Research questions

1. What are the trends in the food production and food consumption in Kerala over the past two decades?

2. What is the administrative structure of the PDS in Kerala and changes (if any) in the same with the introduction of TPDS in the State?

3. How has the PDS/TPDS performed in meeting the food security of the people in the state of Kerala in terms of:
   (i) Allotment and offtake of food-grains from the PDS
   (ii) Per-capita availability of PDS foodgrains in each district in Kerala.
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(iii) Share of the purchases made from the PDS in the total purchase of cereals by the consumers

(iv) Income transfer to the beneficiaries

4. How has the role of the Centre/ State/ Private Sector changed in these years in meeting the food security requirements of the population?

5. What role can market instruments play in the meeting the food security objective?

6. What policy instruments has the Kerala Government put in place to meet the food security of the people?

7. What are the implications of these changes for the viability of the PDS?

1.7 Research Methodology

The research strategy made use of to arrive at the answers to the research questions posed is outlined below. Further, the following theoretical considerations guide the research strategy made use of in the thesis.

Theoretical framework

An intervention by the State in the normal functioning of the market forces according to Sen (1982) is well established to insulate the vulnerable sections of the population from the unduly high prices of the essential items. The famous Kaldor Hicks criterion of welfare maximization says that the public policies would be desirable if as a result, it is possible to make some people better-off without making anybody worse-off. Hicks, in a modified version, stated that a policy would be desirable if it would be impossible in the pre-policy situation to make all the individuals well-off as a result of the policy.

The practical implication of the above would be the analysis of the benefits that accrue from the system with regard to the income gain and other benefits as against the cost of the functioning of the system. The individuals who would lose from the system would probably be the farmers from whom the
foodgrains are procured by the government at lesser than the market price. Since central procurement is longer carried out in the State, this does not apply in Kerala. So rationing in Kerala has no losers in the above sense. However the increases in the issue prices of foodgrains from the PDS owing to continuous increases in the support prices could mean producers in some states are gaining at the cost of consumers especially in the food deficit states. In Kerala’s context the losers of the System would be the economically deprived sections who have been wrongly not included in the beneficiary category and those consuming less owing to a rise in issue price.

The Marshallian concept of consumer surplus is also an important instrument for studying the impact of the state intervention through the PDS. The difference between the price that the consumers would be willing to pay or had to pay at the market and the actual price paid by him for the items purchased from the PDS would be the measure of the consumer surplus. There is however a difference between ‘willing to pay’ and ‘had to pay’. For the very poor households, the two cannot be equated since left to themselves, they may actually consume less than their requirements owing to economic constraints. Therefore compared to others, the consumer surplus would be less for them than the others. However it would be difficult to measure this difference quantitatively. Hence we measure the income gain/ consumer surplus on the assumption that a consumer would continue to purchase the same quantity from the market even in the absence of PDS.

In terms of the indifference curve analysis, the lower price of the ration supplies would cause a shift in the budget line towards the right, enabling the consumers to reach a higher indifference curve. This would mean a higher degree of satisfaction implied by the higher IC that he would be able to attain. The increase in the real income as a result of the differential rice enables the consumer to have better quality items and more quantities of the same item if desired. For inferior commodities, there would be negative income effect, i.e. the consumers would purchase less of the commodity and go for a better quality commodity. The strong negative income effect would even outweigh the positive substitution effect resulting in less of the commodity being
bought finally by the consumer. However for the luxury commodities, both income and substitution effects would be positive and would move in the same direction resulting in higher purchases of the commodity. For necessaries like foodgrains, the reaction would depend on the income level of the people. The high income groups are not likely to opt to purchase the ration commodities. The middle income classes are likely to purchase better quality rice from the open market with the real income gain from the purchase of ration items. For the low income groups, any increase in real income brought about by the substantial difference between the open market and the ration price is likely to increase their consumption of ration rice/ market rice. Therefore the income gain of the BPL households is considered as an explanatory variable in the function for factors determining the open market prices.

The impact of the PDS on the prices can be assessed with the help of the theoretical demand supply framework. The PDS is expected to influence the market prices and reduce the fluctuations therein by regulating the supply in relation to the demand. During the peak season prices are not allowed to fall to un-remunerative levels by undertaking the purchase operations and during the lean season, the foodgrains are distributed on a larger scale to reduce the pressure on the prices in the open market (Figures 1.1 and 1.2). Kerala being a chronically food deficit state, central procurement of rice is no longer carried out in the State. Studies have however pointed out the dampening effect of PDS on the open market prices. Considering the reduced offtake from the PDS, it remains to be seen if the present situation continues to remain the same.

The study intends to make use of both primary and secondary data to analyse the working of the PDS in Kerala and to arrive at answers to the above research questions posed in the study. The research strategy made use of to meet the research objectives in general and to each of the research question in particular is given below:
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1.7.1 Analysis through the secondary data

Case for Public Distribution System in Kerala: The case for PDS in Kerala is advocated on grounds of the chronic food deficit status of the State, the low per capita cereal consumption and calorie consumption and to sustain the health/social achievements of the State. The surplus/deficit status of the 15 major States is analysed and compared to show the quantum of rice deficit in Kerala. To study the chronic food deficit status of the State, the trend in production of rice and the main cereal substitute, tapioca is analysed. The annual growth rates of area, production and yield of rice and tapioca is calculated by fitting an exponential function. Annual percentage change and decadal changes in area, production and yield of rice from the 1960s onwards is also calculated to show the year-wise changes. The proportion of consumption norm and the actual rice requirement met by the per capita production of rice and rice equivalent tapioca is estimated for the different periods covered by the NSS survey. Further, the district-wise rice deficit is estimated from the NSS surveys to show the surplus/deficit producing districts of the State and changes in the magnitude of district-wise deficit in the last decade.

The average consumption of cereals as a whole and rice, wheat, and cereal substitutes in particular is analysed for the bottom 30 percent, middle 40 percent and the top thirty percent population from the seven rounds of quinquennial consumer expenditure surveys of the NSS from 1972-73 to 2004-05. Besides, the calorie consumption of the various segments of the population is analysed for the above mentioned time periods from the same source. A review is also made of the latest National Family Health Survey (2005-06) to reveal Kerala’s picture with regard to the nutrition outcome based indicators.

To analyse the performance of PDS in the State, the utilization of PDS across the 15 major States of the country in the various NSS surveys is studied. Besides, the quantum of distribution of foodgrains in Kerala from the 1960s onwards along with the per capita offtake, population per fair price shops and
proportion of public distribution in Kerala with respect to the total foodgrains distributed in the country is studied. The per capita availability of the PDS foodgrains is analysed in terms of the total per capita allotment of rice and wheat.

**Administrative structure of PDS in Kerala:** To study the administrative structure of the TPDS in Kerala, the literature available on the topic viz. Policy documents, Circulars, Reports, Acts and Orders were studied. This includes the Kerala Rationing Order, 1966 along with its important amendments and Public Control Order 2001: The Public Control Order is explained to understand the broad framework on the various operational issues related to the TPDS like the identification of the families and the agencies involved, the allocation of the ration cards, the scale and issue prices, the process of distribution of foodgrains, licensing, monitoring and control under the TPDS. In the light of the above provisions, the administrative system of the TPDS in India and that of Kerala is outlined and explained. Besides this, the administrative structure of the Civil Supplies Department which is the enforcement agency of the TPDS in Kerala is outlined and the functional divisions of the department is explained in detail.

**Role of the PDS/ TPDS in meeting the food security:** An inter-district analysis is undertaken to study the functioning of PDS in Kerala, prior to and post the introduction of TPDS. The actual offtake of the foodgrains viz. rice and wheat as a percentage of the allotment is analysed from the early 1990s to 2005-06. The offtakes of the different cardholders, Above Poverty Line (APL), Below Poverty Line (BPL) and Antyodaya Anna Yojana (AAY) is analysed separately for the time periods for which data is available. Seasonal variation in offtake is analysed to understand see the seasonal variation in the offtake of foodgrains from the PDS and whether the trend has changed recently. The rice offtake during the two periods, Pre-TPDS and Post-TPDS have been decomposed using ratio to moving average method to arrive at the Seasonal Index.
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To see the effects of targeting and functioning of PDS in Kerala, a comparison is made between the district-wise share of rice in total offtake and per capita offtake of rice in the Pre-TPDS and Post-TPDS phases. Further, to see the benefits of TPDS across districts, the district-wise income gain to the BPL households in the Post-TPDS phases is analysed. The income gain to the household is calculated as given below:

\[ Y_{BPL} = Q (P_M - P_{PDS}) \]

Whereby,
- \( Y_{BPL} \) = Income gain to the BPL population
- \( P_M \) = Open market price
- \( P_{PDS} \) = PDS Price
- \( Q \) = Quantity purchased by the BPL population

The income gain accrued by a household is arrived at by dividing this amount by the total number of BPL cardholders in each district. The income transfer would be calculated from the actual offtake figures for the state as a whole. Further to find out, if the income transfer is high in the districts where the incidence of poverty is more, the income gain is correlated with the district-wise percentage of population below poverty line.

Besides, to compare the Pre-TPDS and the Post-TPDS phases, a correlation matrix is constructed for two time periods, Pre-TPDS and Post-TPDS to analyse the degree of co-variation between the indicators of offtake and that of income and poverty. The indicators of offtake and income and poverty considered are the district-wise per capita offtake of rice, district-wise per capita offtake of wheat, district-wise share of PDS in total consumption, district-wise share of the offtake in total offtake, district-wise share of BPL offtake in total offtake, district wise share of APL offtake in total offtake, district-wise per capita production, district-wise per capita income and district-wise population BPL.

Finally a multiple regression exercise is carried out to analyse the factors influencing the ration consumption in general and if the offtake is targeted to the regions with high poverty in particular.
Role of the Centre, State, and Private Sector in meeting food (rice) requirements of the people in Kerala: Firstly the State-wise source of rice consumption is calculated from the various NSS surveys, which provides data on rice/ cereal consumption and this is multiplied by the population of the State to arrive at the total rice consumption in the State. Further the survey also provides the per capita food grain consumption from the PDS which is then multiplied by the population of the respective years to arrive at contribution of PDS.

The district-wise source of rice consumption in Kerala and the changing role of PDS as a source is also analysed from the early 1990s till 2004-05. The following assumptions are made to arrive at the estimation of the various sources of household consumption in each district:

1. The total rice consumed in the State is arrived at by multiplying the per capita rice consumed in the State as given in the various rounds of the NSS Expenditure Surveys with the population of the respective years. The figures of the intervening years are interpolated from the above.

2. The offtake from the PDS is taken as the contribution of PDS as a source of rice consumption.

3. The contribution of internal production of rice available for consumption is taken as total production minus ten percent allowed for the seed requirements.

4. Supply of grains through the private trade channels

   = Total consumption – PDS – Internal Production.

To analyse the effect of increasing market dependence on the retail price (if any), the per capita market dependence (deficit or consumption above the proportion of requirements met through the PDS and internal production) is correlated with the open market retail price in Kerala.

Role of the market in meeting food security: To meet the food security objective, it is important that the prices of foodgrains prevailing at the open market are reasonable and affordable to the consumers. Rice, being the key staple item there should also be no high fluctuations in its prices.
To study the movement of prices, the changes in the retail prices and wholesale prices are studied along with the changes in the relative prices for the APL and BPL consumers in the various districts over the years. Further, the gap between the wholesale and retail prices of prominent varieties of the rice in Kerala is studied in two time periods; 1993 and 2004. The degree of inter-district variation/ market integration in the retail prices is analysed through Coefficient of variation in the district-wise retail prices of rice over the years.

To analyse the effect of increasing deficit on the open market retail price of rice, a regression exercise is carried out taking district-wise open market retail price as the dependent variable and the net availability of foodgrains in a district (off take from the PDS plus internal production) as the explanatory variable. This is with a view to analyse the impact (if any) on the open market retail price, by the change in the net availability of food grains in the various districts.

Further, to analyse the factors affecting the open market retail prices in Kerala, a multiple regression exercise is carried out and the prices are regressed over the explanatory variables; per capita net availability of rice, offtake of wheat from the ration shops, lagged price variable and income gain to consumers through subsidized grains from the PDS. The explanation for the consideration of the explanatory variables is given in detail in Chapter 5.

The relative price advantage/ disadvantage of the market vis-à-vis the FCI is evaluated in terms of comparison of wholesale prices of prominent varieties of rice available in the State with the Economic Cost incurred by FCI. Besides, a comparison of the income transfer by the Central Government through the budgetary subsidies and the income gain to the consumers through the subsidised grain delivery from the PDS is made to see if there is a net income gain/ loss to both the APL and the BPL consumers. The budgetary income transfer and income gain from the consumers is calculated in the following manner:
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\[ \text{BYT} = (\text{EC} - \text{P}) \text{OFF} \] \hspace{1cm} (1)
\[ \text{YG} = (\text{Pm} - \text{P}) \text{OFF} \] \hspace{1cm} (2)

Where,

- \text{BYT} = \text{Budgetary Income Transfer}
- \text{YG} = \text{Income Gain}
- \text{EC} = \text{Economic Cost}
- \text{P} = \text{PDS price}
- \text{OFF} = \text{Off take of rice by the BPL households}
- \text{Pm} = \text{Market price of rice}

If, \((1) < (2)\), PDS is considered an efficient mode of income transfer

Alternatively, if \((2) < (1)\), the market is more efficient in transferring the intended benefits to the poor households.

1.7.2 Analysis through the primary data

To meet the primary research objective of assessing the effectiveness of TPDS in meeting the food requirements of the population, a primary household survey is conducted in two districts of the State. The districts are selected on the basis of the per capita offtake viz. one with a high offtake i.e. Kottayam and the other with a low offtake i.e. Thiruvananthapuram. From each of the selected districts, two rural areas (Grama Panchayats) and two urban areas (Municipalities) are selected. From each of the selected rural/urban areas, 5 ration shops are selected, each from different wards (based on their location). The list of ration cardholders belonging to APL and BPL categories are taken from the retail dealers of the selected ration shops and 6 BPL and 4 APL households are selected from each shop through the circular systematic sampling procedure. An aggregate of 400 households are thus selected belonging to APL and BPL categories (240 BPL and 160 APL households).
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The required information relating to the functioning of the TPDS in the state was collected through door-to-door interview method with the help of a structured questionnaire. The details that were collected from the households include information pertaining to the ration availability of foodgrains, use of the ration card by the households, entitlement and the actual purchase of foodgrains (rice and wheat), information pertaining to the major items of household consumption and their sources, the share of the purchases made from the PDS in the total purchase of cereals, reasons behind the under-utilization of the TPDS (if any), perception of the public relating to the quality and availability of the cereals distributed from the ration shops in the state.

The viability of ration shops is analysed from the sample of 40 ration shops, 5 ration shops selected from each of the selected areas. The interviews of the TPDS dealers was conducted from the selected FPSs and data on the expenditure incurred by them and income earned by them from different sources was analysed to examine the issue of viability of the ration shops in the State.

The utilization of TPDS by the sample households and the effectiveness of TPDS as a measure of food security is analysed in terms of actual purchase as a proportion of the entitlement of the sample BPL and APL households, the sources of consumption of rice – PDS, internal production and market – of the sample BPL and APL households, the proportion of the APL and BPL households meeting all their requirements from the PDS, from the market, and partially though the PDS and the market, the expected income gain and actual income gain to the households.

The targeting errors, Type I and Type II errors are calculated in the following manner.

\[
\text{Inclusion errors} = \frac{\text{Number of non-poor households with entitlements}}{\text{Total number of households surveyed in the area}}
\]

\[
\text{Exclusion errors} = \frac{\text{Number of poor households without entitlement}}{\text{Total number of households surveyed in the area}}
\]
Further, the utilization of PDS by the wrongly targeted households is analysed in terms of the proportion of such households accessing the ration shops and the average PDS consumption of these households. To see if the benefits of ration rice is higher amongst the socially and economically disadvantaged in Kerala, the utilization of the TPDS across socio-economic groups is analysed by calculating the per household rice and wheat consumption and the proportion of rice requirements met through the PDS of different landholding groups and caste groups in each of the selected area.

A multiple regression exercise is carried out to analyse the factors influencing the consumption of ration rice by the BPL households. The rice consumption from the PDS as a proportion of total consumption is regressed over the landownership, proportion of expenditure on food as a percent of total monthly expenditure, education (dummy variable), caste (dummy variable) and family size.

The financial viability of the FPS is analysed by comparing the returns or the monthly revenue over the operational cost. The sources of monthly revenue are studied in terms of the income earned from sale of different commodities and sales-entitlement ratio of foodgrains under different categories. The average monthly cost incurred under important heads-employees salary, rent, transport, electricity, stationary etc and the proportion of each to the total cost is also studied. The financial condition of the sample FPSs' is analysed in terms of average gain per FPS, proportion of FPS reporting gains from the working capital, proportion of FPS reporting losses from the working capital, average gain amongst the FPS reporting gains, average loss amongst the FPS reporting losses, highest gain/loss reported by the sample FPSs etc.

1.8 Database

The annual allotment and offtake figures were taken from the State Civil Supplies Department, Kerala. The production, area and yield statistics (of rice and tapioca) and the data pertaining to retail and whole sale prices of rice data were taken from the State Economic Review, Kerala (various issues) and the Directorate of Economics and Statistics, Government of Kerala. The NSS
survey data of various rounds are taken to study the cereal consumption and utilization of PDS across various expenditure groups. The additional state subsidy figures were accessed from the FCI, Regional Office at Thiruvananthapuram. Other data sources made use of in this study are the National Family Health Survey (1992-93, 1998-99 and 2005-06), the Annual Report of Ministry of Food and Civil Supplies, Department of Civil Supplies, GOI (Various issues), besides the primary survey data collected by the researcher.

1.9 Scheme of the study

Chapter one gives the, literature review, the objectives of the research, the database, the research strategy/ methodology, besides the Scheme of the study. The comprehensive literature review covers the important studies on concept of food security, the emergence of the PDS in the country and the changes introduced over the years. Further the historical origin of the PDS in Kerala and the specific factors that resulted in the successful functioning of PDS in Kerala is discussed along with the present problems posed to the food security system in the state.

Chapter two examines the administrative arrangements put in place by the State Government for implementing the PDS and the changes introduced in it (if any) over the years. The acts and rules governing the PDS in Kerala is studied in terms of the important provisions of the Kerala Rationing Order, 1966 and the PDS Control Order 2001, along with the necessary amendments incorporated in these from time to time. The chapter discusses the organization structure of TPDS in Kerala and makes a detailed study of the functional divisions of the Civil Supplies Department, the Nodal Organisation for the implementation of PDS in the State. The chapter also makes an in-depth study of the major policy changes in the functioning of the PDS, post introduction of the TPDS with regard to the procedure adopted to identify the targeted beneficiaries, the price fixation & entitlements under the PDS besides the quantum of additional subsidy provided by the State Government post introduction of the TPDS.
Chapter three assesses the need for strengthening the PDS in Kerala. The case for PDS is built in terms of the acute food deficit status of the State and its adverse effect on the food availability and prices in the State, the extremely low and inequitable level of cereal and calorie consumption, and for sustaining the social achievements of the State. The chapter also analyses the functioning of PDS in Kerala in terms of its characteristic features with regard to universal coverage, rural biased-ness, physical accessibility, high utilization of the system and the progressive distribution of its benefits. A comparative study of the Pre-TPDS and the Post-TPDS phases in terms of the above characteristics is attempted with the help of available secondary data.

Chapter four carries out an in-depth inter district analysis of the PDS in Kerala addressing the issues of distribution of foodgrains from the PDS: Pre-TPDS and Post-TPDS, the utilization of PDS across districts, role of PDS as a source of rice consumption and the underlying targeting issues. The performance of the PDS in the state over the years is analysed in terms of the offtake, the lifting of ration articles by the people of the state, the income transfer to the population specially those BPL households, the correlation that the ration offtake has in relation to income and poverty etc. The comparison of the performance of PDS with that of the TPDS is also analysed by correlating the indicators of offtake with that of the income and poverty for the Pre-TPDS and the Post-TPDS phases. In the last segment of the chapter, an analysis is made on the factors determining ration consumption (rice and wheat) in Kerala.

Chapter five carries out an analysis of the open market retail prices of rice in the State. An intemporal comparison of the relative prices (ration price/ open market retail price) is made to see how the price of ration rice compares with the open market price over the years. The chapter examines the inter-district, fluctuation on the open market retail price of Kerala, besides the effect of the withdrawal of consumers from the PDS and the declining production of rice in the State (and the resultant increase in the dependence on the market) on the open market price. Further the relative efficiency of the FCI/ traders is examined vis-à-vis the price at which rice is offered by each.
Chapter six analyses the current situation in the state with regard to the working of the TPDS in the state. The analysis is done with the help of primary data collected from the BPL and APL households in two districts of the state. Statistics is collected from the households on ration availability of foodgrains, proportion of people opting out of the TPDS and the reasons thereof, information pertaining to the sources of household food grain consumption, the share of the purchases made from the TPDS in the total purchase of cereals, enquiry into whether the private channels are efficient enough to provide the physical and the economic access to the people in food deficit regions and the vulnerable groups etc. The chapter also addresses the issue of targeting errors in the identification of poor beneficiaries through the primary survey data and case studies.

Chapter six presents the summary, conclusions and the policy implications of the thesis.