

FOOD SECURITY AND NUTRITION IN KERALA : AN EXPLORATORY APPROACH

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ABSTRACT

The study attempts a comprehensive analysis of food security problem in Kerala by examining both supply side and demand side factors. On the supply side, trends in food availability in Kerala including domestic production, contribution of Public Distribution System and the extent of external dependence are examined. On the demand side, factors influencing the economic access to food are examined. Further, to analyse the utilisation component of food security, different outcome indicators in the form of nutritional status of adults and children are also studied. The study reveals that the agriculture sector in Kerala has undergone major structural changes by increasing its area under commercial crops and reducing the area under food crops. As a result, food production in Kerala has declined. However, the efficient functioning of Public Distribution System (PDS) ensured food availability in the State. But the policy changes implemented by the Central government since liberalisation had adversely affected the efficient functioning of PDS in Kerala and it ultimately resulted in increased external dependence. However, economic access to food improved since per capita GSDP, real income, real wage and land entitlement have improved consistently. Nutritional status of men and women in the State is found to be better and the incidence of under-nutrition among children has declined. Despite the high deficit on the production front what helps the State to achieve better health indicators and lower incidence of poverty is the better economic status. High vulnerability in case of food availability in the State calls for a very urgent policy attention on the production front.

Introduction

Food security has now become a more complex phenomenon than it was earlier. Decline in world foodgrain production due to adverse weather conditions and diversification of production in favour of oil

crops and high value commodities, aligned with the rising demand for food and changes in consumer preferences, on the one hand and inequality in distribution on the other have made the food security problem more complex to handle. Until the seventies food availability and stability were considered as

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This paper is dedicated to late Dr. J. Srinivasan, formerly Associate Professor, Department of Economics, School of Management, Pondicherry University, R.V. Nagar, Kalapet, Puducherry - 605 014.

the major components of food security. During that time achieving self-sufficiency in food production and stability in production and food prices were considered as synonymous to food security. But this conventional wisdom of food security has undergone changes after the pioneering work of Amartya Sen on 'Food Entitlement'. According to him, "starvation is the characteristic of some people not having enough to eat. It is not the characteristic of there being not enough food, while the latter can be the cause of the former, it is but one of many possible causes" (Sen, 1982). As he clearly put it, availability of food is only one factor affecting food security or starvation. He stated that food insecurity is not only caused by non-availability of food but also by entitlement failure. Entitlement failure refers to the inability of people to command food through the legal means available in the society, including the use of production possibilities, trade opportunities, entitlement *vis-a-vis* the state, and other methods of acquiring food (Sen, 1982). This approach stresses the importance of economic resources which provide a person some purchasing power to access food. Hereafter, there was a shift in the literature as the studies started analysing demand side factors also.

Hence, self-sufficiency at the national level is not adequate to achieve food security at the individual level. At the national level food security means availability of sufficient stock of food obtained from either domestic production or imports to meet domestic demand. At the individual level, it means that all members of the society have access to the food they need, either from their own production or from market or from government transfer mechanisms. Moreover, very recently, the concept has become broader when the world food programme pointed out that food security is a multi-

dimensional phenomenon that relates to demographic, nutritional, economic, and social causes (Misra, 2005).

Further, it is not enough that someone is getting what appears to be an adequate quantity of food; if that person is unable to make use of the food, he or she will be malnourished (Broca, 2002). Hence, utilisation of available food is also important. Proper utilisation of food through clean water and sanitation enhances nutritional status. Utilisation of available food is also affected by non-food factors like medical attention, health care services, basic education, sanitary arrangements, eradication of infectious epidemics etc. Nutritional status is an outcome measure of utilisation component and it is affected by all these factors and therefore, the utilisation component can be examined by analysing the nutritional status of children and adults.

Kerala, a major food deficit State in India, has been a main attraction to the economists all over the world because of its peculiar development experience. In spite of its poor performance in both primary and secondary sectors, Kerala has been able to attain better human development indicators. However, being a chronically food deficit State, the food security problem has ever remained a predominant socio-economic issue in Kerala and some earlier studies therefore, examined the different aspects of food security problem in Kerala.

George PS (1979) assessed the operation of the public distribution system of foodgrains in Kerala. He observed that the operation of Public Distribution System (PDS) in Kerala created a dual market mechanism since farmers sell paddy in the open market after meeting the levy requirements and consumers buy grains from open market to supplement quantity obtained from fair price shops. The analysis reveals that the sale of

rice through ration shops is mainly affected by supply constraints and sale of wheat is affected by demand variables. Furthermore, ration rice accounted for a major share of the rice consumption of lower income groups. The study also found that there was sufficient income impact of public distribution system of foodgrains to consumers than producers. Compared to direct cash transfer, rationing of foodgrains provided higher operational efficiency and political feasibility.

Kumar S K (1979) studied the impact of access to subsidised rice on levels of food consumption and nutritional intake and status using household level data for six months in 1974. The study reveals that the rice from ration shops contributed one-fifth of both calorie and protein in the household diet. If rice was not supplied through ration shops, a net decline in calorie and protein supply would occur for the households since they have to purchase rice at higher prices from open market. The impact on demand and consumption of ration rice availability is reflected in the higher marginal propensity to consume additional food from the subsidy income. In addition to this, a positive relationship between ration rice consumption and nutritional status is also identified. On the whole, the study found that there was substantial impact of subsidised rice on calorie and protein intake and nutritional status.

Kannan (2000) examined the State-assisted food security system in Kerala by reviewing its contribution to the food availability in the State. He finds a deficit in the foodgrain production in Kerala since there is wide gap between requirement and total production of cereals, pulses and vegetables. The declining trend in food production and food deficit are mainly because of commercialisation of agricultural production. The State could resolve this food deficit through effective and egalitarian functioning

of Public Distribution System in the State, which is characterised by universal access, and lack of urban bias. Analysing the outcome of the food security measures, he reveals that State performs best in case of indicators like life expectancy, infant mortality, nutritional status of children, and incidence of poverty. However, the policy shifts of Central government during 1990s seem to threaten the well established Public Distribution System in Kerala. The restrained availability of subsidised food along with the altered definition of "Below poverty line" will exclude number of households from the Public Distribution System beneficiaries. Moreover, the recent hike in issue prices was another threat to the survival of Public Distribution System in Kerala.

Suryanarayana (2001) examined the implications of structural adjustment programme of Central government for the food security and social development in Kerala. He observes that the highly subsidised public distribution, which improved the per capita cereal consumption in the State, is not sustainable for fiscal reasons. The social cost of this would be heavy since Kerala is a food deficit State. Moreover, the State also is not in a position to distribute food at subsidised price due to its own fiscal constraints. Therefore, he concludes that the social safety nets and human development in the State is in peril.

Ibrahim and Pramod (2006) examined how the policy changes introduced as a part of New Economic Policy affected the public distribution in Kerala. They argued that the public distribution system has played a crucial role in ensuring food availability in the State. Implementation of New Economic Policy, with a view to reducing fiscal deficit, resulted in rising issue prices of foodgrains and the introduction of Targeted Public Distribution System. The issue price became more or less similar to open market price. Therefore, the

consumers have little incentive to make use of PDS. With the sub-division of beneficiaries into two namely, Above Poverty Line (APL) and Below Poverty Line (BPL), the government changed the entitlement from a per capita norm to family norm since only BPL families are provided food at subsidised price. As a result, there has been considerable fall in the total foodgrains distributed through PDS. The per capita availability through PDS also registered a declining trend. As a result, during post-liberalisation the contribution of PDS to total food supply in Kerala has declined consistently. This has resulted in increasing open market dependence of the State.

Isacc and Ramkumar (2010) highlighted the special efforts taken by the Kerala government to include all households in unorganised sector in BPL list. They critically examined the Tendulkar Committee and Saxena Committee Reports. They argued that the use of poverty estimates provided by Tendulkar Committee is likely to result in exclusion of many poor households from BPL list. On the other hand, Saxena Committee Report would put many of the disadvantaged group on competition with general population for a place in BPL list. Further, since the maximum size of the BPL list is fixed in line with the estimates of poverty from NSSO surveys, further expansion of criteria for automatic inclusion is limited. However, to overcome these problems Kerala Government has adopted a Class approach, which automatically brings all households in the unorganised sector into BPL list. With this the State expanded the welfare entitlements to some more vulnerable households. However, the impact of these efforts on the offtake of food from PDS remains unanswered.

It is clear from the above discussion that earlier studies concentrated mainly on the availability pattern, including trends in internal

production and contribution of PDS, its functioning, impact of policy shift on the functioning of PDS and impact of access to subsidised rice on consumption and nutritional status. Similarly, some of them mostly discussed the decline in food distribution through PDS because of policy shift and introduction of Targeted Public Distribution System. But very recently there has been a reverse trend, that is the foodgrain distribution through PDS started increasing mainly due to the special efforts made by the State government to expand welfare entitlement to the vulnerable sections of the society like Scheduled Caste, Scheduled Tribe, Fisherperson Households, labourers in unorganised sector etc. Further, they have hardly discussed the factors influencing economic access to food, a major component of food security. Among the outcome measures of utilisation component, only the nutritional status of children is discussed, while the nutritional status of adults, who constitute working age people, is not adequately dealt with. Given the theoretical development in case of food security, the present study works on the aforementioned lacuna by analysing three major components of food security, availability, economic access and utilisation in Kerala.

Food Security-Concepts

Food security is a situation where everybody has sufficient and affordable food. The most cited definition of food security is given by World Bank, which defines food security "as access by all people at all times to sufficient food for an active and healthy life". In other words, it can be considered as enough food to supply the energy needed to live healthy, active and productive life. Food and Agriculture Organisation defines it as "ensuring that all people at all times have both physical and economic access to basic food they need". Statz defined food security as "ability to assure on a long-term basis, that

the food system provides the total population access to a timely, reliable and nutritionally adequate supply of food." Thus the, available food should be adequate in quantity as well as quality to meet nutritional requirement. The concept food security mainly consists of availability of food, economic access to food, physical utilisation of food and vulnerability. Food Availability is defined as the availability of sufficient quantities of food supplied through either domestic production or imports. Economic Access refers to the purchasing power of an individual relative to market price of food. Alternatively, it represents adequate resources that enable a person to secure food. Food Utilisation refers to absorption of food through adequate diet, clean water, sanitation and health care. Food utilisation brings out the importance of non-food factors like nutrition practices, metabolic absorption and intra-household distribution in food security. Vulnerability refers to instability in production and fluctuation in prices. Alternatively, it implies the risk involved with fall in income, decline in production and rise in food prices.

Trends in Food Availability in Kerala

Food security on the supply side means total availability of food in the economy. Availability of food depends on internal production and imports from surplus regions and public distribution system. For an economy, it is necessary to ensure sustainable agricultural production and productivity to meet the increasing demand for food. When the internal production is sufficient to meet domestic demand then the economy is considered self-sufficient in food production. Even then there may be food deficit regions within a self-sufficient economy. In such a case, inter-regional transfer of food can be implemented. In India, Public Distribution System has been instrumental in distributing food to deficit regions.

When the internal production does not meet the domestic demand, there arises a need to import food to meet the deficit in availability. Being a chronically food deficit State, Kerala always depends on imports from other states. Food production in the State has been decreasing against the increasing requirement and it has never been sufficient to meet the domestic demand. There exists a wide gap between consumption and production of foodgrains in the State, especially in the case of rice, which is the major staple food of the people in the State. The foodgrain deficit in the State is increasing annually and now it has reached a position where it produced only 14 per cent of the required rice in 2010. The deficit in rice production assumes greater importance because cereals account for more than half of the intake of calories (64 per cent for rural and 57 per cent for urban) and around half of the intake of proteins (52 per cent for rural and 48 per cent for urban) in Kerala (Kannan, 2000).

The decline in food production has been largely due to commercialisation of agriculture production. With more market orientation, agricultural sector in the State witnessed steep decline in area under cultivation of food crops and increase in the area under commercial crops like coconut and rubber. During post-Independence period the overall production performance of crops in Kerala has been largely influenced by the shifts in area under crops. Along with the steep fall in the area recorded under the food crops like rice and tapioca, their production levels have sharply declined.

Commercialisation of Agriculture and Its Impact on Food Production : Food production in Kerala can broadly be divided into two, food crops and non-food crops. The ratio of food crop area to non-food crop area in the State in 1968- 69 was 64:36. It declined to

47:53 in 1995 and 44: 56 in 2004-05. It reveals that the share of commercial crops in the total cultivated area over years has been increasing. The extent of changes in area and its impact on food production can be seen from Table 1. It shows changes in area and production and their percentage variation of important crops in Kerala from 1961-62 to 2010-11. For rice, the area under cultivation declined from 753009 hectares in 1961-62 to 598339 hectares in 2010-11, registering a decline of 68.92 per cent. Consequently, rice production registered a decline of 39.45 per

cent during the same period. For tapioca, major cereal substitute in Kerala, there was 68.39 per cent decline in area and 56.01 per cent decline in production. This kind of large decline in production of tapioca has some implications to food security in Kerala. Because, the shortfall in cereal consumption due to inadequate supply and high relative prices to some extent was compensated by tapioca production and consumption, especially between 1961-62 and 1973-74 (Suryanarayana, 2001).

Table 1 : Changes in Area and Production of Important Crops in Kerala From 1961-62 to 2009-10

Important Crops	Area (Hectares)			Production (Metric Tonnes)		
	1961-62	2009-10	% variation	1961-62	2009-10	% variation
Rice	753009	234013	-68.92	988150	598339	-39.45
Tapioca	236776	74856	-68.39	1618713	2525383	56.01
Pulses	43546	4449	-89.78	16889	3390	-79.93
Pepper	99887	171489	71.68	26550	37899	42.75
Cashewnut	5501	48972	790.24	84449	36450	-56.84
Ginger	12050	5408	-55.12	11185	28605	155.74
Tea	37426	36840	-1.57	37428	57809	54.45
Rubber	133133	525408	294.65	24589	745510	2931.88
Areacanut	56764	99219	74.79	809.1	127893	15706.8
Coffee	18807	84796	350.87	8145	59250	627.44
Coconut*	505035	778619	54.17	3247	5667	74.53

* Production in million nuts.

Source: Economic Review, State Planning Board, Thiruvananthapuram, Kerala, Various Issues.

Moreover, pulses also registered 76 per cent decline in area and 53 per cent in production. All the important food crops registered a greater fall in production along

with their cultivated area. On the other hand, major commercial crops registered increasing trend in area and production. Among these, the performance of rubber seems to be

outstanding since its area increased by 294.65 per cent and production by 2931.88 per cent. Coconut registered 54.17 per cent rise in area and 74.53 per cent in production. Coffee, pepper and areacanut are other commercial crops which registered a rise in both area and production. However, tea and ginger registered a decline in area and rise in production. The area under cashewnut declined and its production increased. Therefore, along with declining food production the food deficit in the State has been increasing largely.

Food Deficit in Kerala : Due to the poor performance of major foodgrains (reason) in the production front, Kerala has been much vulnerable in case of food availability. As we have already seen that the decline in the area under foodgrains was the major reason for the poor performance of the foodgrains. Furthermore, Kannan and Pushpangadhan (1988) attributed the agriculture stagnation in Kerala to the inadequate public investment

in land development policies such as soil conservation and consolidation of landholding and also to the prioritisation of large irrigation dams instead of the much required minor irrigation policies such as flood control measures, timely supply of water etc. Along with the increasing population, the total food requirement in the State has been increasing. Among foodgrains, rice dominates in case of production as well as consumption patterns. Table 2 shows the extent of deficit in rice production in the State. As the data show, the net availability of rice from internal production has been falling against the increasing requirement. Net availability of rice in the State declined from 1198 thousand tonnes in 1975-76 to 538.3 thousand tonnes in 2010. While, on the other side, the total requirement in the State have increased from 2726 thousand tonnes to 3903 thousand tonnes during the same period. This shortage in production further widened the gap of food deficit in the State.

Table 2 : Estimated Rice Requirement, Internal Availability and Supply Gap in Kerala (in 1000 tonnes)

Year	Estimated Population	Availability from Internal Production	Net Availability	Estimated Requirement	Estimated Deficit	Percentage Deficit
1975-76	233.1	1331	1198	2726	1528	56
1980-81	254.53	1272	1145	2977	1832	62
1985-86	272.15	1173	1056	3183	2127	67
1990-91	290.99	1087	978	3403	2425	71
1995-96	309.65	953	858	3621	2763	76
2000-01	318.65	751	676	3725	3049	82
2005-06	332.65	700	567	3888.67	3321.6	85
2010-11	333.87	598.3	538.3	3903	3364	86

Source : Economic Review, State Planning Board, Thiruvananthapuram, Kerala, Various Issues. Statistics for Planning, Directorate of Economics and Statistics, Various Issues.

Public Distribution System and Access to Food: Public Distribution System in Kerala had played a major role in ensuring the availability of food in the State by distributing selected essential commodities at subsidised prices. The commodities distributed under PDS include rice, wheat, sugar and kerosine. The rationing mechanism of PDS therefore, entitles a household to these essential commodities. PDS in the State has a universal coverage as 97 per cent of the households are issued ration cards. As a result, there was considerable increase in the distribution of foodgrains through PDS in the State. Rice distribution increased from 906 tonnes in 1965 to 1063 in 1981. It further increased to 1649 tonnes in 1990.

The policy shift at Centre since 1991, which aimed to reduce the fiscal deficit, had affected the functioning of PDS in the State. As a part of structural reforms introduced in 1991, Central government started reducing

food subsidies. Furthermore, the introduction of Targeted Public Distribution System in 1997 divided the beneficiaries into two categories, Above Poverty line (APL) and Below Poverty line (BPL). The policy is that BPL families received fixed quantities of foodgrains per month at subsidised price (₹ 6.20) while APL families received food at higher price (₹ 10), which is more or less same to open market price. This was done to target the poor families and also to recover the cost of procurement through sale to APL families at higher prices. APL families constitute almost seventy per cent of ration cardholders in 2008. The higher price of APL grains, that is more or less same to open market price, coupled with poor quality of PDS foodgrains forced a large number of APL households to shift to open market for foodgrain purchase (Isaac and Ramkumar, 2010). It resulted in a sharp decline in offtake of PDS foodgrains by APL families, which in turn resulted in declining trend in total

Table 3 : Public Distribution of Rice, Wheat and Total Foodgrains in Kerala (Thousand tonnes)

Year	Public Distribution of Rice	Public Distribution of Wheat	Public Distribution of Total Foodgrains
1992	1804	205	2009
1994	1153	292	1445
1996	1404	492	1896
1998	1640	458	2098
2000	657	64	721
2002	328	125	453
2004	578	253	831
2006	729	292	921
2008	859	202.6	1061.6
2010	1013.9	172.2	1186.1

Source : Economic Review, State Planning Board, Thiruvananthapuram, Kerala, Various Issues.

distribution of food through PDS in Kerala up to 2002 during the post-liberalisation period (Table 3). The public distribution of rice declined sharply from 1640 thousand tonnes in 1998 to 657 thousand tonnes in 2002.

Table 4 illustrates the role played by PDS in total food supply in Kerala and how the policy shift has affected its functioning. In 1992, PDS contributed 52 per cent of total rice requirement. The internal production accounted for only 28 per cent of total rice

requirement. Only for about 20 per cent of total requirement, the State had to depend on other States like Tamil Nadu, Andhra Pradesh, Madhya Pradesh etc. In 2000, the share of PDS declined to 17 per cent. This marked decline in PDS contribution in food supply, led to an increase in external dependence for foodgrains. Along with the declining share of PDS in total food supply, the extent of external dependence also has been increasing. It increased to 37 per cent in 1996 and 75 per cent in 2002.

Table 4 : Rice Requirement, Internal Production and PDS Contribution (Thousand tonnes)

Year	Rice Requirement	Internal Production	PDS Contribution	Dependence On Other States
1971	2496 (100)	1168 (47)	737 (29.5)	591 (23.5)
1981	2977 (100)	1145 (38.5)	1063 (35.5)	769 (26)
1992	3445 (100)	954 (28)	1084 (52)	687 (20)
1994	3532 (100)	930 (26)	1153 (33)	1449 (41)
1996	3621 (100)	858 (24)	4104 (39)	1359 (37)
1998	3705 (100)	688 (18)	1640 (44)	1377 (38)
2000	3773 (100)	694 (18)	621 (17)	2458 (65)
2002	3820 (100)	633 (17)	328 (8)	2859 (75)
2005	3888.6 (100)	567 (14.5)	597 (15.5)	2724.6 (70)
2010	3903 (100)	538.3 (14)	1014 (26)	2350.6 (60)

Source : Economic Reviews, State Planning Board, Thiruvananthapuram, Kerala, Various Issues.

However, thereafter the distribution of rice started increasing significantly and distribution of wheat increased slightly. The recent increase is mainly due to the expansion of welfare entitlements in the form of subsidised foodgrains to some more poor sections of the society through the special efforts made by the Kerala government to include vulnerable sections of the society in BPL list. In 2006 Kerala government reduced price of PDS foodgrains by giving subsidy. Rice was distributed at ₹ 3.0 per kg for BPL families and ₹ 8.90 per kg for APL families and wheat was distributed at ₹ 3.0 per kg for BPL families and ₹ 6.70 per kg for APL families.

The efforts of the Kerala government to include more households in BPL list started when the Central government's narrow definition of BPL households based on per capita monetary expenditure provided an estimate of 10.2 lakh BPL households in Kerala for year 2001. To overcome this problem, government of Kerala used a survey conducted by Rural Development Department in 1993-94 to fix the number of BPL households as 20 lakh which was continued even after 2001. However, despite this, many vulnerable sections of the society were still treated as APL. For instance, about 60 per cent of the fisherperson households and about 40 per cent of the Dalit and Adivasi households were treated as APL.

Therefore, the State government adopted a broader approach. In 2009-10 budget, besides BPL/AAY households, it was decided to distribute foodgrains at the rate of ₹ 2.0 per kg to the families of APL SC and ST, Fishermen and Ashraya from May 2009 onwards. This increased the number of BPL households from 20 to 26 lakh. The State government had to incur an additional cost of 195.5 crore in 2009-10 to implement this programme. In 2010-11 the State government decided to include agricultural labourer

households and labourer households belonging to traditional industry like coir, beedi, cashew, etc. Besides these, those labourers who have worked for 50 days under National Employment Guarantee Scheme and Endosulfan victims were considered to be the beneficiaries of this scheme. Out of the ₹ 245 crore provided for this scheme, ₹ 182.74 was spent up to December 2010. Instead of expenditure based definition of BPL, in June 2010, Kerala government decided to follow a class based approach to extend the scheme of distributing foodgrains at the rate of ₹ 2.0 per kg to the families of the persons working in the unorganised sector. As per this approach, it was decided to include all workers and petty producers in the unorganised sectors coming under 22 more new categories such as traditional goldsmith, tile company workers, lottery workers, toddy workers etc. There was no strict definition of BPL category, rather the criterion was that all the households coming under these classes were entitled to the subsidised food irrespective of their APL/BPL status. As a result, the number of households entitled to subsidised food in Kerala increased to 35 lakh, which constitute about 42 per cent of total households in the State by the end of 2010 (Isaac and Ramkumar, 2010). With the extended coverage of subsidised foodgrain supplied through PDS, the total offtake of foodgrains from PDS has been on increase from 2002 onwards, this trend is more evident in case of rice, the staple food of Kerala (Table 3).

Besides this, the two special schemes namely, Antyodaya Anna Yojana scheme (AAY) and Annapoorna scheme were also functioning well which ultimately resulted in an increase in offtake of foodgrains from PDS. The percentage offtake against actual allotment under AAY has always been more than 70. Antyodaya Anna Yojana Scheme

(AAY) was introduced in February 2001 to distribute 35 kg of rice at ₹ 3.0 per kg to the poorest of the poor families under BPL scheme per month. At the initial stage Government of India fixed the number of beneficiaries under this scheme as 238200 families. Later, as a part of tribal welfare measures all the eligible tribal families have been included under the scheme. During 2003, Government of India decided to enhance the number of beneficiaries to 357400. Again, as a third phase of expansion Government of India has enhanced the target to 595800 families. Now Government of India is allotting 20855 MTs of rice per month at the rate of ₹ 3 per kg. Due to the increased number of beneficiaries and high degree of utilisation (about 70 per cent), the AAY rice offtake from PDS has been increasing over last few years. The AAY rice offtake increased from 1.00 lakh metric tonnes in 2002-03 to 1.58 00 lakh metric tonnes in 2004-05 and further to 2.49 lakh in 2010-11. Annapoorna scheme was introduced since February 2001 for distributing foodgrains to destitute individuals of and above the age of 65 years 10 kg of rice per month free of cost. The Government of India fixed the target as 44980 individuals. From 2002-03 onwards the scheme was transferred to the State government on a cost sharing basis. However, under Annapoorna scheme the percentage offtake against actual allotment has been between 60 and 70.

Further, in January 2011, Kerala government approved the scheme for providing foodgrains at ₹ 2.0 per kg to all card holders subject to certain conditions. As per this scheme all families having less than 2.5 acres of land, and whose monthly income is less than ₹ 25000, per month and also having a house less than 25000 square feet area are entitled to the provision of foodgrains (rice and wheat) at ₹ 2 per kg. In September 2011 the scheme of issuing rice at ₹ 1.0 per

kg was implemented. As per this scheme, all AAY cardholders will get 35 kg. of rice per month at ₹ 1.0 per month and all BPL card holders other than AAY beneficiaries will get 25 kg. of rice per month at ₹ 1.0 per Kg. The inmates of Government approved orphanages will also get rice at ₹ 1.0 per kg per month. Now about 14.62 lakh families receive rice at ₹ 1.0 per month and wheat ₹ 2.0 per month and about 42.8 lakh families receive both rice and wheat at ₹ 2.0 per month. Thus, the total number of families getting subsidised foodgrains in Kerala has now increased to 57.42 lakh families. The subsidy amount required for distributing foodgrains at aforesaid rates accounted for ₹ 679,45.02 lakh per month.

As a result, the extent of external dependence declined from 75 per cent in 2002 to 60 per cent in 2010. This trend indicates that still there is scope for reviving universal PDS in Kerala because with an extended provision of subsidised food, the offtake of foodgrains has been increasing. However, the fiscal constraints of the State government make further expansion difficult. Very recently, the Draft of the Food Security Bill prepared by National Advisory Council is published and gives a mixed picture for the food security problem in Kerala. Firstly the act guarantees that at least 75 per cent of the country's population (90 per cent in rural areas and 50 per cent in urban areas) will be provided subsidised food. Based on the general division of population into three categories namely, priority, general and excluded the food entitlement is sub-divided into three categories. The priority households (46 per cent in rural areas and 28 per cent in urban areas) will be provided 35 kg (equivalent to 7 kg per person) of rice at ₹ 3 and wheat at ₹ 2. The general households (44 per cent in rural areas and 22 per cent in urban areas) will be provided 20 kg (equivalent to 4 kg per person) of rice at ₹ 3

and wheat at ₹ 2. The third group excluded (10 per cent of rural and 50 per cent of urban) will be totally delinked from the ambit of PDS.

As far as Kerala is concerned, some more APL households will be brought under the umbrella of subsidised food because the APL households constitute about 70 per cent of total card holders. However, the inclusion and exclusion depend on the criteria decided by the Central government with some discretion to State government. Only the ST households are guaranteed the right of automatic inclusion in the priority list. All other vulnerable groups including households in unorganised sector, if they come under excluded list, will be excluded from the ambit of PDS. Thus, the approach of automatic inclusion of many vulnerable groups adopted by Kerala Government to expand welfare entitlements will be in peril. Thus, the State has to make sure that eligible households are included in the priority and general list because any criteria adopted by the Central government at the national level is likely to exclude many of the vulnerable households due to the low incidence of poverty in Kerala.

Factors Influencing Economic Access to Food

Economic access to food refers to the ability of household to secure food at reasonable price. If an individual does not have enough purchasing power he cannot access food. Economic access therefore, includes adequate purchasing power in relation to price of food in the market place. Sen's entitlement approach stresses the significance of adequate resources (entitlement) which enables a person to acquire food. In a private ownership market economy, food entitlement depends on four elements. (a) production based elements which depend on ownership of productive assets like land (b) trade based elements

which depend on the market prices of food, (c) household based entitlement which depends on the productivity and the opportunity cost of labour power which is represented by the wage rate (d) inheritance and transfer based entitlements which include relief and subsidies obtained from the government (Hossain *et al*, 2005). This section gives an analysis of these factors.

Growth of Income : Income is the main source of economic access to food. Table 5 reveals that per capita gross state domestic product in Kerala has increased at both current and constant prices. After 1980, the values increased at high rate. Here we consider the values of per capita GSDP at constant price since it is adjusted for price changes. The per capita GSDP at constant price was ₹ 308.5 in 1968-69. It increased to ₹ 52984 rupees in 2009-10. Earlier, the per capita GDP of Kerala was below the per capita GDP of the India till beginning of 1990 and crossed per capita GDP of India by the end of 1990s.

To examine economic access to food Tyagi (1990) employs two criteria (1) proportion of per capita income required to buy a unit of food and (2) relative increase in per capita income at current prices and prices of items in the food basket. By the first criterion if there is a decline in the proportion of per capita income required to buy a unit of food, we can infer that the economic access to food has improved. By this criterion, there has been an improvement in economic access to food in Kerala. The proportion of per capita income required to buy a quintal of rice declined from 22.6 per cent in 1980 to 13.66 per cent in 1990. It further declined to 4.4 per cent in 2006-07. By the second criterion, also there has been improvement in economic access since the increase in per capita income at current price has been higher than the increase in the price index of food. Between 1980 and 1990, Kerala's per

Table 5 : Per Capita Gross Domestic Product of India and Kerala at Current and Constant Prices (in ₹ crore)

Year	Per capita GDP of India At Current Prices	Per capita GDP of India at Constant Prices	Per capita GDP of Kerala at Current Prices	Per capita GDP of Kerala at Constant Prices
1960-61	306	306	265	Na
1971-72	645	316	579	290
1974-75	989	343	861	307
1980-81	1333	663	1312	590
1984-85	2344	772	2196	645
1990-91	4974	2227	3843	1802
1995-96	9321	2573	8007	2353
2000-01	16707	10306	19463	10627
2005-06	25716	20734	35602	31438
2009-10	50157	38155	67312	52984

Source : Economic Review, State Planning Board, Thiruvananthapuram, Kerala, Various Issues.

capita income at current price increased by 153.9 per cent. Whereas price index of food increased by 116.4 per cent. Likewise between 2003 and 2007 the per capita income at current price increased by 24.61 per cent. While price index of food rose by only 16.23 per cent. All these signify that there has been improvement in economic access to food in Kerala.

The improvement in economic access can also be analysed by examining the monthly per capita consumer expenditure. Expenditures are better representation than income of total households, because households typically try to smooth consumption over time (James *et al*, 1999). Thus, we also use estimate of consumer expenditure as a measure of economic well-being. Table 6 shows that the monthly per capita expenditure has been on increase for both rural and urban areas. Further, average

monthly per capita expenditure in Kerala for both urban and rural areas has been higher than the national average since 1983-84 and the disparity between these two increased over time (Table 6).

This improvement in economic access in Kerala has been mainly due to the foreign remittances sent by International migrants from Kerala, especially in Gulf countries. The migration was facilitated by the social and human development that Kerala achieved through high interventionist public policies in public health and education and thereby improving the capabilities of the people. In 2003, total remittances formed about 22 per cent of Net State Domestic Product of Kerala and 30 per cent more than the State's annual revenue receipts (Zachariah and Irudaya Rajan, 2007). In 2003, the total remittances accounted for ₹ 18,465 crore, the inflow of such an amount on annual basis to Kerala

Table 6 : Trends in Average Monthly Per capita Expenditure in Various NSS Rounds

Year	Rural			Urban		
	Kerala	India	% Variation of Kerala over India	Kerala	India	% Variation of Kerala over India
1983-84 (38 th)	145.44	112.31	29.5	179.81	165.8	8.4
1987-88(43 rd)	211.47	158.1	33.8	266.81	249.93	6.8
1990-91(46 th)	261.85	202.12	29.5	369.36	317.75	16.2
1993-94(50 th)	390.4	281.6	38.6	493.5	457.7	7.8
1999-00(55 th)	765.71	486	57.5	932	855	9
2000-01(56 th)	841.31	494.91	70	1203.65	914.58	31.6
2002-03(58 th)	881	530.74	66	1266.64	1011.94	25.2
2004-05(61 st)	1013.15	558.73	81.3	1290.89	1052.36	22.7
2005-06(62 nd)	1055.61	624.53	69	1565.59	1170.6	33.7
2006-07(63 rd)	1250	695	80	1681	1321	28.1
2007-08(64 th)	1383	772	79.1	1948	1472	32.3

Source : Economic Review, State Planning Board, Thiruvananthapuram, Kerala, Various Issues.

certainly has an impact on Kerala Economy. ₹ 18, 465 crore per year distributed among the 32.5 million persons of Kerala could give each person ₹ 5680 per year or ₹ 473 per month sufficient to buy at least one kg of rice per day per person (Kerala Development Report, 2008). In 2006-07, the inflow of foreign remittances to Kerala accounted for about ₹ 24.525 thousand crore, increasing the State domestic product by 20 per cent. This noteworthy contribution of remittances enhanced the purchasing power of the people in Kerala and enabled them to purchase food even at higher prices.

Entitlement of Land : To produce food for own consumption, access to land is essential. The entitlement of food based on household's own production would therefore, depend on access to land. Table 6 shows

changes in the distribution of landholding and Table 7 shows the changes in the structure of landholding. Data given in Table 6 reveal that the total number of operational holdings increased from 5418 thousand in 1990-91 to 6299 thousand in 1995-96. The value further rose to 6657 thousand in 2000-01. Between 1990-91 and 2000-01, there was an increase of 22.86 per cent. Data show growing division of landholding rather than concentration. The number of operational holdings under marginal size class who hold less than one hectare has been increasing. On the other hand, the number of operational holdings under medium and large size has been on decline. The increase in total number of operational holdings reveals that more households are brought under operational holding thereby the number of people who have access to land has increased.

Table 7 shows that area operated by small firms increased and area operated by large firms decreased. Therefore, lands were redistributed from large firms to small firms. The trend was mainly because of two factors. Firstly, there has been growing sub-division of agricultural holdings partly due to the

growth of rural population. Secondly, in Kerala where ceiling legislation was effectively introduced, large agricultural holdings were divided and redistributed. Therefore, the increase in number of marginal firms and their operated area reveal that more rural households were provided agricultural land.

Table 7: Changes in the Structure of Landholding

Category of landholding	1990-91		1995-96		2000-01	
	Area Operated	Average Operational Holding	Area Operated	Average Operational Holding	Area Operated	Average Operational Holding
Marginal (less than 1ha)	865 (48.16)	0.17	912 (53.27)	0.15	883 (56.27)	0.14
Small (1 to 2 ha)	383 (21.32)	1.36	350 (20.44)	1.34	300 (19.1)	1.32
Semi-medium (2 to 4 ha)	255 (14.19)	2.60	244 (14.25)	2.54	191 (12.17)	2.52
Medium (4 to 10 ha)	114 (6.34)	5.42	104 (6.07)	5.20	85 (5.4)	5.29
Large 10 ha & above	178 (9.91)	59.33	102 (5.95)	34.00	112 (7.13)	40.93
All	1796 (100)	0.33	1712 (100)	0.27	1569 (100)	0.24

Source : Agricultural statistics, agricultural census division, Ministry of Agriculture, New Delhi, Various Issues.

Note : Figures in the parentheses indicate the percentage of respective column total to all area operated.

However, the increase in number of holdings of marginal farms and their operated area have greater implication to food security. Holding of this group was below one hectare. Moreover, the average holding of marginal farms who occupy significant share of total holding has been very low and also declining. In 1991, it was 0.17 hectare and it declined to 0.14 hectare in 2000-01, which cannot be a significant source of food production or

income. These households cannot produce sufficient food given small holdings and uncertainties in agricultural production. These people would need to purchase food from the market to cover deficit from the household based production.

Therefore, these functionally landless people would depend heavily on selling labour in both agricultural and

non-agricultural labour markets for their livelihoods. Access to food for these people depends on the trade based entitlement relationship thereby on the wage rate and prices and their fluctuations in the market. The next section deals with the trends in real wage rate of rural labourers and prices of essential commodities.

Trends in Real Wages of Rural Workers: Real wage of rural workers is a good indicator often used to assess the changes in their living conditions. The use of the cost of living index for deflating the nominal wage rate may not be appropriate in view of the substantial larger share of foodgrains in the consumption bundle of the poor people as compared to urban population. In 1990-91 the share of food expenditure in total expenditure for rural households in Kerala was 63.29 per cent. For urban households, it was 49.6 per cent. In 2002-03, the respective values were 50.23 and 40.25 per cent. The higher share of food expenditure in total expenditure for rural households when

compared to urban households indicates that any general price index will be inappropriate to deflate the nominal wage rate. In such case, a food price index will be appropriate to absorb the change in purchasing power resulted out of price changes. Hence, here we choose the index number of foodgrains for agricultural labourers to deflate the nominal wage rate.

Table 8 presents the nominal wage rate and real wage rate of both skilled and unskilled rural workers. There are two categories under skilled, carpenter and mason. Usually skilled workers get higher wage as shown in the Table. On the other hand, unskilled rural workers get only comparatively low nominal wage. Data show that the nominal wage rate for all workers find increasing trend over time. During last decade, nominal wage rate of carpenter increased by 94 per cent and that of mason increased by 95 per cent. In case of male and female unskilled workers nominal wage rate more than doubled.

Table 8 : Trends in Real Wages of Rural Workers

Year	Nominal Wage Rate (₹)				CPI Deflator	Real Wage			
	Skilled Workers		Unskilled Workers			Skilled Workers		Unskilled Workers	
	Carpenter	Mason	Male	Female		Carpenter	Mason	Male	Female
1980-81	19.82	19.78	11.13	7.91	79	25	25.03	14.08	10.01
1985-86	42.84	42.8	26.06	15.1	95.63	44.79	44.75	27.25	15.79
1990-91	54.47	53.98	35.77	21.11	140.61	38.73	38.38	25.43	15.01
1995-96	107.2	105.96	71.17	51.17	244	43.93	43.42	31.62	20.97
2000-01	176.15	173.85	127.21	88.75	303	58.13	57.37	41.98	29.29
2004-05	199.23	194.08	166.38	115.75	333	59.82	58.28	49.96	34.75
2009-10	341.83	338.67	260.11	185.4	427	80.05	79.35	60.78	43.41

Source : Economic Review, State Planning Board, Thiruvananthapuram, Kerala, Various Issues,

Note : Nominal wage rate is deflated by consumer price index of food for agricultural labourers.

However, the estimated real wage rate showed a different trend. The real wage rate of all categories increased between 1980-81 and 1985-86. However, the real wage for all workers showed declining trend from 1985-86 to 1990-91. It reveals that during this period food prices grew at higher rate than the nominal wage rate. After 1990-91, the real wage rate of all workers increased significantly. Since then the real wage of all rural workers showed a sustained increase. It reveals that the nominal wage rate increased at higher rate than the foodgrain prices. Except the period of 1985-86 to 1990-91, the purchasing power of rural workers has been improving over time. Thus, there was considerable improvement in economic access of rural workers.

Trends in Prices of Essential Commodities : Changes in the prices of essential commodities definitely will have impact on the purchasing power of the people. Given the level of income, a rise in food prices will reduce the purchasing power of poor people because a large proportion of their income has to be spent on staple food. A decline in food prices, therefore, significantly increases the purchasing power of poor households. Therefore, any change in food prices will affect the purchasing power of poor people thereby their economic access to food. Table 9 shows the changes in retail prices of essential commodities in Kerala from 1981 to 2007.

On reviewing the prices of essential commodities from 1981 to 2010, it is observed that the prices of almost all commodities increased largely (Table 9). Price of rice, the staple food of people in Kerala registered a rise in its price during the period. From 1981 to 1991, it increased by 126.94 per cent. Between 1991 and 2000 the rise was comparatively slower as it registered 90.84 per cent rise in prices. From

2000 to 2010 price of rice doubled. Along with price of rice, prices of other cereals also registered a rise over the last two decades. The price of other food items, oil and oilseeds, spices, fruits and vegetables showed consistent rise. The rise in prices of all these essential commodities had reduced the real wage as we have seen a large difference between growth of real wage and nominal wage rate.

Changes in Nutritional Status

The mere consumption of adequate quantity of food would not necessarily lead to good nutritional status, if a person is unable to make use of the food in a proper manner. Here lies the importance of 'utilisation' component of food security. Nutritional status is the outcome measure of 'utilisation' component and it is affected by economic factors like income, employment and wage, food factors like food intake, calorie and nutrient intake and intra-household distribution of food and finally non-food factors like education, sanitation, health care services and access to drinking water. In India National Family Health Survey uses anthropometric measures such as stunting, wasting, underweight and Body Mass Index (BMI) to analyse the nutritional status. These anthropometric measures are based on 'food utilisation' component. The third pillar of food security, 'food utilisation' therefore, can be examined by analysing the nutritional status, which is expressed in terms of various anthropometric measures.

Nutritional Status of Men and Women : To assess the nutritional status, National Family Health Survey (NFHS) uses various anthropometric measures of food security. In India, commonly used measure of nutrition among adults is Body Mass Index (BMI). BMI is usually defined by NFHS as weight in kilograms divided height in meters squared

Table 9: Annual Average Retail Prices of Essential Commodities in Kerala

Commodities	Units	1981	1991	2000	2006	2008	2010
Cereals							
Rice	Kg	3.08	6.99	13.34	14.03	19.76	27.15
Greengram	Kg	4.83	11.99	26.11	42.16	45.8	64.01
Blackgram	Kg	4.12	13.85	42.54	55.38	49.75	82.67
Redgram	Kg	4.37	9.34	19.88	29.6	33.14	42
Dhall	Kg	6.19	20.28	29.35	34.61	51.86	70.83
Other food items							
Milk	Lr	3.11	6.75	12.93	114.93	20	23
Egg	Dozen	6.42	10.57	29.44	30.07	39.81	48.48
Sugar	Kg	5.92	8.46	15.19	19.72	20.59	28.59
Oil and oilseeds							
Coconut oil	Kg	13.81	56.04	35.4	56.27	62.64	75.31
Groundnut oil	Kg	14.83	44.46	48.05	70.05	90.02	81.9
Redefined oil	Kg	24.22	65.18	61.34	78.36	80.7	71.59
Coconut(without husk)	100 Nos	125.25	472.14	357.14	557.13	69.93	78.9
Spices & condiments							
Coriander	Kg	9.31	17.61	36.08	38.65	99.52	48.74
Chillies (dry)	Kg	16.55	54.14	41.01	63.2	76.39	68.1
Onion	Kg	2.81	4.26	13	16.31	27.32	25.7
Tubers							
Tapioca	Kg	0.77	2.16	5.68	6.73	8.7	14
Potato	Kg	2.17	5.79	8.91	13.43	14.55	17.16
Fruits & Vegetables							
Banana	Kg	2.67	2.16	13.21	15.781	5.41	26.17

Source : Economic Review, State Planning Board, Thiruvananthapuram, Kerala, Various Issues.

(kg/m²). A cut-off point of 18.5 is used to define thinness or acute under-nutrition and BMI of 25 or above indicates overweight or obesity. An adult with BMI below 18.5 is considered as under-nourished and an adult with BMI of 25 or above is considered as overweight or obese. Table 10 shows the

proportion of women and men falling in various categories of BMI. The proportion of women whose body index is below 18.5 BMI falling to the category of acute under-nutrition (thinness) accounted for 18.7 per cent in 1998-99 and it declined to 18 per cent in 2005-06. The national averages were

35.8 and 35.6 per cent in respective years. Among women, who are thin, 9.6 per cent were mildly thin and only 8.4 per cent women are moderately thin or severely thin.

In 2005-06, women coming under normal category accounted for 53.8 per cent against the national average 51.8 per cent.

Table 10: Nutritional Status of Men and Women in Kerala

Mean Body Mass Index (BMI), and percentage with specific BMI levels, Body Mass Index (BMI)* in kg/m ²								
	Normal		Thin			Overweight/ Obese		
	Mean BMI	18.5-24.9	≤18.5 Total Thin	17-18.4 Mildly Thin	≤17.0 Moderately/ Severely Thin	≥25.0 Over-weight/ obese	25-29.9 Obese Over-weight	≥30.0
Women, Age 15-49								
1998-99	22	na	18.7	na	Na	20.6	na	3.8
2005-06	22.6	53.9	18	9.6	8.4	28.1	23.1	5.0
Men, Age 15-54								
2005-06	21.6	60.6	21.5	11.4	10.1	17.8	15.7	2.1

* Excludes pregnant women and women with a birth in the preceding 2 months.

Source : National Family Health Surveys, International Institute of Population Science - Mumbai, (NFHS-2&3).

But the proportion of men coming under normal category was higher than that of women since 60.6 per cent men fall in this category. However, 21.5 per cent men suffer from acute malnutrition (thin). The national average was 34.2 per cent. Among thin men, 11.4 per cent men were mildly thin and 10.1 per cent were moderately or severely thin. But the proportion of men who are overweight or obese was lower than that of women as it accounted for only 17.8 per cent in 2005-06. Among them 15.7 per cent men were overweight and only 2.1 per cent were obese. It follows from all these facts that the nutritional status of adult men and women has been improving in Kerala. Only less proportion of adults, belong to the category of thinness, acute under-nutrition.

Moreover, more than 50 per cent, men and women belong to normal category.

Nutritional Status of Children : To assess the nutritional status of children three important anthropometric measures were used by National Family Health Survey based on their weight, height and length. They are stunting (height for age) wasting (weight for height) and under-weight (weight for age). Children with low weight relative to their age are said to be under-weight. If they are under-weight relative to their height, they are said to be wasted. Children who are too short for their age are said to be stunted.

Table 11 shows the proportion of children falling under the three categories of under-nutrition, namely wasting, under-

weight and stunting. Children who are more than two standard deviations below the reference median of the indices are considered to be under-nourished, and children who fall more than three standard deviations below the reference median are considered as severely under-nourished. The prevalence of under-nutrition in the State has been declining in terms of stunting and

under-weight. However, the proportion of children wasted increased from 1998-99 to 2005-06. In 1992-93 11.6 per cent of children under age five were wasted. It means that they are too thin relative to their height. Among them, the proportion of children who are severely under-nourished accounted for 1.3 per cent.

Table 11 : Nutritional Status of Children in Kerala

	Weight for Height (Wasting)		Weight for Age (Under-weight)		Height for Age (Stunting)	
	Percentage Below -3SD	Percentage Below -2SD	Percentage Below -3SD	Percentage Below -2SD	Percentage Below -3SD	Percentage Below -2SD
1992-93	1.3	11.6	6.1	28.5	9	27.4
1998-99	0.7	11.1	4.7	26.9	7.3	21.9
2005-06	4.1	15.9	4.7	22.9	6.5	24.5

Source : National Family Health Surveys, International Institute of Population Science - Mumbai, (NFHS-2&3).

The proportion of children wasted declined to 11.1 per cent in 1998-99. Similarly, the proportion of severely under-nourished children declined to 0.7 per cent. But in 2005-06 this value increased. Proportion of children wasted increased to 15.9 per cent. The proportion of children who suffer from severe under-nutrition increased to 4.1 per cent. This is mainly because of inadequate nutrient intake and seasonal variation in food consumption. On the other hand, the proportion of children falling under other two categories has been declining. The proportion of under-weight children declined from 28.5 per cent in 1992-93 to 26.9 per cent in 1998-99 and to 22.9 per cent in 2005-06. Similarly, proportion of severely under-weight children had declined from 6.1 to 4.7 per cent during 1992-93 to 1998-99. In 2005-06 only 4.7 per cent children were severely under-weight. The proportion of children who

are stunted declined from 27.8 per cent in 1992-93 to 24.5 per cent in 2005-06. Severely stunted children also registered a decline from 9 per cent in 1992-93 to 6.5 per cent in 2005-06. Therefore, there has been considerable decline in incidence of under-nutrition in the State.

The proportion of under-nourished children is higher in case of stunting as we stated earlier. It indicates that height of children is lower relative to their age in Kerala. It is a consequence of inadequate food intake. There has been urban-rural disparity in the nutritional status among children. The proportion of rural children wasted accounted for 10.9 per cent in 1998-99. This value of urban children was 11.2 per cent in 1998-99. The proportion of under-weight rural children accounted for 28.0 per cent in 1998-99. However, in urban area in 1998-99 only 22.4

per cent children were under-weight. The proportion of rural children who are stunted accounted for 11.2 per cent and this value for urban children was 10.9 per cent. It shows that there has been urban- rural disparity in case of nutritional status.

Conclusion

Given the cropping pattern in Kerala, it is quite impossible to achieve self-sufficiency in food production within a short period. Therefore, Kerala requires a long-term planning on the production front to reduce food deficit. The State should initiate extensive farming by bringing more lands under food crops. For this government has to control land utilisation for commercial and construction purposes. It has to provide necessary incentives for foodgrain production. Given the high deficit on the

production front what helps the State to achieve better health indicators and lower incidence of poverty is its better economic status. The economic access is strong in the State that enables the people to purchase food even at higher prices.

The consistent rise in real wages clearly indicates that people in the State are able to afford food at higher prices. The utilisation pattern in the State is also much better and it is reflected in the nutritional status of adults and children. The nutritional status in the State is influenced by the determinants of utilisation patterns such as education, medical services, sanitation and access to drinking water. In Kerala there is inter-regional and inter-community differences in consumption pattern. A micro level study with primary data can give further insights to diversification of consumption pattern.

References

1. Centre for Development Studies (1975), *Poverty, Unemployment and Development Policy- A Study of Selected Issues with Special Reference to Kerala*, New York, United Nations.
2. Dreze, Jean (2011), "Mending the Food Security Act", *The Hindu*, May 2004.
3. George, P.S. (1979), "Public Distribution of Food Grains in Kerala - Income Distribution Implications and Effectiveness", International Food Policy Research Institute Report No.7, IFPRI, Washington, DC.
4. Government of India (2008), "Kerala Development Report", Academic Foundation, New Delhi.
5. Government of Kerala (2011), "Economic Review 2010" State Planning Board, Thiruvananthapuram.
6. Hossain, Mahabub, Firdousi, Nahar and Shahabuddin, Quazi, (2005), "Food Security and Nutrition in Bangladesh, Progress and Determinants", *Journal of Agricultural and Development Economics*, Vol.2 No.2, 2005, pp. 103-132.
7. Ibrahim, P. and Pramod E.K. (2006), "Liberalisation, Public Distribution and Food Security - A Case Study" in Rajan, K. (ed), *Indian Economy, The Post Reform Scenario*, Serial Publishers, New Delhi. pp. 37-45.
8. Isaac, T.M, Thomas and Ramkumar, R. (2010), "Expanding Welfare Entitlements in the Neo-Liberal Era : The Case of Food Security in Kerala", *Indian Journal of Human Development*, Vol.4, No.1, pp. 99-119.

9. James .L, Garret and Marie T. (1999), "Are Determinants of Rural and Urban Food Security and Nutritional Status Different?, Some Insights from Mozambique", *World Development*, Vol.27, No.11, pp. 1955-1975.
10. Kannan, K.P and Pushpangadan, K. (1988), "Agricultural Stagnation in Kerala, An Exploratory Analysis", *Economic and Political Weekly*, Vol.23, No. 39, pp. A120-A128.
11. Kannan, K.P. (1995), "Declining Incidence of Rural Poverty in Kerala", *Economic and Political Weekly*, Vol. 30, No. 41, pp. 2651-2662.
12. Kannan, KP. (2000), "Food Security in A Regional Perspective, A View from Food Deficit Kerala", Working Paper Series No.304, Centre for Development Studies, Thiruvananthapuram.
13. Krishnaji, N and T.N Krishnan (eds.) (2000), *Public Support for Food Security : The Public Distribution System in India, Strategies for Human Development in India*, Vol.1, Sage Publications, New Delhi.
14. Kumar, S.K. (1979), "Impact of Subsidised Rice on Food Consumption and Nutrition in Kerala", International Food Policy Research Institute Report No.5, IFPRI, Washington, DC.
15. Misra, Baidyanath. (2005), "Food Security in India" *Man & Development*, March, pp. 29-38.
16. Mooji, J. (1999), *Food Policy and the Indian State : The Public Distribution System in South India*, Oxford University Press, Delhi.
17. National Advisory Council (2011), *Note on the Draft National Food Security Bill*, New Delhi.
18. Radhakrishna, R. (2005), " Food and Nutrition Security of the Poor, Emerging Perspectives and Policy Issues" *Economic and Political Weekly*, Vol. 40, No.18, pp. 1817-1821.
19. Sen, Amartya (1982), *Poverty and Famines, An Essay on Entitlement and Deprivation*, Oxford University Press, Delhi.
20. Sumiter, Broca S. (2002), "Food Insecurity, Poverty and Agriculture : A Concept Paper", ESA Working Paper No. 02-15, Agricultural and Development Economics Division, The Food and Agriculture Organization of the United Nations, Rome- Italy
21. Suryanarayana MH. (1997), "Food Security in India : Measures, Norms and Issues", *Development and Change*, Vol.28, pp. 771-789.
22. Suryanarayana MH. (2001), "Economic Reforms Versus Food Security : Kerala's Gordian Knot", *Journal of International Development*, Vol.13, pp. 239-253.
23. Swaminathan, Madhurai (2003), "Strategies Towards Food Security", *Social Scientist*, Vol. 31, No. 9110, pp. 58-94.
24. World Food Programme (2001), "Enabling Development Food Assistance South Asia", Oxford, New York.
25. Zakaria, K.C and S. Irudaya Rajan (2007), "Migration, Remittances and Employment : Short-term Trends and Long-term Implications", Working Paper Series No.395, Centre for Development Studies, Thiruvananthapuram, Kerala.