

**ISSUES RELATING TO FOOD SECURITY
IN INDIA: A Case Study of Durg
District in Madhya Pradesh**

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Certificate

Certified that this dissertation entitled ISSUES RELATING TO FOOD SECURITY IN INDIA: A CASE STUDY OF DURG DISTRICT IN MADHYA PRADESH submitted by Manjusha S. in partial fulfillment of the degree of Master of Philosophy is entirely her own work and has not been considered for the award of any other degree either at this or any other university.

We recommend that this dissertation be placed before the examiners for evaluation.


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*Dedicated
to the people
of Chhattisgarh*

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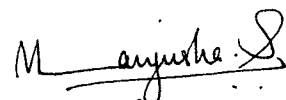
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Chapter 1

Introduction

Food has been the major concern, the basic one, for all life systems in the universe. The evolution of human civilization from the state of 'hunters and gatherers' to that of a settled life has its roots in the search for food security. Behind the two simple terms 'food security', there is a heterogeneous set of dimensions. The World Bank (1986) defines food security as 'the access by all people at all times to enough food for an active healthy life. Each phrase of this definition involves a particular aspect of the food security question. 'Access by all people' carries the dimensions of production and distribution of food. 'At all times' implies that the issue addressed is chronic hunger (undernourishment). The nutritional dimension is incorporated in 'an active healthy life'. Any serious attempt to look at the food security question cannot ignore any of the above dimensions.

1.1 Objectives and Scope of the study:

There has been a vast body of literature on food covering its various dimensions. The different approaches to the food problem varies from the analysis of the food crisis in a Malthusian perspective (Borgstorm 1969, Hardin, 1974) to technological determinism, monetarism (Schultz 1964) and the structuralist and Marxist perspective (George 1976, de Janvry 1981, U. Patnaik, 1997, among others). Food has been dealt with in the theoretical analysis of economics as a wage good (Kalecki 1971, Taylor 1983) which can create a constraint to economic development. Independently of the inter-sectoral linkages involving agriculture as in the process of development, the question of food security has received a lot of attention in the literature. A recent contribution to the vast body of literature on food is the entitlement approach by Sen (1981) as a

serious departure from the supply centred approaches. The nutritional dimensions of the food security question has its own body of literature which is considerable in itself (Sukhatme 1965, 1981, Reutlinger 1977, 1980).

The present study is essentially an attempt to analyse how the food security question has been dealt with in Independent India. In India the number of undernourished people is around 300 millions (Kabra 1997) even after more than four decades of planning. . Food security has been treated as a fundamental right in our constitution. 'The state shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties' (Article 47). The success of India in handling the food problem has been evaluated by writers like Tyagi (1990) Bhalla (1995) Kabra (1990).

India has been able to tackle the problem of acute hunger through its food policies. The present study is an attempt to find out how far the Indian democracy has been able to handle the problem of undernourishment. The study tries to analyse how the problem of food security has been addressed in India and how far it has been successful. With the introduction of the New Economic Policy, the food security question has become a sensitive issue. Writers like U.Patnaik (1997), M.Swaminathan (1996, 1997) have put forward many arguments regarding the impact of NEP. The study hopes to throw some light on some of the possible outcomes of the expenditure restricting policies on the welfare of the poor and vulnerable sections of India.

In India, the Public Distribution System is a major agency through which the government ensures the food security. The system of public distribution started in India during the Second World War. Since then it has evolved into a major agency in ensuring food to the poor and vulnerable sections

at a reasonable price and arresting the market prices (Dantwala 1967). The efficiency of PDS in India regarding the fulfillment of its objectives has been assessed by Suryanarayana (1991, 1995), Parikh (1994), Howes and Jha (1992, 1994). The present study tries to evaluate the performance of PDS on the basis of a micro study of Durg district in Madhya Pradesh. The objectives of the micro study have been stated in detail in Chapter 4. Broadly, the objectives were to estimate the extent to which the PDS influenced the foodgrains consumption of the households surveyed and to assess the possible impact of any move to dismantle the PDS. Attempt has been made to evaluate the alternatives suggested by writers like Bhagwati and Srinivasan (1993) and S.Roy (1992).

In the past five years, there has been a number of micro studies regarding the impact of PDS on the rural poor. (Vidya Sagar 1995, Nair and Sivanandan, 1995). Authors like Suryanarayana, Parikh (ibid.) use the data from National Sample Survey to evaluate the PDS. There has been a debate in India regarding the advantages and disadvantages of a micro study and a large scale survey system. The basic argument for favouring a micro study approach is that the intense localised examination by a participant-observer not only offers a better understanding of various processes and relations (i.e. the qualitative dimension), but may also give better quantitative results, compared to the 'bureaucratic' investigation of large-scale statistical surveys- (P.K. Jha, 1997) The proponents of a large scale survey on the other hand, doubts the ability of micro studies to give quantitative information and points to the limited scope for generalisation for the macro contexts .

An attempt has been made at various places in this study to point out the inconsistencies and logical errors in NSS data on consumption expenditure (see chapter 3 and chapter 4). Authors like Howes and Jha (ibid.) have shown the wide discrepancies in the data on different aspects within the same round. The authenticity of generalisations from a large scale survey with such discrepancies could be questioned. Instead of trying to prove the superiority of one method over the another, one could try to look at the complementarities

between them. Macro studies are important to deal with the quantitative dimensions of the phenomena under study while micro studies help to understand the underlying mechanisms of change.

1.2 Statement of method:

The present study is based on the relevant existing literature on food and a field study in Durg district in Madhya Pradesh. The literature on the evolution of food policy in India is to a large extent dependent on large scale data systems. Important among these large scale data sources are: i) Economic Surveys (GOI) ii) Food Bulletin of Ministry of Food and Agriculture iii) NSS data on consumption expenditure. Our study did not draw on all these data sources directly except in some cases, but used the literature which has analysed them extensively.

The methodology of the micro study is explained in detail in Chapter 4. The field survey was conducted in October-November 1997 in two villages and industrial areas of Durg district, covering 100 households, 50 rural and 50 urban. The choice of Durg district was due to prior familiarity with the region and the infra-structural support to conduct the field study. Durg district is a major industrial region of Madhya Pradesh, next only to Indore and Gwalior. The Bhilai steel plant, the major public sector steel plant in India is located in Durg which gives it certain specific socio-economic characteristics. Some economic indicators of Durg vis-a-vis MP are given in appendix-3.

Durg belongs to the Chhattisgarh region, the rice bowl of MP. A peculiar feature of Durg is the existence of the powerful activist group, the Chhattisgarh Mukti Morcha (CMM) which has a strong influence on the lives of the people. An attempt has been made in the study to examine how far Public Action can go in controlling and fighting measures which are not in the interest of the common people.

All the households surveyed belong to the two categories of agricultural labour and industrial labour. Agricultural labourers constitute the overwhelming majority of the rural poor. The proportion of rural population

below poverty line increased by 30 million from 1990-1991 to 1993-1994 (Sen and Patnaik, 1997). There was an erosion in the real wages of agricultural labourers during the reform period (Jha 1997). It is such a backdrop, predicated on the so-called NEP, which provided the motivation for looking closely at the agricultural and industrial labourers in our micro-study. In Durg, all the industrial labour households who were working in the ancillary units of Bhilai Steel Plant were facing threats of expulsion due to the new Industrial Policy. There was a severe decline in the employment days per month. At the same time all these households were outside the Targeted Public Distribution System. The present study makes an attempt to assess the food security scenario among these vulnerable sections. Conventional studies place the urban households vis-a-vis the rural. Our study is a departure in the sense that the attempt was to analyse the problems of the poor and weakest, be it urban or rural.

1.3 Contents of Chapters:

The study begins with an outline of how the question of food security has been placed in existing literature. Chapter 2 gives a brief overview of how hunger has been conceptualised by various writers and the different dimensions of the food security problem. Various theories explaining the food problem are discussed, emphasis being on entitlement approach of A.Sen (1981).

The controversies regarding nutritional norms are examined together with the importance of nutrition as a variable. A brief sketch of the world food scenario is also undertaken.

Chapter 3 is an attempt to trace the evolution of food policy in India. Some aspects regarding famine relief policies of the British are covered in the first section while the second section examines how far independent India has been able to address the issue of food security through its mixture of policies. The assessment of the food security system in India by different authors are examined in detail.

The findings of the micro study in Durg are discussed in Chapter 4. The issues related to food grain purchase and consumption, dietary inadequacies and the extent of benefit from PDS are discussed in detail. A brief introduction about the mechanisms of foodgrains delivery in Durg is also given. There is an attempt to evaluate the alternatives to PDS in the context of the micro study.

Chapter 5 is the concluding chapter of the present study. We argue that the need for continuing a universal PDS is there especially when the real incomes of the poor and vulnerable sections are being eroded day by day. Since a targeted system has never been successful in any part of the world, however theoretically sound it might be, any attempt at eliminating certain sections of the population can lead to a decline in nutritional standards as is evident from the results of the micro study.

Chapter 2

Food Security Question in Different Perspectives

Introduction:

As mentioned in the introductory chapter, the issue of food security carries a host of dimensions and implications. The existing literature on food is filled with efforts to approach the food security question from these different dimensions. Chapter II is an attempt to look at the different approaches to the question of food security.

The importance of food as a 'wage good' as embodied in theoretical analysis in economic literature is traced in section 2.1. The role of food surplus in economic development and the debate on the inter-sectoral terms of trade is examined. The ~~second~~ section is a detailed survey of the literature on various perspectives towards the question of food and hunger, with an analysis of the different lines of thought which are predominant. In section 2.3, the 'entitlement approach to famines' by A. Sen is discussed. The different ways in which hunger is conceptualised is examined in the third section. Section 2.4 deals with the nutritional dimension of the food security question with emphasis on the controversies regarding nutritional standards. The last section is a brief outline of the world food scenario with a discussion on food policies in some developing countries.

2.1 Food as a wage good:

Food, in strict economic sense, is a wage good. Food as a wage good has occupied a significant place in economic analysis. Its significance emerged from being the major commodity in the consumption basket of wage labourers. The significance of keeping food prices cheap to develop the industries was an important consideration in theoretical analysis. Kalecki (1971) speaks of a supply constraint and demand constraint to development rather than a capital constraint in the developing countries. He argued in favour of a shift in agricultural supply function

which alone would be able to alleviate the wage pressure emanating from a limited supply of food. An increase in food prices, results in inflation in the short run when the money wages in the manufacturing sector fails to increase. This primary inflationary pressure is followed by secondary increases when the 'the inflation barrier' is broken and money wages rise. Kalecki argues that there also a demand constraint operating at the same time. The demand for industrial goods decline in rural areas since all the wage income is absorbed there itself. So there is an industrial recession coexisting with inflation. This supply constraint and demand constraint to development were termed as 'wage constraint' to economic development by S. Chakravarty (1993).

The terms of trade debate has its origin in the same question. The debate can be traced as far as the controversy regarding the corn laws in England (1815). Malthus took a stand in favour of the corn laws to protect the interests of the producers in England while Ricardo was against it arguing that it would lead to an increase in food prices, hampering the development of the economy. The terms of trade debate was taken to further heights with the Bukharin-Preobrazhensky debate in 1920s. Preobrazhensky argued for terms of trade being turned against agriculture to extract an investible surplus while Bukharin stood for a food price induced development strategy.

The implications of class relations in terms of trade in India was analysed by A. Mitra (1977). According to him, without taking into account the the class relations in the society, no conclusion could be made regarding the impact of a shift in terms of trade. A shift in terms of trade in favour of agriculture benefits a minute fraction of the richer community and erodes the real incomes of the working class both in urban and rural areas, creating a demand for luxury goods and a levelling off of demand for mass consumption goods. He attributed the signs of quasi-stagnation in the Indian industry to the continuous shifting of terms of trade against industry.

2.2 Food and Hunger as in Different Perspectives:

Economists from the time of Malthus have been trying to analyse the problem

of food security. The various interpretations of the concept have their ideological underpinnings. Six dominant lines of thought could be identified which discuss the food problem from the supply side or demand side of food, or both. They are Malthusianism, technological determinism, monetarism, structuralism and Marxism.

The first important theory which emerged as an explanation to the food problem was the Malthusian theory which linked population growth to food supply (Malthus, 1798). Unchecked, Malthus said, populations tend to grow in a geometric progression and at a rate that would double its members about every 25 years. Food supply would increase in arithmetic progression. The superior power of population growth over the means of subsistence required that population growth would eventually be checked, if not by preventive measures, then by positive measures of starvation, disease etc. Since Malthus, there has been a substantial analysis of the food security problems concentrating on the Food Availability Decline (usually termed as FAD approach) in relation to the growth in demand due to population rise.

Some of the modern advocates of the theory are Borgstorm (1969) and Garriet Hardin (1974). All hunger related problems in the underdeveloped countries are explained with relation to population growth rates. For them, the dominant policy implication is the need for drastic, coercive population control policies and programmes.

The theory of technological determinism argues that food problem mainly one of food production which necessitates development of technologies to improve production in agriculture. Three agricultural revolutions have been identified by de Janvry (1981), the first one in the Neolithic Age where hunting and gathering was replaced by agriculture and domestication of animals, the second one which started in 1700 in England, later spread to United States and Europe and the third one in 1850 in the developed countries (center as in structuralist analysis) with the industrialisation of agriculture based on new sources of energy, machinery and chemicals. The second revolution did not spread to the developing countries (periphery) and the third one was confined to plantation crops. The radical change in agricultural technology through the green revolution fostered by public research

institutes and international agricultural research centres occurred in almost all countries in Latin America, some in Asia and very few in Africa between 1950-80. This technological achievements did not perlocate to all the classes in the rural sector. The benefits of the achievements were reaped by large plantations and specific crops like wheat. The poorer sections were marginalised and the income distribution became more skewed. Thus the critics of the Green Revolution argue that the food problem is a social one than a technological one.

The monetarist thesis attributes the food security problem to the stagnation in agriculture caused by public intervention and distortion of the markets. This thesis is advocated principally by the Chicago School of Economics (Schultz, 1964) and also by populists like Lipton (1977). The argument is that in the case of the Less Developed Countries, consequent upon the state-led economic transformation process, there have been distortions in exchange ratios both internally and externally leading to the inefficiency of resource use which has been to the disadvantage of the agricultural sector.

The structuralist thesis on food problem is that it emerges from the stagnation in production and rural poverty caused by the land tenure systems. The need for land reform programmes is emphasised. Land reforms result in an increased production through intensive use of natural resources, land-saving technology and labour power. The thesis looks for its empirical support from the inverse relationship between farm size and productivity. Marxists, like structuralists analyse the role of agrarian structure in promoting or constraining agrarian and overall economic development. Within the Marxian discourse, the issue of agrarian reforms is brought out explicitly. A case for land reforms was made by Bhaduri (1983) when he argues that in a country like India where agriculture is characterised by extremely feudal relations reinforced by the caste structure, there is the probability of unproductive investment of the surplus by the landlords by way of consumption loans to the tenants. U. Patnaik puts forward a case for land reforms (1986) when she argues that a 'rent barrier' exists for the capitalist development in India.

The other important feature of the Marxist approach is in incorporating the

relevant features of the international political economy influencing the interregional distribution of existing world food resources. Pioneers of this line of thought are S George (1976), H Friedman (1982), B Crow (1990) and Bernstein (1990), U Patnaik (1997). According to them, the food problem is the result of conscious strategies of the International Food Regime as part of a wider process of global economic and political integration led by the dominant capitalist powers. The issues raised by them revolve around excessive consumption by the developed countries at the cost of the third world countries and the policy ingredients employed to appropriate it.

Finally, in passing we may note that both the structuralist and the Marxist perspective bring into their respective stories the supply as well as the demand level problems.

2.3 Amartya Sen on Food and Famines:

A. Sen (1981) came forward with his entitlement approach in explaining famines which was a major shift to an income centred approach. The entitlement approach to starvation and famines concentrated on the ability of people to command food through the legal means available in the society, including the use of production possibilities, trade opportunities, entitlements vis.a.vis the state, and other methods of acquiring food. According to Sen, in a market economy, a person can exchange what he owns for another collection of commodities. The set of all the alternative bundles of commodities than he can acquire in exchange for what he owns may be called the 'exchange entitlement' of what he owns. Thus, a person starves when his entitlement cannot provide him with a bundle of enough food.

Sen uses his approach to explain the Great Bengal Famine of 1943. He says that the starvation and mortality in the Bengal Famine was not due to a decline in food availability, but due to a dramatic decline in exchange entitlements for a particular group consisting of agricultural labourers and artisans (fishermen, craftsmen, barbers etc.). Sen argues that the vulnerability of wage labourers to famines can be particularly acute in that intermediate phase in which the class of

wage labourers has become large (unlike in precapitalist formations) but a system of social security has not well developed.

Sen's analysis was a major departure from the Food Availability Decline approach. It provided an alternative approach to explain the food problems from the demand side of food supply. The 'entitlement approach' has been criticised by many writers who have discussed the inadequacies of it to explain some aspects of the food problem. Alamgir (1980) questions Sen's analysis of Bengal famine on the ground that there was a lot of disparity in interregional and intertemporal distribution of foodgrains in Bengal which validates the FAD approach to a certain extent. To this Sen replied that FAD is a specific hypothesis and deserves to be examined on its own terms rather than being rescued by redefinition (Sen, *ibid.*). Basu (1986) argues that Sen's analysis cannot throw light on the interrelationship between the ruling class and the people which determines the 'exchange entitlement'. According to Sen, the inflationary spiral created by excess demand for food was a result of war efforts, and the shortfalls in annual production of rice in 1943 was not of such serious proportions that a crisis could have developed. But Basu says that there were significant changes in the Bengal scenario due to the colonial policies consisting of curtailment of imports, seizure of marketable surplus, restriction on inter-provincial and inter-district trade which all led to a total collapse of supply in Bengal.

The criticism by Basu is extended elaborately with a historical perspective by U. Patnaik (1991). She argues that the idea of exchange entitlements is advanced by Sen as a wholly new concept, is not different in its essence from purchasing power in the broadest sense, for a given distribution of assets. The approach is found

inadequate in two respects. She questions the very definition of FAD in terms of effects of variations in exogenous short run factors. It rules out consideration of long term economic and social forces which commercialised food production to meet the needs of metropolitan demand. The operation of these forces has led to declining per head food availability in rural areas, thus setting the stage for famine. The second criticism is regarding the identification of social groups which are vulnerable to starvation-producing decline in purchasing power and the conditions under which such decline should take place. In Sen's analysis, he tries to incorporate the two different sections of rural population - the self employed petty producers such as peasants and artisans and the wage-paid workers in one generic concept.

In spite of the criticisms, Sen's approach stands out in its attempt to provide an income centered view on explaining food crisis.

2.4 Concepts of Hunger:

Hunger can be defined and conceptualised in different ways according to the specificities of the issue under study. The various concepts of hunger are based on the manifestations of the outcome of particular situations.

A major distinction made is between chronic and acute hunger (Dreze and Sen, 1989). Chronic hunger is the persistent form of hunger which is a situation of undernourishment. It implies that a person suffering from it is unable to utilise his full potential of physical capabilities. There are serious long-run health implications to it, especially a decline in immunity which might expose the body to health hazards.

Acute hunger is associated with starvation, emerging from situations like famine. This leads to a destruction of the functional capabilities of the body mechanisms and might lead to mortality.

The concepts of chronic and acute hunger have been explained more clearly by Lustig (FAD, 1985). Four stages of hunger are being conceptualised - latent

hunger, famine, overt hunger and adequate food.

'Latent hunger' is a state in which a sizeable section of population suffers chronically from lack of food without getting much relief even under circumstances judged as normal or better with respect to the overall availability of food.

'Famine' is the state in which scarcity of food assumes catastrophic proportions to cause extensive loss of life and to put the whole populations of the affected regions on the run in search for survival.

In 'overt hunger', there is no famine, but the situation of food is bad enough to cause hardships to even those groups in the population which under normal circumstances, get enough food or more.

'Adequate food' is that happy state in which the problem of hunger is confined to a few persons on the fringes of society and is taken care of by the normal channels of individual and social charity.

Another concept widely used is the 'endemic hunger' which refers to the problem of hunger which are persistent in a particular region since a long time. Hence we put it as endemic hunger in Africa.

2.5 Food and Its Nutritional Dimension:

The basic function of food is to provide nourishment to the body. Hence the nutritional dimension of food becomes important. Human beings need all nutrients (carbohydrate, proteins, fats, vitamins and minerals) in different amounts to live and grow. Therefore in planning a diet for a community, food should be chosen in such a way that all the nutrients are provided in adequate quantities.

The most important requirement of the human body is energy. Energy is essential for rest, activity and growth. When the body is in rest, it spends certain amount of energy for essential functions. The amount expended when the body is at complete rest is termed Basal Metabolism or Resting Metabolism. A person requires additional energy for the actual physical activity on the basis of these two components. The unit of energy used is physiological calories (also called kilo calories - K cal) which is the amount of heat necessary to raise the temperature of one

kilogram of water by 1° from 14.5° C to 15.5° C (Gopalan, 1989).

The quantitative requirements of food are estimated in terms of energy requirements. This, known as dietary approach, has been used extensively in estimating absolute poverty levels. The energy requirement of Indians was recommended by an expert group in 1944 and later revised in 1958. The same figures were adopted by ICMR Expert Group in 1978 also. The figures in use are the revised ones by the Expert Group of 1988 (ibid.). To estimate the poverty line, the usual criteria used is the amount of income needed to ensure a calorie consumption of a particular level. There is another approach to measure undernutrition, the anthropometric approach, where certain indicators of physical growth (size, weight, height etc.) are compared against some norms of desirable standards to conclude whether there is under-nutrition or not.

While choosing a benchmark to identify the population who are undernourished, it is assumed that persons belonging to a same category of physical activity requires the same level of nutrition. In other words, it does not take into account the inter-personal variations in nutrition requirements. Dandekar and Rath (1971) were proponents of the same hypothesis. Variations in requirements among other wise similar persons are assumed to be due to innate genetic characteristics. The possibility of inter-personal variations in requirement has been accepted by writers like Reutlinger and Alderman (1980).

The above model has come under serious attack by writers like Sukhatme (1981). They argue that, a person may be able to maintain the same state of health (homeostasis) at different levels of intake. In other words, there is scope for intra-personal variations in nutrition requirements (intertemporal variation in nutrition requirements of a person) over time.

The possibility of intra-personal variation leads to serious implications in the empirical assessment of undernutrition. By re-conceptualising the energy requirements, Sukhatme showed that the incidence of nutritional poverty in India was less than half of what Dandekar and Rath (ibid.) estimated using the average norm. Using the theory of homeostasis in the anthropometric approach, Seckler (1984)

concluded that only 15-20 per cent of Indian children can be called under-nourished. Thus ignoring intra-personal variations can result in overestimating the number of under-nourished.

Osmani (1995) emphasises on the role of environmental hygiene in nutritional status. The poor environmental hygiene in the developing countries makes people susceptible to diseases and infections, which is overlooked by the dietary approach. He is of the view that the measures on absolute poverty existing today are inadequate due to their inability to include the following aspects: (i) inter-personal variations in nutritional requirements; (ii) intra-personal variations in nutrition requirements; and (iii) role of environmental hygiene.

In analysing the relation between nutrition and mortality rates, various writers have come forward with interesting findings on the implications of a well administered food security system. A decline in mortality rate which occurred in America and Great Britain between 1700 and 1980 is attributed to an increase in per capita food supplies and per capita income (Fogel, 1986). The same argument has been extended to India by Zurbrigg (1994). The argument is that there was a decline in Malaria mortality in Punjab after 1908 was mainly due to a decline in famine than any medical or entomological factors.

2.6 An Overview of the World Food Security Scenario:

Poverty and hunger has been a typical symbol demarcating the more than 80 countries in the under-developed world. About 700 million people in the world are under-nourished (FAO, 1989). Food availability at the country/regional level can be assessed on the basis of dietary energy supply (DES), generally measured in terms of kilocalories per capita per day. Tables 2.1 and 2.2 give the per capita calorie intake per day in the low income countries in Asia and Africa (1970-1992) and the countries in Latin America (1983-1992). In 11 out of the 21 countries in Asia and Africa and 13 out of the 22 countries in Latin America, there has been a decline in calorie intake between 1990 and 1992. A wide gap of over 900 calories per capita per day separates average calorie supply in developed and developing countries (FAO - *ibid.*).

Authors like Cornia and Stewart (1987) attribute the decline in calorie intake to the expenditure restricting policies of the Structural Adjustment Programmes. The percentage of population below poverty line increased in Africa and the Latin American countries during the period 1985-1990). There was a decline in food intake for the bottom 20 to 40 percent of the population.

Developing countries have a long history of food policy formulations to deal with the problems of chronic and acute hunger. The famine relief policies in Africa and the food security system in Srilanka, China and Bangladesh met with some measure of success in addressing the problems. The Public Distribution System in Srilanka was the most efficient one in comparison with its counterparts in other developing countries. In Srilanka, food subsidies were introduced in the form of a food ration scheme in 1942, as a war time measure. Since then it continued in various forms through systematic government intervention. With the introduction of the Structural Adjustment Policies, there was a cut in food subsidies and a shift to Targeted Public Distribution System through a system of food coupons. Studies (Cornia & Stewart, *ibid.*) show that there has been a decline in the nutritional welfare of the people in the period following the reforms. The daily percapita calorie consumption of the bottom 20 percent of the population declined from 1500 in 1978 to 1370 in 1982. The questions regarding food policies assume much significance in this era of liberalisation.

2.7 Concluding Remarks:

In this chapter, we were trying to trace the various approaches to the different dimensions of food security problem. The basic two approaches to the food problem can be summarised as: attempts to explain the 'overt food problem' which deals with aggregate food production, consumption and prices and 'silent food problem' which deals with undernutrition and malnutrition basically arising from the maldistribution of food within and between nations (Reutlinger, 1977).

Chapter 3

Evolution of Food Policy in India

Introduction:

The present food security system in India is the outcome of a mixture of policies formulated and implemented from time to time, each given weightage according to the problem immediately at hand. From a set of policies which were aimed at attacking acute hunger, we could see the emergence of a wide set of strategies from time to time addressing the problem of chronic hunger (undernourishment). At the same time there was a lack of political will to implement them with a long term perspective, which led to their getting sidelined by a host of populist policies (the reluctance towards land reforms is one example).

Chapter 3 can broadly be divided into three sections. The first is a brief overview of the food policies in the pre-Independence India with a historical perspective. The second section deals with the policies adopted from time to time to deal with the issue of food security in the Independent India. An attempt has been made to look at the various phases in the evolution of food policy. An evaluation of the impacts of the policies and the need for continuing a food security system due to different socio-economic factors are looked at in the third section.

3.1 Food administration in the pre-Independent India:

'Strange as it may seem, the food policy in India, viewed in its historical perspective has been very largely fashioned by the famines and scarcities that afflicted this country through the centuries' (Acharya, 1983).

Till the 1940s, in the history of India, we would not find any attempt at attacking the problem of chronic hunger which was in existence in major parts of the country. Efforts were made in the last minute when there was an instance of acute hunger resulting from famine.

Famine relief policies were in existence in India much before the British rule. In ancient literature, we see a gradual evolution of an elaborate system of precautions against famine, some of which are remarkable for their modernity. Imperial Mauryas, under whom India achieved cultural and political unity, laid down elaborate instructions for the higher officers with respect to measures for dealing with famine and other natural calamities. Kautilya has mentioned them in detail in his 'Arthashastra'. In the first place, it was ordained that half of the stores in the state warehouses should always be kept in reserve for times of famine. When famine occurred, the state distributed relief from the reserve, provided seed grain for the next harvest and started public works to keep the people remuneratively employed.

Authentic evidence is available to show that regulation of prices and preventive as well as relief measures against famine emerged during Asoka's reign. A fragmentary and mutilated terracotta inscription found in 'Mahasthan' (Bogra district in Bangladesh) records the order of a Maurya prince to the Mahamatya (governor) of 'Pundranagare' directing the latter to help the famine stricken with loans in cash (gandaka) and corn (dhanya) which they are to repay in better times to the royal treasury.

In the medieval times and later during the Moghul rule, history is replete with instances of famines sweeping through the country and the government of the day fighting them. Kalhanas' 'Rajatarangini' contains graphic description of famines and measures adopted by the kings to provide relief to the people. Shershah Suri (1486-1545) was the first ruler to put the revenue administration on a rational and sound footing. He established a famine relief store to which each peasant had to contribute grain at the rate of 200 'Bahloli Tankas' in weight per bigha. The grain thus collected

was preserved in local government stores and was distributed among the people through cheap grainshops when famine conditions prevailed.

History goes on to record a number of famines that occurred during the 17th century and the measures adopted by the Moghul emperors to provide relief. During Aurangzeb's time, grain was purchased at any price with the public money and it was resold at a very moderate rate (this must have been the early form of our PDS).

Some serious efforts to formulate a full-fledged famine relief policy were done during the British rule. While the broader policies of the government broke the backbone of the Indian economy, British did manage to form a food policy whose main objective was the minimization or prevention of starvation and mortality during famines. There was no strategy to institutionalise a mechanism for providing food security to the vulnerable sections. The government intervened only during famines or such extreme conditions. What was the driving motive behind their concern to avert famines in India? The Famine Commission report of 1880 considers it to be a paramount 'duty of the state' to do the same. According to Dreze (1995), desire to preserve the political stability or the revenue base, a feeling of obligation to the people arising from the more obviously deleterious aspects of colonial expansion and concern about the administrations' image in the eyes of the British public, all might have played an important role.

We could form a broad outline of the British policy towards famine relief. One important feature of the famine relief policy was the recognition of the need for improving the purchasing power of the people through providing employment. A very significant step towards the successful prevention of famines in India was the introduction of 'Famine Codes' in 1880. The backbone of the famine relief strategy embodied in the Famine Codes was the organisation of massive public works. Even before that, during the Orissa famine of 1866, there were instances of foodgrains being provided as wages to the starving population. The aim of this strategy was to provide employment at subsistence wages and at a reasonable distance from their

homes to all those who applied for it (wages were to be paid in cash and public employment was directed to the creation of public assets such as roads and canals). 'Gratuitous relief' for those unable to work, in the form of doles or kitchens, complemented public works to form the core of relief measures.

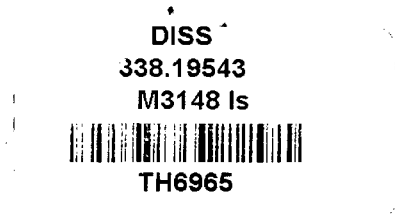
Another major feature of the British policy was the staunch belief in the efficiency of private trade and reluctance to interfere in its realm. They strongly feared that government participation in food trade would have harmful disincentive effects on private initiative. The influence of a political thought which was against any type of state intervention or interference with free trade cannot be overlooked¹.

There was strict injunction to abstain from any interference with the ordinary course of trade in the buying and selling of grain at the governmental level. The question whether government should directly intervene and control the operation of private trade in the supply of grain in famine time was further considered by the Famine Commission which submitted its report in 1880. The prohibition on reports of grain was used in 1867 in Orissa famine and in 1873 in the case of Bengal Famine. But such measures were confined to very exceptional circumstances.

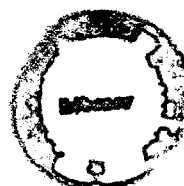
Complementary to the decision to encourage free trade, more emphasis was placed on the construction of communication systems. The Famine Commission Reports often laid great stress on the development of irrigation and railways. The construction of railway lines was to facilitate movement of foodgrains from surplus to deficit areas and to make the prices uniform. Whether the railways achieved the above stated objectives is a matter of debate. Often it was the case that railways facilitated exports from famine-stricken areas (Dreze, *ibid.*)

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¹ Here one should keep in mind the controversy regarding corn laws in England (1815) in which Ricardo and Malthus had an active role.



9



The evolution of the concept of the buffer stock policy in the colonial era needs to be looked at. The Famine Commission of 1880 which laid the foundations for the government policy towards food examined the relevance of a policy of storing foodgrains. They estimated a net surplus of 5 million tonnes in a normal year. The Commission considered it not advisable for the government to store grains on the basis of a cost-benefit analysis (Acharya, 1983).

Two members of the Commission, James Caird and H.E. Sullivan expressed dissent with the majority report. They felt that it was not only expedient but absolutely necessary for the state to make provisions in that manner. They felt that certain localities in Southern, Western and Central India which were isolated and inaccessible and especially vulnerable to famines should have a plan of storage. They therefore put forward a suggestion for partial storage in these areas. But the government went by the majority recommendations and no stock was maintained.

The first procurement scheme began in December 1942 in the wake of the Bengal Famine to maintain steady supplies from hinterland to meet the urban demand. A target of 7,400 tonnes had been fixed and each district was given a quota.

The stocks could not be mobilized for local purposes. As the war situation worsened, the provincial government was compelled to undertake procurement operations on a more extensive scale. A number of agents from private trade were selected and allotted areas in which they were to make purchases. The procurement measures failed to achieve much mainly due to the competitive rise in prices against which the government agent was unprotected. A breakdown in the supplies for Calcutta opened two courses:

- (i) to intensify the policy of controlled procurement, hold prices rigidly and pass over from reliance on voluntary sales to coercion for securing supplies at a fixed price.
- (ii) to allow prices to rise and to secure stocks by purchase in the open market as well as by imports from other provinces. The government decided to favour the second option. The immediate effect was an increase in the volume of supplies purchased by

the government. Within a short period of three weeks in March, the government purchases exceeded 17,000 tonnes which was much more than the purchases made between December 1942 and February 1943. From March 1943, there was a striking change in the direction of policy. A policy of decontrol started with removal of barriers within Bengal and introduction of free interregional trade into the eastern region.

The first scheme for centralized purchase of foodgrains was evolved by the Central Government in September 1942. The plan of action was that a Central Government organisation would purchase surplus wheat through agencies selected in consultation with provincial or state governments. In allocation, priority was to be given to the requirements of fair price shops, consumer co-operatives, industrial areas, big cities, public utilities and places where military works were under construction. Thus the emphasis was entirely on urban population.

In July 1943, the Government of India set up the Foodgrains Enquiry Committee. The question of creating a central foodgrain reserve received a scientific, rational and systematic treatment for the first time, at the hands of this committee. The committee observed that the instrumentality of a central reserve was the best guarantee for securing maximum flow of supplies from the cultivators to consumers. It was argued before the Committee that the only satisfactory system of procurement and distribution of foodgrains was a completely government controlled supply system worked through universal rationing. After considerable deliberations, the committee concluded that the scheme of full monopoly was the only solution, but which in view of the more urgent compulsions of the war and the unpreparedness of the government for enforcing such a system, was impracticable. On the other hand, the central foodgrain reserve was indispensable. It recommended that procurement should be entrusted to the provinces and the states with the overriding right of the Central Government to intervene and insist upon remedial measures. Regarding the setting up of a Central Reserve, the committee came to the following conclusions:

- (a) India required 0.5 million tonnes of foodgrains to build up a central foodgrain reserve as a supplement to the vigorous effort on part of the provincial or state government.
- (b) India required by way of imports for current consumption nearly one million tonnes of foodgrains.

The Famine Enquiry Commission of 1945 categorically stated that the state should recognise its ultimate responsibility to provide enough food for all. This marks the beginning of the evolution of a conscious food policy based on procurement and building up of a food reserve, undermining the dominant role the private traders held hitherto.

3.2 Food Policy in India After Independence:

This section is an attempt to find how far the Indian democracy could reach in trying to address the various dimensions of the food problem, with its salient objective of a socialistic pattern of society. This would involve analysing a whole host of issues related to food including the attempts at increasing the availability of food through production and exchange and ensuring the access to food by all sections of population through effective regulatory and distributive mechanisms.

A general review of the policies of the Indian government regarding food, after independence, reveals three distinct phases. Phase I extending upto the sixties where some efforts were made to bring about changes in the structure of agrarian relations. There was an emphasis simultaneously on increased production through public investment in agriculture. In Phase II, which extends upto mid 1991, efforts at agrarian reforms were aborted and a strategy of increasing production through New Technology was adopted which got precedence over any redistributive aspect. The Phase III is the period after liberalisation in which the importance of all aspects of food security was undermined and market forces were given a free play in the

production and exchange of food. However, U.Patnaik(1997) considers the first two phases as one phase, 'era of food first policies' which led to a rise in per capita food availability for the population and access to basic food was provided even if in an inadequate form, for important segments of the population in poverty. The phase after the 1990s is termed by her as 'Export First' era which was marked by trade liberalisation and expenditure cuts. Let us have a look at these periods in detail.

In the first phase, the emphasis was on increasing the availability of food through greater production. The First Five Year Plan accorded highest priority to agriculture. The output of foodgrains in the terminal year was 65.8 million tonnes which was above the target laid down for that year. Domestic supply situation improved, imports were curtailed and an impression was created that the country had finally overcome the food problem. The planners became so optimistic that they started assuming that on the basis of 'marketed surplus' that would be created it would be possible to sustain the tempo of industrialisation. But the Second Plan saw serious shortages of foodgrains that in 1959 and 1960, as much as 39 and 51 lakh tonnes of foodgrains had to be imported respectively. On the whole, during the decade 1950-60, the foodgrains sector performed well, growing at a compound rate of 3.3 per cent annually.

Land reforms were being implemented partially in many states which was a simultaneous step aimed at redistribution which would lead to efficiency in production. A system of Public Distribution of foodgrains had been in existence as a heritage of the Second World war. During the First Plan, the interest in rationing was limited. Decontrol was implemented and procurement was abandoned in 1954 due to good harvests. Due to changed circumstances under the Second Plan, in 1957, the Foodgrains Enquiry Committee recommended the creation of a buffer stock, control over trade and socialisation of trade over foodgrains. In 1960, the government entered into an agreement with the U.S. government for the import of 16.0 million tonnes of wheat and 1 million tonne of rice over the next four years.

The New Agricultural Technology which involved intensive use of HYV, fertilizers and irrigation was pushed through in the second phase and attempts at agrarian reforms were abandoned. The experience of two decades of PDS, the failure of crops in 1962-63 with resultant price rises and uncertainty of supply and the recommendations of the Foodgrains Enquiry Committee compelled the government to make PDS a permanent feature of food policy. The two important agencies which deal with the operation of procurement and storage, the Agricultural Prices Commission (later renamed The Commission for Agricultural Costs and Prices) and the Food Corporation of India were set up in 1965. The former was to give advice on support price and procurement. The latter was to implement government policy on procurement, storage, transportation and distribution of foodgrains and other commodities through fair price shops. Dantwala(1967), the first chairman of the Agricultural Prices Commission, provided the rationale for compulsory procurement. He argued that after-procurement price in the open market would be higher than what might prevail in the absence of procurement by FCI. A chain of Fair Price Shops was set up to distribute procured grain at issue prices which were lower than the sum of purchase price plus storage, transport and handling costs. The difference was met through the central food subsidy which was on the average 10-12 per cent of the final price.

The green revolution resulted in the emergence of the northern states of Punjab and Haryana as major surplus states. Procurement operations were concentrated in the surplus regions. In the period 1986-1989, almost the entire of wheat (99 per cent) was being procured from the states of Punjab, Haryana and UP. Nearly 95 per cent of paddy was being procured from Punjab, Haryana, UP and the Southern states of Tamil Nadu and Andhra Pradesh (Bhalla, 1994). This concentration of surplus in the Northern states gave the farmers in that region power to exert pressure on price policy decisions.

In March 1992, there existed over 4 lakh Fair Price Shops (3.05 lakhs in rural and 0.94 lakhs in urban areas). A Fair Price Shop covers a population of about 2000.

In addition to regular operations, the foodgrains for mid-day meal scheme and food for work programmes are also distributed through these shops. During the whole period of first and second phase, the PDS has been universal. The system was supposed to be self-targeting when the upper-middle income and upper income groups would prefer to stay out of the system due to preference of better quality grains and the poor service mechanisms of PDS.

The first kind of targeting introduced in India was area targeting. In an attempt to address the poverty and hunger in the tribal areas, a specially subsidised foodgrains programme was introduced in the Integrated Tribal Development Project (ITDP) blocks, numbering around 900 in 1985. The price difference came to stabilise at 50 paise a kg. by 1989. Till 1989, the prices of ITDP areas were only around 70 per cent of the PDS prices elsewhere and the people in those areas were benefited to a certain extent (Venugopal, 1995). Individual states started providing subsidies to targeted groups in the beginning of the nineties. Tamil Nadu extended its rural coverage and had a mid-day meal scheme as a move to enhance nutritional standards of school children and Andhra Pradesh started a Rs. 2 kg. rice programme targeted at the poor.

Employment generating schemes were part of the anti-poverty programmes of the government aimed at creating effective demand. It consisted of self-employment schemes like IRDP which provided subsidised credit and inputs to the identified households and other schemes like Jawahar Rozgar Yojana, Employment Guarantee Scheme which were means of direct income transfer to the poor. The Food for Work Programme directly aimed at providing food security through wages in kind. Along with the measures for providing unemployment, there has been social safety net package aimed at target groups like old, children and females. There have been schemes like the integrated Child Development Scheme, mid-day school meals,

old age pensions, maternity benefits, insurance schemes. The total expenditure on all these programmes rose from about the same level as the food subsidy in 1975, which was roughly 0.4 per cent of GDP to about 1.2 per cent of GDP by 1989-90. Sen and Patnaik (1997) argue that a trend decline in poverty incidence happened in the eighties due to the large scale state expenditure in the employment generation programmes in the rural areas through its multiplier effects and moderate cereal price inflation which led to an increase in real wages of rural labour.

The picture we get till 1990 is one of the issues of food security being addressed from various sides. On the one side are the efforts to increase availability of foodgrains through increased production with the help of new techniques and on the other side are the efforts to increase the access to food by the lower income groups by a set of poverty alleviation programmes and the Public Distribution System. Throughout, the efforts have been to attack the problem of chronic hunger which is a departure from the pre-independent period where emphasis was on crisis management, i.e. managing acute starvation during famines.

In India, the macro-stabilisation and structural adjustment policies were initiated in 1991 to cope with a severe balance of payments crisis. The new economic policy had an impact on all aspects of the food security system. Two major arguments regarding the effect of New Economic Policy on agriculture are:

- i.) There has been a decline in public expenditure on productive capital formation in agriculture. Public capital formation in agriculture in real terms fell at 4.6 percent annually in the decade of eighties and by 7 percent during 1986-87 to 1992-93.
- ii.) There has been a change in cropping pattern in favour of non food grains. During the period 1985-86 and 1995-96 the total area under three major non food crops(oilseeds, cotton and sugarcane) rose by 8.7 million hectares and area under food grains declined by 5.3 million hectares. The argument is that along with the reclamation of fallow lands for cash crop cultivation, there has

been a replacement of area under food grains during the period²(J.K.Mallik,1997)

A direct impact on the food security system is through a cut in the food subsidies as part of expenditure restricting policies. Table 3.1 shows the nominal and real food subsidies in recent years. The Central Government food subsidy declined between 1989-90 and 1992-93, rose in 1993-94 and again declined. The share of food subsidy in GDP declined from 0.6 per cent in 1989-90 to 0.39 per cent in 1993-94, then rose and stagnated at 0.5 per cent in 1995-96. The increase in food subsidies after 1993-94 can be attributed to the increase in intermediate costs and other carrying costs on procurement, buffer stock operations and distribution. Table 3.2 shows the share of subsidy going to the consumer in total food subsidy in the post-reform period. There has been a decline in its share from 86.98 per cent in 1991-92 to 61.41 per cent in 1994-95. Thus we can say that there has been a reduction in food subsidies to consumers in the liberalisation era.

The reduction in food subsidies takes its manifestation in the form of increasing Central Issue Prices(CIP) of foodgrains. Table 3.3 gives the minimum support prices and CIP rice and wheat from 1989-90 to 1997-98. During the period there was a 124 per cent increase in the CIP of rice and a 92 per cent increase in the CIP of wheat. The minimum support prices of rice and wheat increased by 105 per cent and 121 per cent respectively during the period. The sharp increase in minimum support prices of wheat can be attributed to the pressure exerted by the wheat growing areas in North India. Between 1990-91 and 1994-95, the cumulative increase in the prices of major foodgrains sold through the PDS was higher than the corresponding increase in other general price indices (M. Swaminathan, 1997).

There was a decline in the off-take from the public distribution system in the post-reform period due to the rise in issue prices and a decline in purchasing power of

² U.Patnaik(1997) has put forward a similar argument.

the people, which can be attributed to the employment decline owing to expenditure cuts. There was an increase in absolute rural poverty in the nineties. Between 1990-91 and 1993-94, the number of rural people estimated to be below the poverty line increased by more than 30 million (Sen, Ghosh and Chandrasekhar, 1996). Table 3.4 shows the off-take of rice and wheat from the PDS from 1991-1996. There has been a decline of 31 per cent between 1991 to 1994-95. It picked up by 12 per cent in 1995-96. This decline in off-take led to mounting foodstocks with the FCI (34 million tonnes in July 1995). To get rid of the stock and mounting carrying costs, the FCI resorted to open market sales (below economic cost and thus involving subsidy) and exports. Export of wheat from India during April-September, 1996 valued at \$ 192 million, created export earnings nearly 15 times higher than that in 1995 (Kabra, 1997). During 1994-95 and 1995-96, the open market sales of wheat exceeded PDS off-take by 0.076 million tonnes and 0.14 million tonnes.

The open market sales and exports depleted the foodgrains stocks. In 1995-96, the output of wheat fell by 4.8 per cent from the previous year. The off-take from the PDS picked up by around 12 per cent. The procurement of wheat for 1996-97 was only 8.18 million tonnes (a decline of 33.5 per cent from the previous year). The procurement of rice was also 30 per cent lower at around 10 million tonnes. In spite of these constraints emerging, open market sales and exports continued through 1996. By the end of 1996, there was a sharp rise of 40 per cent in the price of wheat in the course of a few weeks. The private traders and hoarders profited out of the situation making use of their purchases of subsidised grain. India had to resort to grain imports of around 2 million tonnes. In 1996-97, the wheat output is 65 million tonnes. If the government cannot pick up its procurement levels in spite of all pressures exerted by farmer lobbies, India will have to import food grains on a regular basis.

A major policy change in the post-reform period in the realm of food security was the move to replace the present system of universal Public Distribution by a system targeted towards an identified section of the population. Though the

advocates of targeting consider this to be a move directed towards protecting the vulnerable groups, there is agreement over the fact that the major push factor behind the move is the fiscal constraint. The constituents of the Targeted Public Distribution System (TPDS) announced on January 26, 1997 by the United Front government were:

- i. A distinction would be made between the Above Poverty Line (APL) and Below Poverty Line (BPL) population.
- ii. The BPL households would be issued special ration cards by which they are entitled to 10 kg. foodgrains per month at half the issue price. Any ration above this would depend on availability and would be provided at the issue price.
- iii. The APL households would get foodgrains at the issue price depending on the availability of foodgrains after the allotment to the BPL households.
- iv. The allotment of foodgrains to the states would be in accordance with the poverty ratio.
- v. Any further allotment will be on the basis of the last 10 years' average off-take.

The TPDS aims at eliminating the APL population altogether in different phases. The TPDS is supposed to cover 36 per cent of the country's population and any additional benefits to the targeted population is conditional on the present targeted group being completely eliminated.

A major criticism against the TPDS is on the decision to allot foodgrains on the basis of last 10 years average off-take. One argument is that the figure would be much less than the last two years off-take because

(a) there has been a natural upward trend to growth rate of population and output which would not be captured in the 10 years' average; (b) the geographical coverage of PDS has expanded in the course of the last decade in the Southern and Eastern

regions; (c) In the economic reform period, as the poor were priced out of ration shops, off-take dropped sharply. Thus taking the decade average entails a significant curtailment in the Public Distribution System (Sen and Patnaik, 1997).

It is shown that in states like Kerala, it would have the immediate impact of taking a large section of population out of the comprehensive coverage of PDS (Muralidharan and Mahalingam, 1997). Kerala's current off-take is 2.4 million tonnes and 10 years average off-take is 1.77 million tonnes. So it would receive not more than 1.77 million tonnes of which 184,000 tonnes would go for BPL households. Haryana, West Bengal, Orissa and Karnataka would be facing a similar situation. The states of U.P. and Bihar would have the opposite problem since they have to develop the network to absorb the additional allocations they would receive due to the enhanced entitlements on the basis of poverty ratio.

Another argument is the difficulties involved in identifying the poor. While shifting from a universal system to a targeted system, the chances of Type I and Type II errors are present (M. Swaminathan, 1996): the error of inclusion of the non-poor and the error of exclusion of the poor. The Type II error can happen due to two reasons. One is the difficulty in identifying the non-poor according to the data bases and the second is the possible defects in the measures of income and poverty themselves.

The third argument is on the inadequacy of the support provided even if one assumes that the poor has been properly identified. It is pointed out that a typical household would have a minimum monthly grain requirement of 30 kg. Anything above the 10 kg. provided by TPDS should be met at the continuously rising CIP or market prices. Thus the actual income subsidy to a wheat dependent family is Rs. 10 per month and that of a rice dependent family is even less.

Many writers have come up with alternative proposals for targeting. S.Roy (1992) puts forward a proposal to cover all agricultural labour households and 30 percent of the rest of households in India. She estimates that this would mean a

food subsidy 1.77 times the actual subsidy borne in 1981. Food coupons as method of targeting is recommended by Bhagwati and Srinivasan(1993), Suryanarayana(1995). Food coupons are to be issued to households having income below specified levels. They can be used to buy specified food items at authorised shops at non-subsidised prices.

3.3 An Assessment of the food security system in India:

Till now we have been looking at the different phases through which the food policies evolved in India. It has been able to conquer the problems of acute starvation on a massive scale and has been trying to address the problem of endemic hunger through its multi-pronged strategies. In the following section, an attempt is made to evaluate the food security system in India.

Table 3.5 shows the population, production and availability of foodgrains in India since 1951. G.S.Bhalla(1994) has analysed the trend in food supply and demand in India including projections for future. The net availability of foodgrains increased from 52.3 million tonnes in 1950-51 to 150.5 million tonnes in 1990-91, that is, at a compound annual growth rate of 2.4 per cent. While cereals availability increased by 2.7 per cent per annum, the pulses availability increased by only 0.5 per cent per annum(table 3.6). Since the population growth during this period was 2.1 per cent and per capita income growth rate only 1.5 per cent, the aggregate demand for foodgrains would have risen at a rate of 2.7 or 3 per cent per annum³. Thus, during the period 1950-51 to 1980-81, food availability almost kept pace with the growth in demand. However, the growth rate of demand started outstripping availability during the eighties, when, because of acceleration in per capita income growth from 1.5 to 3.2 per cent, demand might have grown at a rate of 3.5 to 4 per

³ The measure of aggregate demand is arrived at by taking an income elasticity of 0.4 and 0.6 percent respectively. Those who are interested in the method can refer G.S.Bhalla(ed.) Economic liberalisation of Indian agriculture(1994),Ch.5.

cent compared to the actual growth rate in foodgrains availability of 3.2 per cent only.

The enormity of the food problem is brought out by the projected demand for foodgrains in the year 2001. In order to be self-sufficient in foodgrains production, the growth rate of domestic output should hence forth accelerate to 3.5 to 4.0 per cent per annum from the level of 2.7 per cent per annum. Alternatively, India must produce a minimum of 230 to 240 million tonnes by 2001 compared to a peak production of 176 million tonnes in 1991. This implies that the per year incremental output must average out at 5.6 to 6.6 million tonnes during 10 years.

The role of the food management policy in India in increasing the access to food is appreciated by Tyagi (1990). He advances two arguments to substantiate his claim. One is that the real price of foodgrains remained behind the wholesale prices of all commodities. Whereas the adjusted wholesale prices of all commodities recorded a trend growth rate of 8.39 per cent per annum, the wholesale price of wheat rose at the rate of only 3.8 per cent and that of rice at 6.8 per cent during the period 1970 to 1988. The second reason is that the proportion of per capita income required to purchase food declined over time. While the index of per capita income increased by 419 per cent, the price index of food increased by only 280 per cent.

The success of PDS in ensuring the economic access to food by the poor and vulnerable groups is widely questioned. PDS has been accused of having a bias towards the middle and upper income groups of urban areas. Many empirical studies have shown severe biases in the inter-regional distribution of PDS supplies (Radhakrishna, 1997). States with high incidence of poverty such as Bihar, Orissa, Madhya Pradesh, Uttar Pradesh and Rajasthan distribute just 13 per cent of the total distribution through PDS (Table 3.7). There is a wide difference in the ration sale of grains and its off-take and except in the states of Kerala, West Bengal, Tripura, Jammu and Kashmir, the role of PDS in meeting consumption requirements has been quite limited (Table 3.8).

The result of the National Sample Surveys conducted by NSSO has been used by a lot of writers to draw conclusions regarding the impact of the Public Distribution System. The NSS data also provides information regarding consumption level and pattern of consumption of different socio-economic groups, benefits derived from poverty alleviation programmes as visible in consumption, level of nutritional intake of the population etc.

The criticism that PDS has favoured the urban sector has been in existence since the beginning (Dantwala, 1976; Dreze and Sen, 1989). There has been a number of studies on this subject, reaching an equal number of conclusions. In one of the recent studies, Dev and Suryanarayana (1992) try to evaluate the validity of these criticisms using the NSS data on 'Utilisation of Public Distribution System' for the period July 1986-June 1987 which was collected during the 42nd round. The data were collected from a sample of 47,827 rural households and 27,736 urban households. These data were collected for purchase in respect of food and non-food items. The criteria used by (Dev and Suryanarayana) are:

- i. The relative dependence on PDS which is defined as the PDS share in total quantity purchased of that item.
- ii. Per capita PDS quantity purchased.
- iii. PDS quantity per market dependent.

Using these criteria, they conclude that PDS is rural biased at the All India level for rice, coarse cereals, sugar and cloth which account for more than 60 per cent of total PDS purchases. In the case of all commodities except coal more than 50 per cent of the total quantity purchased under the PDS is in the rural sector.

The method used by them has been severely criticised by Howes and Jha (1992, 1994). Dev and Suryanarayana use total PDS quantities purchased as their numerator and either total quantities purchased or total market users as denominator. Howes and Jha argue that the choice of denominators can be shown to be misleading.

Using total purchases as denominator gives a measure of rural versus urban dependence on the PDS, rather than rural versus urban gain, while using total market users as denominator gives a measure of urban-market-users versus rural-market-users gain, not rural versus urban gain. They put forward three other measures of bias which are:

- i. Per capita quantities of rationed goods consumed.
- ii. Per capita implicit subsidies.
- iii. Accessibility to ration shops.

The first measure of bias suggests that over a period of eight years, the bias towards urban areas have greatly reduced with the ratio of rural to urban per capita foodgrains consumption through PDS rising from .201 to .697. If a state is supposed to display no bias if this ratio is within five per cent of one (between .95 and 1.05), then over the eight year period an urban bias is converted into a rural bias in seven of the 18 states.

With regard to the second measure, they have calculated implicit subsidy for 11 commodities at all India level for rural and urban areas separately. In general, the urban dwellers enjoy a subsidy of Rs.3 monthly per capita, which is 36 per cent greater than the same for rural dwellers which is Rs. 2.2. They argue that one reason for the urban bias is that the ratio of free market to subsidized price is higher in urban than in rural areas.

The final measure of bias, that of accessibility of ration shops used three criteria, proportion of population covered, population covered per ration shop and square kilometers per ration shop. The data suggested that rural dwellers are disadvantaged relative to their urban counterparts only to the extent that shops are on average more distant. Table 3.9 summarizes the results for all the states. It shows an overall urban bias in half of 18 states.

The reliability of NSS data on PDS is questioned by Howes and Jha. Comparing the NSS data on purchased consumption and total consumption of the 42nd Round, they found that the difference which should be the self produced consumption was greater for urban dwellers. The data implies urban dwellers self-produce a quarter of their consumption of rice, half of wheat and most surprisingly, a quarter of edible oil consumption. So they suggest that for aggregate results and comparisons over time the data on PDS consumption should be used with caution.

Parikh (1994) tries to examine the effectiveness of PDS using the 42nd round data. He calculated the implicit subsidy per capita in each commodity and for aggregated cereals for the states and union territories, for rural and urban households.

In the northern big states (Punjab, Haryana, U.P., Bihar, Orissa and M.P.) more than 90 per cent of the population do not purchase any cereals from the PDS. In most cases the value of income subsidy is less than one or two person days of employment per family per month.

In Gujarat, A.P. and Tamil Nadu, where special efforts are made to target PDS to the poor, the rate of subsidy received by the poorest 20 per cent of the households is not different than the average household. In rural areas of most of the major states, the level of subsidy is less than Rs. 3 per person per 30 days. Substantial relief to the rural poor are provided only by Andhra Pradesh and Kerala through cereals distribution. The cost-effectiveness of reaching the poorest 20 per cent of households through PDS cereals is very small. For every rupee spent less than 22 paise reach the poor in all states excepting Goa, Daman and Diu where 28 paise reach the poor. He argues that there is a strong case for withdrawing all subsidies from PDS excepting for those who work on employment schemes and putting the money saved in additional allocation for self-targeting schemes such as JRY.

The 50th Round of NSS on consumer expenditure (July 1993-June 1994) has covered aspects regarding nutritional intake of the Indian population and has come

out with interesting findings. Table 3.10 gives the per consumer unit⁴ intake of calorie, protein and fat per diem and percentage of food to total consumer expenditure by 12 monthly per capita expenditure classes of rural and urban India. While the intake of calories was lower than the minimum requirement level (2700 k cal) the intake of protein and fat was higher than the minimum requirements. Table 3.11 gives the per consumer unit intake of calorie, protein and fat per diem by the rural and urban population in the major states. The states with a much higher average intake level were Jammu and Kashmir, Haryana, Rajasthan and Punjab in the rural areas and Jammu and Kashmir, Himachal Pradesh, Orissa and Rajasthan in the urban areas. These results are amazing since states which are supposed to have a good food security system have a very low level of calorie intake. Kerala which has a very efficient PDS covering 90 per cent of the population has one of the lowest calorie consumption levels. Same is the case with Andhra Pradesh and Tamil Nadu. But the calorie consumption level of the poorest states are much higher according to NSS. Table 3.12 gives the statewise estimates of rural headcount poverty in 1993-94 by Chandrasekhar and Sen (1996) based on NSS and CSO data and the ranks given to the states by the human development index⁵. An attempt was made to find the rank correlation co-efficient between these measures and the Per consumer unit calorie intake Per Diem according to NSS. In the first case the rank correlation co-efficient is 0.0035 and in the second, -0.175. So we can conclude that any generalisation using NSS data ought to be done with caution.

An attempt has been made in the 50th round to compare the per capita intake of calorie, protein and fat per diem by different states in the 27th (1972-73), 38th (1983) and the 50th rounds. The average daily intake of calories by rural population has dropped by 45 k cal (2 per cent) during 1972-73 to 1983 and further by 68 k cal

⁴ According to NSS, a male in the age group 20-39 is considered as a standard and his per diem energy requirement forms a single consumer unit. Each member of a household is given a consumer unit number according to the requirement of energy in relation to this standard man.

⁵ The HDI taken is the one calculated by Prabhu and Chatterjee in 1993, using three indices representing education health and nutritional attainment.

(3 per cent) from 1983 to 1993-94. The same by urban population has decreased marginally by 18 k cal (less than 1 per cent) each during the two successive periods. Average daily intake of protein by the Indian population remained stable between 1972-73 and 1993-94. The intake of fat increased by 29 per cent in rural areas and 17 per cent in urban areas during the same period.

In spite of almost five decades of policy formulations on food, the extent of chronic hunger in the country still remains huge. According to the Planning Commission's revised poverty estimates, the number of people whose expenditure fails to "cover the expenditure on both food and non-food items and ensure adequacy of calorie intake" in 1993-94 is over 244 million (37.27 per cent) in rural India and 79.4 million in urban India - total of 323 million. Since real wages for unskilled agricultural labour declined by as much as 5.61 per cent in 1993-94 and recovered just marginally by 0.05 per cent and 0.69 per cent in the next two years, the number could only have increased (Kabra, 1997).

The poverty estimates do not represent the extent of malnutrition and undernutrition in the country. In his phenomenal work on India (1965), Dr. Sukhatme writes 'At least one in every four and probably one in every three of India's population is undernourished'. Though his estimates belong to an earlier period, its relevance now is far from being questioned. In 1982, V.K.R.V. Rao estimated that around 250 millions of India's population is undernourished or malnourished or both.

In a comprehensive study of India's nutritional problems, C. Gopalan (1995) looks at the extent of undernutrition using the data collected by National Nutrition Monitoring Bureau (NNMB-1980, 1991) and National Family Health Survey (NFHS-1993). According to NNMB survey, between 42.5 per cent of underfives in Kerala and 69.5 per cent in Orissa could be considered undernourished. There has been a significant decline in the prevalence of undernutrition in children in all but one state (Orissa) between 1979 and 1989, the decline being most striking in Kerala and least striking in Madhya Pradesh. According to NFHS data which has a greater

coverage, the prevalence of overall undernutrition in children ranged from 28 per cent in Mizoram and Kerala to 63 per cent in Bihar. Severe malnutrition ranged from around 6 per cent in Kerala and 5 per cent in Mizoram to 31 per cent in Bihar.

The gender aspect in malnutrition cannot be overlooked. In India, discrimination in respect of food starts right from early childhood. The low status of women is reflected in the higher incidence of malnutrition among female children and high level of female morbidity. Table 3.13 gives an idea about the incidence of malnutrition among females (all age groups combined). While the incidence of severe malnutrition is 28.5 per cent among males, the same is 71 per cent among females.

In India, the cereal consumption level of the people is much below the ICMR (Indian Council of Medical Research) norm of 11.58 kg. per month. During the planning period as a whole, from 1952 to 1989/90, the level of per capita cereal consumption in quantity terms did not show any perceptible trend for any group except the poorest one (Suryanarayana, 1995) as a whole in rural India.

3.4 Concluding Remarks:

The food policy of the Indian after independence was a considerable departure from the famine relief policies of the pre-independent era. Through the strategies aimed at increasing the availability of food, the country reached a point where there was self-sufficiency in output to a certain extent. But whether the physical availability could be converted into economic access is debated. Even then India could boast of a public distribution system which was theoretically perfect in its universal coverage. With the ushering in of the era of liberalisation, serious attempts are being made to replace it by a system which is discriminatory in recognizing food as a fundamental right.

A discussion on food policy in India cannot overlook the fact that the food policy is a subsectoral policy forming part of broader sectoral policies on agricultural development (Kabra, 1990). However, the Indian development strategy has avoided any serious efforts at creating changes in the hierarchy of the agrarian structure while making food policy decisions when that would have been a way of ensuring food security in the long run.

Chapter 4

Public Distribution System in Durg District

Introduction:

Micro studies are important to understand the mechanisms which are at work at the qualitative level of any problem which cannot be captured effectively by a large scale survey. A micro study provides the scope for intense observation of the factors that are active in a specific context. A large scale study tends to overlook many aspects which are location specific or situation specific since specificities are lost out in aggregation and standardisation. A micro study gives space for all the specificities and may also give better quantitative information since careful handling of data is possible.

A field survey was undertaken in Durg district of Madhya Pradesh to understand the various aspects of food security and the Public Distribution System.

The micro study was undertaken with the following objectives in mind:

- i. To estimate the dietary inadequacies of the households surveyed;
- ii. To estimate the extent of dependence on various sources for meeting the requirement of food grains;
- iii. To bring out the extent to which utilisation of PDS is influenced by factors like employment and earnings of households;
- iv. To estimate the subsidy accrued to a household by the PDS;
- v. To assess the performance of the Targeted Public Distribution System;
- vi. To evaluate the feasibility of alternatives to the PDS.

The survey was conducted in October-November 1997. In the rural areas, this is a lean season, just before harvest begins.

4.1 Methodology of the field study:

The field study covers 100 households, 50 each from the rural and urban areas. Throughout the analysis, a distinction has been maintained between the rural and urban households due to the reason that the factors at work are different in both. Both regions differ in most of the aspects starting from income levels. In any case, no attempt has been made to look at one vis-a-vis the other since the issue is food security to the poor and vulnerable sections, be it rural or urban.

The households have been classified under various groups according to their Monthly Per Capita Incomes. Usually, large scale surveys use the Monthly Per Capita Expenditure classes (eg.NSS) for analysis. In this study, we use Monthly Per Capita Income (MPCI) groups as a proxy since it was easier to collect.

Another point of difference from many surveys is that while estimating the extent of benefits from PDS, the denominator is always the total population covered and not the people who are beneficiaries of PDS. The survey includes 20 households who are not owners of ration cards.

Throughout the analysis, the results have been looked at the level of household and per unit. A household is constituted by a group of persons normally living together and taking food from a common kitchen. Per unit here means one unit as exists in ration cards. Children below fourteen years are considered as half a unit.

As stated earlier, the sample consists of fifty urban households and fifty rural households. In the rural area, a census survey was conducted in two villages to select the households and to understand the macro processes at work. All the households are agricultural labour¹ households with a marginal amount of land. The urban

¹The definition of an agricultural labour is as a person who sells her/his labour power to work on another person's land for wages in money, kind or as a share of crop ... broader in the sense that it includes all those for whom sale of labour power (in the agricultural sector) is a source of livelihood (Jha, P.K., Agricultural Labour in India, 1997).

households were picked up randomly from three habitats of industrial workers in Bhilai.

To estimate the coverage of PDS, the households have been divided into four categories according to the sources of purchase of cereals:

- i. Households which are completely dependent on PDS for their purchase;
- ii. Households which depend on both PDS and the market;
- iii. Households which depend only on market; and
- iv. Households which do not make any purchase at all.

All the analysis is done on a monthly basis. To calculate monthly per unit cereal consumption, data was collected on the amount of cereal purchase (rice, wheat, coarse cereals) per month.

The per unit Calorie requirements of a household is calculated according to norms put down by ICMR.² The energy consumption of an average male during sedentary work is taken as one unit and the other coefficients are worked on the basis of their calorie requirements relative to that of a sedentary man. One unit of coefficient corresponds to energy requirement of 2400 calories per day. The table of coefficients for computing calorie requirement of different groups is given in the appendix. From the data collected on monthly consumption of cereals, pulses, vegetables, milk, eggs, fruits, edible oil, sugar and other food items, per unit calorie consumption has been calculated for each household separately using calorie conversion tables³, according to the calorie requirement of each person.

Average per unit expenditure on food is calculated for each MPCII group from the information on food purchases. The proportion of income spent on food items is calculated for each group separately.

To calculate the implicit subsidy per capita from cereal purchases from PDS, the following method⁴ has been used. Implicit Subsidy (IS) is

² Gopalan, G., 'Nutritive Value of Indian Foods', National Institute of Nutrition, ICMR, 1971.

³ The calorie conversion table (ICMR) is given in appendix-3

⁴ The method used is the one used by Parikh(1994).

$$IS = (P_m - P_r) \times Q_r$$

where P_m - Price per unit of Market purchase

P_r - Price per unit of PDS purchase

Q_r - Quantity purchased from PDS

To evaluate the alternatives to PDS, the additional household requirement of rice to fulfill the calorie norm is estimated. The employment days required for each MPCII group at the present wage rate and at the minimum wage rate, and the quantity of food grains to be provided to ensure the required consumption level is also worked out.

Finally, an attempt has been made to estimate the price at which food grains should be sold through the PDS to cover the present level of purchase from PDS plus the additional cereal requirements to fulfill the calorie requirements.

4.2 Introduction to PDS in Durg :

In Durg the PDS is run by three agencies: the Civil Supplies Corporation, the Department of Food and Civil Supplies, and the District Co-operative Bank. The mid-day meal scheme and the Food for Work Programme is run by the District Rural Development Agency.

Distribution of food grains is done through co-operative societies. There are 159 co-operative societies in Durg with 618 outlets (466 rural and 152 urban). The distribution part was taken over by the co-operative societies in 1994 to end corruption through private dealers.

The Targeted Public Distribution System was introduced in MP in May 1997. Accordingly all households were issued APL and BPL cards (Table 4.1). The BPL households are entitled to 10 kg. food grains (7 kg. rice and 3 kg. wheat) at half the issue price. A mid-day meal scheme is existing under which each school going child would be provided with 3 kg. rice per month.

Some of the issues which arises regarding the working of PDS in Durg are:

- i) The system is run by three departments each independent of the other. This leads to ignorance of some important aspects and shifting of responsibility. The co-operative Bank is the channel through which the supplies finally reach the consumer. But it was found that that was the weakest link in the chain without any autonomy and power.
- ii) The enumeration for ration cards was being done at the panchayat and municipality level. There was widespread corruption leading to issue of bogus cards, which finally led to a shortage in supplies.
- iii) The allotment was based on the population estimates of 1991. This did not include the increase in population and the number of cards after that. This also led to a shortage in supplies.
- iv) The introduction of TPDS led to situation in which the APL households failing to get even 300gms. food grains per unit (less than the quota of sugar). At the same time it was found that more than 50 percent of the food grains allotted for BPL was surrendered⁵ (Table 4.2). The possible reasons for this can be, a) The amount of subsidy provided is less than that provided by one employment day which they might have to forego in collecting their entitlements, b) The degree of uncertainty is involved in the collection of entitlements, c) The amount of type I error (inclusion of non-poor) must be high.

The subsidy provided per household is Rs.37 per month which is almost equal to one employment day for one person. But since all persons in a household are not employed every day this cannot be a reason enough to forego the subsidy. The uncertainty involved in the form of non availability of stock when money is at hand and the wastage of time if it involves frequent visits to the shops, can reduce the actual amount of subsidy. The probability of type I error is high since there is a general perception that the ownership of a BPL card would make the owner eligible for forthcoming government programmes. Since the responsibility of enumeration is

⁵The foodgrains allotted for BPL households cannot be converted to APL quota even if it is surrendered.

with the local bodies, a corrupt local body can misuse the system.

v) The method of identifying the poor was faulty and led to type II error (exclusion of the poor). The BPL cards were issued to households on the basis of a survey conducted in 1991 to identify the recipients of IRDP⁶. The urban households were virtually excluded from BPL to the effect that even the poorest of them would get no more than 5 kg. rice per card. A survey is being undertaken now to re-identify the BPL households. The income ceiling has been raised to Rs.1700 per month⁷ per household.

Following were some remarks made by the households surveyed regarding the working of PDS .

i) A major complaint against the PDS was the reduction in allotment in 1997. The households which used to get as much as 20 kg. per card earlier does not get more than 5kg.

ii) There is no credit system in PDS shops .So the households found themselves in situations in which when there was money, there was no stock and vice versa.

iii) The shops functioned only on two days a week which was very inconvenient to the workers.

iv) There was blackmarketing in sugar and kerosene which led to shortage of supplies.

v) The consumers had no complaints regarding the quality of the food grains supplied.

4.3 Profile of the Habitats

A socio-economic profile of the habitats to which the households belong would be helpful in getting more insights into the issue under concern.

⁶ The criteria used were a) Annual income below Rs.11,500, absence of facilities like Pucca house, electricity, sanitation and drainage.

⁷ The other criteria has also been expanded to non possession of T.V, vehicle, ceiling fan, tractor, irrigated land etc.

The first village surveyed, Kachandur is in Durg block. It is a panchayat in itself headed by a lady Sarpanch. It is 10 k.m. away from the Jamul industrial area in Bhilai. It has a population of 2165 and 347 households, almost all of them dependent on cultivation directly or indirectly. Many households complement their income by seeking employment in the industrial area. Majority of the households are small and marginal farmers, and agricultural labourers. 75 per cent of the households are net buyers of foodgrains. The Fair Price Shop which covers Kachandur is in Jewra Sirsa, 5 k.m. away from the village. It is run by a co-operative society, along with the fertilizer and seed shop. It serves the needs of 10,921 people in four villages. It has 1700 cards under it of which 446 are Below Poverty Line (BPL) Cards. It also distributes the grain which comes for the mid-day meal scheme. The total number of cards in Kachandur are 325 (94 per cent of total households) and total units are 1668. The number of BPL Cards is 79 which is 24 per cent of total number of cards.

Singhola is a tribal village in Dondi block. It consists of three habitats of Kurkutti, Kanjeli and Paras Birhi with a distance of 3 k.m. between each of them. It has a population of 1500 and around 325 households. Almost all the people are dependent on agriculture. Agricultural incomes are supplemented by forest resources. The village is covered by the Integrated Tribal Development Programme. Unlike in Kachandur, people are not dependent on market for their foodgrains. The demand is fulfilled by the quota from PDS and village production. The Fair Price Shop is in Kurkutti. The number of ration cards under it is 251 of which 98 is BPL cards. Total number of units is 1183.

The urban households were selected from the three industrial labour camps in Jamul, Chawni and Hatkhoj. These habitats harbour most of the industrial labour force in Bhilai. More than 80 per cent are migrants from the villages or the neighbouring districts. Though they have land in the villages, they are completely dependent on markets for their purchases of foodgrains. The industrial labourers include permanent workers in big companies to daily workers paid below the minimum wage rate.

Table 4.3 gives the distribution of households in the Monthly Per Capita Income groups and the total units in each group. The sample picked up is representative of the relative share of each income group. In the rural area, the largest number of households are from the group 100-200 (54 per cent) while among the urban households the distribution is more or less even except the first two classes. The MPCII group of 300-350 has the highest number of households if all the households are taken into consideration (38 per cent) followed by 150-200 (36 per cent).

Table 4.4 provides the distribution of rural households according to ownership of land. 21 households are without any land (42 per cent) and 27 (54 per cent) households have marginal land upto 2 acres. A direct relationship between ownership of land and income cannot be established since income from land depends on other factors, the most important being irrigation. As mentioned earlier, all the households depend on agricultural labour for most parts of the year. In Kachandur, the wage rate is Rs. 30-35 per male worker (coolie) and Rs. 20-25 per female worker (reja). The employment days per year are around 160 days. In Singhola, the wages are fixed in paddy which is one reason which prevents them from being market dependents. The male worker gets 7.5 kgs. per day or its money equivalent and the female worker gets 3 kgs. (less than 50 percent of that of males) per day. The total employment days vary between 90-100 days per year.

The distribution of households according to categories is given in Table 4.5. Among the rural households, 68 per cent belong to Scheduled Tribes and 36 per cent to the OBC category. In the industrial area, 35 households (70 per cent) are from OBC; 7 each from general and ST. The information regarding the ration coverage is given in section 4.6. Around 12 per cent of the rural households are without any cards while the same is 24 per cent in the urban households.

4.4 Details regarding cereal purchases:

Table 4.6 gives details about the distribution of households according to

source of purchase. About 38 per cent of the rural households depend only on PDS for their purchase, 34 percent depend on PDS and the market and 18 per cent is dependent only on the market. 10 per cent of households do not make any market purchase at all. It is also seen that as the income level rises, the dependence on PDS declines.

Among the urban households, 60 per cent of the people depend on PDS and the market and 40 per cent only on the market. The first and last categories are non-existent among urban households.

Tables 4.7 and 4.8 give information regarding the source wise purchase of rice and wheat. The rural households purchase only 39 per cent of their total consumption while for the urban households, it is 100 per cent. The rural households do not purchase wheat from the open market while the urban households depend on market for 40 per cent of wheat purchase. Only the higher income groups purchase wheat from the market.

The details about share of PDS in purchase and consumption of rice are given in table 4.9. In the rural households, the lowest income group is 100 per cent dependent on PDS. The dependence rate declines with increase in incomes. On the average, the share of PDS in total purchase of rice is 61.2 per cent and in total consumption of cereal is 22 per cent. In the urban households, since the share of PDS is very low for all income groups, any such pattern is not visible. Even then, the share of the lowest income group is much more. Table 4.10 gives the share of PDS in total cereal consumption. The share of PDS declines from 51 percent for the lowest MPCII group to 9 percent for the highest income group. No such pattern is visible in the urban households again. The same table gives the monthly per capita cereal consumption. On the average, an urban person consumes 15.33 kg. of cereals per month while it is 13.57 kg. in the rural areas⁸. Unlike the popular perception

⁸ The ICMR norm of 11.58 Kg(chapter-3)cereals in a balanced diet has no application in this context.

regarding cereal consumption, per unit cereal consumption in the urban households is higher than that of rural households .

Table 4.11 gives the average expenditure on food per unit by the various income groups. The expenditure pattern strictly follows Engel's law that the share of food in total expenditure decreases as income increases. On the average, for all income groups, the rural households spend 82 per cent of their income on food and urban households spend 69 per cent of their income on food items. In the urban area, the share increases upto the third income group. The food expenditure of the lowest income groups both in rural and urban areas is greater than their income.

4.5 Calorie Consumption Levels:

Chhattisgarh region to which Durg belongs is the rice bowl of MP. All the households are rice consumers. The diet usually consists of two full meals a day. An attempt has been made to form an estimate of calorie intake levels appendix. Table 4.12 gives an estimate of the daily per unit calorie consumption of the MPCII groups in the rural area. On the average, the daily per capita intake of calories among the rural households is 74 per cent of the calorie requirements. All the six income groups fail to fulfill their calorie requirements. Except for the higher income group, there is no obvious relation between income and calorie intake levels. Even by the poverty line estimate of 2400 calories for rural areas, no income group is fulfilling its calorie requirements. Among the urban households (table 4.13), the average daily per unit calorie intake is 86 per cent of the requirements. Except the highest two income groups, no group satisfies the poverty line norm of 2100 calories. Variations due to income are more visible in the urban area. The bottom group consumes only 50 per cent of the required calories while the highest income group consumes 104 percent. A major difference from the NSS survey results⁹ is that the urban households are better off with regard to cereal consumption.

The diets of the households surveyed were not only inadequate in fulfilling

⁹ The 50th round of NSS(1993-94).

energy requirements but also inadequate with respect to nutrient intake. Even the richest income groups do not consume enough proteins and vitamins. This is true across all the households. Only 5 per cent of the total households consumed egg and milk at a regular basis. Pulses were a luxury. The intake was not more than 75 grams on the average per day per household. The intake of leafy vegetables and other vegetables was also very limited. The diets are deficient in essential nutrients like Vitamin A, Riboflavin, Iron, Calcium and fat. The urban households have the additional disadvantage due to poor and unhygienic environment.¹⁰

Even though a detailed survey cannot be undertaken regarding the gender aspect of nutrition it was found that in most of the households the females faced discrimination in diets. They were provided the residuals of what the male members ate. At the same time the work load on them was same if not more.

4.6 Targeted Public Distribution System:

Table 4.14 gives the distribution of MPCII groups according to Above Poverty Line Cards, Below Poverty Line Cards and no cards. Among the households surveyed, none in the urban area, were covered by the targeted PDS. Table 4.15 gives the distribution of cards among various classes according to ownership of land.

According to the poverty line criterion, none of the rural households could be excluded from the TPDS. But if we go by the income groups, we could see that 19 (38 per cent) households have been excluded from the system, who are actually eligible. If you take the ownership of land as the criteria, 17 (34 per cent) households have been excluded. Thus the incidence of type II error has been great. On the other hand, type I error, that is, the inclusion of households who are not eligible is totally absent among the household surveyed. This cannot be taken as a rule that exists in other areas of Durg since the local administration was not very corrupt and public action was strong in both the villages surveyed.

Among the urban households, except the last income group, all the other

¹⁰ The role of environment in nutrition has been discussed by Osmani(1995)

households are eligible to be covered by TPDS. But all the 38 households have been excluded and are considered as APL groups. This has led to a drastic reduction in the allotment of rice and wheat to them. Altogether, 45 households who have been declared as APL, gets about 5 kg. rice per month from the PDS. The APL cards in the village of Singhola, which is a tribal block, gets 20 kg. rice per month per card. The BPL card in the village of Kachandur is entitled to just the 10 kg. cereals provided at half rates which is less than the monthly cereal consumption of even one person in the lowest income group. The subsidy provided per BPL card is Rs. 37 per month which is equal to 1.25 employment days in the rural areas.

4.7 Implicit Subsidy from PDS:

The implicit subsidy per unit per month has been calculated for the various MPCII groups. Table 4.16 gives the per unit implicit subsidy on rice and wheat and on cereal aggregates. The implicit subsidy on rice is Rs. 5.97 in rural area and Rs. 1.30 in urban area. Among the rural households, the subsidy is more or less even among the MPCII groups while among the urban households, the lowest subsidy is received by the poorest income group, Rs. 1.30. No other significant pattern emerges in the urban area. The implicit subsidy for an average household in the rural area is Rs. 32 per month, which is equal to the wages of a male agricultural worker for one day of employment. In the urban area, the subsidy provided for an average household is Rs. 11.70 per month which is less than one third of the daily earnings of one member for one day of employment.

4.8 An Evaluation of Alternatives:

An attempt has been made to evaluate the costs and benefits of any alternative to PDS among the households surveyed. The alternatives considered were:

1. An Employment Guarantee Scheme which would provide the income equivalent to the subsidy provided by PDS at present plus the amount needed to meet the additional requirements of foodgrains.

2. A Food for Work Programme as an Employment Guarantee Scheme.
3. A Food for Work Programme along with existing PDS.
4. Extending the PDS to cover the additional requirements of food.
5. A system of food coupons to be issued to the poor households.
6. The present TPDS with a greater entitlement.
7. A targeted system in which all the agricultural labour households are covered.

Table 4.17 gives the additional household requirement of rice to fulfill the calorie requirements. Table 4.18 gives the employment days required for each MPCII group at the present wage rates and the present market prices to realise that amount of consumption if the PDS is abolished. The table also gives the same assuming that minimum wage rates are ensured. In the rural area, an average of 9.5 employment days would be required at the existing wage rate and 5.2 days at the minimum wage rate per person per household monthly to fulfill that amount of consumption. In the urban areas, the same is 6.20 and 4. If the government initiates a food for work programme, it should provide an average of 36 kg. rice per person per household monthly in rural area and 20.5 kg. rice per person in the urban area. If we take the three lowest income groups, the quantity is 48 kg. in the rural area. The quantity is 81 kg. for the lowest income group in the urban area.

An attempt has been made to estimate the price at which foodgrains should be sold through PDS to cover the present level of purchase from PDS plus the additional cereal requirements to fulfill the calorie requirements. Table 4.19 gives the respective values for each income group. On the average, foodgrains per kg. should be priced at Rs. 2.30 in the rural areas and Rs. 2.75 in the urban areas. If the PDS in the existing form is complemented by a food for work programme, it should provide an average of 24.08 kg. foodgrains per household in the rural areas and 17 kg. per household in the urban areas per month to fulfill the additional cereal requirements.

The main draw back of the proposal of PDS being substituted by an Employment Guarantee Scheme is that any such scheme ensures food security only to persons who have the access to the programme. In other words, it works on the

principle that the those who need food would need employment, and those who need employment would come forward to benefit from the scheme. But the picture given by the field study was not very satisfying. In Singhola it was seen that most of the employment schemes benefited the residents of Kurkutti since it was the votebank of the Sarpanch even though the Panchayat was more or less not corrupt and public action was strong. There was also information gaps regarding government programmes given the fact that the level of literacy and awareness is not very high. Abandoning PDS altogether and shifting once for all to an employment scheme is not advisable, however theoretically sound it might be. A PDS in the existing form along with a Food for Work programme seems to be a better alternative.

The success of any targeted system depends on how well the targeted group can be identified. As mentioned earlier, among the households surveyed, the incidence of type II error (the exclusion of the poor) was high. Proper identification of the poor requires the formulation of proper criteria plus vigilance at the enumeration stage. Supposing that the target group has been identified, the system poses further problems. Among the MPCII groups surveyed except the highest two income groups in the urban area, all are eligible to be targeted if we look at the calorie consumption levels. The present subsidy provided is inadequate to fulfil the requirements. If the entitlements are to be raised and all eligible households are enumerated, the administrative and economic burden of targeting would be enormous and may even outstrip the present food subsidy levels. A system of food coupons could be implemented only in the urban area since market plays a minor role in the day to day life of the rural households surveyed. Even in the urban areas, unless proper monitoring is done and the coupons are renewed from time to time to make it inflation indexed, the households would be exposed to the fluctuations in the market. Since all the agricultural labour households surveyed are eligible to be targeted under the category of the poor, a separate targeting of them does not make any difference even though conceptually the criterion provides a clearer view of the target group.

4.9 Concluding remarks :

The micro study was an attempt to look at some issues related to the food security system. It was found that, PDS had an important role in the food grain purchases of the households. After the introduction of the TPDS, the subsidy to the urban households declined considerably (Rs.11.70 as against Rs.32 for rural). The calorie consumption level fails to reach the required level both in the urban and rural areas. The calorie intake among rural households was just 74 percent of requirements. The urban households surveyed were facing serious threat of income decline unemployment due to the conditions created by the new Industrial Policy. Any move to dismantle the PDS and go for an alternative with a view to reducing the economic burden might lead to serious decline in nutrition levels of the rural households. At the same time adequate coverage and better delivery system could go a long way in improving the nutritional standards of the urban households. Schemes like Food for Work programme could exist side by side with the PDS in ensuring food security rather than being an alternative to PDS.

Chapter 5

Conclusion

A Food security system addressing different aspects of food (production, distribution, nutrition, etc.) became the hall mark of the food policy in India after independence. Public Distribution System is a major agency through which the government enforced the regulatory mechanisms in the food grain market. The rationale for the Public Distribution System could be sought in the specific context of the role of food as a wage good for economic development in the developing countries. (S. Chakravarty, 1993).

The following are some of the issues that emerged during the discussion on Food Policy in India:

- i) India was able to arrest the problem of acute hunger (starvation) to a great extent through its effective mix of strategies. The incidence of widespread famines is almost nonexistent in India now.
- ii) The government was able to formulate a proper policy mix for food security, constituted by land reform regulations, New Technology in agriculture and increasing public expenditure on poverty alleviation and rural development. However, the implementation of these policies was marked by a lack of commitment and political will, and a certain allegiance towards the vested interests. (For e.g. The dismissal of land reforms from the agenda).
- iii) Through a universal Public Distribution System, the government has been able to provide food security to the lower and lower middle income groups to a certain extent. Though it is argued that (Parikh, 1994) the implicit subsidy provided by PDS is negligible (less than Rs.3 per person per month), in states like Kerala, TamilNadu, Andhra Pradesh, Jammu&Kashmir and Gujarat the coverage and subsidy from PDS is valuable.

- iv) The food Policy was not able to ensure adequate nutritional standards of the people. According to the latest NSS data available (1993-94) the population reporting a calorie intake level of "less than 90%" of the norm of 2700K cal, formed 42 percent of the total in rural areas and 49 percent of the total in urban areas. The incidence of malnutrition among children and women are very high.

To understand the extent of benefits accrued to the poor income groups from the PDS, a field survey was undertaken in Durg district of Madhya Pradesh. The main objective to find to what extent the PDS has influenced the foodgrains consumption of the households surveyed, especially after the implementation of the Targeted Public Distribution System. The following are the summary of the findings of the micro study.

- i) The level of undernourishment was high among both the rural and urban households surveyed. On the average, the rural households had a calorie intake of just 74 percent of the required calorie norms while the same was 86 percent for urban households. Though the urban households have a greater calorie consumption level, in terms of environmental hygiene which has nutritional implications, they were worse off.
- ii) The degree of dependence on PDS in the tribal area was high. About 38 percent of the rural households depend only on PDS for their purchase. This was especially the case in the tribal village where the household entitlement was high and service mechanisms better. According to the provision that any one within a radius of 15 km. of a Fair Price Shop could avail the facility of it subject to availability of food grains, there were many migrant households who were benefited from PDS.
- iii) The implicit subsidy provided by the PDS was greater in rural areas after the implementation of TPDS. Even then, the subsidy provided per

household per month was equal to the earnings of one day of employment for a person. For an urban household it was less than one third of the daily earnings per person.

- iv) The enumeration for ration cards was not done properly. The coverage of households of migrants and slum dwellers was very limited due to technical problems. This resulted in the exclusion of some of the most vulnerable sections from the system.
- v) The introduction of TPDS led to an interesting situation in Durg district, where more than 50 percent of the Below Poverty Line quota was surrendered due to failure to off-take. The Below Poverty Line households who used to depend on PDS before, could not get more than 5 kg per month above the allotted quota. The coverage of TPDS in the urban areas was extremely limited. Among the households surveyed, the incidence of Type II error was very high. (38 percent in rural areas). None of the urban households were covered by TPDS. If we go by the calorie consumption levels, except the highest two urban MPCl groups, all the others are eligible to be covered by TPDS.
- vi) It was seen that the implementation of a government programme depended to a large extent on the efficiency of the local body and existence of Public Action. The Panchayats in the villages surveyed were more or less non corrupt and any negligence on its part was countered by strong Public Action. These two factors reduced many defects which would have happened otherwise.
- vii) An evaluation of the alternatives for the PDS suggested that the dismantling of PDS for any Employment Guarantee Scheme is not advisable since the successful implementation of any such scheme was dependent on a lot of other factors (mainly political). Any system of targeting faced the problem of proper identification of the categories, which is a very complicated procedure.

In the wake of the liberalisation, the government has gone for a cut in food subsidies as a part of the expenditure restricting policies. Though the rhetoric is of 'protecting the poor and vulnerable sections', it is a known fact that the reason behind the cut is a conscious move to reduce the fiscal deficit. The Targeted Public Distribution System was introduced in January 1997. The idea is targeting through income. The desirability of a targeted system can be questioned on the following grounds:

- i) The existing system of universal Public Distribution was in a way self targeting. Due to the inferior quality of grains supplied and poor deliverance mechanisms, the richer income groups stayed out of the system most of the time.
- ii) Targeting involves discriminations in the most fundamental right of a citizen, the right to food. If a person chooses to be a beneficiary of the PDS, it is the responsibility of the state in its role as protector of people's welfare to create the conditions.
- iii) The identification of the targeted category poses a moodier problem. On one hand is the problems regarding the conceptualisation of poverty and undernourishment while evolving a criterion. On the other hand are the problems at the enumeration level. The incidence of Type I error (inclusion of non-poor) and Type II error (exclusion of the poor) may be high.
- iv) Most of the developing countries implemented a targeted system as part of the Structural Adjustment Policies after 1985. A study by Cornia and Stewart (1987) shows that there has been a decline in the nutritional levels of the population. No Targeted System has been successfully implemented in the world till now. This is an adequate reason for approaching targeting with caution.
- v) The group which is outside the target are exposed to vagaries of the market, especially when foodgrain prices are likely to soar up in the

absence of existing PDS. The number of vulnerable persons are increasing day by day especially among the industrial workers due to the New Industrial Policy.

An efficient system of public distribution cannot overlook the significance of delivery mechanisms. In India, the distribution of foodgrains is done by private dealers and co-operative societies. A major part of the leakages in the system occurs through the private dealers. The role of co-operatives in ensuring an efficient delivery mechanism in the realm of foodgrain distribution need to be examined. For a co-operative society to work efficiently, there are certain preconditions. Shah (1995), argues that success of a co-operative, either at the village level or the entire federal system, depends upon how effectively it serves the purposes central to its user members; and how effectively the co-operative does this depends on how well it is designed to do so. In India, the present system of working of the village co-operatives leaves them without any initiative and incentive through overregulation and control by the federal system. Shah analyses the causes which enabled the success of co-operatives in Gujarat. He finds that an uninterrupted tradition of member governance at all levels, a benign micro policy and an enlightened macro-policy environment with granted autonomy to the federal co-operatives, had a major role in their success. The replacement of the existing distribution channels by efficient co-operatives on the line of Gujarat could be recommended.

The Right to Information movement that emerged in India in the nineties is a major step in ensuring accountability of any government scheme including the PDS. The movement exists as a tool of empowerment of the working class in Rajasthan. In Madhya Pradesh, the movement made a head way in Bilaspur Division, when all information related to PDS were made public. A consumer could go to the Fair Price Shop and demand information regarding all the aspects of its working. This was supposed to ensure accountability towards the public through empowerment of the masses. At the same time, for

any such programme to be successful, the awareness of the people regarding their rights is essential. In Bilaspur, it was found from a field survey conducted in a tribal village in Raigarh district in 1996 March that none of the households were literate enough to avail the benefits of the programme. Even then the movement has its own value as exhibiting a correct perspective regarding the functioning of government schemes.

A Public Distribution System which is universal in its coverage along with Employment Guarantee Schemes to generate purchasing power seems to be the best method for creating access to food for the poor and vulnerable sections. If there are surplus stocks of foodgrains, instead of going for open market sales, the government can utilise them for Food for Work Programmes (Sen, Ghosh & Chandrasekhar 1996). This would result in the creation of assets in the rural areas which would help in the overall development of the rural economy.

We could conclude that the need for an efficient PDS which is universal in its coverage along with public expenditure to create purchasing power is the best alternative in ensuring food security to the people, especially when there is a decline in welfare due to the liberalisation policies.

Appendix -1
Tables

**Table 2.1 : Per capita calorie intake per day of low income countries
in Asia and Africa**

Country	1970	1980	1990	1992
World	2464	2559	2718	2718
Asia				
Bangladesh	2196	1902	1994	2019
Nepal	1912	1863	2307	1957
Phillipines	1741	2253	2416	2257
Sri Lanka	2304	2341	2205	2273
India	2082	1959	2277	2345
Africa				
Angola	2104	2184	1851	1839
Burundi	2106	2025	1956	1941
Central African Republ	2359	2266	1797	1690
Chad	2189	1639	1698	1989
Comoros	1880	1760	1753	1897
Ethiopia	1711	1858	1604	1610
Kenya	2194	2161	1902	2075
Malawi	2360	2251	1958	1825
Rawanda	2089	2048	1908	1821
Somalia	1819	1788	1769	1499
Sierra Leone	2370	2008	1895	1694
Zambia	2174	2196	2088	1933
Zimbabwe	2226	2292	2173	1985

Source : FAO Production Yearbook (1994)

**Table 2.2 : Per capita calorie intake per day in
Latin American Countries**

Country	1983 - 85	1988 - 90	1992
Argentina	3195	3068	2880
Bahamas	2703	2777	2634
Barbados	3129	3217	3207
Bolivia	2114	2013	2094
Brazil	2629	2730	2824
Chile	2589	2484	2582
Columbia	2578	2453	2677
Costa Rica	2772	2781	2711
Cuba	3094	3103	3129
El Salvador			2414
Guatemala	2398	2327	2254
Granada	2371	2959	2400
Haiti	1843	1992	2005
Honduras	2208	2138	2210
Jamaica	2576	2579	2558
Mexico	3147	3123	3062
Nicaragua			2556
Panama	2420	2484	2269
Peru	2144	2277	2037
Dominican Republic	2468	2359	2310
Uruguay	2721	2746	2668
Venezuela	2550	2534	2443

Source : Yearbook for Latin America and the Caribbean (1995)

Table 3.1 : Nominal and Real Food Subsidies (1989-90 to 1996-97)
in Rupees crores .

Year	Subsidy at Current Prices	Real Subsidy at 1980 - 81 prices	Subsidy as % of GDP	Index of Real Subsidy
1989-90	2476	1220.5	0.6	100
1990-91	2450	1088.3	0.46	89.1
1991-92	2850	1103.2	0.46	90.4
1992-93	2800	999.9	0.39	81.9
1993-94	5537	1807.1	0.67	148
1994-95	5100	1522.1	0.5	125
1995-96	5250	1486.2	0.5	122
1996-97	6114	-	-	-

Source : M . Swaminathan (1997)

**Table 3.2 : Share of Consumer Subsidy in
Total Food Subsidy**

Year	Total Subsidy (Rs. Billion)	% Consumer Subsidy to Total Subsidy
1991-92	33.2365	86.98
1992-93	36.7446	87.73
1993-94	44.2033	71.83
1994-95	44.55	61.41

Source : U. Patnaik (1997)

**Table 3.3 : Minimum Support Price and Central Issue Price
(per Quintal)**

Year	Rice		Wheat	
	M S P (in Rs.)	C I P (in Rs.)	M S P (in Rs.)	C I P (in Rs.)
1989-90	185	289	-	-
1990-91	205	-	215	234
1991-92	230	377	225	280
1992-93	270	437	275	330
1993-94	310	537	330	402
1994-95	340	-	350	427
1995-96	360	-	360	-
1996-97	380	-	380	-
1997-98	-	650	475	450

Source : U. Patnaik (1997)
The Hindu , Feb. 24 , 1997.

**Table 3.4 : Offtake of Foodgrains (rice
& wheat) from PDS (1991 - 96)**

Year	Offtake (million tonnes)
1991-92	19
1992-93	17
1993-94	15.2
1994-95	13.1
1995-96*	14.7
1996-97*	14.3
(April to December)	

* Provisional

Source : M. Swaminathan (1997)

**Table 3.5 : Population , Production and Net availability of Foodgrains
in India**

Year	Population (in millions)	Net Production (million tonnes)	Net Imports (million tonnes)	Net Availability (million tonnes)	Per Capita Net Availability per day (in gms.)
1951	363.2	48.1	4.8	52.4	394.9
1955	389.7	61.9	0.5	63.2	444
1960	432.5	67.5	5.1	71.2	449.6
1965	482.5	78.2	7.4	84.6	480.1
1970	538.9	87.1	3.6	89.5	455
1975	603.5	87.4	7.5	89.3	405.5
1980	675.2	96	-0.3	101.4	410.4
1985	750.4	127.4	-0.4	124.3	454
1990	832.6	149.7	1.3	144.8	476.4
1995*	916	167.2	0.4	169.4	506.6

* Provisional

Source : Economic Survey (1996 - 1997)

**Table 3.6 : All India Compound Growth Rate of
Production of Principle Food Grain Crops**

Foodgrains	1967-68 to 1980-81	1980-81 to 1994-95
Rice	2.22	3.48
Wheat	2.94	3.7
Coarse Cereals	-1.03	0.54
Total Cereals	0.37	3.06
Gram	-0.55	0.52
Tur	0.38	0.77
Total Pulses	0.44	1.67
Total Foodgrains	0.38	2.89
Total Non-Foodgrains	0.94	4.31

Source : G.S.Bhalla , Indian Journal of Agricultural
Economics ; Vol 50 No. 1 , 1995.

**Table 3.7 : Supply of Foodgrains through the PDS
in major Indian states , 1990 .**

States	Quantity Supplied (in 1000 tonnes)	Percent of total National Supply
Kerala	1736	12.2
Maharashtra	1607	11.3
West Bengal	1491	10.5
Andhra Pradesh	1319	9.3
Tamil Nadu	900	6.3
Gujarat	830	5.8
Karnataka	826	5.8
Assam	612	4.3
Rajasthan	584	4.1
Uttar Pradesh	526	3.7
Bihar	455	3.2
Madhya Pradesh	443	3.1
Orissa	429	3
Haryana	28	0.2
Punjab	8	0.1
Other States & Union Ter	2433	17.1
All India	14227	100

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Source : Bhalla (1994) , pg. 149

**Table 3.8 : Percent of Actual Requirement met through
Consumer Utilisation of PDS entitlement**

Region / State	Wheat	Rice	Sugar
North & North West			
Haryana	0.95	1.17	25.11
Punjab	0.66	17.28	19.84
Himachal Pradesh	16.72	11.03	31.66
Jammu & Kashmir	27.87	34.53	51.63
East			
Assam	5.65	6.94	34.52
Bihar	6.03	0.71	43.46
Orissa	24.64	3.86	64.11
West Bengal	13.14	20.49	43.7
Tripura	54.99	23.47	43.19
South			
Andhra Pradesh	10.9	22.14	55.8
Karnataka	3.92	3.11	21.36
Kerala	83.22	48.22	49.75
Tamil Nadu	-	-	-
West Central			
Gujarat	3.91	0.12	29.75
Maharashtra	3.53	2.01	28.4
Madhya Pradesh	2.49	6.36	33.54
Rajasthan	0.22	2.54	34.31
Delhi	59.21	47.55	44.95

Source : Kabra (1990) , pg. 149

Table 3.9 : Bias in PDS .

States	Bias
Andhra Pradesh	Rural
Assam	Urban
Bihar	Urban
Gujarat	Rural
Haryana	Urban-Rural
Himachal Pradesh	Rural None
Jammu & Kashmir	Urban
Karnataka	Urban-Rural
Kerala	Rural None
Madhya Pradesh	Urban
Maharashtra	Urban
Orissa	Urban
Punjab	Urban
Rajasthan	Rural
Tamil Nadu	Rural-Urban
Tripura	Rural None
Uttar Pradesh	Urban
West Bengal	Urban
India	Urban

Source : Howes and Jha (1992)

**Table 3.10 : Per Consumer Unit Intake of Calories , Protein and Fat Per Diem &
Percentage of Expenditure on Food to Total Consumer Expenditure**

MPCE Classes (Rs.)	% Expenditure on Food to Total		Per Consumer Unit Per Diem Intake					
	Consumer Expenditure		Calorie (K Cal)		Protien (gms.)		Fat (gms.)	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
<120	73.59	71.63	1700	1674	12.1	15.4	15.6	19.5
120 - 140	74.07	71.05	2004	1957	15.6	19.8	19.7	24.9
140 - 165	73.74	70.27	2173	2112	17.6	23.7	22.2	29.5
165 - 190	73.33	68.8	2320	2216	20.4	27.5	25.6	34.1
190 - 210	72.48	67.01	2457	2323	23.1	31.8	28.8	39.1
210 - 235	71.4	65.19	2555	2443	26.2	36.6	32.7	45
235 - 265	70.4	62.99	2676	2533	29.5	41.5	36.7	50.7
265 - 300	68.47	60.39	2810	2668	33.4	46.5	41.4	56.8
300 - 355	66.65	56.6	2981	2795	38.6	52.9	47.7	64.4
355 - 455	62.88	53.1	3204	2996	46.9	61.6	57.9	74.6
455 - 560	58.19	48.81	3448	3234	55.2	73.8	67.9	88.7
560 & above	43.62	34.9	3985	3628	72.3	85.4	88.3	102.9
All Classes	63.2	54.7	2683	2542	31.4	42	39.1	51.6

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Source : NSS 50th Round (1993 - 94)

**Table 3.11 : Per Consumer unit intake of Calories , Protien and Fat per Diem
by major states**

State	Calories		Protiens		Fat	
	Rural	(K .Cals) Urban	Rural	(0.0 gms.) Urban	Rural	(0.0 gms.) Urban
Andhra Pradesh	2559	2455	63.4	61.2	34	43
Assam	2406	2543	60.1	64.6	25.5	37.1
Bihar	2637	2667	75.1	74.9	28.7	39.8
Gujarat	2470	2491	68.9	67.5	58.7	71.2
Haryana	3109	2616	97.9	77.7	66.9	60.4
Himachal Prades	2916	2914	88.5	84.4	55.9	67.8
Jammu & Kashm	3154	2950	94.9	85.2	57.8	72.3
Karnataka	2575	2485	68.4	65.1	35.5	46.2
Kerala	2451	2445	63.4	65.3	40.8	46
Madhya Pradesh	2691	2556	78.5	73.5	35.3	49.5
Maharashtra	2427	2432	68.6	67.9	41.9	58.6
Orissa	2740	2754	65.6	69.7	18.5	34.2
Punjab	3007	2569	92.8	76	74.3	66.1
Rajasthan	3090	2704	99.4	82.3	66	63.9
Tamil Nadu	2347	2366	58.3	60	30.7	41.8
Uttar Pradesh	2899	2615	88.5	78.2	44.7	51
West Bengal	2733	2587	67.7	68.7	26.5	41.6
India	2683	2542	75	70.2	39.1	51.6

Source : NSS 50th Round (1993 - 94)

Table 3.12 : Rural Head-Count Poverty & Ranks according to Human Development Index .

States	Rural Head Count Poverty	Ranks according to HDI
Andhra Pradesh	16	10
Assam	45	9
Bihar	58	14
Gujarat	22.2	7
Haryana	28.7	3
Karnataka	28.2	8
Kerala	26	1
Madhya Pradesh	40.8	15
Maharashtra	38.6	4
Orissa	49.9	12
Punjab	12.5	2
Rajasthan	27.5	11
Tamil Nadu	32.6	6
Uttar Pradesh	42.6	13
West Bengal	40.3	5

Source : M.P. Human Development Report (1995).
Sen & Patnaik (1997).

**Table 3.13 : Incidence of Malnutrition among
Males and Females in India .**

Severity of Malnutrition	<u>Incidence of Malnutrition</u>	
	Female	Male
Severe	71.43	28.57
Moderate	56.93	43.07
Mild	43.6	56.4
Normal	30.3	61.2

Source : National Commission on Rural Labour , (1991) .

Table 4.1 : Coverage by Public Distribution System .

	BPL	APL
Number of Cards	127681	336632
Units	613225	1864816

Source : Civil Supplies Corporation , Durg .

Table 4.2 : Allotment & Offtake of Rice
(Below Poverty Line) in Durg .(1997)

Month	Allotment	Offtake	Offtake as % of Allotment
April	606	585.4	96.60
May	606	580.2	95.74
June	960.2	853.2	88.86
July	972	541.3	55.69
August	972	740.2	76.15
September	972	513	52.78
October	972	446.6	45.95

Source : Civil Supplies Corporation , Durg .

Table 4.3 : Distribution of households according to Monthly Per Capita Income Groups .

MPCI groups	Rural		Urban		All	
	No. of household	Total units	No. of household	Total units	No. of household	Total units
upto 100	2	8.5	1	7.5	3	16
100 - 150	15	55.5	0	0	15	55.3
150 - 200	14	68	4	12.5	18	80.5
200 - 250	6	22.5	6	25	12	47.5
250 - 300	3	11	6	24.5	9	35.5
300 - 350	10	35.5	9	36.5	19	72
350 - 400	0	0	5	21	5	21
400 - 450	0	0	7	30	7	30
above 450	0	0	12	42	12	42

Source : Field Survey .

Table 4.4 : Distribution of households (rural) according to Ownership of Land .

MPCI groups	0 acres	0 - 2 acres	2 - 5 acres
upto 100	1	1	0
100 - 150	5	8	1
150 - 200	2	11	0
200 - 250	5	1	0
250 - 300	2	2	1
300 - 350	6	4	0

Source : Field Survey .

Table 4.5 : Distribution of Households According to Categories .

MPCI groups	Rural		SC	Urban		
	ST	OBC		ST	OBC	General
upto 100	2	0	0	0	1	0
100 - 150	13	2	0	0	0	0
150 - 200	12	2	0	0	4	0
200 - 250	3	3	0	1	4	1
250 - 300	1	2	0	0	4	2
300 - 350	3	7	0	2	6	1
350 - 400	0	0	1	0	4	0
400 - 450	0	0	0	2	5	0
above 450	0	0	0	2	7	3

Source : Field Survey .

Table 4.6 : Distribution of Households According to Source of Purchase .

MPCI groups	Rural				Urban		
	Only PDS	PDS & Market	Only Market	No Purchase	Only PDS	PDS & Market	Only Market
upto 100	2	0	0	0	0	1	0
100 - 150	5	8	2	0	0	0	0
150 - 200	8	5	1	0	0	2	2
200 - 250	2	2	1	1	0	3	3
250 - 300	1	1	1	0	0	3	3
300 - 350	1	1	4	4	0	4	5
350 - 400	0	0	0	0	0	3	2
400 - 450	0	0	0	0	0	5	2
above 450	0	0	0	0	0	9	3

Source : Field Survey .

Table 4.7 : Sourcewise Purchase of Rice (Rural).

MPCI groups	Per Capita Rice Consumption	Sourcewise Purchase			Purchase as % of Total
		PDS	Open Market	Total	
upto 100	10.5	4.7	0	4.7	44.5
100 - 150	13.9	3.13	0.02	3.15	22.6
150 - 200	11.03	3.5	1.5	5	45.3
200 - 250	14.4	2.84	3.5	6.34	44
250 - 300	11.6	1.5	1.8	3.3	29
300 - 350	16.5	0.69	7.36	8.45	51.2
All Groups	12.9	2.73	2.36	5.09	39.4

Source : Field Survey .

Table 4.8 : Sourcewise Purchase of Rice & Wheat (Urban).

MPCI groups	Sourcewise Purchase of Rice			Sourcewise Purchase of Wheat		
	PDS	Open Market	Total	PDS	Open Market	Total
upto 100	0.66	6.66	7.32	0.6	0	0.6
100 - 150	-	-	-	-	-	-
150 - 200	0.8	14.4	15.2	4.32	0.8	5.12
200 - 250	1.2	13.4	14.6	2.2	0.2	2.4
250 - 300	0.61	10	10.61	2.05	0	2.05
300 - 350	0.54	10	10.54	1.64	0.6	2.33
350 - 400	0.71	10.47	11.18	1.9	0	2
400 - 450	0.8	15.98	16.28	0.96	0.48	1.44
above 450	1.14	13.9	15.04	1.42	4.53	5.95
All Groups	0.8	11.85	12.65	1.89	0.82	2.72

Source : Field Survey .

Table 4.9 : Share of PDS in the Purchase of Rice .

MPCI groups	Rural				Urban	
	Total Purchase (kg.)	Share of PDS %	Total Consumption (kg.)	Share of PDS %	Total Purchase (kg.)	Share of PDS %
upto 100	4.7	100	10.5	44.7	7.32	9
100 - 150	3.15	99	13.9	22.6	-	-
150 - 200	5	70	11.03	31	15.2	5
200 - 250	6.34	44.7	14.4	19	14.6	8
250 - 300	3.3	45.4	11.36	13	10.61	5
300 - 350	8.5	8	16.5	4	10.54	6
350 - 400	-	-	-	-	11.18	4
400 - 450	-	-	-	-	16.28	7
above 450	-	-	-	-	15.04	0
All Groups	5.15	61.2	12.9	22.4	12.65	6.12

Source : Field Survey .

Table 4.10 : Monthly Per Unit Cereal Consumption and the Share of PDS .

MPCI groups	Rural		Urban	
	Cereal Consumption (kg.)	Share of PDS %	Cereal Consumption (kg.)	Share of PDS %
upto 100	10.57	51	7.92	16
100 - 150	14.54	26	-	-
150 - 200	11.69	35	20.32	25
200 - 250	15.2	24	17	20
250 - 300	12.16	19	12.66	21
300 - 350	17.3	9	12.87	16
350 - 400	-	-	13.18	19.8
400 - 450	-	-	17.72	9
above 450	-	-	20.99	12
All Groups	13.57	27.33	15.33	17.35

Source : Field Survey .

**Table 4.11 : Average Expenditure
as a Percentage of Income .**

MPCI groups	Rural	Urban
upto 100	127	101
100 - 150	93.5	-
150 - 200	75.5	118
200 - 250	67.5	78
250 - 300	72	66
300 - 350	57	49
350 - 400	-	49.75
400 - 450	-	55
above 450	-	37
All Groups	82	69.22

Source : Field Survey .

Table 4.12 : Daily Per Unit Calorie Consumption (Rural).

MPCI groups	Requirement (K Cal)	Actual Intake (K Cal)	Actual Intake as % of Requirement
upto 100	2369	1600	67
100 - 150	2394	1827	76
150 - 200	2400	1553	64
200 - 250	2473	1586	64
250 - 300	2340	1775	76
300 - 350	2409	2264	94
All Groups	2397	1767	74

Source : Field Survey .

Table 4.13 : Daily Per Unit Calorie Consumption (Urban).

MPCI groups	Requirement (K Cal)	Actual Intake (K Cal)	Actual Intake as % of Requirement
upto 100	2000	903	50
100 - 150	-	-	-
150 - 200	2475	2248	91
200 - 250	2418	2325	96
250 - 300	2512	2254	90
300 - 350	2164	1819	84
350 - 400	2382	1959	82
400 - 450	2709	2412	89
above 450	2534	2649	104
All Groups	2399	2071	86

Source : Field Survey .

Table 4.14 : Distribution of Households According to Possession of Ration Cards .

MPCI groups	Rural			Urban		All		
	APL	BPL	No Card	APL	No Card	APL	BPL	No Card
upto 100	1	1	1	1	0	2	1	1
100 - 150	2	10	0	0	0	2	10	0
150 - 200	2	10	2	3	1	5	10	3
200 - 250	1	5	0	4	2	5	5	2
250 - 300	1	2	1	4	2	5	2	3
300 - 350	4	3	4	6	3	10	3	7
350 - 400	0	0	0	4	1	4	0	1
400 - 450	0	0	0	6	1	6	0	1
above 450	0	0	0	10	2	10	0	2
All Groups	11	31	8	38	12	49	31	20

Source : Field Survey .

Table 4.15 : Distribution of Households According to Possession of Land & Ration Cards (Rural) .

Land (acres)	APL	BPL	No Card
0	5	13	3
0 - 1.0	-	8	1
1.0 - 2.0	5	10	3
> 2.0	1	-	1

Source : Field Survey .

Table 4.16 : Per Unit Implicit Subsidy on Cereal Purchases (in Rupees) .

MPCI groups	Rural			Urban		
	Rice	Wheat	Cereals	Rice	Wheat	Cereals
upto 100	6.38	0.21	6.59	0.42	0.88	1.3
100 - 150	7.02	1.92	8.94	-	-	-
150 - 200	5.77	1.83	7.6	3.02	3.58	6.6
200 - 250	7.52	2.4	9.92	1.54	2.38	3.92
250 - 300	3.6	2.4	6	1.44	1.92	3.36
300 - 350	5.54	2.4	7.94	1.15	1.43	2.58
350 - 400	-	-	-	1.33	1.83	3.16
400 - 450	-	-	-	0.67	1.23	1.9
above 450	-	-	-	0.85	1.64	2.49
All Groups	5.97	1.86	7.83	1.3	1.86	3.16

Source : Field Survey .

Table 4.17 : Additional Quantity of Rice needed to fulfil Calorie Requirements (in Kgs.)

MPCI groups	Rural		Urban	
	Per unit	Per household	Per unit	Per household
upto 100	6.6	28	9.5	71
100 - 150	5	28.5	-	-
150 - 200	7.5	38.5	2	6
200 - 250	7.7	30.8	0.22	0.79
250 - 300	4.9	14.7	2.24	6.7
300 - 350	1.2	4	9.45	33
350 - 400	-	-	3	9
400 - 450	-	-	2.6	9
above 450	-	-	0	0

Source : Field Survey .

Table 4.18 : Employment days needed to attain the Required Calorie Intake .

MPCI groups	Present Wage Rate		Minimum Wage Rate	
	Rural	Urban	Rural	Urban
upto 100	12.81	18.5	6.98	11.7
100 - 150	11.18	-	6	-
150 - 200	15	2.3	16	1.49
200 - 250	11.3	0.71	6.18	0.45
250 - 300	5.5	2.14	3	1.35
300 - 350	1.89	7.96	1.02	5.04
350 - 400	-	2.71	-	1.72
400 - 450	-	2.57	-	1.63
above 450	-	0.35	-	0.23

Source : Field Survey .

Table 4.19: Issue Price Needed to fulfil
Consumption Requirements

MPCI groups	Rural	Urban
upto 100	2.32	0.41
100 - 150	2.77	-
150 - 200	1.6	2.28
200 - 250	1.6	3.42
250 - 300	4.8	0.58
300 - 350	2.5	1.88
350 - 400	-	1.5
400 - 450	-	4
above 450	-	-
All Groups	2.32	2.76

Source : Field Survey .

Appendix-2

PDS Questionnaire

1. Name of the habitat.
2. Name of the head of the household.
3. Category.
4. Main occupation of the head of the household.
5. Annual income of the household.
6. Details regarding ownership of land.
7. Details regarding ownership of livestock.
8. Whether covered by any government scheme.
9. Whether in ownership of a rationcard:If yes,type of card.
10. If not in possession of card ,reason.
11. Details regarding family members.
12. Details regarding purchase from the ration shop.
13. Details regarding purchase from open market.
14. Details regarding production of foodgrains.
15. Details regarding monthly consumption of food items.
16. Remarks about the public distribution system.
17. Any other information.

Appendix -3

**Table 1 : Selected Economic Indicators of Durg
and Madhya Pradesh .**

	Durg	Madhya Pradesh
Rural Population	1550037	50787815
Rate of Rural Poverty (%)	62.4	60
Small Farmers	43129	1200558
Marginal Farmers	72432	1435235
Agricultural Labourers	42008	1701974
Rural Artisans	3806	197340

Source : M.P. Human Development Report (1995) .

**Table 2 : Coefficient for computing Calorie
Requirements of different groups .**

Group	Cu - Units
Adult Male (sedentary worker)	1
Adult Male (moderate worker)	1.2
Adult Male (heavy worker)	1.6
Adult Female (sedentary worker)	0.8
Adult Female (moderate worker)	0.9
Adult Female (heavy worker)	1.2
Adolescents (12 to 21 years)	1
Children (9 to 12 years)	0.8
Children (7 to 9 years)	0.7
Children (5 to 7 years)	0.6
Children (3 to 5 years)	0.5
Children (1 to 3 years)	0.4

Source : ICMR (1989) .

Table 3 : Calorie Conversion Chart .

Item	Calories Per Kg. (K Cal)
Rice - PDS	3460
Rice - Other Sources	3460
Wheat - PDS	3460
Wheat - Other Sources	3460
Jowar	3490
Bajra	3610
Maize	3420
Gram	3600
Tur	3350
Masur	3430
Milk (per litre)	1000
Goat Meat	1180
Eggs (per numbers)	100
Fish	1050
Sugar	3980
Gur	3830

Source : NSS (1993 - 1994) .

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