SOME ECONOMIC EFFECTS OF THE NEW ECONOMIC POLICY ON INDIAN FOOD SECURITY

A Dissertation submitted to the University of Hyderabad
in partial fulfillment of the requirements for the award of the
degree of

MASTER OF PHILOSOPHY

IN

ECONOMICS

BY

G. SRIDEVI

DEPARTMENT OF ECONOMICS
SCHOOL OF SOCIAL SCIENCES
UNIVERSITY OF HYDERABAD
HYDERABAD - 5000 46

1998

DECLARATION

I hereby declare that the work embodied in this dissertation entitled: "Some Economic Effects of the New Economic Policy on Indian Food Security", carried out by me under the supervision of Prof. M. Achi Reddy, Department of Economics. University of Hyderabad, is original and this has not been submitted for any degree or diploma, either in part or in full to any other university or Institution.

Place: Hyderabad.
Date: 31/12/98

G. Sridevi

Prof. M.Achi Reddy,
Department of Economics
University of Hyderabad
Hyderabad - 500 046.

CERTIFICATE

This is to certify that the dissertation entitled, **"Some Economic Effects of the** New **Economic Policy on Indian Food Security",** submitted by Miss. G. Sridevi, in partial fulfillment of the requirement for the award of the degree of Master of Philosophy in Economics is prepared under my supervision. The dissertation or a part thereof has not been submitted for any other degree or diploma at this or any other university or institution.

Hyderabad.
Date:

Prof. M. Achi Reddy
(Research Supervisor)

Head,
Department of Economics,

HEAD
Department of Economics
University of Hyderabad
HYDERABAD - 500 134.

Dean
School of Social Sciences

ACKNOWLEDGEMENTS

I am indebted to my supervisor Prof. M Achi Reddy who helped and encouraged me at all stages of my dissertation work with great patience and care despite of his busy schedule of work

1 am thankful to Prof. G. Nancharaiah, Prof V.V.N.Somayajulu, Prof. D. Narasmiha Reddy, Dr. V.B.N.S Madhuri, Dr. B, Kamaiah, Mr. K. Laxminarayana, Dr. Vathsala Narasimhan and other faculty members of the department of economics.

I am also thankful to the office staff Mrs Jayashree, Mr. Venkateswara Rao, and Mr. Murthi

I am sincerely thankful to Prof Partha Sarathi, Prof R Radha Krishna, The Vice-Chancellor, Andhra University, and Dr. Indrakanth, Reader, Dept of Economics, Osmania University for their valuable suggestions in my dissertation work

1 am thankful to my friends like, Rekha, Neeraja, Vijaya, Sujatha, Shanthi, Mini, Madhuri, Sabeena, Rani, Nalini, Sriramulu and others for their inspiration in writing this thesis

I am also thankful to Mr Gangaji for helping in typing the thesis

I also thank to the employees of I.G.M Library, CESS, and ASCI for their help to collect the material

1 am very much indebted to my parents Smt. G. Dhanalaxmi and G. Nanchariah, whose love, affection, encouragement, guidance care, made me to complete my dissertation work 1 am also thankful to my sister Srividya and my brothers Sanjay and Vijay for their encouragement

G. Sridevi.

TO

MY
PARENTS

CONTENTS

List of Tables

CHAPTER-I

INTRODUCTION

Most of the third world countries reel under the common problems of poverty, hunger and malnutrition coupled with high rates of population growth A number of them are predominantly agrarian economies with their employment and income directly linked to the performance of the agricultural sector. Agricultural policy was evolved in India, as in most other developing countries in the post-world-war two period At present Indian agriculture contributes about 27% of the nation's gross domestic product, but engages almost 67% of its labour force The persisting inability of the rest of the economy to absorb the labour from agriculture at a faster pace is a challenge that India must meet in the near future Meeting this challenge means also ensuring food security and a better standard of living for the rural poor Providing food security can be attributed to two factors Firstly to the lack of availability of food, i.e., physical access to food, and secondly to the lack of purchasing power, i.e., economic access to food Economic access to food depends on employment of the people Hence, providing food security to a rapidly rising population and simultaneously providing employment to a large proportion of work force traditionally engaged in agriculture is the major challenge The policy package employed to achieve this consisted of institutional changes like land reforms and large investments in rural infrastructure these measures were supplemented with a positive price policy. Combating food insecurity - both chronic and transient, has been the major concern of food policy in India during the past four decades (G.S.

Bhalla, 1994 p.133). While India could achieve some success in combating transitory food insecurity caused by droughts or floods, it has failed to make much dent on the chronic food insecurity reflected in low energy intake The improvement in the nutritional status has also been very slow.

In creased food production is considered to be a necessary,. though not a sufficient, condition for improving food security for the poorest segments of the population. If higher levels of production result in cheap food, it would be an effective instrument for food security particularly when the poor have adequate entitlements In the absence of such pre-conditions, even with improvement in food supply, the market mechanism may not always and automatically transfer food to the poor. In periods of short falls in domestic production, market failures due to imperfect markets in credit and insurance and incomplete information, the burden of adjustment is likely to fall heavily on the poorest families. Hence, in order to improve food security for the poor, the government relies on a set of policy instruments such as food rationing, price subsidies, employment programmes and feeding schemes Stability of food grain price, besides being a direct measure of food security, is considered important for both employment generation and poverty alleviation (Radhakrishna & Hanumantha Rao. 1994, pp.1) Of all the safety net operations that exist in India, the most far reaching in terms of coverage as well as public expenditure, is the public distribution system

During the mid-sixties when the food situation was critical, India opted for a production strategy of spreading the High Yielding Variety (HYV) - seed and fertilizer technology in a few high potential regions through a policy package consisting of output price support, input price subsidies and a public distribution system (PDS). The policy choice was based on the presumption that the positive agricultural price incentives would accelerate foodgrain output through the spread of new technology. There was an explicit recognition that the new strategy might aggravate inter-regional and inter-class inequalities, but such adverse consequences were sought to be neutralised through the PDS (Dantwala, 1976). Food management in India has since then come to include a food procurement programme with support prices as major policy instrument and the PDS which moves food grains from the surplus to the deficit states. It is a buffer stock, policy for stabilising foodgrain prices.

It was claimed that India had been able to reach the level of self-sufficiency in food-grains and insulate the domestic economy from the large fluctuations in the world market. The country had also managed to reduce the relative price of foodgrains especially during the 1970s and 1980s and bring down the inter-seasonal and inter-regional variations in prices (G.S. Bhalla. 1994) In the process the PDS had emerged as one of the major safety net providing food security to the poor

In India 25% of the population depend upon the PDS for rice and 12% for wheat. Purchases from the PDS account for 13% of total market purchases in rural

areas and 16% in urban areas (NSS 42nd round, 1986-1987). The food subsidy is about Rs.5000 crores accounting for about 0.7 per cent of the GDP in 1993-94 (R Radha Krishna 1996, p.2).

The concept of food security had undergone considerable modifications in recent years. In the early years, food security implied arrangements for providing physical supply of an adequate minimum level of foodgrains for the population in the developing countries during the years of normal as well as poor harvests. Food availability and stability were considered good measures of food security till the seventies. However, it is now recognised that the ultimate aim of food security is not only provision of foodgrains for the entire population on a stable basis through out the year, but also to assure that all population including the poor and vulnerable section have economic access to foodgrains. This implies that satisfactory production levels and stability of supply should be matched by a reduction in poverty and an increase in the effective demand to ensure economic and physical access to food for the poor. Therefore, there has been a change in approach and the food energy intake of the vulnerable groups is now given prominence in assessing food security.

It has become the common practice to estimate the number of food insecure households by comparing their caloric intake with required norms However, the widely accepted norms of levels of food required for overcoming under-nutrition have been questioned. Nutritionists argue that energy intake is a poor measure of

nutritional status for the reason that nutritional status depends not only on nutrient intake but also on non-nutrient food attributes, privately and publicly provided inputs and health status. This led to the further improvements in the concept of food security.

1.1.Definition **of Food security and Food insecurity**

A nation's food security is defined as the responsibility of the government to devise ways and means by which (I) food is made available insufficient quantities within the country, and (ii) to see that the people had the means to buy it Food security depends on income levels, income distribution, employment pattern and prices of food (Acharya K.C.S. 1983) These two aspects are basic to any definition of food security

The World Bank (1996) defined "food security in terms of access by all the people at al! times to enough food for an active and healthy life". This definition emphasizes both availability and ability to acquire enough food for an active and healthy life. To enable a household to acquire enough food need not involve the management of food economy' by the government For example, providing income earning opportunities to the poor to enable them to acquire enough food without directly intervening in the food economy of the country by Government is one such policy option. Management of food economy, on the other had implies

making enough food available at the macro level and its distribution more equitably at the micro or household level through measures of intervention.

Food security for a country is also a matter of poverty and under development. If it has enough income, it need not be self sufficient and can import the food it needs. But if it is poor and deficient in food production, it is vulnerable to transient influences that reduce domestic production or increase world market prices. Thus, the lack of food security is a problem only for poor people and poor nations (Kirit Parikh, 1997, p.255)

A country is food secure when it is able to provide adequate' food to all its citizens under all circumstances that can be reasonably expected Food security issues are important because improved nutrition is an investment in the productivity of a nation's populations. Also the adjustment measures countries undertake to improve economic performance are more likely to succeed if food security, objectives are not compromised in the process Problems with food security do not necessarily result from inadequate food supplies, they arise from lack of purchasing power on the part of nations and of households Food security can be ensured in the long run only by raising the real incomes of households so that they can afford to acquire enough food. The principal cause of hunger is poverty Since our poverty line is derived on the basis of a calorie input norm, we can also take it that an estimate of persons below the poverty line is also an estimate of persons hungry (2400 kal/person/day in rural areas and 2100 kal/person/day in urban areas) (Kirit

Parikh, 1997, p.257). Hence food insecurity can be defined as the probability that in any given year, actual food consumption falls below a minimum level necessary for survival and adequate health. The term food insecurity is complementary to food security and also referred to as degree of vulnerability. Food insecurity could be of two forms:

1. transitory food insecurity or short term food insecurity.
2. Chronic food insecurity or long term food insecurity.

Transitory' insecurity resulting from decline in household's access to enough food, the worst form being famine, the poor usually suffer a loss of income when agricultural production is reduced or disrupted due to unusual weather or wars. Apart from such sudden drops in real income, a creeping loss may occur if employment opportunities do not keep pace with the growth in the labour force The real income of the poor can also fall because of rise in food prices Policies such as price stabilization, e.g., credit, crop-insurance and temporary employment creation are utilised for stabilizing the consumption of the poor.

The problem of chronic food insecurity is primarily associated with poverty and under development But not of food production If all the poor are given additional income more food would be demanded and produced because farmers are given higher prices, the poor whose incomes have not changed, would continue to remain hungry. Thus food security can be provided to an individual either by increasing

money income or by decreasing the price at which adequate' food is made available to them, the strategy to overcome chronic food insecurity includes short-term intervention to raise the purchasing power of the poor through the endowments of land and non-land assets and by generating employment opportunities as well as longer term growth mediated interventions to improved food availability and to raise incomes. Income and employment generating programmes are being adopted since pre-independence days. These include food for work programme' drought prone area programme, IRDP, NREP and RLEGP. India has made substantial progress in terms of over coming transient food insecurity through public procurement and distribution of food grains, employment programmes etc However, despite a significant reduction in the incidence of poverty (from 55 percent in 1973-74 to 36% in 93-94), chronic food insecurity persists as a large proportion of population is still below the poverty line (Radhakrishna, 1997, p.3)

1.2.Food security at national level

At the national level, food security essentially refers to the capacity of a country to provide sufficient food for its population And it will depend on production, trade (imports & exports), availability of food grains and within country food distribution At the national level, stress is made on the importance of achieving greater self sufficiency in food grains which is considered as one of the important determinants of food security. Therefore, a trade off is necessary between agricultural commodities for domestic consumption and exports There is a strong relationship

between food self sufficiency, trade oriented self-reliance and socio-politico-economic factors with regard to national food security. Development planners in less developed countries prefer to have self sufficiency through internal production rather than imports. The rational for self sufficiency is in the wake of risk and uncertainty in international trading system Especially for primary commodities price instability, trade restrictions, tariff barriers and to some extent political influences are some of the important factors which force developing countries to opt for self sufficiency through internal production

Production is variable and this leads to variability in hunger, public policy can mitigate this variability in annual availability. Both trade and stock policies have been used by the government for this purpose. Even then per-capita availability has not been wholly smoothened The average percapita availability of food grains is an indicator of food security, at the national level The percapita availability of food is a function of population and food production with adjustments made for exports, imports at the beginning of the year.

With a satisfactory level of availability, other policies should be able to provide adequate food to all citizens and provide food security to individuals, when average availability is lower, it is the poor whose consumption falls rather than that of rich. Thus, the variability in the consumption of the poor, i.e., the variability of the number of hungry would be higher than the variability of availability National level food insecurity gets translated into food insecurity at the level of individuals

In principle, the public distribution system (PDS) was supposed to reduce the variability in the consumption of the poor through provision of subsidized foodgrains through ration ships. By increasing such distribution in years of low availability, the food insecurity of the poor can be reduced. Hence PDS should be viewed as an income transfer in favour of the poor.

National level food security also depends on price stabilization policies. If food prices are stabilized at some reasonable levels, then the country is food secure This is so because at that price everyone's demand would be meet To stabilize the price we consider buffer-stock operations along with trade. Price variability arises due to variability of production demand and world prices (Kirit S. Parikh, 1997, pp.270-272) The principal source of production variability is that in rainfall, irrigation and investment in agriculture Production variability causes variability in incomes and hence also in demand

The long term solution for providing national level food security is economic growth of the country that can provide productive employment to all, yet economic growth is a necessary but not a sufficient condition for eliminating hunger Production of foodgrains should also rise along with growth Growth creates opportunities for productive employment but not necessarily employability and skills among the people. This requires investment in education Apart from creation of skills, there is yet another route along which investment in education brings about

long term food security. Female literacy results in decline in fertility, infant mortality and better nutritional status, for children (Kirit S. Parikh, 1997, p.259).

A reduction in the growth rate of population means a quick increase in percapita net availability of food grains and percapita income. Thus food security involves three major aspects of food production, assured supply, and access to food

1.3.Household Food security

At the household level, food security refers to availability. The household must have physical access to food measured in terms of percapita availability of food grains and economic access to food measured in terms of income required to buy food. Food security at household level depends on purchasing power it in turn related to incomes of the household Incomes of the household in tern depends on employment

Food insecurity at household level is mainly due to poverty. The poorest groups in India tend to be asset-less or nearly asset less Landlessness is increasing, both absolutely and relatively The poor derive income from wage work in which they may be simultaneously underemployed and forced unwaged work The path of diversification of the rural economy varies from region to region and is often insufficient to absorb surplus labour from agriculture. In addition, there is still a particular institutionalized poverty amongst Scheduled Castes (SCs) and Scheduled

Tribes (STs), and in regions where such people are concentrated the rates of poverty reduction are also very low. Poverty in the case of SCs was 64.4% and 72.4% in case of STs in 1977-78 while it was 57.2% incase of total population. In 1987-88, incidence of poverty in case of SCs was 44.7% and 52.6% in case of ST's while it was only 33.4% in case of total population. But poverty remains to be high in case of SC/STs (G. Nanchariah, 1998, p.5). Hence the problem of food insecurity is more among these groups. Household food insecurity can be reduced by reducing poverty. This can be reduced by creating employment.

1.4 Government interventions: Food subsidies

Food subsidies represent the expenditure incurred on procurement of food grains, warehousing storage, and distribution via the public distribution system of foodgrains The food subsidy can be thought of comprising two components. The first relates to the operation of food management, basically undertaken by Food Corporation of India (FCI) The other component refers to the benefit that end consumers get by being able to purchase food grains at less than market price. In a country, where there are wide disparities in foodgrains production and income, and poverty in certain regions is acute, it is only the PDS network, combined with rural employment programmes, which can ensure protection of entitlements

Public distribution system (PDS)

The PDS in its present form, a producer price-support-cum-consumer subsidy programme has evolved in the wake of food grain shortages of the 1960's, the main emphasis was on price stabilization till the late 1970's and PDS was mainly confined to urban areas and food deficit states. The welfare dimension of the PDS has gained importance since the early 1980s and its coverage has been extended to rural areas in some states as well as in view of economic reforms PDS is perceived to be the main safety net to protect the poor from potential short run, price-induced adverse effects of economic reforms

The PDS supplies have increased rapidly since the mid sixties, the annual average supply increased from 6.5 million tonnes during 1961-65 to 18.4 million tonnes during 1990-92 A number of studies (Dev and Suryanarayana, 1991, Howes and Jha 1992, Geetha and Suryanarayana. 1993, Jose 1994, Parikh 1993) examined the functioning of PDS and found it to be a blunt instrument for providing income support to the poor It continues to have a bias towards the urban areas and non-poor. The impact of PDS on open market prices except in Kerala, as a safety net for the weaker section, is minimal In some states such as Karnataka, financial viability of fair price shops is also very poor. Parikh (1993) has examined the cost effectiveness of PDS and found that for every rupee spent on the PDS, the amount reaching the poor was less than 0.22 paise in all the states

1.5. New economic policy - Structural Adjustment and Food security

India's economic policy since the time of the first five year plan had been growth with social justice. It was believed that given the degree of underdevelopment, industrial take-off must be actively pursued (the industrial resolution policy of 1956). It was felt that the public sector should strategically control the key sectors and the commanding heights of economy. Import substitution had been an important strategy of rapid industrialisation under the assumption of export pessimism One of the important objectives of planning was self-reliance and it was interpreted to mean import substitution. The emphasis was on aid rather than trade

But by 1965 the problem of foreign exchange became acute problem due to drought and war with Pakisthan Aid India Consortium (AIC) decided not to extend aid to warring nations. Due to the worst drought in 1965, agricultural production declined and agricultural exports suffered After the war, the AIC offered to resume aid flows to India but at a price, India has to devalue it's currency substantially On June 6th 1966 the rupee was devalued by **57.5%.** The official rate increased from Rs 4.76 to Rs 7.50 per the U.S. dollar, since then, the foreign trade policy had been liberalised and various incentives in the form of subsidies were given to export industry

Despite these incentives, the share of Indian exports in the world exports had declined from 2 % in 1950 to 1.1% in 1960 to 0.6% in 1970 to 0.40% in 1980. It

raised to 0.5% in 1990. The trade gap was about 3 percent of GDP on average during 1951-91 (G. Nancharaiah, 1995, p.l) The BOP accentuated due to Gulf war in 1991 to overcome this difficulty government of India devalued rupee to the extent of about 20 percent in terms of dollar and pound sterling in July 1991. Several other measures like deregulation, delicensing, liberalization of imports and foreign investment further incentives to exports, convertibility of rupee on current account, privatisation of public enterprises and industrial exit policy have also been initiated. All theses components constitute new economic policy from state regulated economy to market economy.

Indian agriculture had undergone a perceptible structural transformation due to the impact of economic reform. These resulted in raising the prices of tradable agricultural commodities including food grains vis-a-vis manufactured products. For example, both the trade fiscal compression, that result in withdrawal of subsidies, tend to raise agricultural prices, higher prices benefit only surplus farmers On the other hand the main burden of the rise in prices of essential food grains fall on landless agricultural labourers, the urban unorganised workers and the rural and urban poor Capital formation in the agriculture sector has a crucial role in agriculture development considering the pattern of the budgetary outlays of the government, the fiscal contraction inevitably resulted in a disproportionate cut in capital expenditure. The capital expenditure slid from 5.10 per cent of GDP in 1990-91 down to 2.74 percent in 1995-96. In terms of percentage of total expenditure, it fell from an average of 32.8 per cent during the preceding five years of the reforms,

to average of 22.05 percent during the succeeding five years of the reforms. In 1995-96 it is as low as 17.82 percent (CMIE: June 1996, p 320). Agriculture sector also bore the share of this cut. The average annual increase in public sector outlay on agriculture and irrigation during 1985-90 fell from Rs.1.3 billion to an average of Rs.0.68 billion during 1990-92. This cut has certainly had depressing effect on the agricultural production.

The subsidy on fertilizer which had played a crucial role in quadrupling food grain production during the four decades between 1951 to 1991, suffered a drastic cut from 0.82 per cent of GDP in 1990-91 to 0.75 percent of GDP in 1995-96. The prices of the phosphatic and potassium based fertiliers were decontrolled and that of nitrogen based fertilizers were reduced by 10 percent (Economic Survey 1997-98, p. 131). This resulted into prices of phosphatic and potassium based fertilizers soaring high to international level leading to a sharp fall in their consumption on one hand, and steering the consumption ratio of a mix of nitrogenic phosphatic and potassic fertilizer in favour of the former through some amount of substitution of effect on the other. This imbalance is said to have an adverse effect on soil quality and in turn on its productivity. A study of Andhra Pradesh, Maharashtra and Karnataka by (Gaih, R. 1994) has noted a significant reduction in per hectare fertiliser consumption during the reform period which expectedly showed in the decline in foodgrain production

During the five years since trade liberalisation in Agriculture, foodgrains growth has slowed down, the average of annual growth rates being only 1.71 percent, with food grains while wheat and rice have an average percentage growth of 3.48 and 2.53. The pulses growth rate has averaged only 1.1 percent while the coarse-grains show the most alarming picture with lowest average growth rate of a mere 0.37 percent. The gross area under food grains has declined by about 4m. ha over the reform period. Coarsegrains have declined markedly by about 3m. ha and combined with decline in the pulses are accounts for the 4m. ha decline (Utsapatnaik, 1996, p.247), with such a decline in the production of coarse-grain as a result of displacement by the exportables catering to domestic and foreign metropolitan demand, then what will happen to the consumption of the labourers and small farmers for whom these coarse grains like bajra, jowar and ragi are the traditional food staples.

Another reason which had created problems for food security, is shifting of cropping patron, i.e., changing paddy cultivation to commercial cultivation like aqua culture In the year 1993-94, the marine products worth $ 814 millions or Rs.2552 crores were exported, constituting 3.6% of the total agricultural and allied exports The marine export basket was dominated by shrimps accounting 71% of the value (Rs.881 crores) and 36% in volume. It has also been seen that total shrimp production was 35,500 tonnes, covering area of 65,100 hectares during 1991-92 During 1993-94 shrimp production and the area under cultivation were 63,300 tonnes and 82,500 hectares respectively. In India West Bengal has toped with

utilization of Paddy land to brackish water area around 34,000 hectares (27% of the total area under cultivation) then Kerala is the second state with 13,000 hectares (21% of the total area under cultivation) then Orissa, A.P., Maharastra and Tamilnadu are giving more importance for commercial purpose by changing paddy land to brackish water area. It has been estimated that the area for brackish water is expected to increase significantly during the next four or five year especially in the states like West Bengal 4,05,000 hectares from 33,815 hectares in Orissa it is expected to increase 31,000 hectares from 7,075 hectares, in Andhra Pradesh it will increase to 150,000 from 6,000 hectares, in Tamilnadu 56,000 hectares from 25,000 hectares, Kerala it will increase to 65,000 from 13,000 similarly for Gujarat and Maharastra it is expected to increase 376,000 hectares and 80,000 hectares respectively (ADAK Survey report, 1991). These commercial production will only help large farmers who are able to invest in A.G. As a result of commercial cultivation the total food grain production will decline which will lead to food insecurity. A study made by National council of applied economics research (NCAER) says free trade is likely to benefit India. It argues that export of wheat and rice would be highly beneficial to India

With the rise of agri-exports food availability domestically will fall. At the current exchange rates, rice is competitive in the international market and the export of rice is growing fast from a low initial base. The main area of commercial rice production is north-India which has been supplying so far over two-thirds of the rice procured by government for the public distribution system With exports gathering

momentum the government has to compete with the global markets to keep its own ration shops supplied. The result has been a sharp rise in the administered prices of food grains. In the new atmosphere of license to profiteering, a larger fraction of stock meant for the ration shops appear to be getting diverted to the free market. Ration price when available at all, costs now double what it did five years ago, making the gap between the open-market and ration-shop prices so small that many lakhs of the poor have been priced out, and off take from the ration shops is exceptionally low (Utsapatnaik, 1996, p.2448) The central government procurement price for rice, wheat and coarse grains were increased by Rs.20 per quintal each to a level of Rs.330, Rs.350 and Rs.280, respectively, such high procurement price, acting as a support price, has resulted in an increasing trend in the quantity of grains procured in the recent years. This trend is likely to continue in the future, given the significant increase in procurement prices and the expected growth in production Along with the increase in procurement price, the central government has also increased the issue price of foodgrains through the PDS. For example, the central issue price was increased in June 1994 by Rs.60 and Rs 38 per quintal for rice and wheat, respectively Consequently, the price differential between the open market and PDS issue price has narrowed down, particularly in January, 1993. This could be the major reason for the decline in the off take of foodgrains through the PDS in recent years.

1.6.Food Demand projection

The growth of population and growth of percapita income will determine the demand for food. An increase in the growth rate of population leads to a direct increase in the growth, rate of total demand for food. Growth of percapita income results in further growth of demand for foodgrains. According to some authors, in the early stage of the development process people are poor and mortality rates are high leading to moderate growth in population and slow growth in percapita income Effective demand for food grows at a rate that more or less keeps pace with population growth As percapita income rises, population growth also increase and rising incomes combined with increasing population lead to much higher demand for food grains, particularly derived demand for cereals because of high income elasticity of demand for livestock products. In this phase, food supply has to take a qualitative jump and in addition to increasing domestic food supply, food imports may also become necessary. It is only at a later stage of development when population growth rates decline sharply and growth in income begins to have little effect on demand for food, that meeting food demand can become manageable and even surpluses can emerge. In the process of development, "it is increasing percapita income that is the dynamic factor underlying the growth in food demand in the third world" (Mellor, 1983, p.241). Based on a study made by Radhakrishna. For matching the growing food demand, food production would have to grow at a rate of 4.4 percent up from the growth rate of 3.4% achieved during the seventies and the eighties (Radhakrishna, 1998, p.24).

India faces a formidable challenge in providing food security to its population, the demand for food grains is estimated to grow at a rate of 3.5 to 4 per cent per annum compared to the foodgrains growth rate of 2.9% per annum during the period 1949-50 to 1989-90 (G.S. Bhalla, 1994, p.134).

Various approaches are used to study the food-security they are pure market approach, the full interventionist approach and realistic approach. (G.S Bhalla, 1994, p. 168). Both the pure market approach and the fully interventionist approach of total closing of the domestic economy as a pure market approach can expose large countries like India to high risks of food-security, the policy of isolation cannot also be pursued any longer for it is completely irrelevant in the present day world scenario of liberalization of domestic economies and their increasing integration with the world economy. Hence a realistic approach is used to study the food-security in this theses.

This study is about the some economic effects of the new economic policy on food-security of India at macro level.

1.7.Objectives of the Study

1. To study the effects of new economic policy on food security at the national and household level

1.8. Hypothesis

While India could achieve some success in combating transitory food insecurity caused by draughts or floods it has failed to make much dent on the chronic food insecurity, reflected in low energy intake. Moreover, with the recent shift to a more market oriented and outward looking macro policy the poor are likely to be exposed to the risk of market uncertainties in the future leading to raise in their food insecurity.

1.9. Methodology

The data relating to National level food security are obtained from the economic surveys (GOI), and Bulletin of food statistics (GOI). To know the trends relating to production, area under different crops, yield per hector simple and compound growth rates are used. Same is the case with reference to agricultural exports and rice exports. For this data is obtained from economic surveys (GOI) and monthly statistics of foreign trade in India Various issues, to know the efficiency of PDS as an instrument of providing food security, Date relating to procurement of foodgrains, PDS supplies of foodgrains, procurement and issue prices and Government food subsidies have been used. Source of date is various issues of economic survey (GOI) and bulletin of food statistics (GOI). To study the household food security changing trends of percapita consumption of rice, wheat, and total cereals, income groups and total cereals consumption in k.g./percapita per month and

calorie intake norms have been used. Monthly per capita consumer expenditure published in the national sample survey organisation reports have been used.

l.l0.Chapterisation

The entire study consists of five chapters. Chapter-I, deals with definition of food-security and various components of food security, objectives, methodology. Chapter -II deals with review of literature. Chapter - HI deals with National Level food security, Chatper - IV deals with household level food security and chapter V deals with conclusion. The dissertation is divided into three chapters and only for analytical convenience.

REFERENCE

1.	G.S.Bhalla, (1994)	Economic Liberalisation and Indian agriculture edited by G.S.Bhalla.
2.	Centre for Monitoring the Indian Economy (CMIE), 1996.	"Public finance in India".
3.	Gaiha,R. (1994)	"Impact of structural adjustment of state level" - A comparative analysis of A.P., Maharashtra and Karnataka, August, mimeo.
4.	Govt of India •	"Economic Survey", 1997-98, Ministry of Finance, Economic Division, New Delhi.
5.	Kirit S. Parikh (1997)	"Food security: Individual and national" INDIAS economic reforms and development, eassys for Manmohansing Edit by Isher, Ahluwalia and I.M.D. little.
6.	G Nancharaiah (1996)	"New economic policy: It's effects on Dalits", published in VIKALP: vol.V No.5.
7.	G. Parthasarathi (1996)	"Social security and structural adjustment", the Indian Jorunal of Labour economics, vol.39, No.l.
8.	P. Radhakrishna, K. Hanumantha Rao (1994)	"Food security, public distribution system (PDS) and price policy" Working paper, No.26
9.	P. Radhakrishna (1996)	"Food Trends, PDS, and Food security concerns', presidential address. Fourteenth annual conference, A.P. Economic Association.
10.	Utsapatnaik (1996)	"Export-oriented agriculture and food security in developing countries and India" EPW; September, 1996

CHAPTER-II

REVIEW OF LITERATURE

In this chapter an attempt has been made to examine various studies relating to food security and insecurity both chronic and transient. Increased food production is considered to be a necessary, though not a sufficient, condition for improving food security for the poorest segments of the population. If higher levels of production lead to cheap food, it would be an effective instrument for food security particularly when the poor have adequate entitlements. In the absence of such pre-conditions, even with significant improvement in food supply, the market mechanism may not always and automatically transfer food to the poor.

The concept of food security has undergone considerable modification in recent years. Food availability and stability were considered good measures of food security till the seventies and achievement of self-sufficiency was accorded high priority in the food policies of developing countries. Energy intake of the vulnerable groups is now given prominence in assessing food security. *Historical Evolution* of food security and evaluation of the concept of buffer stock policy and it's implications, have been by some studies (Acharya K.C.S. 1983) covered various issues relating to provision of food security system in India. It was noted that price stabilization was beyond the capability of the buffer stock policy, and suggested therefore to include coarse grains in the buffer stocks. But it is not practicable of their high preservation costs in the godowns.

Impact of changes in *population growth* and *percapita income* on food security have been studied by a number of scholars. Like most other densely populated developing countries India faces a formidable challenge in providing food security to its population. This is so, because India has a large population of 948 million 1997 and its growth rate is quite high. The percapita income is expected to rise sharply during the next decade or so. The demand for food grains is estimated to grow at a rate of 3.5 to 4 percent per annum compared to the food grains growth rate of 2.9 percent per annum during the period, 1949-50 to 1989-90.

In the early stage of the development process people were poor with high mortality rate, leading to moderate growth in population and slow growth in percapita income (Mellor, J.W., 1983) Effective demand for food can grow at a rate that can keep pace with population growth. As percapita income rises, population growth also increases. Rising incomes combined with increasing population lead to high demand for food grins, particularly demand for livestock product. In this context food supply has to take a quantitative jump and in addition to increasing domestic food supply, food imports may also become necessary. It is so because only at a later stage of development when population growth rates decline sharply and growth in income begins to have little effect on demand for food, then meeting food demand can become manageable and even surpluses can emerge In the process of development, it seems that increasing percapita income is the dynamic factor underlying the growth in food demand in the third world countries.

Food Demand Projections

Four alternative scenario based on four different assumptions about growth of the GDP and the percapita income and further uses four alternative demand models to derive demand elasticities and demand projections for food grains-for the year 2000 and 2010 was worked by Som Schlores (Kumar, Rosengrant, 1994, and Bouis). Their results in term of quality projections for both household demand and for total demand for rice is 87.2 million tonnes, wheat 70.8 m.t. course cereals 33.5 m.t. However, the total demand for food grains is 286.6 m.t.

The impact of changes in percapita expenditure on food demand projections for India includes by the method of estimating the total population and the expected birth and death rates estimated by world bank (Radhakrishna, and Ravi, 1990) The next exercise was to undertake a detailed analysis of the NSS data on expenditure of different expenditure groups in the base year 1986-87 separately for the rural and urban population The linear expenditure system was then used for analysing the likely demand pattern of various expenditures groups. This is enabled the authors to estimate the nutrition levels that would be attained by India's rural and Urban population. In order to meet the total food demand in 2000, the country should be producing 234.5 m.t. based on their food demand projections

At the national level food-insecurity exists due to fall in production or due to instability, in stocks and imports. At the household level food insecurity exists due to the low purchasing power this inturn depend on incomes of the people, employment and prices of food grains. Food insecurity is of two types they are transitory and chronic food insecurity. Who temporarily are subject to hunger during off season, drought and inflationary years and so forth. In contrast, the problem of chronic food insecurity is primarily associated with poverty.

The causes of short run food insecurity were divided into 'internal' and 'external' in a cross country analysis of nearly 50 countries including India (Diakassavas, 1989). He concluded that although both the types of factors have significant bearing on food consumption instability, but instability in domestic food production is the most important single factor. Because variability in production brings variability in net availability.

At the national level a measure of food security would be production, trade and availability of food grains. (Parikh, 1997, pp.253-279,). The average percapita availability of foodgrains is an indicator of food security at the national level At the household level, food insecurity is mainly due to poverty and poverty is due to lack of employment. He argues a national wide Employment Guarantee Scheme (EGS) with increased wages and easy access to all can provide individual level food security against both chronic and transient hunger to the employable hungry. This can be done at a cost of about Rs. 14775 crores per year. The long term solution is of

core economic growth that can provide productive employment to all. To create skills among the people to enable them to take up jobs more investment is required in education. The short term measure used to reduce food insecurity are the various schemes of subsidized food distribution, such as the public distribution system.

Food security in the context of Liberalisation of the Economy

Food security has two aspects, first, availability and the accessibility. The basic ingredient of stabilization and structural adjustment programme is the contraction of public expenditure to reduce fiscal deficit coupled with drastic devaluation of local currency and general withdrawal of the state from economic activities vacating the space for market (Bandyapadhyay, 1995). Immediate and inevitable consequence of reduction of Government expenditure is the cut in public investment in the agriculture. Capital formation in the agriculture sector has a crucial role in agricultural development During 1985-90, the average annual increase in public sector outlay in agriculture and irrigation was Rs.1.3 billion, this went down to Rs.0.62 billion. There is a large scale shift from food crops to non-food crops having serious implication for the systematic availability of food there by putting in Jeopardy the first condition of food security. Removal of subsidies to agriculture and allowing the free movement of agriculture products, for international trade will cause the rise in prices. Thus in the process of implementation of the new economic policy, there will be large scale alienation of land, fall in wages, rise in food prices, loss of employment, people may not get access to food and starve.

General poverty scenario in the post reform period is worse than in the pre-reform era.

Because of the acute food shortages in the country and large dependence on food imports, the policy makers sought to meet the challenge of providing food to a rapidly rising population, through a two-pronged strategy (G.S. Bhalla, 1994, pp. 133-174). It's first component was accelerating growth in food production through substantial investments in rural infrastructure, including irrigation, power, rise arch, extension and development of new technology. The second component of food system of procurement, storage and public distribution of foodgrains with the main objective of providing food to consumers at reasonable prices and keeping prices of food at reasonable levels through open market operations or through imports At present, procurement is undertaken by the Food Corporation of India at minimum support procurement prices fixed by the government and is then distributed through the PDS, which consists of a large chain of fair price shops spread over rural and urban areas The final component of food management is food stocks, which enable the functioning of PDS and help stabilize prices through open market operations. The PDS has suffered from several limitations First it has not been able to cover a large section of the poor, particularly in rural areas and has failed to serve poor states like Bihar, and Orissa. Second, since the PDS has been open-ended and is not targeted to the poor, the food subsidy has become excessively large. It tends to become even larger because of the inefficiency of the via (a) changes in the rate of growth and consequently employment (b) prices of wage

goods and the general rate of inflation, and (c) Government policies affecting prices of food grains and food subsidy.

There is a significant change in foodgrain scenario from a scarcity to a surplus situation because of the acceleration in the production of food grains in the 1980's more significantly, food grains stocks held by the government have been increasing despite a lower growth to it's historical growth rate (Radhakrishna, 1996, pp. 1-15). The predictions are that the surplus situation will be sustained, that agriculture will be diversified and that the exports of rice, wheat and agro products will increase Domestic price is generally lower than the international price for cereals and higher for other food items If liberalization has its sway and the cereal price is allowed to increase and other prices are allowed to fall in order to Food Corporation of India He argued that for a big country like India, with rapidly increasing population a policy of near self-sufficiency is necessary not only to avoid the high risks involved in international trade, but also because of the dependence of a large proportion of its workforce on food production He, however cautioned that while a pure market approach can be highly risky for food security in India. As isolationist policy can be no less so, for it would deprive India of the opportunities to derive benefits from world trade. But a necessary condition for this, however is generation of large surpluses through a significant acceleration in agricultural growth.

Three major forms of social assistance to the unorganized sector, viz, food security, employment security and health security, are discussed by (Parthasarathy, 1996, pp.73-79). The most important social security need of the poor is food security. But, food security cannot be ensured without access to adequate purchasing power for the wage earners. Since, the means of obtaining purchases is employment at a minimum wage, employment security is essential for achieving food security. According to him. In India, chronic food insecurity persists, it was found to be strongly related to poverty. Though there is a moderate success in combating transitory food insecurity. Structural adjustment is expected to have effect on food security, integrate the domestic market with the international market, the poor may be hurt in the transition since cereals are by far the major and cheapest source of calories. Raising the real income of the poor to enable them to buy more food, though an important instrument of improving nutrition would be a slow process. Hence there is a need for better targeted Public distribution system and nutrition support programs. Another study says that India has achieved some success in combating transitory food insecurity caused by droughts or floods, it has failed to make much dent on chronic food insecurity reflected in low energy intake (Radhakrishna, 1998). The improvement in the nutritional status has also been very low high growth sustained for more than a decade would significantly reduce income poverty by 2010 but the chronic food insecurity is likely to persist. Moreover, with the recent shift to a more market oriented and outward looking macro-policy, the poor are likely to be exposed to the risk of market uncertainties more likely in the future.

Agriculture Trade Liberalization and Food Security

Since the prices of food and clothing are to increasing with agricultural trade liberalization even without devaluation, and since further devaluation is likely to become necessary to keep the current account deficit in the balance of payments within manageable proportions, an increase in the degree of opens of economy following liberalization is bound to increase domestic prices in absolute terms, and also lead to relative price change, which hurt the poor more than the rich or even the non-poor. If India was to operate in the world as a significant food exporter, size of the market being what it is, world market prices would fall. However, the world prices may fall below our domestic prices, creating a situation where India should be importing rather than exporting food in her own interest. A recent study done for the World Bank (Parikh, Narayana and other 1995) on agricultural trade liberalization provides an empirical evidence for this assertion in respect of rice, where India is said to have a comparative advantage, under certain assumptions about rice demand elasticity (0.1) and supply elasticity (0.4) about the rest of the world, the study concludes that anything beyond 4 million tonnes of rice export from India pushes down world market prices below domestic prices

Based on the results of an exercise which calibrated the effects of agricultural trade liberalization using a computable general equilibrium, concludes that there will

be no improvement in agricultural GDP in India, in the long run that the number of hungry persons will increase (Kirit, Parikh, 1992). He argues that "the grains from agricultural liberalization may not be as large or as unambiguous as some partial equilibrium analysis suggest. It is therefore, not obvious that India should liberalize it's agricultural trade.

Using a social accounting brought out the following results of the effects of external trade liberalization, the effect of liberalizing India's agricultural trade on agriculture would be small and comparatively more on non-agriculture (Subramanian, Shankar, 1993). If the liberalization is extended to non-agriculture, the impact on agriculture would be significant since industry was highly protected and even if agriculture were to improve in the long-run due to liberalization, the rural and urban poor may be adversely affected in the short run because of higher food grain prices. Subramainan also argues that if global agriculture prices rise, and if India liberalizes it's agriculture this price rise would be transmitted to Indian agriculture and result will be decrease in rural income for the rural poor and all urban classes but the real incomes of larger farmers would increase

It is undoubtedly true that liberalization would enable a large number of rich farmers specially in the well endowed irrigated regions to diversify their production structure and start producing for exports. The rich farmers could also fruitfully negotiate with the trading organizations and could avert excessive risks (Bhalla G.S., 1995, pp.7-24). But this may not happen in the case of the small and marginal

farmers, specially in the under developed regions. If agricultural exports are to be treated as a vent for surplus, then the amount of food grains unless special efforts are made to augment output.

The undeclared aim of liberalization policies appears to be the restricting of domestic income growth and absorption of the products of development countries by the populations of developing countries in order to release resources for growth of the exportable products demanded by the developed world (Utsa Patnaik, 1996, pp.2429-2449). She argues given the marked downward shift in the trend growth rate of the economy over the last four years of the new economic policies, and the rise in the rate of inflation which erodes the real incomes of the unorganized labour force It lead to rise in poverty level sharply, with the rising agricultural exports food availability will fall leading to food insecurity.

The impact of trade policy reform in the national context and multilateral trade liberalization was analysed by some scholar (Deepak Nayyar and Abhijit Sen, 1994, pp.62-95). Accordingly, food and clothing prices are likely to increase with agricultural trade liberalization even without devaluation, and the degree of openness of the economy following liberalization is bound to increase domestic prices in absolute terms, and also lead to relative price changes, which hurt the poor more than the rich. Reduced self-sufficiency and reduced government procurement may erode, the ability of the state to carry out the market intervention needed for an adequate buffer-stock policy and to avoid or mitigate, through PDS, the possibility of sudden

rise in food price, inflation following unforeseen local shortage He suggests there should **be** some tariff or non-tariff wedge between world prices and domestic prices is retained

Public Distribution System (PDS) and Food Security

The public distribution system (PDS) in India represents a direct intervention by the government of food market. It involves subsidized distribution of limited quantities of essential food such as cereals, sugar, edible oil etc. Among them, distribution of cereals assumes crucial importance it is supposed to provide food security to the poor. Of late, however, PDS has come under severe criticism for its urban bias, its ineffectiveness in reaching the poor and its inefficiency with reference to cost of distribution.

Growth of the PDS, functioning, coverage and effect of the PDS on providing food security was discussed by (Bapana, 1993, Bhatia, 1983). Bapana presented the growth and functioning, coverage and other effects of the PDS in India. He says several developing countries including India achieved food self-sufficiency but a large section of the population still faces the risk of food insecurity There is food security at the international level, at the country level for several countries and at the regional level on the average, but there, is insecurity for individuals in the world particularly in the developing countries. The main reason for this insecurity is lack of purchasing power. The PDS makes food accessible and transfers income in the form of subsidy. If the PDS could be managed properly, it has a direct impact on

nutrition, the PDS should be considered as a short term substitute for provision of access to food by providing purchasing power through development and employment schemes. The PDS is used as a device for buffer stock operations.

Evaluating the procurement and distribution policies, Bhatia suggested an independent buffer stock policy which he claimed to have many advantages over the present system for the better management of the PDS. (Bhatia, 1983).

Two important aspects of PDS are impact of PDS and the *equity aspects of distribution* The database for most of these studies includes the National Sample Survey Organisation (NSSO) data on PDS for the year 1986-87 and the reports and records of food-supplies and civil supplies. The equity aspect of the PDS has been examined in terms of the percentage of the poor covered under PDS, the share of rural areas in the total and so on using the 42nd round of NSS data (Dev and Suryanarayan, 1991, pp.2357-2366). It is found that PDS is pro-urban at the All India level of rice and coarse cereals Their study also showed that the rural poor depend on PDS for the meager 16 percent of their foodgrain consumption requirements. This finding implies that the poor mainly draw their food requirements from the open market

About 40-50 percent of the population buys subsidized rice and wheat and about half of them are non poor (Jha 1991) It means that a substantial part of PDS benefits accrues to the non-poor. However, welfare gains to the poor are substantial

wherever the PDS supplies are targeted well as in Kerala and Andhra Pradesh (George 1979, Radha Krishna and Indrakant, 1988).

The issue of targeting, and the extent of leakages out of the programme was examined by (Deepak Ahluwalia, 1993). The results show that there are no easily identifiable criteria that determine central allocations of foodgrains across states in 'normal' years. There is however, evidence to suggest that during drought year some consideration is given to the price environment and relative poverty levels across states. There is no evidence of any serious urban bias. Use of the programme is, by and large, fairly widespread in the rural areas of Andhra Pradesh, Kerala, Karnataka, Tamilnadu, Maharashtra and Gujarat. On targeting, the current practice of universal eligibility has to change if the PDS is to act a viable safety net. Leakage are a major problem in the PDS.

An important study regarding inter-variations has been done by (Geetha, and Suryanarayana, 1993 pp.2207-2213). They have reviewed the objectives of food policy pursued in different, five-year plans. Examined inter-state PDS disparities, and their implications for the current ongoing PDS reform Their study confirms the general impression that there have been significant disparities in the state-wise PDS quantities, be it with respect to total population or population covered by the PDS. This is largely in conformity with the objects of global coverage as enunciated in the sixth plan. Part of the reason seems to be the lack of proper infrastructure for the PDS in some states and hence their inability to lift their allotted quota, by the centre.

Thus PDS revamping is not merely a question of targeting but also involves the creation of the necessary infrastructure.

District-wise requirements of PDS and comparison was made with production and procurement potentials of rice and quantities actually distributed in each district of A.P. (Subba Rao, 1980). He found that 10 out of 21 districts of A.P. are deficit, therefore the entire state cannot be called as a surplus in rice as is claimed by the government. He criticized the foodgrain movement restrictions which made the prices of rice in deficit districts disproportionately high. The net impact of the procurement cum-distribution in the state on the poor consumers will be nil or even negative.

Procurement method of levy system was discussed by (Gulati and Krishnan, 1975). To improve the levy system they have suggested a proposal of graded producers levy. In normal years, they emphasized the need for procurement of foodgrains from all surplus producers irrespective of whether they belong to surplus or deficit states. They quantifies the cereal requirements through PDS for all India for the year 1973.

The consistency between share of PDS and the level of poverty among state has been examined by (Tyagi, 1990, pp.55-83). He concluded that there was no positive correlation between the poverty levels of a state and its share in PDS supplies. His results show that during 1983-88, states with high incidence of poverty

such as Bihar, Madhya Pradesh, Orissa and U.P. received a low share in the distribution of food grains through the PDS and in percapita terms there states received less than 10 kgs. Per annum. On the other hand, states with a moderate incidence of poverty such as Kerala, A.P. Gujarat etc. received a high share in PDS with the annual percapita PDS quantity distributed from central pool being about 26 kgs in Kerala and 22-23 kg. In A.P. and Gujarat. More recent data on the allocation to states from the central pool also reveal the persistence of imbalance across states.

In 1993, around 20 percent of the population was estimated to be below the poverty line (Sengupta, 1995) Total off-take of wheat and rice in 1993 was 13 million tonnes of which 4.2 million tonnes were consumed by the poor and 9.1 million tonnes were consumed by the relatively better-off sections. If we had a schemes in 1993 to enable 51 million families of the poor to receive a ration of 20 kg. Of rice and wheat per month at 50 percent of market price the off-take of the poor from PDS would have increased from 4.2 million tonnes to 12.1 m.t. this according to him, will also reduce the maintenance loss of stocks by FCI. Further, the problem of identification of the poor so that the scheme could be targeted only to them is recognized to be not easy. The task of identification should be left to the jurisdiction of local panchayats which should also supervise and estimate the total cost of additional subsidy is less than Rs. 2,200 crores which is less than a quarter of one percent of the Gross Domestic Production (GDP).

REFERENCES

1. AcharyaK.C.S. (1983) Food Security system of India, Concept Publishing Company, New Delhi.

2. Bhalla G.S. (1994) "Policy for food security in India", in G.B. Bhalla (ed) 1994, Economic Liberalization and Indian A.G. ISID, New Delhi.

3. Bhalla G.S. (1995) "Globalisation and A.G. Policy in India", *IJAE*.

4. Bandyopadhyay, D. (1996) "Food Security and Liberalization", Memorial Lecture.

5. Diakossavas, D. (1989) "On The Causes Of Food Insecurity In Less Developed Countries", An Empirical Evolution", World Development.

6. KiritsParikh(1979) "Food Security. Individual and National: India's Economic reforms and development, essays for Manmohan Singh, Ed By Isher Judge Ahluwalia and I.M.D. Little.

7.———(1992) "Importance of food and agriculture policies in the success of structural reforms in India", invited paper for the 29th European Association of Agricultural Economists Seminars, Hohenheim, Germany, Sept. 21-25.

8. Kumar, Praduman, Mark, W. Rosengrant and Howarth E. Bouis(1994) "Demand for rice and other foodgrains in India", Indian A.G. Research Institute, New Delhi and International Food policy research Institute, Washington D.C., USA, September.

9. Mellor, J.W.(1983) "Food Policy for the developing countries", *American Economic Review*, vol.93, No.2

10. Nayyar, Deepak and SenAbhijit(1994) "International trade and Agricultural sector in India" in G.S. Bhalla (ed) Economic Liberalization and Indian Agriculture, ISID, New Delhi, 1994, Chap.III

11. G.Partasarathy, (1996) "Social security and Structural adjustment", the Indian Journal of Labour Economics, Vol.39, Number.1, January-March, 1996.

12. R. Radhakrishna (1998) "Food Security, Nutrition and Poverty In India", Centre for Economic and Social Studies, Hyderabad.

13. R. Radhakrishna and Ravi (1990) "Food Demand projection in India", A study Undertaken for the World Bank, in Centre for Economic and social Studies, Hyderabad, A.P.

14.——, (1996) "Food trends, PDS and Food security" Presidential Address, Fourteenth Annual Conference, A.P. Economic Association.

15. Subramanian, Shankar (1993) "Agriculutral Trade Liberalization and India", Development Studies Centre.

16. Utsapatnaik (1996) "Export-orientated A.G. and Food Security in Developing Countries and India", *EPW*, Special Number.

17. S.L. Bapna(1990) "Food Security through the PDS: The Indian Experience", in D.S. Tyagi (ed) 1990, Increasing access to Food, The Asian Experience, Sage Publications.

18.B.M. Bhatia(1983) "A Study in India's Food Policy, Institution and Incentives in India's food Security Structure", Monograph of Asian and Pacific Development Centre, Kaulalumpur, Malaysia

19. Deepak Ahluwalia (1993) "Public Distribution of Food in India", Coverage Targetting and Leakages, Food Policy.

20. S. Geetha and Suryanarayana M.H.(1993) "Revamping PDS: Some issues and Implications", *EPW*, October, 9.

21. GeorgeP.S.(1979) "Public Distribution of Foodgrains in Kerala, Research Report, No.7, International Food Policy, Research Institute, Washington, DC.

22.I.S. Gulati, and Krishna T.N. (1995) "Public Distribution and Procurement of Foodgrains 'A Proposal'", *EPW*, vol x, no.21, May.

23. Jha, S. (1991) "Consumer Subsidies in India: Is Targetting Effective", Indira Gandhi Institute of Development Studies, Bombay.

24. Sengupta, Arjun (1995) "The Economic Reform and Poverty:" Ravi Narayana Reddy Memorial Lecture, September, 7.

25. Subbarao K. (1980) "What is a Surplus State Public Distribution of Rice in A.P." Artharijnana, Vol22, No.l, March.

26. Tyagi D.S. (1990) Managing India's Food Economy, Sage Publications, New Delhi.

CHAPTER - III

NATIONAL FOOD SECURITY

Indian economy emerged from the colonial rule as a food deficit economy. Notwithstanding the phenomenal progress made by the agricultural sector in the post-independence period, crop failures continue to occur at frequent intervals, sometimes spread over the three consecutive years. The consequent shortages of foodgrains led to malnutrition, sometimes to starvation deaths, and migration. The rural poor moved to urban areas in search of food and work. Food security has therefore significant economic affects.

In the Indian context, the concept of food security become prominent after the Bengal famine in 1942-43. It was found that majority of those affected in the famine were agricultural and casual labour and artisans Subsequently, the system of rationing foodgrains was introduced. A country is food-secure when it can provide 'adequate' food to all its citizens under all circumstances that can be reasonably expected What constitutes 'adequate' food intake is still a matter of contention among nutritionists. The principal reason for hunger is that the hungry have inadequate real income to buy the food they need. Thus, food security has to be provided to an individual either by increasing the money income or by decreasing the price. Food security of a country is closely related to its poverty and under-development. At the national level a measure of food security is related to its production, trade and availability of foodgrains. Production is variable and this

variability leads to some times to scarcities. Both trade and stock policies have been used by the government for this purpose (Kirit, S. Parikh, 1977, p.258). Even then, percapita availability was not smoothened. The PDS was intended to reduce the variability in the consumption of the poor through provision of subsidized foodgrains through ration shops.

3.1. Foodgrains Production

Considerable progress has been made, since Independence in the sphere of agricultural development in India, in terms of increased crop production and productivity by technological developments, and crop diversification. There were periods of ups and downs in the agricultural production. The growth rate was appreciably high during the mid sixties, it had slowed down during the subsequent years, gathered momentum again during the eighties, and has decelerated considerably in the nineties, so far the declaration in the growth during the nineties is more pronounced in the case foodgrains. There has been an impressive growth in the production of foodgrains, output recorded a four-fold rice from 50.8 million tonnes in 1950-51 to 198.2 m.t. in 1996-97 (see Table 3.1). The productivity trends indicate that the rise in production is neither continuous nor large. Production of major non-foodgrains like oil seeds, cotton, and sugarcane recorded almost five-fold increase, (See Table 3.2).

Table 3.1.
Production Of Foodgrains (M.T)

YEAR	RICE	WHEAT	ALL FOODGRAINS
1970-71	42.2	23.8	108.4
1973-74	44.05	21.78	104.6
	(4.3)	(-8.4)	(-3.5)
1974-75	39.58	24.1	99.8
	(-10.1)	(10.65)	(-46)
1975-76	48.73	28.85	121.0
	(23.1)	(19.7)	(21.2)
1976-77	41.92	29.01	111.1
	(-13.9)	(0.55)	(-8.1)
1977-78	52.67	31.75	126.4
	(25.6)	(9.45)	(13.7)
1978-79	53.77	35.51	131.90
	(20.0)	(11.8	(4.3)
1979-80	42.33	31.83	109.7
	(-21.2)	(-10.4)	(-16.8)
1980-81	53.63	36.31	129.5
	(26.7)	(14.07)	(18.1)
1981-82	53.25	37.45	133.2
	(-0.7)	(3.1)	(2.8)
1982-83	47.12	42.79	129.5
	(-11.5)	(14.25)	(-2.8)
1983-84	60.10	45.48	152.3
	(27.5)	(6.3)	(17.6)
1984-85	58.64	44.23	146.2
	(-2.4)	(2.75)	(-4.0)
1985-86	64.15	46.89	150.4
	(9.4)	(6.0)	(2,9)
1986-87	60.56	44.32	143.4
	(5.6)	(5.5)	(-4.6)
1987-88	56.80	46.2	140.4
	(6.2)	(4.24)	(-20)
1988-89	70.5	54.1	169.9
	(24.1)	(17.1)	(21.0)
1989-90	73.6	49.8	171.0
	(4.4)	(-7.9)	(0.6)
1990-91	74.3	54.5	176.2
	(1.0)	(9.4)	(3.0)
1991-92	74.7	55.7	168.4
	(0.5)	(2.2)	(-4.4)
1992-93	72.9	57.2	179.5
	(-2.4)	(2.7)	(6.5)
1993-94	80.3	59.8	184.3
	(10.2)	(4.5)	(2.6)
1994-95	81.8	65.8	191.5
	(1.9)	(10.0)	(3.9)
1995-96	79.6	62.6	185.1
	(-2.7)	(-4.9)	(-3.3)

Source: Various Issues of Economic Survey.
Figures in the brackets indicate annual growth rates.

Table-3.2
Production Of Major A.G. commodites In India (M. T)

Crops	1950-51	1960-61	1970-71	1980-81	1990-91	1996-97
Rice	20.6	34.6	42.2	53.6	74.3	80.5
Wheat	6.4	11.0	23.8	36.3	55.1	68.7
Coarsecereals	15.4	23.7	30.5	29.0	32.7	34.1
Total cereals	42.4	69.3	96.6	119.0	162.1	183.3
Pulses	8.4	12.7	11.8	10.6	14.3	14.9
Totalfoodgrains	50.8	82.0	108.4	129.6	176.4	198.2
Oilseeds	5.2	5.2	9.6	9.4	18.6	24.5 .
Cotton	3.0	3.0	4.8	7.0	9.8	14.5
Sugarcane	57.1	57.1	126.4	154.3	241.0	271.0

Source: Various issues of Economic Survey

The production of foodgrains in India under went rapid change from the late sixties onwards. India was heavily dependent upon large-scale food imports prior to 1967-68. On an average, between 1946 to 1976, about four million tonnes of foodgrain were imported per annum. The annual gap between supply and demand of food in the period from the early sixties to the mid-seventies was about 5.1 million tonnes (Nira Ramachandran, 1996, p.41). The advent of the Green Revolution in the mid sixties was at a time when the availability of further land for agriculture had more or less reached its limits, the agricultural scenario changed from one of land reclamation to one heavily dependent on the modern inputs The introduction of HYV seeds which are heavily water and fertilizer dependent brought in a rapid increase in irrigation facilities. The wheat areas of the North-West comprising the states of Punjab, Haryana and Western U.P., which already possessed an extensive canal irrigation system, displayed spectacular results with total wheat production increasing from 12 million in 1964-65 to 26 million tonnes in 1971-72. Together

with the adoption of the Mexican wheat, this region also absorbed a large portion of the new inputs especially chemical fertilizers. With rice, however, no major break-through was achieved, while the production of wheat was more than doubled in the period from the mid-sixties to the early seventies, rice production during the same period recorded an increase of only four million tonnes from 39 m.t. in 1964-65 to 4.3 m.t. in 1971-72. The growth rate in agricultural production between. 1964-65 and 1970-71 was 3.28%, per annum compared to 2.55% for the proceeding fifteen years; it became extremely prone to fluctuation.

The experience of the eighties, however, shows an improvement in the growth rate of foodgrains. Rice production increased from 42.3 m.t. in (1979-80) to 64.1 m.t. in 1985-86, it raised to 73.6 m.t. in 89-90. Wheat production was low during 1979-80 compared to 78-79. But it showed an increasing trend from 31.8 m.t. in 1979-80 to 46.8 m.t. in 1985-86 and 49.8 m.t. in 1989-90. During nineties the growth rate of foodgrains decelerated (see Table 3.1). This is so in case of foodgrains due to shift in cropping pattern, fall in investment and rise in more demand for exportable agricultural goods. The cropping pattern has also undergone significant change which can be appreciated from the divergence in the growth rates of area and production of foodgrains and the change was noticeable, particularly after the mid-eighties. Gross area under foodgrains was 124.32 m. hectors during 1970-71, it raised to 129.1 m.h. during 1981-82 it decelerated to 121.9 m.h., in 1991-92 and 123.5 m.h. during 1995-96. The Gross area under rice remains more or less same since 80's 40.15 m.h. in 1980-81 42.7 in 1991-92 and 42.9 m.h during 1995-96.

Same is the case with wheat also. 22.2 m.h in 1980-81 and 24.9 m.h in 1990-91, 25.1 m.h. during 1995-96 (see Table 3.3). Data shows a clear fall in the area under foodgrains. Whereas the area under oil seeds has raised from 17.6 m.h. in 1980-81 to 26.3 m.h during 95-96. The area under sugar cane also raised from 2.6 m.h. in 1980-81 to 4.1 m.h. during 1995-96. There is a considerable shift from foodgrains to commercial crops

By considering annual compound growth rates of index numbers of area, production and yield of foodgrains. The percentage change in area 1980-81 to 95-96 is -0.19 and -0.65 during 1990-91to 95-96 for non-food grains 1.74 and 2.06 in consequent years, (see Table 3.4). Foodgrain production growth has slowed down during the first half of the 1990's. The trend growth rate has been lower than the historical growth rate during the last four decades. What is particularly noteworthy is that the pace of growth of foodgrains production has barely kept pace with population growth

Table - :3.3

Gross Area Under Major Crops (M.H.)

Year	Foodgrains	**R**	Wheat	Oilseeds	Sugarcane
1970-71	124.32	37.59	18.24	16.64	2.62
	(7.5)	(10.2)	(41.3)	(20.5)	(9.1)
1975-76	128.18	39.48	20.45	16.92	2.76
	(3.1)	(5.0)	(12.1)	(16.91)	(5.3)
1977-78	127.52	40.28	21.46	17.17	3.15
	(-0.5)	(2.0)	(4.9)	(1.5)	(14.1)
1978-79	129.01	40.48	22.64	17.71	3.09
	(1.1)	(0.4)	(5.5)	(3.1)	(-1.9)
1979-80	125.2	39.41	22.17	16.94	2.61
	(-2.9)	(-2.6)	(-2.0)	(-4.3)	(-15.5)
1980-81	126.67	40.15	22.28	17.60	2.67
	(1.1)	(1.8)	(-2.0)	(3.9)	(2.2)
1981-82	129.14	40.71	22.14	19.06	3.19
	(1.9)	(14.3)	(0.5)	(8.2)	(19.4)
1982-83	125.01	38.26	23.57	17.75	3.36
	(-3.1)	(-6.0)	(-0.6)	(-6.8)	(5.3)
1983-84	**131.16**	41.24	24.67	18.69	3.11
	(4.9)	(7.7)	(4.6)	(5.3)	(-1.4)
1984-85	126.67	41.16	23.67	19.86	2.99
	(-3.4)	(-0.2)	(4.3)	(6.2)	(-3.8)
1985-86	128.02	41.14	23.00	19.02	2.85
	(1.0)	(-0.2)	(-2.5)	(-4.2)	(-4.6)
1986-87	127.20	41.14	23.10	18.63	3.08
	(-0.6)	(0.1)	(0.5)	(-2.0)	(8.0)
1987-88	119.7	38.32	22.60	20.00	3.29
	(-5.8)	(-6.9)	(-2.2)	(7.3)	(6.8)
1988-89	127.7	41.7	24.10	21.9	3.3
	(6.6)	(8.8)	(6.6)	(9.5)	(0.3)
1989-90	126.8	42.2	23.5	22.8	3.4
	(-0.7)	**(1.1)**	(-2.4)	(4.1)	(3.0)
1990-91	127.5	42.6	24.0	24.0	3.7
	(0.5)	(0.9)	(2.1)	(5.2)	(8.8)
1991-92	121.9	42.7	23.3	25.3	3.8
	(-4.3)	(0.2)	(-2.9)	(5.4)	(2.7)
1992-93	123.1	41.8	24.0	25.3	3.6
	(0.9)	(-2.1)	(5.5)	(0.0)	(-5.2)
1993-94	122.7	42.5	25.2	26.9	3.4
	(-0.3)	(1.6)	(2.4)	(6.3)	(-5.5)
1994-95	123.7	42.8	25.7	25.3	3.9
	(0.8)	(0.7)	**(1.9)**	(-5.9)	(14.7)
1995-96	123.5	42.9	25.1	26.3	4.1
	(-0.1)	(0.2)	(-2.3)	(3.9)	(5.1)

Source: Various Issues of Economic Survey.

Figures in the Brackets indicate Annual Growth Rates.

Table - 3.4
Annual Compound Growth rates of Index numbers of Area, Production and Yield of Foodgrains, Non-foodgrains, and all crops (%)

	Foodgrains			Non-Foodgrains			All-Crops		
Periods	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
1951-52 to 95-96	0.53	2.64	2 10	1.51	3.15	1.61	0.77	2.84	2.05
1951-52 to 64-65	1.41	2.91	1.49	2.36	2.50	1.08	1.62	3.13	1.49
1964-65 to 95-96	0.17	253	2.35	1.15	3.01	1.83	0.42	2.71	2.29
1964-65 to 80-81	0.50	2.22	**1.71**	0.61	1.89	1.28	0.52	2.10	1.57
1980-81 to 95-96	-0.19	2.85	3.05	1.74	4.21	2.43	0.31	3.37	3.06
1980-81 to 85-86	0.28	3.97	3.97	0.92	3.43	2.50	0.42	3.77	3.35
1985-86 to 90-91	-0.19	2.96	2.96	2.24	5.54	3.21	0.41	3.92	3.49
1990-91 to 95-96	-0.65	1.63	1.63	2.06	3.68	1.58	0.08	2.44	2.35

Source: G S. Bhalla - 1993.

Table - 3.5
All-India Growth Rates of Area Production and Yield of Principal Crops.

	1949-50 to 1989-90			1949-50 to 1964-65			1967-68 to 1989-90		
Crop	Area	Prod	Yield	Area	Prod	Yield	Area	Prod.	Yield
Rice	0.83	2.58	1.73	1 33	3.49	2.13	0.57	2.74	2.19
Wheat	2.53	5.82	3.21	2.68	3.99	1.27	1.91	5.12	3.14
Jowar	-0.27	1.21	1.49	0.99	2.50	1.50	0.68	1.31	2 00
Bajra	0.09	1.66	1.57	1.08	2.34	1.24	0.18	0.26	1.08
Total Cereals	0.68	2.99	2.30	1.30	3.24	1.87	0.18	2.95	2.77
Other Pulses	0.70	0.76	0.06	2.07	1.28	-0.77	0.59	1.44	0.85
Total foodgrains	0.59	2.67	2.07	1.41	2.93	1.52	0.20	2.74	2.53
Total Oilseeds	0.82	2.11	1.28	2.69	3.11	0.48	0.16	2.15	1.99
Non-Foodgrains	0.99	2.65	1.65	2.52	3.54	0.99	0.48	2.72	2.23
All crops	0.67	2.66	1.98	1.61	3.13	1.50	0.26	2.74	2.47

Source: G.S. Bhalla -1993.

The slowdown in output growth during this period is observed in respect of both foodgrains and non-foodgrains. The non foodgrains nevertheless, recorded an impressive growth rate of 3.68 percent although slower than 5.54 percent achieved during the second half of the eighties. (Bhalla, G.S. 1993, p. 143, See Table 3.5). The declaration was more pronounced in the case of foodgrains mainly because of the decline in area by 0.65 percent particularly to oil seeds. The area under total foodgrains growth rate during 1949-50 to 89-90 was 0.59% and production was 2.67%. Whereas for non foodgrains it was 0.99 percent per annum, production was 2.65 percent per annum. During 1967-68 to 89-90 it was 0.20 percent per annum for foodgrains and for non-foodgrains it was 0.48.

Table - 3.6
Plan Outlay for Irrigation Development

Plan Outlay (in Current Prices in Rupees Billion)				Plan Outlay As % of total plan outlay		
Year		Minor Schemes			Plan Outlay as a % of Total Plan out lay	
	Major of Medium Schemes	Govt Finance	Inst. Finance	Major of Medium Schemes	Govt. Finance	Inst. Finance
1980-85	75.16	1802	1544	8.40	2.01	1.73
1985-90	111.07	3118	3061	5.08	1.43	1.40
1990-91	24.96	812	676	4.28	1.39	1.16
1991-92	29.63	868	674	4.58	1.34	1.04
1992-93	30.47	995	812	4.18	1.37	1.11
1993-94	33 69	969	876	3.64	1.05	0.95
1994-95	42.85	1413	1126	3082	1.26	1.00

1994-95 Budget Estimate.
Source: Parikh (1996).

Table-3.6 (b)
Irrigated Area Under Different Crops - Million Hectares

Crops	1970-71	1980-81	1990-91	1991-92	1992-93	1993-94
Rice	14.3 (38.4)	16.4 (40.8)	19.4 (45.5)	20.2 (47.3)	20.1 (48.0)	20.7 (48.6)
Jowar	0.6 (3.6)	0.8 (47)	0.8 (5.6)	0.8 (6.5)	0.8 (6.1)	0.8 (6.2)
Bajara	0.5 (40)	0.6 (5.5)	0.5 (51)	0.7 (6.5)	0.6 95.8)	0.7 (6.6)
Maize	0.9 (15.9)	1.2 (20.1)	1.2 (19.7)	1.3 (22.5)	1.3 (21.5)	1.4 (22.6)
Wheat	9.9 (54.3)	15.6 (70.0)	19.5 (811)	19.6 (83.7)	20.8 (84.2)	21.4 (85.0)
Bareley	1.3 (52.0)	0.9 (50.6)	0.5 (54.5)	0.6 (60.7)	0.6 (60.8)	0.5 (58.1)
Total Cerals	28.1 (27.6)	35.8 (34.1)	42.3 (41.0)	43.4 (43.4)	44.4 (43.7)	45.6 (45.0)
Total pulses	2.0 (8.8)	2 0 (9.0)	2.6 (10.5)	2.4 (10.7)	2.5 (105)	2.6 (11.2)
Total food grains	30.1 (24.1)	37.8 (29.7)	44.9 (35.1)	45.8 (37.4)	46.9 (37.4)	48.2 (38.7)
Oil Seeds	1.1 (7.4)	2.3 (14.5)	5.8 (22.9)	6.8 (25.5)	6.4 (24.1)	6.5 (23.0)
Cotton	1.3 (17.3)	2.1 (27.3)	2.5 (32.9)	2.6 (33.3)	2.7 (34.6)	2.6 (34.3)
Sugarcane	1.9 (72.40	2.4 (81.3)	3.4 (86.9)	3.6 (88.0)	3.5 (88.3)	3.4 (89.0)

Source: Economic Survey 1996-97.

Table-3.7
Gross Capital Formation in Agriculture (At 1980-81 Prices)
Rs. Crores

				Percent share	
Year	Total	Public	Private	Public	Private
1960-61	1668	589	1079	35.3	64.7
1970-71	2758	789	1969	28.6	71.3
1980-81	4636	1796	2840	38.7	61.3
1990-91	4594	1154	3440	25.1	74.9
1991-92	4729	1002	3727	21.2	78.8
1992-93	5372	1061	4311	19.7	80.3
1993-94	5031	1153	6878	22.9	77.1
1994-95	6256	1316	4940	21.0	79.0
1995-96	6961	1268	5696	18.2	81.8
1996-97	6999	1132	5867	16.2	83.8

Source: Various Issue of Economic Service.

Table - 3.8

Public and Private Investment in Agriculture
(Rs. Billion, 1980-81 Constant Prices)

Year	Total G.C.F in Agri	Public	Private	% of Agriculture GCF in Total GCF
1980-81	48.64	18.92	29.72	17.09
1981-82	47.41	18.78	28.63	13.90
1982-83	48.65	18.57	30.08	14.66
1983-84	44.06	18.43	25.63	13.41
1984-85	48.88	18.22	30.66	14.63
1985-86	**46.41**	16.31	30.10	**11.65**
1986-87	43.60	15.50	28.10	10.85
1987-88	47.78	15.76	32.02	11.43
1988-89	47.34	14.82	32.52	9.47
1989-90	47.91	13.01	34.90	9.39
1990-91	50.76	13.15	37.61	8.74
1991-92	52.12	11.35	40.77	9.79
1992-93	28.70	11.77	46.93	**9.31**
1993-94	61.19	12.94	48.25	9.90
1994-95	64.27	-	-	~

Source: CSO, National Accounts Statistic, 1996. (GCF Gross Capital Formation)

Production on the other hand depends on availability of irrigation facilities Investment in agriculture as a proportion of total capital formation declined. There is a stagnation in investment in irrigation. Plan outlay for major and medium schemes as a percentage of total plan outlay has drastically declined from 8.40% in 1980-85, to 3.8% in 1994-95. For minor schemes finance from government has fallen from 2.0% in 1980-85 to 1.2% in 1994-95. In total foodgrains irrigated area is only 38.7 percent in 1993-94. For rice more than 52% land is under cultivation without irrigation facility. Irrigation facility is available only for 48 percent of land in 1993-94 and for wheat 85 percent of land is under irrigation facility (See Table 3.6b).

Gross investment in agriculture sector has decreased in real terms from Rs. 4636 crores in 1980-81 to Rs.4580 crore in 1991-92. The provision for maintenance of irrigation works is low, reducing the efficiency in utilization of irrigation water. During 1985-90, the average annual increase in public sector outlay in agriculture and irrigation was Rs 1.3 billion. This went down to Rs 0.62 billion in early nineties. More importantly there has been a decline in the central assistance to states as a proportion of total public sector outlay to reduce the fiscal deficit. Which is an important aspect of new economic policy. Share of government expenditure on gross capital formation in agriculture is falling from 35.3 percent in 1960-61, to 16.2% in 1996-97 (see Table 3.7). As a percent of agriculture gross capital formation in total gross capital formation is falling It was 17.09 percent in 1980-81 it has fallen to 9.90 in 1993-94 (see Table 3.8). Many aspects of macro-economic

stabilization and sectoral adjustment policies have had a profound effect on the agricultural production. For example, the fiscal compression resulted in partial withdrawal of subsidies to fertilizers. More important fiscal compression resulted in the declaration of public investment in irrigation, power and other rural infrastructure including agricultural research, roads and communications, etc. Further monetary and credit reforms suggested by Narasimham Committee, if implemented, are expected to both reduce the availability of institutional credit to the rural sector (G.S. Bhalla, 1995, I.J.A.E. p. 10), leading to raise the cost of credit to agriculture. The available bank credit to agriculture during March 23rd 1990 was 16,526 at Current prices and in 1980-81 prices it was 8.147. As a percentage of net bank credit it was 17.4 percent, it was reduced to 12.4 percent during march 31st 1995 (See Table 3.9).

Table - 3.9
Bank Credit to Agriculture

Outstanding as on	March 23 1990	March 22 1991	March 20 1992	March 19 1993	March 18 1994	March 31 1995
Current Prices	16,526	16,750	18,157	19,963	21,208	23,980
1980-81 Prices	8,147	7,437	7,027	7,127	6,914	7,050
As a Percentage of Net Bank Credit	17.4	15.3	15.5	14.1	13.9	12.4

Source: Economic Survey 1996-97.

Table-3.10
Consumption of Fertilizer Nutirents

Year	Nitrogen (N)	Phosphate (P)	Potash (K)	Total NPK
1960-61	0.2	0.1	..	0.3
1970-71	1.5	0.5	0.2	2.2
1980-81	3.7	1.2	0.6	5.5
1990-91	8.0	3.2	1.3	12.5
1995-96	9.8	2.9	1.2	13.9
1996-97	10.3	3.0	1.0	14.3
1997-98	**11.1**	4.0	1.4	16.5

Source: Economic Survey - 1997-98

Table -3.11
NPK Consumption Ratio

Year	Nitrogen(N)	Posphate(P)	Potash(K)
1960-61	7.2	1.8	1
1970-71	6.5	2.0	1
1980-81	5.9	1.9	1
1990-91	6 0	2.4	1
1995-96	8.5	2.5	1
1996-97	10.0	2.9	1
1997-98	8.0	2.9	1

Source: Economic Survey 1997-98

Table - 3.12
Prices of Fertilizers

Rs/Tonnes

Year	Urea	DAP	MOP	DAP/Urea	MOP/Urea
1990-91	2350	3600	1300	1.53	0.55
1991-92	3060	4680	1700	1.53	0.56
1992-93(K)	3060	4680	1700	1.53	0.56
1993-94(K)	2760	6650	4500	2.41	1.63
1994-95(K)	2760	6600	3800	2.39	1.38
1995-96(K)	3320	7500	3800	2.26	1.14
1995-96(K)	3320	9800	4450	2.95	1.34
1995-96(R)	3320	10000	4600	3.01	1.39
1996-97(K)	3320	11000	4800	3.31	**1.44**
1996-97(R)	3320	9000	4300	2.71	1.29
1997-98	3660	8300	3700	2.27	1.01

K-Kharif, R-Rabi
Source: *Economic Survey*, 1997-98.

Given the fixed arable land resource, the increasing pressure of population necessitates higher productivity levels which are possible to achieve mainly through higher coverage under irrigation and more intensive use of nutrients. Nutrient wise break up in terms of NPK shows disproportionately larger share of nitrogen use vis-a-vis other two nutrients (see Table 3.10). The ideal NPK ration aggregated for the country as a whole is 4:1:1, but at present all India NPK ratios are far removed from this norm (see Table 3.11). Consumption is biased in favour of nitrogenous fertilizer whose predominant use is a consequence of the past administered pricing policy adopted for different fertilizers. Urea continues to operate under a price control system after phospatic and potassic fertilizers including DAP, MOP and complex grade fertilizers were decontrolled in August 1992. The consumer prices of fertilizers after taking into account the concession on decontrolled fertilizers are listed in (see Table 3.12.). The subsidy on fertilizer which had played a crucial role in quadrupling food grain production during the four decades between 1951 to 1991, suffered a drastic cut from 0.82 percent of GDP in 1990-91 to 0.75 percent of GDP in 1995-96. The prices of the phosphatic and potassium based fertilizers were controlled and that of nitrogen based fertilizers were reduced by 10 percent. This resulted into prices of phosphatic and potassium based fertilizers soaring high to international level, and skewing the consumption ratio of a mix of nitrogenic, phospatic and potassic fertilizers in favour of the former through some amount of substitution effect, on the other. This imbalance is laid to have an adverse effect on soil quality and in turn on its productivity. To support this a study of Andhra Pradesh, Maharashtra and Karnataka (Gajha 1994) has noted a significant reduction

in per hectare fertilizer consumption during the reform period which expectedly showed up in the decline in foodgrain production

3.2 Agricultural Trade

Indian economy is predominantly an agricultural economy where 70% of its total population depend on agriculture. It not only feeds huge population, but also an important source of foreign exchange. The export of agricultural commodities to international market from India in the early fifties was negligible. Till the mid-sixties there was no remarkable changes in the growth of agricultural exports. The carrying of large buffer stocks, and large foodgrain imports are the two most common methods of stabilizing the supply of food in a country In the period before second world war, India was importing about 5.9 million tonnes of food grains annually. This was largely in the form of rice from Burma. With the disruption in production during the war, food imports fell to just about 1.16 million tonnes (1948-52). With the signing of the first PL-480 agreement of 1956, the scene changed, and India became heavily dependent on wheat imports which reached a high of 14.23 million tonnes in the two drought years of 1965-66 and 1966-67. The bumper wheat production in 1967-68 and the increasing production in the subsequent years enabled the government to build up large stocks which helped the country' through several periods of crisis without more imports.

After the seventies, there were some change in the agricultural sector due to the adoption of new technology. India became a net exporter of agricultural products. Exports have increased from Rs.6,317 crores in 1990-91 to Rs. 12,528

crores in 1993-94. AT the same time, it is also found that imports of agricultural products into the country are very low. Imports of agro-products constituted only 3.8% of all India imports remained very low in many items till at the end of 1980. Yet it is also found that India had enjoyed the comfortable share in the world agricultural exports during the 1990s. In foodgrains rice exports have been raising.

Table-3.13
Share of A.G. Exports to Total A.G. Production.

Year	Total A G. Production In '000 tonnes	Total A.G. Exports in ('000 tonnes)	% Share of agri exports to Total a.g. Production
1970-71	117,384.20	11,837.60	10.08
71-72	119,010.00	11,385.20	9.56
72-73	116,897.30	12,473.30	10.67
73-74	118,533.30	13.965.10	11.78
74-75	121,102.70	13,866.90	11.45
75-76	120,769.30	14,011.00	11.60
76-77	120,546.20	14,545.30	12.06
77-78	124,001.10	13,988.70	11.28
78-79	126,385.20	12,435.00	9.73
79-80	127,755.80	14,997.37	11.41
80-81	130,376.20	15.662.85	**11.73**
81-82	133,487.50	17.331.67	12.61
82-83	137,383.20	18,222.33	13.30
83-84	139,003.80	21.521.06	15.14
84-85	142.126.30	22,457.30	14.39
85-86	156.032.70	21,776.90	15.22
86-87	161.303.80	24,555.30	13.34
87-88	169,921.80	22,667.70	14.11
88-89	171,.36.40	24,148.40	13.72
89-90	176,390.30	24,208.60	15.27
90-91	168,373.20	25,718.20	20.04
91-92	180,010.80	36,085.70	18.27
92-93	184,020.40	36,235.20	19.01
93-94	188,020.40	36,237.00	19.27
94-95	192,300.10	36,447.80	18.95

Source: Various Issues of Economic Survey, CMIE, Bombay.

Table-3.14
A.G. Exports to Total Exports

Year	Exports of Agri Commodities in (Rs)	Total Exports from India in (Rs)	% Share of A.G. exports to Total exports in (Rs)
1970-71	487.00	1,535.00	**31.72**
71-72	585.00	1,608.00	**36.38**
72-73	**751.50**	1971.00	**38.12**
73-74	1,006.80	2,523.00	39.90
74-75	1,401.50	3,329.00	42.09
75-76	1,685.50	4,036.00	41.76
76-77	1800.60	5,142.00	35.01
77-78	2,000.30	5,408.00	36.79
78-79	1,902.60	5,726.00	33.22
79-80	2,238.30	6.418.00	34.87
80-81	2,057.00	6,711.00	30.65
81-82	2,623.20	7,806.00	33.60
82-83	2,642.80	8,803.00	30.20
83-84	2,819.40	9,771.00	28.85
84-85	2,973.50	11,744.00	25.31
85-86	3,018.00	10,895.00	27.70
86-87	3,217.10	12,452.00	25.83
87-88	3,625.30	15,674.00	23.12
88-89	4,192.50	20,232.00	20.72
89-90	5,021.00	27,681.00	18.13
90-91	6,218.80	32.553.00	**19.10**
91-92	8,087.00	44,041.00	18.36
92-93	8,977.00	53.68800	**17.72**
93-94	12,528.00	69,547.00	18.01
94-95	13,727.00	73,158.00	18.46
95-96	17,496.00	10,635600	**16.5**
96-97	21,021.00	118817.00	17.7

Source: Various Issue of "Monthly Trade Statistics" Published by DGC1 & S, Cale and Economic Survey, 1997-98.

Table - 3.15
Compound Growth of Agricultural Exports Taking Base Year 1980-81

Year	Compound Growthrate (%)
1980-81	—
81-82	21.58
82-83	22.16
83-84	27.04
84-85	30.82
85-86	31.84
86-87	36.06
87-88	43.25
88-89	50.93
89-90	59.03
90-91	66.92
91-92	74.56
92-93	77.08
93-94	82.88
94-95	85.01
95-96	88.24
96-97	90.21

Growth in Agricultural Exports

The value of agricultural exports increased from Rs. 487 crores in 1970-71 to Rs. 13,726 crores in 1994-95. During the same period it also found that the share of agricultural exports to total agricultural. Production increased from 10.08% to 18.95 percentage (see Table **3.13).** The percentage share of agricultural exports to total exports (see Table 3.14) India's agricultural exports included pulses, rice, wheat, cereals, tobacco, sugar and molasses, poultry and dairy products, horticultural products, spices, etc. Non-basmati rice exports declined to 1.3 million tonnes in 1997.98 (April 97 - January 98) from 1.9 m.t. exported in 1996-97. The compound growth rates of A.G. exports during pre-liberalization and post-liberalization period has shown in the table 3.15).

Table 3.16
Rice Production and exports from India from 1970-71 to 94-95

Year	Domestic Production ('000 tonnes)	Export from India ('000 tonnes)	Value of exports from India (Rs. Crores)	% share of Rice export to total agricultural exports
1970-71	42225.0	32.10	5.00	1.02
1971-72	43068.0	32.10	4.20	0.71
1972-73	39243.0	22.92	6.50	0.86
1973-74	44051.0	23.30	7.43	0.73
1974-75	39579.0	41.69	17.50	1.24
1975-76	48740.0	34.04	13.40	0.79
1976.-77	41917.0	20.82	6.50	0.36
1977-78	52671.0	52.23	11.40	0.56
1978-79	53773.0	110.49	37.70	2.03
1979-80	42330.0	515.28	128.30	5.73
1980-81	53631.0	726.70	224.60	10.91
1981-82	53248.0	872.50	367.80	14.02
1982-83	47116.0	453.70	217.90	8.24
1983-84	60097.0	175.60	113.30	4.01
1984-85	58337.0	247.70	169 80	5.71
1985-86	64153.0	245.00	196.20	6.50
1986-87	65034.0	273.10	213.00	6.62
1987-88	67832.0	295.42	285.00	7.86
1988-89	69457.0	366.37	317.70	7.57
1989-90	73572.6	421.80	427.00	8.50
1990-91	74291.4	505.00	462.00	7.42
1991-92	74677.6	678.20	756.00	9.34
1992-93	72867.7	580.40	976.00	10.87
1993-94	78972.4	767.70	1287.00	10.27
1994-95	79963.0	789.60	1385.00	10.09

Rice is an important staple foodgrain in India Besides large domestic demand for it, India is exporting large quantities . The rice production during 1970-71 was around 42,225 thousand tonnes and increased to 79,963 thousand tonnes during 1994-95. At the same time, it also found that the export of rice from India has

increased from 32.1 thousand tonnes to 789.6 tonnes from the year 1970-71 to 1994-95. There is some fluctuation in the quantity of production and the quantity of exports. (See table 3(6). The quantity of production was 42330 thousand tonnes in 1979-80 whereas the export was 515.28 thousand tonnes. And the export again increased to 726.7 thousand tonnes in 1980-81 due to high demand of rice for other south Asian countries the production of rice started increasing right from 1984-85 to 1994-95. Another situation observable from the data is that the value of rice export has been increased from 5 crores to 138.5 crores during the period 1970-71 to 1994-95. Besides two years, i.e., the value of rice export. After eighties India was able to get high price for rice by exporting rice to the international market. It has also seen that the percentage share of rice exports to total agricultural exports has increased from 1.02% to 10.09% . India's share in the world exports of rice has increased remarkably till 1990-9las compared to the year 1970-71, it has increased upto 6.5% in the year 1990-91 and 5.6% in 1994-95 (See table 3.17).

Table 3.17
India's share in the world export of Rice

Year	World export in US $ millions	India's export in Terms of $ millions	India's share in the World exports in (%)
1970-71	6775	9	0.1
1975-76	25133	16	0.1
1980-81	4355	160	3.7
1985-86	2916	162	5.6
1990-91	3903	254	6.5
1992-93	3929	133	3.4
1993-94	4086	197	4.8
1994-95	4963	282	5.6

Liberalisation of trade in agricultural products has it's effects on food security. The multilateral agencies have always favoured free trade in all commodities including agricultural commodities. Most of the business groups like the Federation of Indian Chambers of Commerce and Industry and other trade organizations have also generally supported free trade and free entry although with some qualifications "level playing field'. It is argued that economic liberalization in India that resulted in depreciation of the Indian currency and dismantling of protection to industry has shifted the terms of trade in favour of tradable agriculture and has created a favourable climate for a number of agricultural commodities to record large increases in exports (G.S Bhalla, 1995, p. 11). The withdrawal of agricultural subsidies by the developed countries is expected to further increase the export potential of temperate crops like cereals, sugar and livestock output, provided India can generate exportable surplus.

Another benefit of trade liberalization, it is argued, would be a more rational allocation of production resources. The alignment of internal domestic prices with the border prices is likely to help in obtaining a more rational and sustainable cropping pattern and would result in the expansion in acreage under those crops which have a comparative advantage and contraction of acreage under crops like oil seeds and to some extent sugarcane which are high cost (Nayyar and Sen 1994). But it will have effect on food security due to shift in cropping pattern from foodgrains to commercial/exportable crops. While large number of scholars argue that trade liberalization combined with exchange devaluation has generated a large potential

for agricultural exports. Although there are some positive gains through agricultural trade will have adverse effects on India's food security.

The neo-colonial arguments for gains from trade are based on small country assumption do not hold true for big countries like India and China with a large share in world agricultural output, in particular that in foodgrains production. This is because the amount of most of the food grains traded (except wheat) internationally is but a small part of their total domestic demand and their entry in the market would lead to significant changes in world prices. During 1993, the total world trade in rice was 14.5 million tonnes (FAO, 1994), while India alone consumes about 65 million tonnes per year so that a mere 10% shortage amounts to nearly three-fifths of the total world trade. Even a signal for imports of rice by India is bound to send world prices Skyrocketing (Bhalla, 1994, p. 163). Since food and clothing prices are likely to increase with agricultural trade liberalization even without devaluation, and since further devaluation is likely to become necessary to keep the current account deficit in the balance of payments within manageable proportion an increase in the degree of openness of the economy following liberalization is bound to increase domestic prices in absolute terms, and also lead to relative price change, which hurt the poor

Because of the large fluctuations in the international prices of agricultural commodities, the variability in domestic market prices is likely to get accentuated as a result of trade liberalization. A detailed comparison of domestic and international prices of 18 commodities undertaken by Nayyar and Sen (1994) brought out that the world market was less stable than the domestic market. The same conclusion was

also derived by Tyagi (1990) These fluctuations would adversely affect food security of the poor. The recent evidence shows that the domestic price is generally lower than the international price for cereals and high for other food items. If liberalization has its sway and the cereal price is allowed to increase and other prices are allowed to fall in order to integrate the domestic market with the international market, the poor may be hurt in the transition since cereals are by far the major and cheapest source of calories. The relative price of foodgrains which showed a decline during the seventies and eighties registered a rise during the 1990s (Radhakrishana, 1998, p.9).

Liberalization would enable a large number of rich farmers specially in the well endowed irrigated regions to diversify their production structure and start producing for exports (G.S. Bhalla 1995, p.l1). But this may not happen in the case of the small and marginal farmers specially in the under-developed regions. Because of limited resources, it would be very difficult for them to diversify their production structure and also avoid risks of international price fluctuations.

If agricultural exports are to be treated as a vent for surplus, then the amount of foodgrains surplus over domestic demand is not likely to be substantial In fact, with expected acceleration in the growth of income. India may have to import food grains unless special efforts are made to augment output. For example a country like China despite high growth in food production had to import nearly 12 million tonnes a year to meet its total food and feed requirements. This may become true for India

also if and when its economy records a high growth rate in incomes. Hence free trade in foodgrains may have adverse effects on food security of the poor in India.

3.3 Public Distribution System

Quantity rationing of essential commodities has been in existence in India since the inter-war period. The system **of** Fair Price Shops systems (FPS) was first introduced in Bombay when the war broke in 1939. This was especially to keep check on speculative activity of the trade. The FPS system was later transformed into the rationing system in 1942 to ensure an equilable distribution of available food-supplies within the country. By 1947 nearly 54 million people in urban areas were covered by statutory rationing and another 19 million in the non-statutory rationing areas of the country. Around 1967-68, the name of the FPS schemes was changed to call it the public distribution system (Tyagi D.S. 1990). Thus it was started mainly as the urban focused scheme. The PDS in its present form - a producer price support-cum-consumer subsidy programme. The main emphasis was on price stabilisation till the late 1970s and PDS was mainly confined to urban areas and food deficit states The welfare dimension of the PDS has gained importance since the early 1980's and its coverage has been extended to rural areas in some states as well as to areas with a high incidence of poverty the food subsidy cost accounted for 0.7% of GDP in 1993-94. In the wake of economic reforms PDS is previewed to be the main safety net to protect the poor from potential short-run, price-induced adverse effects of economic reforms.

Table 3.18
Net availability of procurement and public distribution of food grains

(Million tons)

Year	Production of Food Grains	Net Imports	Change in Govt. Stock	Net availability of food Grains	Net avl. **Per** capita per day (grams)	Procurement	Public distribution	Col. 6 **as%** col.4	Col. 6 as% Col 1	Col. 7 as% col 4
1970	87.1	3.6	1.1	89.5	455.0	6.7	808	4.0	7.7	9.9
1971	94.9	2.0	2.6	94.3	468.8	8.9	7.8	2.1	9.3	8.3
1972	92.0	-.5	-4.7	96.2	466.1	7.7	10.5	-.5	8.3	10.9
1974	91.6	5.2	-.4	97.1	451.2	5.6	10.8	5.3	6.2	11.1
1975	87.4	7.5	5.6	89.3	405.5	9.6	11.3	8.4	10.9	**12.6**
1976	105.9	.7	10.7	95.8	424.3	128	9.2	.7	12.1	9.6
1977	97.3	.1	-1.6	99.0	429.6	9.9	11.7	.1	10.1	11.8
1978	110.6	-.6	-.3	110.2	468.0	11.1	10.2	-.5	10.0	9.2
1979	115.4	-.2	.4	114.9	476.5	13.8	11.7	-.2	12.0	10.2
1980	96.0	-.3	-5.8	101.4	410.4	11.2	15.0	-.3	11.6	14.8
1981	**113.4**	.7	-.2	114.3	4548	**13.0**	**13.0**	.6	11.4	11.2
1982	116.6	1.6	1.3	116.9	454.8	15.4	14.8	**1.4**	**13.2**	12.6
1983	113.3	4.1	2.7	114.7	437.8	15.6	16.2	3.5	13.7	14.1
1984	133.3	2.4	7.1	128.6	479.7	187	**13.3**	1.8	14.0	10.4
1985	127.4	-.4	2.7	124.3	454.0	20.1	15.8	-.3	15.8	12.7
1986	131.6	.5	-1.6	133.8	478.0	19.7	**17.3**	.4	15.0	12.9
1987	125.5	-.2	-9.5	134.8	471.8	15.7	18.7	-.1	12.5	13.8
1988	122.8	3.8	-4.6	130.8	448.5	14.1	18.6	2.9	11.5	14.2
1989	148.7	1.2	2.6	147.2	494.5	18.9	16.4	.8	12.7	11.1
1990	149.7	1.6	6.2	144.8	476.4	24.0	**16.0**	.9	16	11.0
1991	**154.3**	-.1	-4.4	1586	510 1	**19.6**	20.8	0	12.7	13.1
1992	147.3	-.4	-1.6	148.5	468.5	**17.9**	**19.8**	-.3	12.2	12.7
1993	157.3	3.1	10.3	149.8	464.4	28.1	16.4	2.1	7.9	10.9
1994	161.2	1.1	7.5	154.8	471.2	26.0	14.0	.7	6.1	9.1
1995	167.6	.4	-1.7	169.8	506.6	22.6	**15.3**	.2	13.5	9.0
1996	157.9	-1.2	-8.5	162.5	485.1	19.8	20.5	-.7	**12.5**	12.4
1997	174.4	1	**-1.8**	177.2	512.1	23.6	20.5	.6	**13.5**	11.6

Public Distribution Supplies.

PDS supplies have increased rapidly since the mid sixties, the average annual supply increased from 6.5 million tonnes dueint 1961-65 to 18.5 million tonnes during 1990-92. A note worthy feature is the response of government supply to fluctuations in production, it has been higher in drought years than in normal ones. For instance, in 1979-80 and 1987-88 years associated with low food grain production, PDS supplies were substantially higher than in normal years. In both the years, the government increased the supplies through the employment programs in distressed areas (Poverty and Social Policy Department, the World Bank, 1996). Food grains distributed through PDS was 8.8 million tonnes in 1970, it has been raised to 20.5 million tonnes in 1997 (See Table 3.18) procurement of food grains also raised from 6.7 million tonnes in 1970 to 23.6 million tonnes, in 1997.

Studies suggest that PDS operations are not very sensitive to inflationary situations (Parikh, 1992). For instance, in 1993-94, the year in which the annual inflation rate (point-to-point) went on increasing from 6 9 percent in April to 10.5 in March while the wholesale price of foodgrains increased by 7.8 percent the central foodgrain stock had risen from 11.8 m.t. in January 1993 to 22 .0 m.t. in January 1994, but foodgrain offtake from PDS had dropped from 17.0 m.t. in 1992-93 to 14.7 m.t. in 1993-94.

Another recent disturbing trend is the steady decline of the offtake from the PDS. Between 1991-92 and 1994-95, the offtake of rice declined from 9.9 to 8.0 million tonnes and that of wheat from 8.8 to less than 5 million tonnes in spite of the revamped **PDS** introduced in 1,752 blocks covering **a** population of 165 million including the poorest in tribal and dry land areas.

Pricing and Subsidies

The recent, and large increase in the procurement prices have had an adverse impact on the efficacy of the PDS. The minimum support price was raised by 69 percent for wheat and 44 percent for rice between 1990-91 and 1995-96 (Radha Krishna 1996, p.6). On the one hand, the price advantage to the farmers had resulted in the FCI buying up more wheat and rice that it can manage for the simple reason that the FCI has no choice but to buy whatever is offered to it at the minimum support price. On the other hand, due to large increase in the issue prices, the off-take from the PDS has declined Procurement price of rice has risen from Rs. 74.0 in 1975 to Rs. 360.0 in 1995. And that of wheat Rs. 105 in 1975 to Rs 3.80 in 1995 With the rise of procurement price of rice and wheat issue price has also raised Issue price of rice is Rs. 150 in 1975 it raised to Rs. 537 in 1995. Issue price of wheat was Rs. 125 in 1975 it raised to Rs. 402 in 1995 (see Table 3.19). Due to raise in issue price, off take from PDS has fallen During 1990-91 offtake of wheat was 7.09 m.t. it was reduced to 5.29 m.t. during 1995-96. And that of rice is 7.87 m.t. in 1990-91 and it was 9.46 m.t. 1995-96 (See Table 3.20).

Table : 3.19
Public distribution central issue and procurement price of Rice and Wheat

Year	Procurement Price of Rice	Issue Price of Rice	Procurement Price of Wheat	Issue Price of Wheat
1975	74.0	150.0	105.0	125.0
1976	74.0	150.0	105.0	125.0
1977	77.0	150.0	110.0	130.0
1978	85.0	150.0	110.0	130.0
1979	95.0	150.0	115.0	130.0
1980	105.0	150.0	130.0	130.0
1981	115.0	170.0	130.0	145.0
1982	132.0	188.0	151.0	160.0
1983	132.0	188.0	152.0	172.0
1984	137.0	208.0	152.0	172.0
1985	142.0	217.0	157.0	190.0
1986	146.0	233.0	162.0	195.0
1987	150.0	239.0	166.0	204.0
1988	160.0	239.0	173.0	204.0
1989	185.0	244.0	183.0	204.0
1990	205.0	289.0	225.0	204.0
1991	230.0	377.0	275.0	234.0
1992	270.0	377.0	330.0	280.0
1993	310.0	437.0	350.0	280.0
1994	340.0	537.0	360.0	402.0
1995	360.0	537.0	380.0	405.0

Source : Various issues of Economic survey

Table : 3.20
Food Grain allocation and off take under the P.D.S.

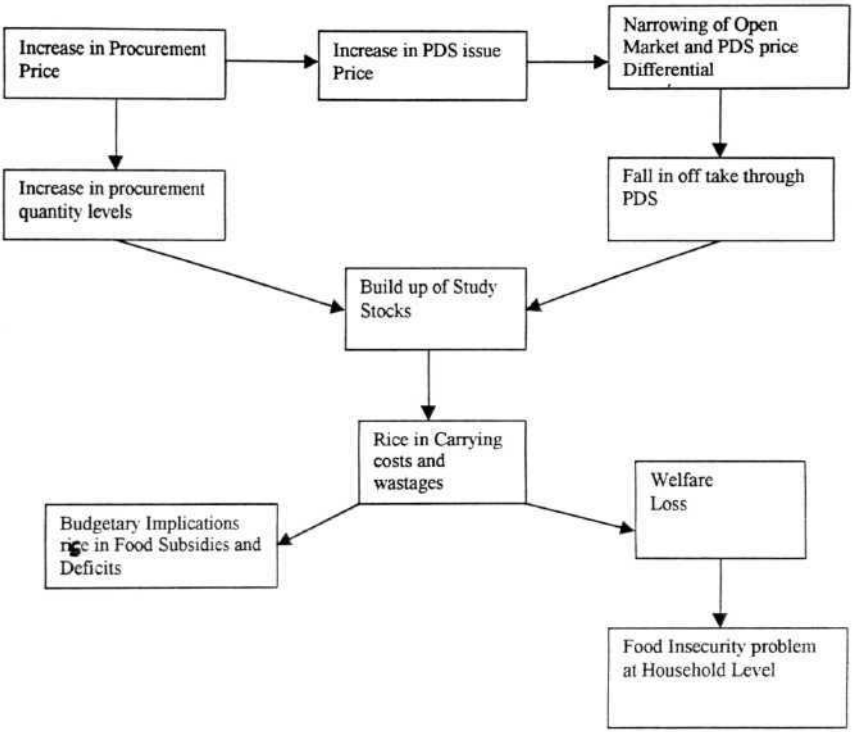
Million Tonnes

Year	Rice			Wheat		
	Allocation	Offtake	%of allocation not take	Allocation	Offtake	% of allocation not take
1990-91	9.61	7.87	18.11	9.58	7.08	25.47
1991-92	11.36	10.17	10.48	10.36	8.83	14.77
1992-93	11.48	9.55	16.81	9.25	7.47	19.27
1993-94	**12.41**	9.07	26.91	9.57	6.15	35.74
1994-95	13.32	8.01	39.86	10.80	5.11	52.69
1995-96	14.61	9.46	32.25	11.31	5.29	52.23

Source:Govt. of India, Ministry of Finance, Economic Survey 1995-96 and 1996-97.

Figure 3.3.1

Food Management.



Source: India Development Report, 1997.

Consequently, buffer stocks had reached uneconomic levels, far exceeding the norms suggested by the technical groups constituted by the government. Studies suggest that the economic costs of withholding foodgrains from the market would be high (Poverty and Social Policy Department, the World Bank, 1996). The with holding of foodgrains would increase its open market price which would hurt the poor more, and the very poor the most due to the fact that not all the poor are covered by the PDS. Even those who are covered depend on the open market for a major portion of their foodgrains requirements.

Increase in procurement price will lead to increase in procurement quantity levels leading to build up of foodgrain stocks, it will lead to rise in carrying costs and wastages (Fig.3.3.1).

Foodgrains prices in general and rice prices in particular have been increasing at a rate higher than production they exhibited a staircase type of movement remaining steady when production is rising, and increasing when production shortfalls occur. This is mainly because during years of good harvest the surplus have gone into stock building and not been used for bringing down prices in accordance with normal market functioning (Krishnaji, 1982). This demonstrates that the stocks have not been used in stabilizing the fluctuations in domestic production. It is generally believed that whenever there is a procurement the open market price goes up. In the case of Andhra Pradesh procurement of 1 million tonnes of rice for buffer stocks would increase the open market price by 25% and the

weighted price by 10 percent on the other hand procurement of 1 million tonne and it is distributed through PDS would increase the open market price by 4 percent but the weighted price would remain the same (Radhakrishana and Indrakant - 1988).

Due to the large increase in the issue prices, the offtake of cereals from PDS has declined from 19.3 million tonnes in 1991-92 to 15.0 million tonnes in 1994-95, effecting food security of the poor. The sharp increases in the minimum support and central issue prices explain the abnormal increase in the carrying cost of buffer stocks in 1993-94 and 94-95. In 94-95 out of the central food subsidy amount of Rs. 51,000 million the carrying costs of buffer stocks amounted to 36% (Radhakrishna 1996). The excess stock over the minimum norm is estimated to have involved an additional central government expenditure amounting to about half of the carrying cost.

The Central Government expenditure of the central government on food subsidy increased eight fold in current prices between 1980-81 and 1994-95, the rate of growth of central government expenditure on food subsidy has slowed down after 2993-94. However, the share of food subsidy in GNP as well as in central government expenditure, has fluctuated, showing no strong secular trend one way or another (see table 3.21).

Table: 3.21

Central Government Expenditure on food Subsidy

Year	Expenditure (Rs million)	Percentage to		
	At current Prices	At 1980-81		Total Govt. Expenditure
		Prices	GNP	
1974-75	2950	4238	0.44	3.01
1975-76	2500	3688	0.35	2.08
1976-77	5060	7029	0.66	3.85
1978-79	5700	7316	0.61	3.22
1979-80	6000	6689	0.58	3.24
1980-81	6500	6500	0.53	2.89
1981-82	7000	6349	0.49	2.76
1982-83	7100	5961	0.45	2.33
1983-84	8350	6466	0.45	2.32
1984-85	11000	7927	0.53	2.51
1985-86	16500	11032	0.71	3.11
1986-87	20000	12511	0.77	3.12
1987-88	20000	11506	068	2.84
1988-89	22000	11703	0.63	2.70
1989-90	24760	12172	0.61	2.60
1991-92	28500	11018	0.53	2.53
1992-93	28000	9903	0.45	2.22
1993-94	55370	17871	0.78	3.80
1994-95	51000	14920	0.61	3.01

Source : Poverty and social policy department
The world bank - Draft on India's public distribution system November-1996

Table: 3.22

Central Government Expenditure on Cereal Subsidy and Cost of Carrying Cereals

(Rs. Million)

Item	1990-91	1991-92	1992-93	1993-94	1994-95
1) Consumer Subsidy	20718 (81.31)	28921 (86.94)	32237 (87.73)	31738 (71.81)	23507 (55.91)
1.1 Wheat	10365 (40.68)	15017 (45.12)	18096 (49.24)	16112 (36.45)	15178 (36.10)
1.2 Rice	10353 (40.63)	13904 (41.81)	14141 (38.48)	15626 (35.35)	8329 (19.81)
1.3 Coarse Cereals	1 (0.00)	2 (0.01)	(0.00)	1 (0.00)	(0.00)
2) Carrying Charge Buffer Stocks	4762 (18.69)	4327 (13.01)	4507 (12.26)	12453 (28.17)	18535 (44.09)
Total (1+2)	25479 (100.00)	33238 (100.00)	36745 (100.00)	44193 (100.00)	42041 (100.00)

Table : 3.23
Details of FCI Cereal Sales and Cereal Subsidies During 1990-96

Item	Quantity (million tons)						Subsidy (Rs. Million)					
	1990-91	1991-92	1992-93	1993.94	1994-95	1995-96	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96
(PDS)	13.28 (78.03)	17.09 (80.2)	13.71 (76.41)	10.78 (57.83)	8.63 (44.38)	10.76 (40.9)	16514 (79.34)	23264 (80.17)	23375 (72.29)	17069 (55.26)	8827 (37.4)	15647 (41.75)
TDP/ PROS)	1.92 (11.25)	2.20 10.29)	3.50 (19.49)	4.15 (20.26)	4.36 (22.41)	3.96 (15.05)	3018 (14.5)	4158 (14.33)	7694 (23.8)	8811 (28.53)	7110 (30.12)	7783 (20.77)
JRY	0.03 (0.21)	0.02 (0.11)	0.32 **(1.78)**	0.40 (2.16)	0.22 (114)	0.24 (0.90)	36 (0.18)	25 (0.09)	535 (1.66)	686 (2.22)	301 (1.27)	354 (0.94)
All PAPs	15.23 (89.5)	19.30 (90.6)	17.54 **(97.68)**	15.33 (82.24)	13.22 (67.93)	1496 (56.86)	19569 (94.01)	27447 (94.58)	31605 (95.74)	26566 (86.01)	16238 (68.8)	23784 (63.46)
Open Mar. Sales	1.28 (7.52)	1.01 (4.76)	0.05 (0.28)	2.98 (15.99)	5.68 (29.18)	5.16 (19.62)	491 (2.36)	152 (0.52)	111 (0.34)	3659 (11.85)	6413 (27.17)	6474 (17.27)
Export	0.27 (1.56)	0.73 (3.43)	0.04 **(0.21)**	0.04 (0.21)	0.00 (0.02)	4.50 (17.11)	346 (1.66)	1137 (3.92)	10 (0.03)	8 (0.03)	1 (0.01)	4592 (12.25)
Others	0.25 (1.42)	0.25 (1.21)	0.33 (1.84)	0.30 (1.56)	0.56 (2.87)	1.69 (6.42)	311 (1.50)	184 (0.63)	511 **(1.58)**	557 (1.80)	854 (3.62)	2537 (6.77)
Total	17.03 (100.00)	21.29 (100.00)	17.96 (100.00)	18.65 (100.00)	19.46 (100.00)	26.31 (100.00)	20718 (100.00)	28921 (100.00)	32238 (100.00)	31738 (100.00)	23507 (100.00)	37386 (100.00)

Source : FCI Performance budget

In 1994-95, out of the food subsidy amount of Rs. 51,000 million, subsidized and buffer stocking accounted for Rs.42,041 million about 82 percent (see table 3.22). There is a sharp increase in the annual carrying cost of cereal buffer stocks - both absolutely, and relatively to total food subsidy. It increased nearly three fold over the period 1990-91 to 94-95, on the other hand, expenditure on cereal subsidy has declined by 27 per cent between 1992-93 and 94-95. The distribution of cereal subsidy between wheat and rice was more or less equal except in the year 1994-95 when the share of wheat has increased to 65 percent. The subsidy on coarse cereals has been negligible. Despite the increasing trend of central food subsidy, consumer cereal subsidies declined since 1992-93. The distribution of food subsidy by antipoverty programs is shown (see Table: 3.23). The share of poverty elevation programs in the cereal subsidy has declined in the recent years. PDS of course is the major program through which the food subsidy is delivered, to provide food security But in the context of recent new economic policies, consumer subsidy has been falling, It also lead to raise in issue price, leading to fall in off-take from the PDS. Hence PDS role of PDS to provide food subsidy is not positive positive in terms of reducing food-insecurity.

PDS Food Access to the poor.

It is important to ask whether the poor have benefited from the increased tempo of PDS operation and what is the efficacy of PDS in distributing food to the poor. Many empirical studies have shown severe biases in the interregional

distribution of the PDS supplies. States with high incidence of poverty such as Bihar, Orissa and Madhya Pradesh receive a lower share. Further, with few exceptions, PDS remained an untargeted programme. (Jha, 1991, Dev and Suryanarayana, 1992). To obtain the information on the distributional incidence of PDS slightly dated information (42nd NSS round, 1986-87) needs to be noted (see Table 3.24). In rural Kerala, 1986-87 Nss data show that percapita monthly PDS cereal purchases (4,3-4.5 Kg) tended to be regressive across the expenditure groups, and percapita monthly PDS cereal purchases constituted 40-58 percent of cereal consumption, and 43058 percent of the market purchases In the case of very poor, while the per capita PDS cereal purchase was low, its share in market purchases as well as in cereal consumption was high because the overall spending (Market & PDS) levels were low. The dependency of the very poor on PDS was very high. In regard to urban areas of Kerala, the extent of coverage and inter-class pattern in PDS purchases were more or less similar to those in rural areas with the exception that the inter-rural areas with the except that the interclass distribution of subsidized cereals was slightly less regressive than in rural areas.

In Andhra Pradesh, the monthly percapita purchases in 1986-97 was 2.23-2.56 kg. in rural areas and d2.23-2.63 kg. in Urban areas. The share of PDS cereal purchases in cereal consumption was 17-26 percent in rural areas and 18-26 percent in urban areas. Inter class variations were similar to those in Kerala.

In contrast to the impressive coverage of PDS in the states of Kerala and Andhra Pradesh, the coverage was low in All India, the monthly percapita purchases was 0.88 kg. in rural areas and 1.34 kg. In Urban areas. The low PDS cereal purchases in All ?India can be attributed to the extremely low cereal purchases from PDS in the prosperous states with high poverty levels such as Bihar, Orissa, Madhya Pradesh and Utter Pradesh. The monthly purchases from PDS was lowest for the very poor uniformly across all the states, both in rural and urban areas, (poverty and social policy department world bank, 1996).

Based on the results of some selected village studies on PDS in 1995 in four states, the evidence shows that even now, the efficacy of PDS in distributing food to the poor seems to be as biased as in 1986-87 None of the four villages surveyed in Bihar received any PDS supplies, nor did three out of four villages surveyed in Uttar Pradesh (see Table 3.25) PDS has remained an expensive and largely untargeted program.

Table: 3.24

Monthly Per Capita Purchase of CEREALS (kgs) from PDS and their percentage To total Cereal (PDS + Open Market) purchases and cereal consumption 1986-87

States	Rural Areas					Urban Areas				
	Very Poor	Moderately Poor	Poor	Non-Poor	All Classes	Very-Poor	Moderately Poor	Poor	Non-Poor	All Classes
A.P	2.33	2.49	2.43	2.56	2.53	2.63	2.83	2.72	2.23	2.44
	26.15	19.92	21.99	17.37	**18.19**	26.04	24.35	25.28	18.83	21.44
Assam	0.93	0.79	0.84	0.63	0.72	1.78	1.20	1.40	1.25	1.28
	9.71	6.64	7.58	4.27	5.43	18.22	10.96	13.27	10.15	10.76
Bihar	0.04	0.05	0.05	0.07	0.06	0.16	0.06	0.12	0.38	0.26
	0.36	0.36	0.40	0.39	0.39	1.45	0.46	1.01	2.76	20.02
Gujarat	1.43	1.59	1.52	1.21	1.30	1.25	1.13	1.18	0.71	0.91
	18.97	16.58	17.43	10.05	11.76	15.36	12.65	13.79	7.91	10.34
Haryana	0.02	0.02	0.02	0.01	0.01	0.10	0.08	0.08	0.08	0.08
	0.18	0.15	0.16	0.07	0.07	0.86	0.75	0.74	0.76	0.75
J & K	1.82	2.92	2.61	1.89	2.08	6.08	5.58	5.70	7.54	7.16
	13.21	19.74	18.00	9.91	11.67	53.10	42.89	45.13	49.80	48.97
Karnataka	0.89	0.99	0.94	1.16	1.08	1.15	1.53	1.31	2.02	1.70
	9.50	8.31	8.86	7.92	8.21	13.19	16.22	14.54	17.57	16.38
Kerala	4.31	4.39	4.35	4.52	4.46	4.29	4.79	4.47	4.92	4.24
	57.93	49.05	52.16	40.47	43.39	56.30	47.19	52.34	38.10	44.40
MP	0.26	0.28	0.27	0.27	0.27	0.47	0.54	0.50	0.50	0.52
	2.15	1.96	2.04	1.61	1.80	4.14	4.47	4.27	4.44	4.36
Maharashta	1.05	1.00	1.02	1.21	1.13	1.26	1.80	1.49	1.51	1.50
	11.50	8.67	9.85	9.34	9.54	14.84	18.54	16.56	16.06	16.23
Orissa	0.01	0.00	0.01	0.08	0.04	0.13	0.23	0.17	0.51	0.35
	0.08	0.00	0.07	0.43	0.25	0.97	1.67	1.25	3.55	2.50
Punjab	0.19	0.02	0.06	0.00	0.01	0.06	0.05	0.05	0.04	0.04
	2.62	0.22	0.71	0.00	0.08	0.76	0.58	0.59	0.38	0.39
Rajastan	**1.58**	**1.12**	1.32	0.68	0.86	0.39	0.21	0.29	0.24	0.26
	12.59	7.87	9.76	3.79	5.15	3.34	1.70	2.41	1.71	1.95
TN	1.20	1.27	1.24	1.34	1.30	1.18	1.26	1.22	1.17	1.19
	12.86	11.20	12.09	9.77	10.59	14.59	13.07	13.82	10.84	12.00
UP	0.11	0.13	9.12	0.27	0.21	0.20	0.17	9.19	0.43	0.32
	0.95	0.97	0.95	1.53	1.33	1.89	1.48	1.81	3.45	2.72
WB	0.87	1.00	0							
	7.85	0.88	7.26	5.52	6.16	24.98	28.73	27.14	27.23	27.22
All India	6.51	0.81	0.76	0.95	0.88	1.19	1.36	1.27	1.39	1.34
	6.51	6.27	6.38	6.08	6.17	12.65	12.73	12.59	12.30	12.26

Source : Poverty and social policy department
The world bank-Draft on India's public distribution system-November-1996

Table: 3.25
Per capita Monthly Consumption (KG.) of Rice from PDS in Andhra Pradesh and Kerala and Cereals from PDS in Bihar and Uttar Pradesh : 1995

Andhra Pradesh

Expenditure Class, (Rs./month/perca pita)	Village 1 Netampadu	Village2 Singtham	Village3 Jaggasagar	Village4 Narsayap alem	Villag5 Machavaram
Less than 175	2.28 (22.96)	1.07 (12.71)	2.81 (36.34)	4.81 (48.73)	2.81 (30.34)
176-225	2.27 (21.43)	2.57 (22.69)	2.27 (20.99)	2.53 (24.85)	2.91 (27.39)
226-275	1.81 (14.77)	0.00	0.94 (8.44)	3.38 (27.95)	2.51 (32.77)
276-350	0.00	0.00	0.47 (1.86)	0.39 (7.52)	1.66 (14.53)
Above 350	0.00	0.00	0.00	0.43 (1.63)	11.26 (9.64)
All Classes	2.42 (22.92)	1.41 (14.07)	1.66 (18.05)	2.32 (24.33)	2.77 (28.97)

Kerala

Expenditure Class, (Rs. /month/percapita)	Village 1 Anand	Village2 Anjengo	Village3 Edavaka	Village4 Pruthoor
Less than 175	3.40 (46.01)	1.01 (14.45)	**6.17** (80.33)	5.00 (100)
176-225	3.17 (46.55)	1.95 (28.89)	4.28 (69.59)	5.18 (68.07)
226-275	4.11 (53.03)	2.12 (21.2)	4.78 (53.95)	3.81 (44.82)
276-350	5.01 (44.49)	3.12 (29.46)	3.86 (42.37)	5.63 (66.47)
351-500	6.39 (58.46)	4.08 (36.82)	3.86 (26.62)	4.52 (54.19)
501-1000	4.74 (40.83)	3.89 (23.50)	3.75 (38.38)	6.13 (54.10)
Above 1000	7.43 (79.89)	0.00	0.00	0.00
All Classes	4..77 (48.47)	2.70 (26.06)	4.21 (41.35)	4.73 (55.52)

Figures in the Bracket indicates the Percentage of Cereals from PDS in the Total Cereal Consumption.

Source :UNDP Research Project on Strategies and Financing for Human Development.

Table: 3.25
Per capita Monthly Consumption (KG.) of Rice from PDS in Andhra Pradesh and Kerala and Cereals from PDS in Bihar and Uttar Pradesh : 1995

Expenditure Class (Rs./month/ Per capita)	Bihar				Uttar Pradesh			
	Village 1 Bharat	Village2 Feta	Village 3 Parsa	Village4 Pathraha	Village1 Jamgain	Village2 Jhajra	Village3 Kaghar Sadar	Village4 Khalispu
Less than 175	0.00	0.00	0.00	0.00	0.00	1.75 (37.23)	0.00	0.00
176-225	0.00	0.00	0.00	0.00	0.00	1.90 (37.33)	0.00	0.00
226-275	0.00	0.00	0.00	0.00	0.00	1.86 (44.93)	0.00	0.00
276-350	0.00	0.00	0.00	0.00	0.00	3.03 (58.16)	0.00	0.00
Above 350	0.00	0.00	0.00	0.00	0.00	2.15 (44.38)	0.00	0.00
All Classes	0.00	0.00	0.00	0.00	0.00	2.08 (43.24)	0.00	0.00

Source :UNDP Research Project on Strategies and Financing for Human Development.

Empirical evidence for urban bias seems to be weak (see table 3.24, out of the eight states (A.P. Gujarat, Jammu & Kashmir, Karnataka, Kerala, Maharashtra, Tamil Nadu and West Bengal) in which PDS network has spread, only in Jammu & Kashmir, Karnataka, Maharashtra and West Bengal, were the percapita purchases from PDS as well as their share in the market purchases of cereals higher in urban areas. However among these states, the urban bias was extreme in Jammu & Kashmir and West Bengal.

It needs to be recognized that PDS is not functioning at all in the states with high concentration of the poor, due to lack of initiative on the part of the state government. The proposed new scheme of providing 10 kg/month to poor household at half the issue price if earnestly implemented, it may help the poor to get access to food provided the delivery systems in the poorer states are made to function properly without leakages.

3.4 Percapita Net Food Availability

The percapita availability of food is a function of population and food production with adjustment made for exports, imports change in govt. stocks at the beginning of the year.

The percapita net daily availability of cereals has not been varied significantly in the last 25 years being 417g in 1970-71 and 469 grams in 1994-95 (see Table 3.26), thus, food grain production growth seems to have been absorbed by population growths (see Table 3.27). Pulses account for less than 8% of total food grain production in the country. The pulse production has not kept pace with population growth. Percapita availability declined from 51.2g in 1970-71 to 38.1 grams in 1994-95. This was not only due to a reduction in land under pulse cultivation but also to a decline in yield per hectare There is not much improvement in percapita net availability per day it was 468.8 grams. During the 1971 it was raised to 507.7 in 1995.

Table 3.26

Net availability of Food grains

Year	**Population (Million)**	**Net Production of Food Grains(m.t)**	**Net** avilability **(m.t)**	**Percapita Net availabilityPer day(grm)**
1970	**538.9**	87.1	89.5	455.0
1971	**531.3**	94.9	94.3	468.8
1972	**563.9**	92.0	96.2	466.1
1973	**576.8**	84.9	88.8	421.3
1974	590.0	91.6	97.1	451.2
1975	603.5	87.4	89.3	405.5
1976	617.2	105.9	95.8	424.3
1977	631.3	97.30	99.0	429.6
1978	645.7	110.6	110.2	468.0
1979	660.3	115.4	**114.9**	**476.5**
1980	675.2	96.0	**101.4**	410.4
1981	688.5	113.4	114.3	454.0
1982	703.8	116.6	116.9	454.8
1983	718.8	113.3	114.7	437.3
1984	734.5	133.3	128.6	479.7
1985	750.5	**127.4**	124.3	454.0
1986	766.4	131.6	133.8	478.1
1987	756.7	125.5	134.8	471.8
1988	799.2	125.5	130.8	448.5
1989	815.8	148.7	147.2	494.5
1990	872.6	149.7	144.8	476.4
1991	851.7	154.3	158.6	510.1
1992	861.8	147.3	148.5	468.5
1993	883.9	157.5	149.8	464.4
1994	899.9	161.2	154.8	471.2
1995	916.0	167.6	169.8	506.6
1996	932.0	157.9	165.2	**485.1**
1997	948.0	174.4	177.2	**512.1**

Source: Various Issues of Economic Survey.

Table-3.27
Growth Rates of Foodgrains and Population

Year	Growth rate of Foodgrains	Growthrate of Population
1975-76	21.23	2.2
76-77	-8.14	2.2
77-78	13.70	2.2
78-79	4.34	2.2
79-80	-16.8	2.2
1980-81	18.13	2.2
81-82	2.85	1.9
82-83	-2.82	2.2
83-84	17.64	2.1
84-85	-4.03	2.1
85-86	2.90	2.1
86-87	-4.68	2.1
87-88	-2.09	2.1
88-89	-21.00	2.0
89-90	0.64	2.0
90-91	3.04	2.2
91-92	-4.42	1.8
92-93	6.59	1.8
93-94	2.67	1.8
94-95	3.90	1.8
95-96	-3.34	1.7

Source: Various Issues of Economic Survey.

With population growing at 1.94 percent and an assumed rate of growth of percapita income of 3 percent as experienced during the eighties, the aggregate household demand for foodgrains by taking rural and urban population together is expected to grow at a rate of 2.97 percent per annum. However, with an assumed growth rate of per capita income of 5.5 percent, the demand for food grains would rise by 3.84 percent per annum. (G.S. Bhalla, p. 14, 1995). National commission on Agriculture (NCA), estimated the total requirement of concentrated at 20.32 million tonnes that included coarse cereals at 5.47 million tonnes for 1973. The availability

was found to be considerably lower. For the year 2000, the NCA projected the requirement of concentrates at 82.81 million tonnes including coarse cereals at 23.90 million tonnes (Government of India, 1976, chapter 34). The demand projections derived imply that in order to meet its requirements, ranging between 243 to 259 m.t. of foodgrains by the year 2000 out of domestic production, the country should achieve an average incremental output of 7.5 to 9.0 m.t. a year during the nineties as against the incremental output of about 4.3 m.t. a year recorded during the eighties.

To sum up, there are clear signs of a slowdown in foodgrains growth in the post reform period. Peal public investment in agriculture continues to be lower than that realized in the early eighties As a result, there is a shortfall of investment in irrigation. Rise in procurement price lead to fall in off-take from PDS.

REFERENCES

1. G.S. Bhalla (1994): "Policy for Food security in India" in G.S. Bhalla (ed) 1994, economic liberalisaion and Indian A.G. ISFD New Delhi.

2. G.S. Bhalla (1995): "Globalisation and Agricultural policy in India". Indian Journal of Agricultural Economics.

3. Hanumantha Rao and Gulati !994): Indian Agriculture Emerging perspectives and major policy issues Washington, DC. U.S.A (Mimeo).

4. Kirit Parikh (1973): "Food security: Individual and National", In Isher Ahluwalia and IMD Little (ed), Indian economic reforms and development eassys for Manmohan Singh.

5. Kumar. Praduman, Mark W. Rosengrant and Demand for Rice and other Food grains in India, I.ARE. New Delhi and International Food Policy

Jowarth E. Bouis (1994): Research Institute, Washington, DC U S A

6. Kurien, C.T(1996): 'The real impact' Frontline, Feb 9, 1996

7. Nayyar, Depak and SenAbhijit(1994) "International Trade and Agricultural Sector in India", in G.S. Bhalla (ed) Economic Liberalization and Indian A.G ISID

8. R.Radhakrishna(1998) "Food security Nutrition and Poverty in India:" Centre for economic and Social Studies, Hyderabad.

9. R.Radhakrishna(1996) "India's PDS - A National and International Perspective", (Draft) October.

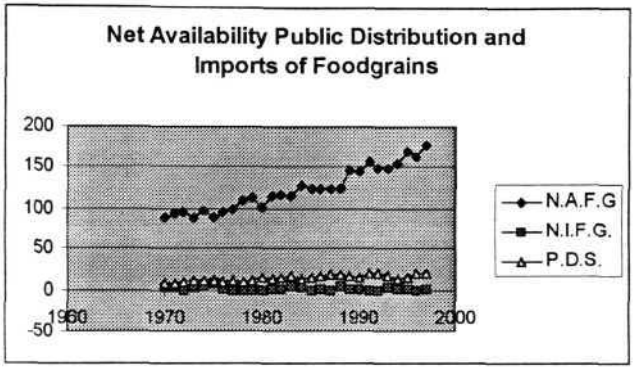
10. Ravi and Radhakrishna (1990) "Food demand projections for India", A Study undertaken for World Bank, CESS, Hyderabad.

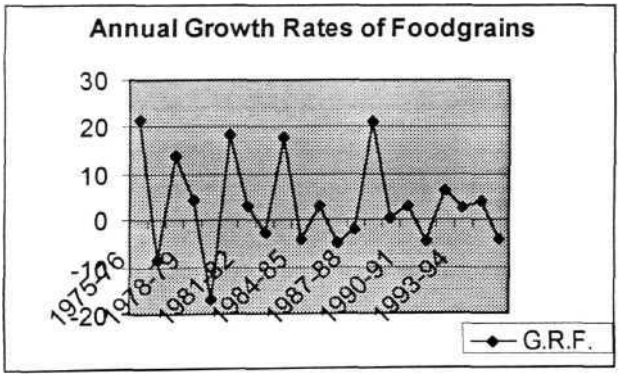
11. D.S.Tyagi (1990) "Increasing Access to food through Interaction of Price and technology policies - the Indian Experience" (ed) by D.S. Tyagi, V S. Vyas in Increasing access to food, the Asian Experience.

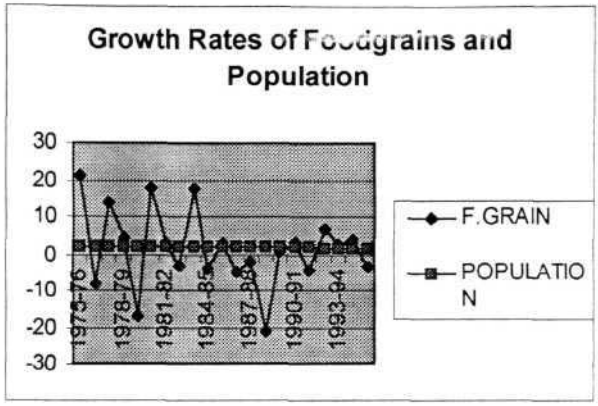
12. Poverty and Social Policy Department - the World Bank Draft: on India's PDS: A National and International Perspective (1996).

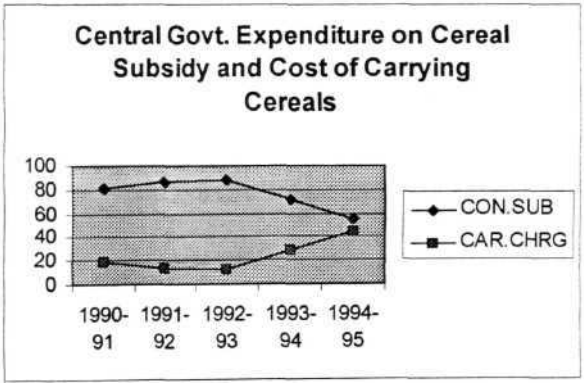
13. Government of India Economic Survey - (Various Years).

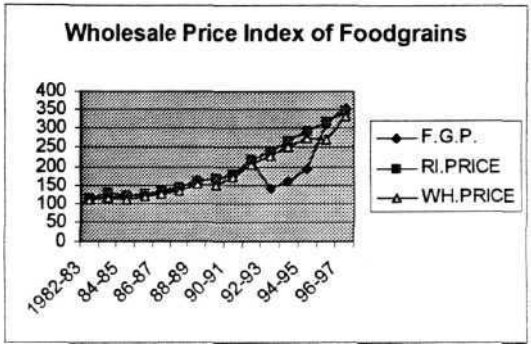
14. Government of India Bulletin of Food statistics (Various years).

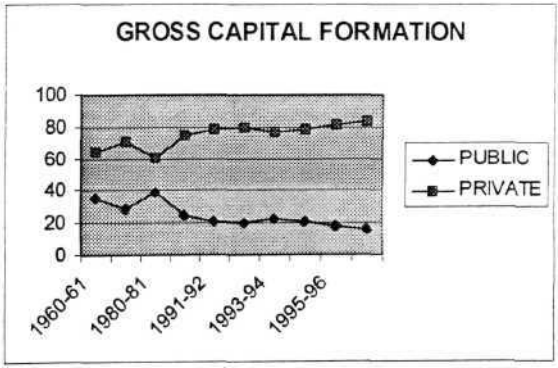

Net Availability Public Distribution and Imports of Foodgrains
200
150
100
50
0
-50
1960
1970
1980
1990
2000
N.A.F.G
N.I.F.G.
P.D.S.


Annual Growth Rates of Foodgrains
30
20
10
0
-10
-20
1975-76
1978-79
1981-82
1984-85
1987-88
1990-91
1993-94
G.R.F.


Growth Rates of Foodgrains and Population
30
20
10
0
-10
-20
-30
1975-76
1978-79
1981-82
1984-85
1987-88
1990-91
1993-94
F.GRAIN
POPULATIO
N


Central Govt. Expenditure on Cereal Subsidy and Cost of Carrying Cereals
100
80
60
40
20
0
1990-91
1991-92
1992-93
1993-94
1994-95
CON.SUB
CAR.CHRG


Wholesale Price Index of Foodgrains
400
350
300
250
200
150
100
50
0
1982-83
84-85
86-87
88-89
90-91
92-93
94-95
96-97
F.G.P.
RI.PRICE
WH.PRICE


GROSS CAPITAL FORMATION
100
80
60
40
20
0
1960-61
1980-81
1991-92
1993-94
1995-96
PUBLIC
PRIVATE

CHAPTER - IV

HOUSEHOLD FOOD SECURITY

Agricultural development, food production and its distribution are central to the national food security. In addition, there are several other factors that determine the food security at the household level. They include food prices, employment and purchasing power.

The main reason for the lack of household level food security in India is low purchasing power. This inturn depends on the income of the household. Income of the household mainly depends on employment Food insecurity at the household level is due to poverty. The poorest groups in India tend to be assetless or nearly assetless families. Landlessness is increasing, both absolutely and relatively and most of the poor derive income from wage labour They are often underemployed, under-paid and forced into non-wage work. In addition, there is still a particular institutionalized poverty amongst Scheduled Castes (S.C.), and Tribes, (ST.) In regions where such people are concentrated the rate of poverty is high. Hence the problem of food insecurity is more is more among these groups. Food security at the household level also depends on prices.

If food prices are stabilised at some reasonable level, at that price everyone's demand would be met. The relative price of foodgrains which showed a decline during the seventies and the eighties registered a rise during the first half of the

1990s. An increase in cereal price would significantly reduce the calorie intake. The increase in prices of foodgrains lead to decline in real wages for unskilled agricultural labourers. This would mean loss in purchasing power for the bottom strata of the poor.

Table 4.1

Percentage distribution of households by type of response on the question — whether all members of the household get two square meals a day -1983.

State	Only some months in the year		No	
	Rural	Urban	Rural	Urban
Andhra Pradesh	14.69	6.93	0.82	0.04
Assam	12.49	7.23	3.58	1.79
Bihar	31.81	9.14	5.42	2.89
Gujarat	2.78	1.05	0.07	0.09
Haryana	0.78	0.53	0.12	—
Himachal Pradesh	3.08	0.74	0.24	—
Jammu & Kashmir	1.51	0.88	0.30	0.12
Karnataka	17.81	10.39	0.93	0.58
Kerala	15.29	11.67	3.68	1.85
Madhya Pradesh	13.35	4.86	1.72	0.37
Maharashtra	9.31	5.00	0.68	0.42
Orissa	31.80	11.33	5.02	0.84
Punjab	1.33	1.80	0.24	0.82
Rajasthan	3.11	1.18	0.69	0.27
Sikkim	…	0.60	0.69	—
Tamilnadu	16.01	7.15	1.36	1.05
Uttar Pradesh	10.39	3.86	0.02	0.71
West Bengal	31.01	6.14	8.60	1.35
All India	16.19	5.56	2.35	0.77

Source: Government of India (1989)

While India has achieved moderate success in combating food insecurity, caused by crop failures due to droughts and floods, it has failed to make a dent on the chronic food insecurity. The problem of chronic food insecurity is primarily associated with poverty. The strategy to overcome chronic food insecurity includes short term interventions to raise the purchasing power of the poor through the endowments of land and non-land assets and by generating employment opportunities, as well as long term growth mediated interventions to improve food availability and raise incomes (Radhakrishna, 1995, p.2).

The dimensions of household food insecurity could be obtained from the NSS data. The NSS 38th round, 1983 sought data on the perceptions of households on adequacy of food. The percentage distribution of households by type of response on the question "whether all members of households get two square meals a day" is available (see Table 4.1). At the all-India level, 16 19 percent of households got two square meals a day only during some months of the year Another 2.35 percent reported "no" to the question Thus, 19% of rural households reported hunger. A similar question reported in 1990-91 showed a decline in the percentage of the hungry (46th Round NSS). But these results were based on a small sample and so comparison will not be valid (G. Parthasarathy, 1996, p.88). There are large variations across the states. In states such as Bihar, Orissa and West Bengal, the hungry households exceeded one-third of total households The extent of reported food insecurity in urban areas was less as compared to rural areas but not insignificant as in some states such as Orissa, Kerala and Karnataka.

The data on percentage of households with less than the calorie norm of 2,700 calories per consumption unit in 1983 further substantiates the extent of hunger (see table 4.2). As many as 16.9% of persons in rural areas and 21% in Urban areas consume less than 70% of the required norm of 2,700 calories per consumption unit.

Table - 4.2

Per 1,000 distribution of persons/households with less than the calorie Norm of 2,700 calories per consumption unit: All India 1983

	<70	70-80	80-90	90-100	100-110	110-120	120-150	150 above	All
Rural									
Persons	169	100	131	129	113	93	158	96	1000
Households	155	99	122	124	111	93	170	126	1000
Urban									
Persons	210	147	163	144	107	74	104	51	1000
Persons	174	121	144	143	114	83	135	86	1000

Source: G. Parthasarathy - 1996,1.J.L.T.

The distribution of households by monthly percapita expenditure for calorie intake level (see Table 4.3) throws light on the poverty level of the persons with less than 70 percent of calorie intake level. As per the expert group of poverty, the poverty line for 1983 was Rs.89.45 for rural and Rs.l17.64 for urban households. The calorie intake levels for the poor as compared to the non-poor, both in urban and rural areas, are much lower, suggesting the relation between food security and poverty of households.

Table - 4.3
Per 1,000 distribution of Households by Monthly Percapita Expenditure for Calorie in-take level, 1983

Monthly per capita expenditure	Calorie in take level (% of norm)				
	<70	70-80	80-90	90- 100	All
Poor	Rural				
0-30	119	003	001	001	010
30-40	109	029	013	004	023
40-50	166	89	**49**	27	47
50-60	175	142	111	69	72
60-70	141	182	137	114	90
70-85	134	220	228	206	114
Non-poor					
85-100	67	143	168	184	130
100-125	53	116	165	198	166
125- 150	22	38	65	92	102
150-200	13	24	44	70	106
200 - 250	5	8	11	20	22
250-300	2	3	4	8	22
300 above	3	3	4	7	34
All households	11,375	7,606	9,517	9,660	77,331
Poor	Urban				
0-30	27	—	—	—	5
30-40	26	1	—	—	5
40-50	53	10	4	—	11
50-60	100	69	13	6	25
60-70	115	69	38	18	38
70-85	183	144	87	49	76
85-100	144	151	132	79	87
100-125	154	246	213	190	151
Non-poor					
125-150	75	136	161	163	119
150-200	71	124	183	211	167
200 - 250	25	46	83	121	103
250-300	9	20	39	63	67
300 above	18	24	48	99	147
Sample households	6,507	4,716	5,824	5,875	4,092

4.1 Cereal Consumption

The NSS consumption data reveal that percapita consumption of cereals has been declining since the early 1970's (see Table 4.4). Between 1970-71 and 1993-94, the percapita cereal consumption declined by 0.52 percent per annum in the rural areas and by 0.27 percent per annum in urban areas of India. The average All India rural percapita consumption fell from 15.25 kg/percapita/month in 1977-78 to 13.40 kg, in 1993-94, while the urban consumption fell from 11.62 to 10.60 kg During the same period, the declining trend is visible across all the states with the exception of Kerala, West Bengal and Orissa. The decline is very prominent, in Punjab and Haryana. The absolute fall of about 4 kg. Percapita per month in rural areas of the Punjab and Haryana and about 2 kg. In Urban areas occurred mainly due to reduced consumption of coarse cereals. Low percapita intake of cereals in Punjab, the most prosperous state 11 kg. In rural areas and 9 kg in urban areas in 1993-94 and high intake in the backward state of Orissa 16 kg. In rural areas and 13.40 kg. In urban areas. This is partly due to the diversification of the food basket in Punjab in favour of non-cereal food, particularly milk and milk products, meat, egg and fish, vegetables and fruits etc

Table 4.4

Cereal Consumption in Rural Areas of Various States During 1970-94

Kg/month/person

States	1970-71	1972-73	**1973-**74	1977-78	1983	1986-87	1987-88	1989-90	1990-91	1991-92	1993-94	Trend Growth
Andhra Pradesh	16.05	15.25	15.80	15.85	15.37	13.99	14.35	14.31	13.62	13.6	13.30	-0.76
Assam	15.70	**14.81**	15.33	14.38	14.23	13.24	14.23	13.93	13.68	13.2	13.20	-0.64
Bihar	16.39	15.58	14.99	16.16	15.77	15.25	15.39	15.14	16.45	15.0	14.30	-0.23
Gujarat	15.00	13.32	13.87	13.44	12.56	11.05	12.00	12.22	11.75	11.1	10.70	-1.17
Haryana	18.13	17.57	16.56	15.22	14.54	14.84	15.02	13.74	14.15	10.2	12.90	-1.55
Himachal Pradesh	17.64	18.06	16.30	15.47	16.06	14.32	16.06	Na	Na	Na	Na	-0.84
Jammu & Kashmir	20.14	18.72	19.09	17.99	17.59	17.82	17.26	Na	Na	Na	Na	**-0.70**
Karnataka	15.71	15.63	15.61	15.01	15.03	13.16	13.75	12.11	11.62	12.3	13.20	-1.20
Kerala	7.99	7.97	7.69	9.18	10.01	10.28	10.36	9.75	10.73	10.0	10.10	1.29
Madhya Pradesh	1651	17.28	17.12	16.08	15.83	15.14	15.39	14.60	15.22	14.3	14.20	-0.78
Maharashtra	12.83	12.60	13.45	13.52	13.79	11.84	13.03	11.89	11.48	11.7	11.40	-0.58
Orissa	16.12	15.22	15.88	15.97	15.61	16.02	15.72	16.52	15.98	17.1	15.90	0.16
Punjab	15.46	15.38	14.89	14.35	13.52	11.86	12.41	12.29	11.69	12.0	10.80	-1.44
Rajasthan	17.91	18.17	18.76	18.18	17.19	16.69	16.62	15.54	15.75	14.9	14.90	**-0.92**
Tamilnadu	13.95	14.53	14.72	13.85	13.05	12.27	12.24	12.43	12.20	11.6	11.70	**-0.98**
Uttar Pradesh	16.32	16.83	16.24	16.57	15.17	15.48	15.32	14.77	14.79	13.7	13.90	-0.74
West bengal	13.35	13.64	12.97	14.74	14.28	15.41	15.12	15.44	1506	14.2	15.00	0.56
All India	**15.35**	15.26	**15.09**	15.25	14.80	14.28	**14.47**	14.00	14.06	13.5	13.40	**0.55**
Coefficient of Variation	15.7	16.1	16.0	13.2	11.5	13.8	11.9	12.8	13.5	14.6	13.0	

Note: Na: Not available

Table 4.4 (Contd.)

Cereal Consumption in Urban Areas of Various States During 1970-94

Kg/month/person

States	1970-71	1972-73	1973-74	1977-78	1983	1986-87	1987-88	1989-90	1990-91	1991-92	1993-94	Trent Grow
Andhra Pradesh	13.31	12.68	13.07	12.83	11.95	11.37	11.70	11.74	11.70	**11.6**	11.3	-0.6
Assam	**12.91**	12.55	12.31	13.44	12.78	11.89	12.39	12.34	12.08	11.5	12.10	-0.18
Bihar	13.68	13.49	13.22	14.06	13.44	12.90	13.37	13.50	12.85	13.7	12.80	-0.17
Gujarat	10.35	10.77	10.71	10.17	9.61	8.81	9.44	9.48	9.55	8.9	9.00	**-0.77**
Haryana	11.69	11.86	12.23	12.24	11.59	10.61	10.98	10.24	10.11	9.9	10.50	-0.83
Himachal Pradesh	11.30	11.97	12.57	11.62	11.79	11.44	13.28	Na	Na	Na	Na	0.26
Jammu & Kashmir	14.62	14.16	14.31	13.16	13.80	14.62	14.09	Na	Na	Na	Na	**-0.04**
Karnataka	11.91	11.32	11.24	12.68	11.69	10.37	11.06	10.71	10.40	10.4	10.90	**-0.52**
Kerala	7.55	8.17	7.93	8.91	10.12	9.55	9.60	9.88	9.60	9.7	9.50	1.03
Madhya Pradesh	12.88	12.88	12.53	12.61	12.32	11.70	11.89	11.63	11.54	11.5	11.30	**-0.57**
Maharashtra	9.75	8.95	9.24	9.92	9.95	9.23	10.18	10.18	9.79	9.4	9.40	0.14
Orissa	14.22	13.77	13.42	13.96	14.19	13.98	13.74	14.39	13.93	13.4	13.40	0.08
Punjab	11.25	10.71	11.03	10.80	9.94	10.25	9.74	9.40	9.06	8.9	9.00	**-0.98**
Rajasthan	13.03	13.21	12.97	12.55	12.95	13.32	12.73	11.76	12.03	11.6	11.50	-0.48
Tamilnadu	10.63	**11.12**	11.39	**11.05**	10.39	9.93	10.14	10.26	10.14	10.0	10.40	**-0.49**
Uttar Pradesh	11.79	12.24	12.48	12.27	11.66	11.77	11.63	11.33	1**1.14**	11.4	11.10	**-0.40**
West bengal	10.88	10.53	10.92	11.92	11.80	12.75	11.71	12.12	11.78	11.3	11.60	0.40
All India	11.36	11.24	11.32	11.62	11.30	10.94	11.19	11.04	10.87	10.7	10.60	**-0.27**
Coefficient of Variation	14.3	13.5	12.8	12.1	11.6	13.5	**11.5**	12.4	12 1	12.9	11.7	

Note: Na: Not available

The NSS estimates of consumption of food items and nutrients for India for the years 1972-73 and 1993-94 indicate that percapita cereal intake declined although percapita total expenditure in cereal terms increased by **1.17** and 1.31 per cent per annum (see Table 4.5). However the fall in cereal consumption was offset by an increase in the consumption of non-cereal food. In fact, the percapita food

expenditure increased at 0.49 percent per annum in rural areas and 0.51 per cent per annum in urban areas of India. However, these increase were not commensurate with the increase in percapita total expenditure.

Despite this moderate increase in food expenditure, the nutrient intake did not improve between 1972-73 and 1993-94, percapita calorie intake declined at 0.25 per cent in rural areas and 0.08 percent in urban areas (see Table 4.6). For the lowest 30 percent of the population, there has been hardly any perceptible improvement in the cereal and nutrient intakes in the rural as well as urban areas The percapita calorie intake in 1993-94 was 1678 k.cal. per day in rural areas and 1682 k cal Per day in urban areas and the per capita protein intake was 46 grams per day in rural areas and 47 grams per day in urban areas. This section of the population fails to enjoy an adequate diet that would provide the required food energy. There has also been a substantial diversification of the consumption basket of the poor in favour of non-cereal items, particularly non-food items. At the moment, the picture that emerges is that there is stagnancy in the per capita consumption of cereals. The apparent cause of national self-sufficiency in cereals is the slow growth of aggregate cereal demand about 2 percent per annum in aggregate terms and negative in per capita terms. Which is due to changes in consumer preferences, so that there has been no noticeable improvement in the per capita intake of calories and protein. Clearly despite the decline in income poverty between 1972-73 and 1992-93, the food poverty (i.e. proportion of households consuming less than the norm) has not declined.

Table 4.5

CAGR of Percapita Cereal, Food and Total Consumption Expenditure

Expenditure	1972-79	1977-83	1983-88	1988-94	1972-94	1972-73	1977-83	1983-88	1988-94	1972-94	1972-79	1977-89	1989-88	1988-94	1972-94
Lowest 30%	0.6	**-0.9**	0.4	-0.8	-0.1	0.4	2.0	0.9	1.0	0.9	1.7	2.0	1.4	**1.1**	1.0
Middle 40%	0.0	-1.0	-0.4	**-1.8**	-0.7	**0.1**	1.4	-0.9	0 8	0.6	0.9	2.6	-0.1	**1.1**	1.0
Top 30%	-0.7	-1.1	-1.5	-2.0	-1.4	-0.5	1.4	-0.1	0 0	0.2	3.5	0.0	0.0	0.7	1.0
All	-0.1	-0.9	-0.6	-1.4	-0.8	-0.1	1.5	-0.1	0.5	0.5	2.4	1.1	0.2	0.9	1.2
Urban															
Lowest 30%	**0.1**	-0.7	1.2	-0.9	-0.0	-0.9	2.2	-1.5	1.5	0.6	**1.1**	2.9	-0.9	1.7	1.9
Middle **40%**	0.7	-0.6	-0.4	-1.0	-0.4	-0.9	1.6	-1.0	1.9	0.6	1.1	1.9	0.9	1.6	1.9
Top 30%	1.1	-0.4	-1.5	**-1.2**	-0.5	-0.6	1.5	-0.9	**1.0**	0.5	0.9	1.9	0.8	**1.6**	**1.9**
All	0.7	-0.6	-0.9	-0.9	**-0.9**	-0.4	1.7	-0.8	1.2	0.5	1.0	2.0	0.4	1.6	1.9

Note:class specific price deflators have been used for estimating real expenditures.

Source:R. Radhakrishna (1998)

Table 4.6

Average Percapita Calorie and Protein Intake in India and CAGRs

Expenditure Groups	1972-78	1978-83	1983-94	1972-94	1972-78	1978-83	1983-94	1972-94
	Calories (K.Cal/Day)			Rural	Protein (Mg/Day)			
Lowest 30%	1504	1630	1620	1678	42.56	46.37	46.92	46.55
Middle 40%	2170	2296	2144	2119	60.55	66.70	60.95	58.89
Top 30%	3161	3190	2929	2672	85.69	97.40	81 47	75.60
All	2268	2364	2222	2152	62.70	69.81	62.90	60.20
				Urban				
Lowest 30%	1579	1701	1627	1682	44.6	48.7	45.6	46.8
Middle 40%	2154	2438	2148	2111	58.0	74.1	58.8	58.3
Top 30%	2572	2979	2506	2405	67.1	93.5	67.6	66.2
All	2107	2379	2099	2071	56.7	72.3	57.5	57.2

Compound **Annual** Growth Rates (CAGR)

Expenditure Groups	1972-78	1978-83	1983-94	1972-94	1972-78	1978-83	1983-94	1972-94
Lowest 30%	1.6	-0.1	0.3	0.5	1.7	0.2	-0.1	0.4
Middle 40%	1.1	-1.2	-0.1	-0.1	1.9	-1.6	-0.3	-0.1
Top 30%	0.2	-1.5	-0.9	-0.8	2.6	-3.2	-0.7	-0.6
All	0.8	-1.1	-0.3	-0.2	2.2	-1.9	-0.4	-0.2
Lowest 30%	1.5	-0.8	0.3	0.3	1.8	1.8	0.3	0.2
Middle 40%	2.5	-2.3	-0.2	-0.1	5.0	5.0	-0.1	0.0
Top 30%	3.0	-3.1	0.4	-0.3	6.9	6.9	-0.2	-0.1
All	2.5	-2.2	-0.1	-0.1	5.0	5.0	-0.1	0.0

Source: R Radhakrishna (1998)

There has been substantial inter-state variation in the percapita food energy intake (see Table 4.7) while the average intake of calories was very low in Kerala and Tamilnadu, it was high in Madhya Pradesh and Karnataka.

Table 4.7

Percapita Calorie Intake in Selected States

States	Rural			Urban		
	1972-73	1983	1993-94	1972-73	1983	1993-94
Andhra Pradesh	2103	2204	2052	2143	2009	1992
Assam	2074	2056	1983	2135	2043	2108
Bihar	2225	2189	2115	2167	2131	2188
Gujarat	2142	2113	1994	2172	2000	2027
Haryana	3215	2554	2491	2404	2242	2140
Himachal Pradesh	2202	2260	2073	1925	2124	2026
Kerala	1559	1884	1965	1723	2049	1966
Madhya Pradesh	2423	2323	2164	2229	2137	2082
Maharashtra	1895	2144	1939	1971	2028	1989
Orissa	1995	2103	2199	2276	2219	2261
Punjab	3493	2677	2418	2783	2100	2089
Rajasthan	2730	2433	2470	1841	2140	1922
Tamilnadu	1955	1861	1884	1841	2140	1922
Uttar Pradesh	2575	2399	2307	2161	2043	2114
West Bengal	1921	2027	2211	2080	2048	2131
All India	2266	2221	2153	2107	2089	2071

Source: NSS Report No.4.05

The National Nutrition Monitoring Bureau (NNMB) provides the nutritional status of rural households in 7 sample states for the periods 1975-80, 1988-90 and 1994. NNB classified rural children aged 1-5 years into different nutritional grades based on weight for age (Gomez classification). The results show that the percentage of children suffering from severe malnutrition declined from 15.0 in 1975-79 to 8.7 in 1988-90 and further to 7.5 in 1994 (see Table 4.8). Inspite of some improvement in nutritional status, nearly half the rural children are suffering from

malnutrition. The decline in the percentage of severely malnourished children is very visible across all NNMB sample states except Orissa

Table 4.8

Per Cent Distribution of Children (aged 1.5 years)
According to Nutritional Grades in Rural Areas
Of Selected States

State	Period	Normal	Mild	Moderate	Severe
Kerala	1975-79	7.5	35.7	46.5	**10.3**
	1988-90	17.7	47.4	32.9	2.0
	1994	15.1	50.6	32.6	1.7
Tamilnadu	1975-79	6.2	34.2	47.0	12.6
	1988-90	8.0	42.0	45.8	4.2
	1994	6.2	40.6	46.0	7.2
Karnataka	1975-79	4.6	31.1	50.0	**14.3**
	1988-90	4.8	38.1	48.8	8.3
	1994	6.2	40.6	46.0	7.2
Andhra Pradesh	1975-79	6.1	32.4	46.1	15.4
	1988-90	8.7	39.5	44.3	7.5
	1994	4.8	46 1	41.7	7.4
Maharashtra	1975-79	3.2	25.4	49.5	21.9
	1988-90	6.7	38.0	47.5	7.8
	1994	8.6	37.2	43.7	10.5
Gujarat	1975-79	3.8	28.1	54.3	13.8
	1988-90	7.3	33.9	45.8	**13.0**
	1994	4.8	28.0	55.1	12.1
Madhya	1975-79	8.4	30.3	45.1	16.2
Pradesh	1988-90	17.7	27.4	38.9	16.0
	1994	10.2	36.1	42.1	**11.6**
Orissa	1975-79	7.5	35.9	41.7	14.9
	1988-90	8.1	34.6	46.6	10.7
	1994	6.3	40.4	47.9	5.4
All States*	1975-79	5.9	31 6	47.5	15.0
	1988-90	9.9	37.6	43.8	8.7
	1994	8.5	40.4	47.9	5.4

Source: National Nutritional Monitoring Bureau Reports - 1991, 1996, National Institute of Nutrition, Hyderabad.

The decline is very striking in Kerala and Tamilnadu. In terms of nutritional status of children, middle income states such as Kerala, Tamilnadu and Andhra Pradesh performed better than higher income states like Gujarat and Maharashtra. Poorer states such as Madhya Pradesh and Orissa showed worst performance. It is worth noting that with low food energy intake Kerala and Tamilnadu could perform better, National Family health Survey (NFHS) data also reveal more or less similar pattern (see Table 4.9).

Table 4.9
NFHS Estimates of Malnutrition Among Children under Age Four (1-4 years) in 1993

States	Weight-For-Age Percentage Below 2SD (Underweight)			Height-For-Age Percentage Below 2SD (Stunted)			Weight-For-Height Percentage Below 2SD (Wasted)		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Andhra Pradesh	52.1	40.2	49.1	Na	Na	Na	Na	Na	Na
Assam	51.8	37.3	50.4	53.5	39.6	52.2	11.4	5.6	10.8
Bihar	64.1	53.8	62.6	61.8	55.2	60.9	22.7	16.3	21.8
Gujarat	45.8	40.5	44.1	44.6	41.6	43.6	20.3	16.1	18.9
Haryana	39.4	33.0	37.9	48.0	42.4	46.7	5.7	6.4	5.9
Himachal Pradesh	48.3	30.2	47.0	Na	Na	Na	Na	Na	Na
Jammu Kashmir	Na	Na	44.5	Na	Na	40.8	Na	Na	14.8
Karnataka	Na	Na	54.3	Na	Na	47.6	Na	Na	17.4
Kerala	30.6	22.9	28.5	29.6	21.5	27.4	11.5	12.0	11.6
Madhya Pradesh	59.4	50.1	57.4	Na	Na	Na	Na	Na	Na
Maharashtra	57.5	45.5	52.6	50.8	39.1	46.0	21.5	18.3	20.2
Orissa	Na	Na	53.3	Na	Na	48.2	Na	Na	21.3
Punjab	47.4	40.0	45.9	40.4	38.4	40.0	21.4	14.3	19.9
Rajasthan	41.1	43.9	41.6	43.0	43.5	43.1	17.7	29.1	19.5
Tamilnadu	52.1	37.3	46.6	Na	Na	Na	Na	Na	Na
Uttar Pradesh	Na	Na	49.8	Na	Na	49.2	Na	Na	16.2
West Bengal	Na	Na	56.8	Na	Na	43.2	Na	Na	11.9
Arunachal Pradesh	40.3	36.2*	39.7	52.7	61.7*	53.9	10.6	14.9*	11.2
Manipur	31.6	25.9	30.1	34.9	29.6	33.6	8.3	10.2	8.8
Nagaland	30.5	19.7	28.7	32.7	31.0	32.4	14.1	5.6	12.7
Tripura	53.0	31.6	48.8	49.1	33.3	46.0	19.7	8.8	17.5
Meghalaya	47.2	37.5	45.5	55.5	29.7	50.8	20.1	14.1	18.9
Mizoram	34.5	22.0	28.1	54.0	29.1	41.3	2.3	2.2	2.2
All India	59.9	45.2	53.4	54.1	44.8	52.0	18.0	15.8	17.5

Source: National Family Health Survey (NFHS), 1993.
Na - Not available

Table 4.10

Income Groups and total cereals consumption in Kg percapita per month poor and non-poor (43rd Round 1987-88) NSS dates

Rural	Cereal Consumption	Urban	Cereal Consumption
<65	9.78	<90	9.16
65-80	11.82	90-110	10.63
80-95	12.85	110-135	10.95.
95-100	13.64	135-160	11.30
110-125	14.19		
125-140	14.64	160-185	11.47
140-160	15.10	185-215	11.20
160-180	15.40	215-255	11.50
180-250	15.90	255-310	11.64
250-280	16.30	310-385	11.58
280-385	16.91	385-520	11.33
>385	20.32	520-700	11.36
		>700	12.26
All groups	14.47	All groups	11.19

Note: Povertyline as per 1987-88 isRs 152.1 for Urban and Rs. 131.8 for rural
Source:G. Parthasarathy - Indian Journal of Labour Economics page 77.

The NNMB data indicate that 46 percent of the rural adult population in the seven sample states suffer from chronic energy deficiency in 1994 (see Table 4.10), and the extent of malnutrition among the adults was closer to that of children (51 percent) chronic energy deficiency was found to be lower in Kerala (33%) and Tamilnadu (37%) and higher in Gujarat, Maharashtra and Madhya Pradesh (above 50 per cent).

As income rises, calories are derived from high value calorie substitutes and therefore, a lower cereal consumption need not reflect hunger. But, if this is so we, should find a negative relation between percapita cereal consumption and percapita expenditure of the household. However the data (table 4.10 source: G. Parthasarathy, 1996, p.77) do not show negative relation between percapita cereal consumption and per capita expenditure of the household. Quantity of total cereals as per the 43rd Round 1987-88 is seen to increase from 9.78 kg/month in rural areas for less than Rs 65 expenditure group to 14.19 kg/month around the poverty line in Rural areas and goes upto 28.7 kg a highest income, level than in Urban areas. Those below the poverty line consume less cereals, and consumption increases as we approach the poverty line The continuous increase of cereal consumption with rise in income suggests that hunger is due to lack of purchasing power

While low purchasing capacity results in low entitlements to the poor given the money income a higher rate of increase in the price of wage goods results in erosion of purchasing power and causes food insecurity. The price rise in food grains owing to cuts in the food and fertiliser subsidies and consequent adjustments have particularly been harsh In the proceedings decade of the reform the per annum price of rice had risen by 7 percent and that of wheat by 3.3 percent But in the next four years of the reform period, they registered the rise of 13.5 per cent and 18.1 percent respectively. The other food grains also behaved approximately in similar fashion. The free market ethos unleashed by the economic reforms also indirectly have contributed to the price rise. Inflation hits the poor people the hardest Being employed mainly in the unorganized sector most of their earnings is spent on the

basic needs like food, clothing and shelter, and hence any price rise directly dampens their level of consumption The relative price of food grains which showed a decline during the seventies and eighties registered a rise during the first half of the 1990's (see Table 4.11). The increase in food price would significantly reduce the calorie intake of the poor. The annual inflation for cereals during 1980-89 is 6.4 and it rained to 10.7 during 1990-96, for all commodities it is 6.8 in 1980-81 and 9.6 in 1990-96.

Based on the Wholesale Price Index (WPI), the price rise of the primary articles of consumption ranged from 42 percent to 93 percent (EPW Research Foundation 1995, p.21). The WPI for all articles increased by 44.4 percent registering an annual compound growth of 10.3 percent in the decade preceding the reforms (1980-81 to 1990-91), this increase was only 7 percent, despite the 17 percent growth in money supply. Prof. Kurien's study isolates four periods of significant price rise from 1950, viz (i) 1964-65 to 1968-69 (ii) 1972-73 to 1976-77 (iii)1979-80 to 1983-84 and (iv) 1991-92 to 1995-96 He finds clearly extraneous force major cause like famine in the first three periods and like in international petroleum prices in the second for the price-rise in the fourth period on the contrary, it could be easily attributed to steps taken under the economic reforms (Kurien, C.T. 1996, p.97). For example, it is the reforms that caused the price of chemical fertiliser to rise by 100.6 percent, electricity by 65.9 percent and coal by 58.1 percent. WPI of food grains was increasing since 1984-85 but the raise in prices was more after 1991-92. Same is the case with rice, wheat and pulses (see Table 4 12a) CPI-AL for food (1960-61=100) in 1989-90 it was 810 percent it raised to 1048 percent in 1991-92

and 1214 percent in 1993-94. CPI-AL Industrial and Agricultural labour is shown in (Table 4.13).

Table 4.11

Annual Inflation Rates in Consumer Prices

YEAR	RURAL					URBAN				
	Cereals	Non Cereal Food	All Food	Non-Food	All Commodities	Cereals	Non Cereal Food	All Food	Non-Food	All Commodities
1970-71	-1.3	8.7	3.2	4.4	3.6	-0.5	9.5	5.7	4.7	5.3
1971-72	2.4	-1.9	0.4	4.5	1.9	1.8	-1.3	-0.2	4.4	1.7
1972-73	13.3	11.2	12.3	4.4	9.4	11.1	9.4	10.0	3.5	7.3
1973-74	17.3	23.9	20.3	9.3	16.4	13.9	21.9	19.0	8.5	14.8
1974-75	40.4	17.7	29.8	20.3	26.6	44.1	20.9	29.1	20.0	25.6
1975-76	-8.9	-1.9	-5.9	6.5	-1.9	-7.6	-1.7	-4.0	7.7	0.2
1976-77	-11.1	0.0	-6.2	4.9	-2.3	-9.7	1.7	-2.6	3.6	-0.2
1977-78	4.4	17.7	10.7	1.9	7.4	3.4	16.1	11.6	2.1	7.8
1978-79	-2.1	-3.8	-2.9	2.5	-1.0	-1.4	-4.8	-3.7	3.5	-0.9
1979-80	9.5	4.6	7.0	9.3	7.9	9.9	5.6	7.0	9.6	8.1
1980-81	14.1	11.7	12.9	7.4	10.9	12.0	9.3	10.2	7.8	9.2
1981-82	11.4	10.0	10.7	9.8	10.4	10.2	10.8	10.6	10.1	10.4
1982-83	9.2	6.3	7.8	3.9	6.4	11.3	8.0	9.1	4.3	7.2
1983-84	9.7	17.7	13.5	5.6	10.7	9.0	18.5	15.1	5.5	11.4
1984-85	-5.0	5.4	0.1	5.4	1.8	-4.9	5.1	1.7	6.3	3.4
1985-86	6.3	1.5	3.8	4.5	4.1	5.6	0.9	2.4	4.7	3.3
1986-87	5.4	13.1	9.3	5.1	7.8	5.6	13.2	10.8	4.6	8.4
1987-88	7.9	11.5	9.8	5.0	8.2	8.0	10.7	9.9	6.1	8.5
1988-89	12.1	5.0	8.3	8.1	8.2	12.4	3.5	6.2	8.6	7.1
1989-90	3.5	7.4	5.5	8.5	6.5	2.5	10.9	8.2	7.2	7.8
1990-91	6.1	14.8	10.6	9.5	10.3	8.3	14.5	12.6	8.0	10.9
1991-92	24.3	18.0	20.9	11.1	17.7	21.5	14.1	16.3	10.0	14.0
1992-93	14.2	5.9	9.8	8.1	9.3	13.9	7.0	9.1	10.5	9.6
1993-94	3.8	5.0	4.4	6.9	5.2	7.0	6.1	6.4	7.7	6.8
1994-95	12.7	9.5	11.1	11.6	11.2	10.5	8.2	8.9	11.4	9.8
1995-96	7.1	13.5	10.4	8.9	9.9	•5.2	12.1	9.8	8.3	-9.3
1996-97	11.9	7.2	9.5	5.3	8.2	13.6	6.7	8.9	6.0	7.9
1970/71 to 1979/	6.7	8.3	7.5	7.2	7.4	6.7	8.4	7.8	7.0	7.5
1980/81 to 1989/	6.4	8.6	7.5	5.5	6.8	6.3	8.6	7.8	5.9	7.1
1990/91 to 1996/	10.7	9.5	10.1	8.5	9.6	10.6	8.9	9.4	8.7	9.2
1970-71 to 1996/	7.0	8.2	7.6	6.7	7.3	7.0	8.2	7.8	6.8	7.4

Source: CESS Project on Food Demand

Table 4.12 (a)

Prices of Food Grains

YEAR	WPI (1981-82)= 100			
	Food grains	Rice	Wheat	Pulses
1982-83	109	115	111	94
1983-84	119	129	114	110
1984-85	117	121	111	• 131
1985-86	125	127	119	138
1986-87	129	134	127	128
1987-88	141	146	135	153
1988-89	162	161	154	200
1989-90	165	169	148	206
1990-91	179	178	172	228
1991-92	216	217	204	249
1992-93	242	240	227	257
1993-94	261	266	253	308
1994-95	293	294	273	363
1995-96	313	316	271	399
1996-97	354	347	330	449

Source: Various issues of Economic survey

Table 4.12 (b)

Compound Growth Rates of Prices of Food grains

Year	Rice	Wheat	Pulses	Cereals	Food grains	Gen. Prices
1980-89	6.3	5.8	9.3	6.4	6.8	7.3
1990-95	8.2	6.11	7.4	9.61	**11.7**	8.1

Source: Agricultural prices in India, Director of Economics and Statistics, Ministry of Agriculture, GOI

Table 4.13

All India Consumer Price Index Numbers

Year	Industrial workers (Base: 1982=100)	Urban non-manual (Base 1984-85=100)		Agricultural labour (Base 1986-87=100)
	Food Index	General	General Index	General Index
1986-87	141*	137*	115	. 572*
1987-88	154*	**149** •	126	629*
1988-89	169*	163*	136	708*
1989-90	177	173	145	746*
1990-91	199	193	161	803*
199192	230	219	183	953*
1992-93	254	240	202	1076*
1993-94	272	258	216	1114*
1994-95	297	279	232	1204*
1995-96	337	313	254	234
1996-97	369	342	283	256

*Old base 1960-61=100
Source: Economic Survey, 1997-98.

There are three factors which explain the recent price rise in food grains (1) steeps hike in procurement prices of food grains, necessitating further hike in the issue prices through the public distribution system. This in turn gets translated into higher open market prices. The procurement prices rose by more than 65% in the 1990s so far. (2) slow down in the growth rate of the output of food grains mainly due to marked deceleration in productivity, especially that of cereals in 1990's , resulting in supply shortages. Food grains production grow at the rate of 2.0 percent per annum in 1990's as against 2.9 percent in 1980's. (3) Growing demand for food grains partly due to rising population and partly due to raise in incomes. Real wages

for unskilled agricultural labour has declined by 06.19 percent in 1991-92 but it raised by 5.21 percent in 92-93 again it declined in 1994-95 by -0.39 percent, it raised by +1.64 percent in 1996-97 (see Table 4.14, Table 4.15) shows that nominal wages deflated by consumer price index for industrial workers (CPI-IW) (1982=100) of regular wages salaries men were 12.78 percent higher in rural and 7.78 percent higher in urban India after liberlisation than before real wages of regular wage/salaried women, calculated with the same defaulter, were 6.49 percent lower in villages but about 3.52 percent higher in cities.

Table 4.14

Annual Percentage change in Real wages for unskilled Agricultural Labour for selected states

State	Percentage change for a.g year (July to June) over previous year					
	1991-92	1992-93	1993-94	1994-95(P)	1995-96(P)	1996-97(P)
Andhra Pradesh	-11.40	+1.57	+8.60	+2.71	-1.73	+ 1.35
Assam	-8.73	+0.58	-6.58	-1.67	+2.68	+1.68
Bihar	-4.39	-5.00	+5.98	+ 1.69	-2.30	-10.80
Gujarat	-4.31	+7.92	+2.86	+ 1.27	+2.92	+5.70
Karnataka	-13.25	-14.39	+41.31	-15.60	-8.61	+21.48
Kerala	+4.07	+9.74	-2.84	+5.24	+ 13.20	+ 14.03
Madhya Pradesh	-3.89	+12.57	-3.53	+4.93	+ 1.24	+ 1.23
Maharashtra	-14.79	+0.66	+25.58	-0.68	-7.89	-2.88
Orissa	-3.87	+ 11.03	-0.14	-3.52	+0.55	-0.30
Punjab	+3.65	+4.25	+1.51	-1.17	-6.50	-0.34
Rajasthan	+6.12	-3.56	-7.66	+ 1.05	+ 10.33	+ 16.42
Tamilnadu	-4.85	+13.29	+ 11.60	+ 1.03	+3.63	+ 10.06
Uttar Pradesh	+1.02	+ 7.56	-6.77	-2.31	+14.78	-6.53
West Bengal	-6.25	+24.39	-0.50	-5.29	-0.28	+ 1.65
All India	-6.19	+5.21	+5.61	-0.39	+0.72	+ 1.64

Source: Economic Survey : 1997-98
(P) indicates previsonal

Table 4.15

Age-specific work participation Rates by usual status

Regular wage Salaried		1983 wage in Rs.	1987-88 Wage in Rs.	1993-94 Wage in Rs.	Income		
					1987-88 over 1987-88	1993-97 over 1987-88	1993-94 over 1983
Rural							
Males	Nominal	16.08	30.14	58.48	87.44	94.03	263.68
	CPI in ddef		22.19	24.87	38.00	12.08	54.66
	CPI non defi		21.94	24.83	36.44	13.17	54.42
Female	Nominal	10.85	21.56	37.89	98.71	75.74	249.22
	CPI ind defi		15.87	14.84	46.27	-6.49	36.77
	CPI non defl		15.69	14.81	44.61	-5.61	36.50
Urban							
Males	Nominal	23.72	41.87	78.12	76.52	86.58	229.34
	CPI ind defl		30.83	33.22	29.97	7.75	40.05
	CPI non defl		30.47	33.16	28.46	8.83	39.00
Females	Nominal	17.36	34.76	62.31	100.23	79.26	258.93
	CPI ind defl		25.59	26.49	47.41	3.52	52.59
	CPI non defl		25.30	26.45	45.74	4.55	52.36
Casual Rural							
Males Public Works	Nominal	8.66	12.69	24.65	46.54	94.25	184.64
	CPI agrwks		10.03	11.00	15.82	9.67	27.02
Other	Nominal	8.45	12.50	23.18	47.93	85.44	174.32
	CPI agrwks		9.88	10.34	16.92	4.66	22.37
Female Public Works	Nominal	5.41	9.34	18.52	72.64	98.29	242.33
	CPI agrwks		7.38	5.26	36.41	11.92	52.68
Other	Nominal	5.04	7.71	15.33	52.98	98.83	204.17
	CPI agrwks		6.09	6.84	20.83	12.32	35.71
Causal Urban							
Males	Nominal	10.89	17.04	33.79	56.47	98.30	210.28
	CPI ind defl		12.55	14.37	15.24	14.50	31.96
	CPI agrwks		13.46	15.08	23.60	12.04	38.48
Females	Nominal	5.3	8.97	19.00	69.25	112.37	259.43
	CPI ind defl		6.60	8.10	24.53	22.73	52.83
	CPI agrwks		7.09	8.50	33.77	19.89	60 38

Source: Sudha Deshpande, Lalit Deshpande, *(EPW,* 1998)

Since the larger part of the regular wage/salaried workers is likely to be doing non-manual work, it would be more appropriate to deflate the earnings of this group by the CPI for non-manual workers (1984-85=100). When they were, real wages of men showed a marginally faster increase of 13.17 percent in rural and 8.83 percent in urban India. Regular wages salaries women workers suffered a loss of 5.61 percent in rural and a gain of 4.55 percent in urban India.

In 1993-94, regular wage/salaried workers formed about 9 percent of the male and 3 percent of the female workers enumerated in the usual status in rural India and 43 percent of the male and 36 percent of the female workers enumerated in the usual status in urban India. Real wages of all workers, irrespective of where they lived and the sector of their employment, were higher in 1993-94 than in 1983. However, they increased slower in the second than in the first half of the decade This is the result of price level increasing faster in the second half than in the first and there by leading to the crisis of 1991.

The redeeming feature of the 1993-94 is that the real wages of casual workers particularly of women among them, increased faster than those of the regular workers This contrasts with the 1987-88 when the regular workers gained more than the casual.

Security of employment is essential for obtaining food security. Structural adjustment affects the poor in several ways by encouraging multinational business, using sophisticated technology in agricultural sector could displace people engaged in traditional sector (G. Parthasarathy, 1996, p.79). The rate of growth of employment in the organised sector dropped from more than 1.7 percent per annum in the late 1980's to 1.2 percent in 1991-92 and to 0.6 percent in 1992-93. Creation of jobs in the public sector fell from 11.0 million in the preceding four years of the reforms. For the private sector, the corresponding figures showed a rise from 2.08 million to 2.49 million. In the central government establishment there were 4.03 million jobs on 1st March, 1991 which went up next year to 4.14 million. But for the next two years, they came down to 3.97 million respectively. Similarly picture of declining employment opportunity is held out in the statistics of employment exchanges. The contraction in public expenditure and the consequent reduction in aggregate demand will effect adversely employment in the unorganised sector. Food security cannot be ensured without providing access to adequate purchasing power for the wage earners. Since the means of obtaining purchases is employment at a minimum wage, employment security is essential for achieving food security.

4.2 Incidence of Poverty

Food in security at household level is partly due to poverty. Poverty is one of the outstanding feature of India. It may be difficult to define poverty but it is not difficult to identify it. When a large number of people are not having the basic needs

of life viz. Food, clothing and shelter, when a substantial segment of a society is deprived of the minimum level of living and continues at a bare subsistence level, the society is said to be plagued with the mass poverty. The main problem of poverty is essentially a problem of imbalance between the population and economic resources of the nation

And whatever development effort we make, it is counter balanced by the rapidly rising population. Consequently our percapita income and per head availability of goods and services remain low.

For over three decades of planning since 1950-51, India followed the strategy of import-substitution centered industrialization in an economy that, as consequence, was virtually insulated from the rest of the world through a variety of rigid restriction on imports and all transactions involving foreign exchange The oil shocks of the nineteen-seventies forced the Indian economy into greater participation in international trade because of the dependence on imported oil and the resulting need to pay for rising foreign exchange outlays on petroleum, oil and lubricants (POL). Following the foreign exchange liquidity crisis, a wide ranging process of policy reforms has been initiated since July 1991. It has two components, first, the stabilization of the fiscal and balance of payments deficits and maintaining a low rate of inflation This was sought to be achieved through an appropriate exchange rate, interstate, fiscal and monetary policies. The second component of structural adjustment aimed at opening up the economy to international trade and investment

through a movement in policies towards a neutral foreign trade regime A third component was the deregulation of domestic markets All these components are expected to help, the Indian economy on to a higher growth path. But, a number of factors can impact negatively on the poverty situation. Thus, the reduction of the fiscal deficit is expected to bring about a contraction of economic activity, thereby adversely affecting employment and hence poverty. The brunt of fiscal adjustment may also fall on public expenditure earmarked for poverty alleviation and the social sectors of health and education. Structural adjustment policies, too result in a higher rate of unemployment and a decline in real wages.

Poverty: Definition and Measurement

Poverty might be defined as the state of not having sufficient income to provide what is regarded as a minimum standard of living Thus poverty implies the absence of economic efficiency needed to command basic minimum subsistence. People, whose income (lack of purchasing power) is insufficient for the necessities of life, are living in poverty. In India the definition of poverty is based on the sole criterion of the minimum food requirement for survival. Thus, the poverty line is decided by the income sufficient to buy food equivalent of 2400 calories in rural and 2100 calories in urban areas. But there is considerable disagreement on the issue of what is adequate caloric intake for an average Indian (Sukhatme 1965). Irrespective of the inconclusive nature of the debate, the narrow definition of poverty in terms of a minimum daily dietary requirements of an individual has been accepted by the

planning commission and many other researchers as the norm for the measurement of poverty (Sudip Kumar Mahapatra, RBI Occasional Papers, p. 507), the Task Force' (Planning Commission, 1979) has prescribed this at 2,435 calories intake per day/per head for the rural areas and 2,095 calories intake per day/per head for urban areas (rounded off to 2,400 and 2,100 calories, respectively). Even before similar norms were used by planning commission (1962). A norm of 2,250 .calories was used by Dandekar, and Path (1971). The monetary equivalent of this calorie norm is used as the poverty line' (At 1979-80 prices Rs.76 in rural areas and Rs.88 in urban areas, at 1984-85 prices it comes to Rs.107 in rural areas and Rs.122 in urban areas) to distinguish between the poor from the non-poor. Such definition does not clearly consider the need for having a minimum norm for clothing housing, medical and education facilities

The method of converting the minimum adequate caloric intakes into its cost equivalent is also not agreed to unanimously There is considerable disagreement on the consumption basket (Panikkar, 1972) and the relevant price indices that have been used in the estimation of poverty (Jain and Minhas, 1991)

The issue of minimum level of living expression in terms of daily food requirements found place perhaps for the first time in a study entitled "perspective of Development: 1961-1976, Implications of planning for a minimum Level of living (1962), prepared by the perspective planning division of the planning commission. It activated consumption level of Rs.20 per capita/per month at 1960-61 prices (Rs.25

per capita per month for urban areas). Subsequently, a number of estimates were given by other - Rs.18.26 (FAQ), Rs.15.71 (Sukhatme), Rs.4.0 (Bardhan), Rs.16.67 (Minhas), Rs.18.0 (Ojha), Rs.16.63 (Rudra), and Rs.14.2 (Dandekar and Rath), all at 1960-61 prices. Task force in the planning commission estimated the poverty line at Rs.49.09 percapita per month for rural areas and at Rs.56.64 per capita per month for urban areas at 1973-74 prices. Since then this figure has been updated taking into account the changes in price level.

Current consumption is generally regarded as a better measure of living standard than current income since it reflects household's ability to buffer their standard of living through saving and borrowing, despite income-fluctuations. A consumption based poverty line reflects the expenditure necessary to buy the minimum standard of calories as prescribed in the poverty norm. The household consumption surveys undertaken by the National sample survey organization (NSSO) year in India is the only source material that could be used for making such poverty estimates.

Long-Term Trends of Poverty

The Planning Commission report 1990 states that 29.20 percent of the total population are below the poverty line and this has declined to 25.80 percent for the year 1989-90, according to NSS Report. Latest statistics of the planning commission reveal that only 168.55 million Indians out of 889 millions (1993-94) i.e. 10% could

be categorised as living below the poverty line. This claim is based on estimates made by the Planning Commission using a methodology whereby the consumption distribution obtained from the NSS are applied total estimated of consumption expenditure as obtained from the Central Statistical Organisation's (CSO) compilation of National Accounts. On this basis, the rural poverty ratio declined from 28.37 percent in 1987-88 to 21.68 percent in 1993-94 while the urban poverty ratio fell from 16.82 percent to 11.55 percent. These trends shows that there is no increase in poverty due to economic reforms, but these estimates were criticised on the grounds first one is that even using the planning commission method, poverty in 1993-94 was higher than in 1990-91 just before reforms the comparison with 1987-88, a drought year, gives a misleading trend. Second, the planning commission method is itself flawed as was pointed out in 1993 by the high-level expert group on estimation of proportion and number of poor. Using the methodology suggested by this expert group, not only are the poverty figures much higher, there show that there is no real trend decline in poverty since around 1986, and that although poverty fell in 1993-94 this was still higher than in the immediate pre-reform years 1989-90 or 90-91 (see Table 4.16), (Abhijit Sen, EPW, September 1996, p.244) poverty estimated from a third source altogether that compiled by the poverty and Human resources division of the World Bank, also using NSS data. This source gives a long series from 1951 onwards, there was no long term time trend in poverty from 1950-51 to 1973-74 but that there was thereafter a sharp decline in poverty till 1986-87. After 1986-87 the decline continued at a slower pace till 1989-90 when it was reversed, with a particularly sharp increase in poverty in 1992. Poverty declined

again in 1993-94 so that rural poverty in 1993-94 although higher than in 1989-90 or 1990-91 just before the reforms, was at about the same level as in 1986-87. Urban poverty was lower in 1993-94 than in any pre-reform year.

Table 4.16

Poverty Estimates

NSS Round	Period	Rural			Urban		
		H	PG	SPG	H	PG	SPG
25	July70-Jun71	54.84	16.55	6.80	44.98	13.35	5.35
27	Oct72-Sep73	55.36	17.35	7.33	45.67	13.46	5.26
28	Oct73-Jun74	55.72	17.18	7.13	47.96	13.60	5.22
32	Jul77-Jun78	50.60	15.03	60.06	40.50	11.69	4.53
38	Jan83-Dec83	45.31	12.65	4.84	35.65	9.52	3.56
42	Jul86-Jun87	38.81	1.01	3.70	34.29	9.10	3.40
43	Jul87-Jun88	39.60	9.70	3.40	35.65	9.31	3.25
44	Jul88-Jun89	39.06	9.50	3.29	36.60	9.54	3.29
45	Jul89-Jun90	34.30	7.80	2.58	33.40	8.51	3.04
46	Jul90-Jun91	36.43	8.64	2.93	32.76	8.51	3.12
47	Jul91-Dec91	37.42	8.29	2.68	33.23	8.24	2.90
48	Jan92-Dec92	43.47	10.88	3.81	33.73	8.82	3.19
50	Jul93-Jun94	38.74	9.41	3.27	30.03	7.62	**2.76**

Note: H - head count ratio of poverty

PG - poverty gap ratio
SPG - squard poverty gap

Source: A.Sen (1996)

Table 4.17 (a)

Tendulkar-Jain Estimates of Poverty

Year	Urban			Rural		
	H	**PG**	SPG	H	PG	SPG
1970-71	45.89	13.39	5.32	57.33	17.57	7.31
1972-73	47.00	13.57	5.32	57.21	17.93	7.54
1973-74	49.20	13.88	5.31	56.17	16.75	6.72
1977-78	42.98	12.16	4.81	54.47	16.59	6.88
1983	38.33	9.95	3.66	49.02	13.86	5.45
1986-87	35.39	9.48	3.54	45.21	12.21	4.60
1987-88	36.52	9.34	3.38	44.88	12.26	4.04
1988-89	36.98	9.61	3.49	42.23	10.20	3.54
1989-90	32.41	8.03	2.84	37.94	8.80	2.95
1990-91	32.43	8.03	2.88	36.55	8.81	3.03
1991 (July-December)	32.02	7.90	2.87	42.06	10.02	3.39
1992	33.87	8.43	2.97	48.07	12.59	4.58

Source: EPW Special Number 1996.

Table 4.17 (b)

Poverty Ratios and Number of Persons Below Poverty line

Full Sample	% ofPoor		Total	Number of Poor in Millian		Total
	Rural	Urban		Rural	Urban	
1970-71 (July-July)	57.3	45.9	55.1	251.7	50.1	301.8
1983 (Jan-Dec.	49	38.3	46.5	263.3	66	33.3
1984-85 (June-July)	44.9	36.5	42.7	261.5	75	336.4
1987-88 (July-July)	39.1	40.1	39.3	**231.4**	78.4	310.1
Their Sample						
1989-90 (June-July)	33.7	36	34.3	206.7	75.1	281.8
1990-91 (Jan -Dec)	35	37	35.5	218.4	79.5	297.9
1992 (Jan-Dec.)	41.7	37.8	40.7	269	85.8	354.8
1993-94 (June-July)	40.2	36.2	39	262.5	83.5	346

Before 1973-74 the poverty rate was very high due to low agricultural production and high inflation agricultural wages stagnated till the mid 1970s. With the sharp increase there after till the end of 1980s. During the period 1977-91, particularly during the 1980s the Indian economy underwent a consumption led boom, spurred on by increasing revenue deficits of government, and financed in large part by high deficits on the external current account. This is the boom which went bust in 1991, laying the basis for 'reforms', while the declining trend after 1975 is officially accepted but the reversal during the 1990s is not. The main difference between the official view and those of independent observers arises because till now the official estimate is based not on the NSS data directly but on adjusted figures obtained by blowing up the NSS consumption estimates for every decline group by a common adjustment factor equal to the ratio between the CSO estimate of private consumption and the corresponding the NSS estimates. Because this adjustment factor has increased sharply in recent years, the official estimate has diverged increasingly from any estimate based directly on NSS data. The expert group which recently went into this matter concluded quite categorically that the practice of adjusting' NSS data was arbitrary and was likely to give wrong results because as against the implicit assumption in the official method that any under estimation of consumption is distributed uniformly over the entire population, it is better to assume that the underestimation is only for those who are non-poor.

A series calculated by Tendulkar and Jain is available for the period 1970-72. Their trend in poverty shows larger increase between 1990-91 and 92 (see Table **4.17).** In addition measure of rural poverty for all India and the major states, based on the expert group method using NSS data covering the years from 1972-73 to 1993-94 (see Table 4.18), this is obtained by applying state-specific poverty lines to state level NSS data. From this data it is evident that poverty increased sharply during 1990-91 (35.0) and in 1992 (44.0) it has come down to 37.5 in 1993-94.

Incidence of poverty among Dalits (Scheduled Castes and Scheduled Tribes) is more when compared with others. Dalits constitute 24.56% (16.48% + 8 08%) of total population as per 1991 census. About 81% of SCs and more than 90 percent of STs live in rural areas while about 74 percent of general population live in rural areas. The major problem of Dalits is poverty superimposed by social discrimination (G. Nancharaiah, 1998, p. 1).

From (Table 4.19) it follows that incidence of poverty in case of SCs was 64.6% and 72.4% in case of STs in 1977-78 while it was 57.2% in case of total population. It was declined by 1987-88 in all social groups In 1987-88, incidence of poverty in case of SCs was 44.7% and 52.6% in case of STs while it was only 33.4% in case of total population. But poverty remains to be high among SC/STs. It is found that there was some improvement in the monthly percapita expenditure of all social groups during 1983-87 (see Table 4.20) (a) and 4.20 (b)), in both rural and

urban areas to all India level However, there is a significant gap between the percapita consumption levels of SC/ST and others and it has widened during 1983-87.

Table 4.18

Estimates Of Rural Headcount Poverty By The Expert Group Method

States	1973-74	1977-78	1983	1986-87	1987-88	1989-90	.1990-91	1992	1993-94
Andhra Pradesh	48.4	38.1	26.5	14.6	20.9	19.5	22.1	27.4	16.0
Assam	52.7	59.8	42.6	39.7	39.4	35.2	33.7	51.7	45.0
Bihar	63.0	63.3	64.4	50.1	52.6	52.4	46.3	61.1	58.0
Gujarat	46.4	41.8	29.8	30.3	28.7	14.8	21.6	33.7	22.2
Haryana	34.2	27.7	20.6	19.5	16.2	13.3	19.5	17.7	28.7
Karnataka	55.1	48.2	36.3	36.6	32.8	45.4	34.9	45.5	28.2
Kerala	59.2	51.5	39.0	33.5	29.1	34.4	30.3	26.0	25.9
Madhya Pradesh	62.7	62.5	48.9	47.8	41.9	39.5	42.4	47.9	40.8
Maharashtra	57.7	64.0	45.2	44.6	40.8	34.8	35.9	53.6	38.6
Orissa	67.3	72.4	67.5	55.2	57.6	52.9	36.5	49.0	49.9
Punjab	28.2	**16.4**	13.2	13.0	12.6	3.2	9.3	10.2	12.5
Rajasthan	44.8	35.9	33.5	29.2	33.2	26.1	25.9	31.7	27.5
Tamilnadu	57.4	57.7	54.0	41.2	45.8	38.4	37.5	44.3	32.6
Uttar Pradesh	56.5	47.6	46.5	36.6	41.1	30.5	34.8	47.9	42.6
West Bengal	73.2	68.3	63.1	47.3	48.3	37.2	49.5	44.0	40.3
All India	56.4	53.1	45.6	38.3	3.9.1	34.4	35.0	44.0	37.5

Source: Economic and Political Weekly

Table 4.19

Incidence of Poverty among social groups in %

Year	Total Population	S.C	ST.
1977-78	51.2	64.6	72.4
1983-84	40.4	53.1	58.4
1987-88	33.4	44.7	52.6

Source: Govt, of India, VIII Five Year Plan.

Many studies on poverty established that the poverty has been concentrated among the agricultural labour households. About 78% of the SC workers depend on **agriculture** and of whom **about** 50% **are** agricultural labourers and **28%** are cultivators (see Table 4.21) while about 65% of total workers of general population depends on agriculture and of whom about 39% are cultivators and 26% are agricultural labourers in 1991. In case of ST workers more than 95 percent depends on agriculture and of whom 33 percent were agricultural labourers in 1991. During **1981 to 1991 the** percentage of SC cultivators declined from 28.17 to 25.44, while there was an increase in the percentage of SC agricultural labourers from 48.22 to 49.06 indicating downward movement in the case of SC agricultural worker. Of course in the case of workers of general population also percentage of cultivators declined from 41.58 to 38.75 while percentage of agricultural labourers increased from 24.98 to 26.15 (G. Nancharaiah, 1998, p.7).

Table 4.20 (a)

Average monthly percapita consumer expenditure by social groups at all India level: Rural-value (Rs.) of total consumption per person per 30 days

Year	SCs	STs	Others
1983	94.31	87.15	120.42
1987	133.35	123.04	169.23

Table 4.20 (b)

Urban Value (Rs.)

Year	SCs	STs	Others
1983	128.95	133.11	172.11
1987	185.03	201.79	256.50

Source: Sarvekshana Oct-Dec. 1993.

Table 4.21

Occupational distribution at all India level

Category	Percentage in total main workers of SCs			Percentage in total main workers of STs			Percentage in total main workers of general population		
	1971	1981	1991	1971	1981	1991	1971	1981	1991
Cultivators	27.87	28.17	25.44	37.60	54.43	54.50	42.9	41.58	38.75
A-g lab-others	51.75	48.22	49.06	33.00	32.67	32.69	26.9	24.94	26.15
Non-farming workers	20.38	23.61	25.41	9.40	12.90	12.81	30.2	33.48	40.10

Source : 1. Govt. of India, VII Five Year Plan (1987-1992) Vol.11
2. Census of India, 1991, Series 1, Paper-1, Primary Census Abstract for SCs/STs.

Failure of land reforms is an important reason for high degree of land lessness among SCs and thereby for high incidence of poverty Intermediary land tenure system could be abolished but it's benefits did not percolate down to vulnerable sections and land has passed into the hands of dominant peasant castes, which is a owner cultivator class, from entire class and land concentration persists.

The Comptroller and Auditor general of India (CAG) analysed the efforts of government for rural development and concluded that the poverty alleviation programmes have failed due to diversion of funds for ineligible families, 50% of the beneficiaries could not cross the poverty line and most of the poverty elevation programmes have been proved to be inefficient. In rural development programmes on amount of Rs. 14,355 crores was spent from 1985 to 1993. This expenditure proved to be waste. The Government has been increasing the number of beneficiaries under this programme but no one did are for the long term increase in the income of the beneficiaries.

The proportion of people below the poverty line remained above 50% with no declining trend till the mid-seventies but registered a declining trend in the later part of 1970s and 1980s. The extent of decline in poverty differed sharply among regions and rural poverty was mainly concentrated in the eastern and central regions which had lagged behind in agricultural development. Urban poverty was, however, less concentrated region-wise. The declining trend in the incidence of poverty witnessed in the 1980s seemed to have slowed down in the initial years of the reform period. The higher incidence of poverty during 1992-93 is due to raise in food prices as well as the decline in public expenditure on the social sector in the post reform period.

REFERENCES

1.	Abhijit Sen (1996)	"Economic Reforms, Employment and Poverty" Trends and Options FPW, Special issue September, 1996.
2.	Dandekar and Rath (1971)	Poverty in India, Poona, Indian, School of Political Economy
3.	JainL.R. & B.S. Minhas (1991)	"Rural and Urban consumer price indices by commodity Groups (States and all India 1970-71 to 1983). Sarvekshana, Vol.XV, No. 1, July-Sept. 1991.
4.	KishoreC. Samal (1998)	"Poverty Alleviation after postliberalisation": Study of a Tribal Block in Orissa. EPW, July 11, 1998.
5.	G. Nancharaiah(1998)	"State and Dalit education: 50 Years of Independence", H C U
6.	Panikkar, P.G.K (1972)	"Economies of Nutrition", EPW, Annual Number, 1972.
7.	G. Parthasarathy (1996)	"Social security and structural adjustment" IJLE, 1996, January-March No.l
8.	Planning Commission (1979)	"Report of the Task Force on Projection of minimum Needs and effective consumption", Government of India
9.	Radhakrishna R. (1998)	"Food Security, Nutrition and Poverty in India", CESS
10	SukhatmeP.V. (1978)	"Assessment of adequacy of Diets at different income levels: EPW Aug, 1978
11	EPW Research Foundation (1995)	"Myth of Inflation, Control" Economic and Political Weekly, January 7, 1995.

CHAPTER -V

CONCLUSION

Most of the third world countries are concerned about providing food security to their poor sections. A country is food secure when it is able to provide 'adequate' food to all it's citizens under all circumstances that can be reasonably expected. What constitutes 'adequate' food intake is still a matter of contention among nutritionists, combating food insecurity has been the major concern of food policy in India during the past four decades. Increased food production is considered to be a necessary, though not a sufficient, condition for improving food security to the poorest segments of the population till the 1970's. However, it is now recognised that the ultimate aim of food security is not only provision of food grains for the entire population on a stable basis through out the year, but also to provide economic access to food. In the absence of such preconditions, even with improvement in food supply, the market mechanism may not always and automatically transfer food to the poor. Hence, in order to improve food security for the poor, the government relies on a set of policy instruments such as foodrationing, price subsidies, and employment programmes. Since the beginning of 1990's Indian agriculture has undergone a perceptible structural transformation due to the impact of economic reforms. In this thesis an attempt is made to study the effects of new economic policy on National and household food security of India A realistic approach has been used to study the food-security

At the rational level a measure of food security would be production, trade, public distribution and availability of foodgrains.

During the 1960s and 1970s, total food production including non-cereal food barely kept pace with the population growth The growth rate of percapita food production declined during the 1960s, but grew at a slow rate during the 1970s. It was only during 1980s that percapita food production increased at rate of 1.6% per annum. The annual growth rate of foodgrain production improved from 2.3% during the 1970s to 2.8% during the 1990s production has barely kept pace with population growth and the real price of foodgrains has been on an upward trend. During 1990-91 annual growth rate of foodgrains is 3.0% while it was -3.3% in 1995-96. This decline in foodgrain production is partly due to decline in area under foodgrains and partly due to fall in capital formation in agriculture. Gross area under foodgrains was 128.18 m.h in 1975-76 (in 1985-86) 123.5 m.h. in 1995-96. By considering annual compound growth rates of Index number of area, production and yield, the percentage change in production and yield. The percentage change in area during 1980-81 to 85-86 is 0.28%, and -0.65% during 1990-91 to 95-91 and that of production is 3.97% and 1.63% in consequent years. From the study it is found that due to export biased of some agricultural commodities i.e. marine products, the pattern of cultivation has been changed over a period and also expected to increase in future. In India it has been practised in almost all states existing along the coastal line, which have great potential in the production of paddy cultivation.

From the study it is found that investment in agriculture as a proportion of total capital formation declined. Gross investment in agriculture sector has decreased in real terms from Rs. 4636 crores in 1980-81, to Rs. 4580 crores in 1991-92. Plan outlay has drastically declined from 8.40% in 1980-85, to 3.8% in

1994-95, for major and medium schemes as a percentage of total plan outlay. For minor schemes finance from government has fallen from 2.0% in 1980-85 to 1.2% in 1994-95. Share of government expenditure on gross capital formation in agriculture is falling from 35.3% in 1960-61 to 16.2% in 1996-97. A sudden and steep rise in the prices of fertilizers in the wake of economic reforms following a reduction in subsidy led to a significant decline in the demand for fertilizers the prices of the phosphatic and potanssium based fertilisers were decontrolled and that of nitrogen based fertilisers were reduced by 10% this resulted in rising phosphatic and potassium based fertilisers, leading to a sharp fall in their consumption on one hand, and skewing the consumption ratio of a mix of NPK this imbalance will have a effect on foodgrain production there are clear signs of a slow down in agricultural growth in the post-reform period. Real public investment in agriculture continues to be lower than that realized in the early eighties.

From the study it is found the value of agricultural exports increased from Rs. 487 crores in 1970-71 to Rs. 13,726 crores in 1994-95. Rice is a important stable foodgrain in India. Besides high domestic demand for it, India is exporting large quantity of rice to international market. The rice production during 1970-71 was around 42,225 thousand tonnes and has increased to 79,963 thousand tonnes during 1994-95. It is also found that the export of rice from India has increased from 31.1 thousand tonnes to 789.6 tonnes from the year 1970-71 to 1994-95. India's share in the world exports in percentages 0.1% in 1970-71, 6.5% in 1990-91 and 5.6% in 1994-95. Net exports of foodgrains has been falling 3.6 m.t. were imported in 1970, and that of 1.1 m.t. in 1994. With the rise in rice exports the government has compete with the global markets to keep its own ration shops supplied the result has been a short rice in the administered prices of foodgrains.

GATT agreement will have a profound impact on the food security policy in India. It imply fare reaching changes in the PDS in terms of higher prices to the consumers as the foodgrains would be purchased only at market prices an decanalization of imports and exports would raise domestic prices of food grains.

PDS in its present forms - a production price support-cum-consumer subsidy programme - has evolved in the wake of foodgrain shortages of the 1960s. The main emphasis was on price stabilization till the late 1970s and PDS was mainly confined to urban areas and food deficit states. The welfare dimension of the PDS has gained importance since the early 1980s and its coverage has been extended to rural areas in some states as well as areas with high incidence of poverty. PDS is perceived to be the main safety net to provide food security from the study it is found that. In the wake of economic reforms, PDS may not act as main safety net to protect the poor from potential short-run, price-induced adverse effects of economic reforms. PDS supplies have increased rapidly since the annual average supply increased from 6.5 m.t. during 1961-65 to 18.4 m.t. during 1990-92, consequent upward revisions in the central issue prices had an adverse effect on the efficacy of the PDS. The minimum support price was raised by 69% for wheat and 44% for rice between 1990-91 and 1995-96. On the other hand, due to large increases in the issue prices, the offtake of rice from PDS has declined from 9.9 m.t to less than 5 m.t consequently, buffer stocks have reached uneconomic levels, far exceeding the norms suggested by the technical groups constituted by the Government due to increase in the minimum support and central issue prices, the carrying cost of buffer stocks has increased. Despite the increasing trend of central food subsidy, consumer subsidy had declined since 1992-93. The PDS which is the main instrument of the government to ensure food security for its people, has largely failed.

Household food security is a measure of purchasing power, this in turn depends on prices of foodgrains, real wages, and employment. From the study it is found, between 1970-71 and 1993-94, the percapita cereal consumption declined by 0.52% per annum in the rural areas and by 0.27% per annum in urban areas of India. The average all India rural percapita consumption 15.25 kg /percapita /month, in 1977-78, 13.40 kg. in 1993-94, while.the **urban** consumption fell from 11.62 to 10.60 kg. While low purchasing capacity results in low entitlements to the poor given the money income a higher rate of increase in the price of wage goods results in erosion of purchasing power and causes food-security foodgrains prices have raisen by 11.7% during 1990-95 compared to 6.8% during 1980-89. WPI also shows a continuous increase in prices, since the reform period. Three important factors which effected the recent rise in prices are (1) steep hike in procurement price of foodgrains, necessitating further hike in issue prices of foodgrains through PDS. (2) slowdown in the growth rate of foodgrain production. (3) Growing demand for foodgrains partly due to rising population and partly due to raise in incomes. The growth rate of employment in the organised sector dropped from more than 1.7% per annum in the late 1980s to 1.2% in 1991-92 and to 0.6% in 1992-93. Creation of jobs in the public sector fell from 11.0 million in the preceding four years to the 6.2 million in the succeeding four years of the reforms. Real wages for unskilled agricultural labour has declined by 06.19%, in 1991-92 and in 1994-95 by -0.39%.

From the study it is found, the rural poverty ratio declined from 28.37% in 1987-99 to 21.68% in 1993-94. While the urban poverty ratio had fall from 16.82% to 11.55%. Based on planning commission estimates, there is no increase in poverty due to economic reforms, but these estimates were criticized by scholars on the grounds that even using the planning commission method,

poverty in 1993-94 was higher than in 1990-91 just before reforms. The comparison with 1987-88, a drought year, gives a misleading trend. Using the methodology suggested by expert group, there is no real trend decline in poverty since around 1986, and that although poverty fell in 1993-94 this was still higher than in the immediate pre-reform years 1989-90 or 90-91.

It was noted that incidence of poverty among SCs was 64.6% as against 57.7% in case of the total population in 1977-78. In 1987-88 the incidence of poverty among SCs was 44.7% as against 33.4% in case of the total population. Poverty remains to be high in case of the SC/STs when compared to the total population. Inequality is a corollary of growing poverty.

Based on the available date on consumption on expenditure, the share of the bottom 30% people was growing consistently from 1987-88 upto 1990-91, both in rural as well as in urban areas, had a sudden reversal soon after the reforms were launched. In rural areas it was 15.57% in 1987-88 which rose upto 15.96% in 1990-91, but there after slid down to 15.79% in 1991 and further to 15.60% in 1992. For the urban areas, the corresponding figures are 13.33%, 13.74%, 12.74% and 13.17% indicating a slight upturn in the terminal year. The share of the middle 40% population also dwindled in the same manner in both rural and urban areas. The loss of these 70% population appears to have benefited the top 30% population.

Achievement of food security is integrated to the process of alleviating poverty through employment generation. The overall growth rate of the economy is the most important factor accounting for the alleviation of poverty. Many macro level studies observed that new economic policy will have it's adverse on food security in India. Due to fall in capital formation in agriculture, by reducing the food subsidy and with liberalisation of agricultural trade there will be more

demand for export commodities it in turn effect the cropping pattern. A number of studies examined the functioning of PDS and found it to be blunt, instrument for providing income support to the poor. It continues to have a bias towards the urban areas and non-poor. The impact of PDS on open market prices, except in Kerala, as a safety net for the weaker sections, is minimal. In some states such as Karnataka, financial viability of fair price shops is also very poor. Parikh (1993) has examined the cost effectiveness of PDS and found that for every rupee spent on PDS, the amount reaching the poor was less than 0.22 paise in all the states.

Some studies says the economic reforms has possible effect on food security of India. Due to raise in economic growth and employment Trade liberalisation would lead to a more rational allocation of productive resources. National council of applied economic research (NCAER) study has calculated that free trade is likely to benefit India immensely since it is competitive in wheat, rice, cotton, and soyabean hence it argues export of wheat and rice would be highly beneficial to India.

The year 1991-92 was marked by a fall in agricultural production. The percapita net availability of total foodgrains fell down from 510 gms per day in 1990-91 to 468 gms per day in 1991-92 and further to 464 gm per day in 1992-93. The procurement price policy of the government also added tot he problems of food security as market prices followed closely the procurement prices. The index number of whole sale prices of rice, wheat and pulses showed the reform period The consumer price index of agricultural labourers also rising. In addition capital formation in agricultural has come down, affecting employment prospects for agricultural labour. Thus, agricultural labour faced double squeeze lower employment couples with higher prices for wage goods Thus effecting food security. Further there is also

In the light of these findings it is suggested that there is a need for rapid growth in agriculture production particularly foodgrains, output would inturn require large public investment in rural infrastructure like irrigation etc. Research and development should be geared up for developing new seeds, upgradation of quality of plants through better protection and processing technology. Public distribution system must be specified for a targeted group. The task of identification of poor should be left to the jurisdiction of local Panchayat Raj institutions. Exports of foodgrains (rice and wheat), without generating a sufficient surpluses for domestic consumption will have extremely serious effects on food security. Hence the Agricultural trade should not be completely liberalised, but it should be regulated by government. Government restrictions is advisable, for conversion of land which is basically used for foodgrain cultivation to commercial farming and production of marine products. Radical redistribution of land is required to reduce the inequalities so that the benefits of growth will perculate down to the agricultural workers particularly to the Scheduled Castes and Scheduled Tribes.

BIBLIOGRAPHY

Books:

AcharyaK.S.S. (1983) — Food Security System of India, Concept Publishing Company, New Delhi.

BapnaS.L.,(1990) — "Food Security through the PDS The Indian Experience in D.S. Tyagi (ed); Increasing Acres to Food, the Asian Experience, Sage Publications..

Bhalla G.S., (1994) — "Policy for Food Security in India", in G.S Bhalla (ed), Economic Liberalization and Indian Agriculture, Institute for Studies in Industrial Development, (ISID), New Delhi

Dandekar and Rath (1971) — Poverty in India,. Poona, Indian School of Political Economy

KiritS. Patikh, (1997) — "Food Security Individual and National", in Isher Ahluwalia and I.M.D. Little (ed), India's Economic Reforms and Development Essays for Manmohan Singh.

Nayyar, Deepak and Sen, Abhijit (1994) — "International Trade and Agricultural Sector in India", in G.S. Bhalla (ed), Economic Liberation and Indian Agriculture, ISID, New Delhi

Tyagi D.S. (1990) — "Increasing Access to food through Interaction of Price and Technology Policies - the Indian Experience", (ed) Vyas, In Increasing Access to Food the Asian experience Sage Publications, New Delhi

_____, (1990) — Managing India's Food Economy, Sage Publications, New Delhi

Articles

Abhijit Sen (1996) — "Economic Reforms, Employment and

Poverty", Trends and Options, EPW, Special Issue, September.

BhallaG.S. (1995) "Globalization and Agricultural Policy in India" Indian Journal of Agricultural Economics, Vol.50, No.l, Jan-March.

Deepak Ahluwalia (1993) "Public Distribution of Food in India", Coverage, Targeting and Leakages, Food Policy, February 1993.

Dev, Mahendra S and Suryanarayana M.H. (1991) "Is PDS Urban Biased and Pro-Rich?, And Evaluation", EPW, October, 12.

E.P.W. Research Foundation (1994) "Three Yeas of Economic Reform in India", *EPW* Research Foundation.

_____, (1995) "Myth of Inflation Control" *EPW*, January 7.

Geetha, S. and Suryanarayana M.N. (1993) "Revamping PDS: Some Issues and Implications", EPW, October 9.

George, PS. (1979) "Public Distribution of Foodgrains in Kerala, Research Report No. 7, International Food Policy Research, Institute, Washington, DC.

Gulati IS., and Krishna T.N. (!975) "Public Distribution and Procurement of Foodgrains 'A' Proposal" EPW, Vol.X, No.21.May 1975.

Gupta, S.P. (1994) "Economic Reforms and Its Impact on the Poor", EPW, June 3.

Hanumantha Rao and Gulati (1994) "Indian Agriculture: Emerging Perspectives and Major Policy Issues", IFPRI, Washington, DC, USA (Mimeo).

Howes, Stephen and Jha, Shikha(1992) "Urban Bias in Indian Public Distribution System", EPW, May .9.

Jain, L.R. and MinhasB.S. (1991) "Rural and Urban Consumer Price Indices by Commodity Groups", Sarvekshana Vol. XV, No.l, July-September.

Jha, S. (1991)	"Consumer Subsidies in India: Is Targetting Effective? Indira Gandhi Institute of Developoment Studies, Bombay.
Jose, Mooij (1994)	"Public Distribution System as Safety Net: Who is Saved? EPW, January, 15.
Kishore, C. Samal(1998)	"Poverty Alleviation After Post Liberalisation" Study of a Tribal Block In Orissa", *EPW, My.*\\.
Kumar, Praduman, Mark W. Rosengrant and Howarth E. Boiuis (1994)	"Demand for Rice and Other Foodgrains in India" IARE New Delhi and International Food Policy Research Institute, Washington DC, USA.
Kurien, C.T. (1996)	"The Real Impact", Frontline, February 9.
Nancharaiah, G, (1996)	"New Economic Policy: It's Effects on Dalits", In VTJCALP, Vol.V, No.5.
_____, (1998)	"State and Dalit Education: 50 Years of Independence", H.C.U. Hyderabad.
Panikar, P.G.K (1972)	"Economics of Nutrition" *EPW,* Annual Number.
ParikhKirit(1993)	"Who gets How much from PDS: How effectively Does it reach the Poor", Indira Gandhi Institute of Development Research .Bombay.
Parthasarathy, G., (1996)	"Social Security and Structural Adjustment" in the Indian Journal of Labour Economics, Vol.39, Jan-March
Radhakrishna, R. (1998)	"Food Security, Nutrition and Poverty in India", Centre for Economic and Social Studies, Hyderabad.
_____,(1996)	"India's PDS", A National and International Perspective, (Draft), October.

_____,(1996)	"Food Trends, PDS and Food Security Concerns", Presidential Address, 14 Annual Conference A.P. Economic Association.
Radhakrishna R. and Indrakanth, S. (1998)	"Effects of Rice Market Intervention Policies in India: The Case of Andhra Pradesh", in Asian Development Bank, Manila.
Radhakrishna Rand Ravi, C, (1990)	"Food Demand Projections for India", Centre for Economic and Social Studies, Hyderabad.
Rao, V.M. (1995)	"Beyond 'Surpluses' Food Security in Changing Context", EPW, Vol.30, No.4, January 28.
Rao, I.V.R. Krishna (1993)	"Andhra Pradesh: An Experiment in Food Security", EPW, September, 11.
Sengupta, Arjun(1995)	"The Economic Reforms and Poverty", Ravi Narayana Reddy Memorial Lecture, September.
Subba Rao, K. (1980)	"What is a Surplus State? Public Distribution of Rice in A.P", Arthavignana, Vol 22, No.l, March.
Subramanian, Shankar (1993)	"Agricultural Trade Liberalisation and India",. Development Study Centre.
Sukhatme, P.V. (1978)	"Assessment of Adequacy of Diets at Different Income Levels", *EPW,* August.
UstaPatnaik,(1996)	"Export Oriented Agriculture and Food Security in Developing Countries and India", EPW, Special Number, September.

Other Publications:

C.MI.E.	Basic Statistics Relating to Indian Economy Various Issues.
DGCI&S	Monthly Statistics of Foreign Trade in India Various Issues.

Government of India — Economic Survey, Ministry of Finance, Economic Division, Various Issues.

Government of India — Bulletin of Food Statistics, Various Issues.

Government of India (1989) — Sarvekshana, Journal of the National Sample Survey Organization, Department of Statistics, Ministry of Planning, Vol. XIII.

No.2, Issue No. 41, October-December.

_____, (1991)b, — Sarvekshana, Vol. XI, No.l, July-September.

_____, (1991)c, — Sarvekshana, Vol. XIV, No.47, April - June.

_____, (1991)d, — Sarvekshana, October - December.

_____, (1992) — Sarvekshana, XV, No.4, Issue No.51, April - June

India Development Report (1997)

Planning commission (1979) — Report of the Task Force on the Projections of Minimum Needs and Affective Consumption., Govt, of India.

Poverty and Social Policy Department National and International Perspective. — The World Bank (Draft). On India's PDS a 1996, November