CHAPTER - II

Review of Literature

2.1 Reviews of Important Research Works

The study takes into account the status of food security at household level, where nutrition security plays a crucial part. Access to safe and adequate food is one of the important and basic prerequisite in improving the nutritional status of people. Keeping this in view, a detailed review of available literature is made for assessing the status of food security at micro level. The following section contains all these reviews.

N.S. Pasricha with Ramendra Singh (1982) written about the land degradation & household food security in Indian context. In their writings they discussed about the total land requirements for having enough food for an average human being. They have identified the soil erosion, nutrient mining, Stalinization, over grazing & deforestation , as the major causes for land degradation , which ultimately affects the food security in general & household food security in particular. According to their view decreasing carrying capacity of land is responsible for the increment in per capita land area requirement. Population explosion is the major cause in the increase of rate of loss of agriculture land. According to them the growing population & the changing dietary requirement will lead to a high food demand in the coming decades but national food security is threatened by the wide spread degradation of land as the food production capacity of the land is lowered. Building of road, urbanization & industrial development is the result of large scale destruction of the cultivated land. City encroachment on the agricultural land exerts another sort of pressure on the cultivable land. They have viewed all these causes of land degradation during their study. In their article they have discussed the severity of land degradation in different parts of the country. Decline in productivity, socio-economic factors & indirect cause of land degradation, production & consumption links all these aspects received importance in their study. In the article both of them also expressed their concern about the country's present food prospects & implications

for Agricultural Science. In the conclusion they have said that local & regional food security will totally depend on substantial improvements in the productivity of the popular cropping systems especially in the less favorable environments. They have suggested that particularly the marginal areas inhabited by the poor in the country must be directly the subjects of research if the poverty & food insecurity is to be eliminated.

Maxwell, Daniel G. (1995), has studied the alternative food security strategy and its analysis in the urban areas of Kampala. In this literature, Maxwell have discussed about the farming within African cities which has become an increasingly important source of food for urban population. The information about urban farming has very little availability, where its impact on household level is also a lesser known fact. To understand urban farming, the study gave stress on intra-household dynamics and gender relations as well as declining wages and economic informalization. The study have identified the major constraints as access to land where only a small fraction of urban farmers own their land. After carrying the field research in Kampala the capital and largest city of Uganda between November-1992 and October-1993 on a series of 40 comparative household case studies, and a two round survey of 360 household selected into a multi stage random sampling and focus groups, Maxwell have revealed the fact that those household with access to land, urban farming is associated with higher levels of household food security and child nutrition. Household analysis of urban farming in Kampala puts a question in Maxwell's mind that whether a household's strategy is a women's strategy, because urban farming in Kampala is largely, a long-term adaptive strategy of women to protect the food security of the persons for whom they are responsible, either through the device provision of supplemental source of food, a food reserve or as a means of stretching other sources of income. This paper outlines in the last section of the study the linkages between economic strategies, access to land, and food security, and discussed the policy implications of urban farming in Kampala in the light of legal status and control over labour where largely women are giving labour and their efforts can be supported by offering technical services in farming. So, programmatic intervention into urban agriculture should as a first priority, protect and enhance the food security strategies of vulnerable groups.

I. J. Singh (1998) in this study Farm Poverty, Household Food Security and Agricultural Sustainability in India has tried to show how unstable farm production, low farm incomes and rising food prices, have adversely affected the food security in the individual households. In his study he was of the view that those farmers are among the under-fed people in the country, who ushered the green revolution. His study is based totally on secondary data. Incidence of farm poverty and state-wise farm poverty were analysed by him. The net farm income is found out from a given farm-size holding to maintain an average family size of five adult members having a relation with the size of landholding is just sufficient to maintain minimum family living expenses. And the study is of the view that this relation is important for knowing the magnitude of the farm poverty. The explanation of poverty estimation by different people was done by him which reveals the fact that there are wide differences in methodologies, data adjustments and the price deflators used. With the help of the break-even methodology a state-wise quantification of the magnitude of poverty of rural cultivating household in India was made by Singh (1989). Here, he has shown the poverty line income at Rs. 1,728, and among the fourteen studied States, Maharashtra till 1970-71 was far from satisfactory level so far as the performance of agriculture is considered. The spectacular performance was done by Punjab, where the total number of farm households below the poverty line was reduced by 1985-86. That is steady agricultural growth and development have resulted in reduction of poverty in absolute terms Rural household food security was analyzed by Singh and he found that the per capita actual and projected availability of pulses, milk, sugar and edible oils is far lesser then their recommended intakes since 1951 to 2000 A.D. except for food-grains. Pulse intake is lowest among the rural people and expensive cereals are preferred when income of the people increases. The cereal and millet consumption is more among rural people compared to high income group & industrial labourers. But, the rural people consume all these in poor and inadequate manner. In India, substantial food security is in Punjab and Haryana, and to some extent in West Bengal, followed by Assam, Maharashtra and Rajasthan when state wise food security of household is considered. The remaining eight states are poorly food secured. The scholar have found out that rural savings are negative and for this they either draw the cash and kind reserves, and borrow from friends and relatives for meeting their consumption needs.

Present day highly capital intensive farm technology is inaccessible to rural farmer because of this dissavings. It is only the Punjab and Haryana who have the high level of food security. According to Singh sustainability of Indian agriculture is in the requirement of steady agricultural production and disregarding of environment should be absent. The sustainability co-efficient worked out by Singh for Assam reveals that in this North Eastern state agriculture is highly unsustainable where green revolution could not approach the paths due to ecological degradation and shifting cultivation. The state of Bihar is next to Punjab and Haryana where green revolution could make a pace. According to the study the suitable measure to make Indian agriculture a sustainable one, there should be the measure like crop-insurance, region-wise specialization, use of Biofertilizer etc.

James L. Garrett and Marie J. Ruel (1999) have viewed the case of Mozambique in finding the difference between the determinants of rural and urban food security and nutritious status. Children of 0-60 months old in Mozambique is suffering from under nutrition more in rural areas in comparison to urban areas. They have found that, though food security is about the same, yet regional difference exist substantially. Despite Mozambique's' large rural population, food insecurity and malnutrition are significantly present in urban areas also. In their study, they took the help of a standard household utility model for examining the determinants of food security and nutritional status, specially , a demand function for calories and a production function for child nutritional status. Conceptual and empirical models have also been used by them to find out which variables belong to the estimated equations and what estimating procedures are appropriate. The data collected by them are from a National Cross-Sectional Household Demographic and Expenditure Survey carried out by the Government of Mozambique from February 1996 to March 1997. The data to be a representative one were collected from 8,274 households at the level of each of the 10 provinces and the capital, Maputo. In the principal questionnaire, non-food expenditure of households made either monthly or quarterly were collected together with the food expenditures from a daily consumption module that covered a seven-day recall period. Household level calorie availability was calculated from this daily consumption module. After excluding extra ordinarily

unreasonable values of calorie availability per Adult Equivalent Unit, (AEU) the sample used for estimation included 6463 households. Anthropometric measures were also collected for all children 60 months old and younger in the household. They have found that levels of expenditures are higher in urban areas while calories availability is very low. They are of the view that high expenditure on non-food needs may be a reflection of higher prices and lower energy requirements because of lower physical activity. Income levels which is likely to be affected by education is higher in both male and female in urban areas though women are lagging far behind. In urban areas preschoolers are in a better position so far as the inputs required for good child nutrition is concerned-such as higher levels of expenditure and maternal and adult male education as well as better access to sanitation and safe water. The study reveals that environmental factors do play a large role in determining nutritional status of older children, but the nature of the threat is different in urban and rural areas. So far as nutritional status is concerned, for both younger and older children, the urban-rural differences appear mostly due to the differences in the levels of critical determinants, e.g. in income or mother's educational level. The levels of food insecurity which is measured by calories/AEU/day are mostly the same instead of some critical determinants of calorie availability between rural and urban areas. Among the policy recommendations made in the study, the income generation in both urban and rural areas for achieving food and nutrition security in Mozambique are social assistance such as the urban cash transfer programme for those who cannot enter the labour market and enjoy the increasing economic growth's benefit are important. Improving girl's formal education & women's literacy and job skills to raise household income is also important in the long run to improve children's nutritional status which will also help in lowering the household sizes and proportion of children under five in the household. For older children, the study focused in-house crowding's negative effect which can be minimized by providing sanitation, garbage disposal and clean water to those household where there is children under the age five. The study feels the importance of and identified the key areas for intervention, to reduce food insecurity and malnutrition in both rural and urban areas where the policy framers and administrators should focus parallely.

Bouis, Howarth and Joseph Hunt (1999), have revealed the link between Food and Nutrition security taking lessons from past and discussed also about the future opportunities in this literature. Traditional food security strategies are reviewed by the researchers which are generally found to have a week impact on lowering child malnutrition. Unless these programmes are properly targeted and linked to employment and micro-credit opportunities for women, they are unlikely to be effective or sustainable. They have viewed in this study the links between food policy and nutrition security require greater attention to dietary quality through agricultural research and technology directed to reducing both under-nutrition and over nutrition, social security policies that protect poor women and children, and food aid policies that are developmental in intent and impact. One element in the final solution given by this study to malnutrition is to provide increased consumption of range of non-staple foods. To reach the poor, this will require a relatively large investment in agricultural research and other public and on-farm infrastructure over several decades. In the medium run, this study gave opinion that a much smaller investment in improving the nutrient content of staple foods through plant breeding can make a major contribution to reducing deficiencies in selected micro-nutrients. The study have viewed that the role of women is central to nutrition outcomes (anthropometric measures) through child care so that policies and programmes must consider how to enhance women's decision-making power in household, how they affect time demands on women and how to increase women's education and nutritional knowledge. In this literature, final view of the researcher is that community based programmes which lies at the heart of the country nutrition investment plans in Asia, which are also central to the RETA strategy for improved nutrition should be used to monitor the nutrition effects of agricultural policies and programmes and to provide feedback to agricultural policy makers as to how to enhance the positive effects and minimize the negative effects of agricultural policies and programmes. Food income transfers are a widely used means of alleviating food insecurity. Food stamps are the least distortionary of these programmes where the consumers are allowed to have widest choices of commodities without affecting relative prices. The government can resort any of these measures for the betterment of the scenario of food security linking nutrition security.

Maxwell Daniel, et. al (2000), has prepared the Research Report-112, on the collaborative effort between International Food Policy Research Institute, (IFPRI), the Noguchi Institute of Medical Research and the World Health Organisation (WHO) to assess the Nature of urban poverty and the relationship between urban poverty and food insecurity or malnutrition in Accra, Ghana in 1996-97. The major determinants of food security and nutrition status has been identified in this case study in urban poverty together with the development of indicators of food and livelihood security that are appropriate for urban setting. In this research report it has been mentioned that the three organisations has made participatory community studies, household case studies, a household survey carried out in 19 areas of Greater Accra Metropolitan Area, and follow up interviews and focus groups. The goals of the study was to set up a framework for determining these relationships and offers decision makers policy options they can use to address the urban poverty's underlying causes. The objectives of the study were specifically –

1) To identify the constraints to livelihoods, income, women's labour and childcare practices which affect food & nutritional security in a major urban centre in Africa.

2) To understand the coping strategies of urban developers with poverty and identify vulnerable groups,

3) To develop the indicators of livelihood and food security appropriate for urban context,

4) To identify the policies & programmes to reduce urban poverty, food insecurity and malnutrition and

5) To provide high quality information to policymakers in natural and local governments, non-governmental organisations (NGOs) and community-based organisation.

Urban livelihoods in relation to different activities, household income sources, income inequality, various types of shock to livelihoods, households coping strategies at the community and kinship level and also at individual level,

inter household transfers reciprocal exchanges, borrowing and lending, sues group membership etc. were keenly studied by Maxwell. Households spending or expenditure pattern for both food and non-food items and source of a acquisition consumption of street foods, food availability, calorie intake in terms of mean availability of calories at the household level equivalent units per day (kcal / aeu / day) all this house been discussed by Maxwell in this report. This has shown a strong relationship between expenditures and caloric adequacy. Nutrition and health of women and children have also been measured thorough anthropometric indicators. Height for age, weight for age and weight for height for children using visual analog scale, where as average height, weight and body mass index (BMI) of mothers were checked together with the visual analog scale also. Care-giving behaviours and resources in the study area was also analysed. A multivariate regression investigation of the determination of child nutritional status and the theoretical model to support econometric approach used was the standard unitary household model. The former was used to determine the main constraints to achieving good child nutrition in Accra. Nutritional status was influenced by three important factors : food, care and health. Household food availability was captured by total calories per adult equivalent unit (aeu) per day and the price / 100 calories per acu each day (kcal/ aeu/ day). It is determined by food prices, expenditures household demographics and household tastes and preferences. Household food availability is not the significant determinant of the child's nutritional status rather individual characteristics of the child & mother i.e. the anthropometry are the strongest determinant. This research has identified several groups that had been hard hit by the economic changes that took place in Ghana during the 1980s and 1990s. Four groups in particular have been considered as highly vulnerable low income urban wage earners hurt by the economic crisis, the city's indigenous. Ga population who have lost their traditional livelihoods as the city is expanding, female – headed households who have few assets and with children in the 0 – 2 age groups and women with low educational levels and the fourth group is that who have poor employment opportunities together with the lack of access to credit and regulatory environment that constraints the activities of the urban self-employed. Another special group derived form this analysis who consume an adequate amount of food but spend a disproportionate part of their total income to acquire It. The rapid urban growth is a fact of life in Sub-Sahara

Africa and urban problems cannot be dealt with by addressing rural issues. Considering urban poverty, a balance between urban and rural poverty alleviation initiatives is imperative. Alleviating poverty be incorporating in direct means of enhancing the capacity of the urban poor to earn a living may be another policy prescription by the government. A major national policy strategy linking urban growth and other economic issues. Ghana needs to continue researching and developing processed foods derived from domestically produced foodstuff. Domestic rice production, processing and marketing must be expanded and quality to be improved to compete with imports. The policy issue must addressed the change in dietary preferences also.

Asfaw (et. Al, 2000) has discussed about the food security issues in Ethiopia, its magnitude and obstacles. The study have found out that the food intake level in the country is below the recommended dietary energy requirement set by FAO, 1993. And according to them the essential determinants of food security are access to fooe, availability of food and risks associated with either access or availability. Food security at the country level can be measured with the demand-supply indicator and is best monitored at the household level by direct dietary intake. The study has also discussed that rural population are hard hit by food insecurity. In Ethiopia, food supply problem takes two form – (1) large and growing long-term deficit in domestic production and the second is the country's inability to finance the needed imports to meet immediate targets for consumption levels. On this aspect the study has set two objectives to analyze the food security – to examine food security in the light of minimum dietary requirements and to project supply of and the demand for food grain up to the year 2005. methodology adopted for this study comprises time series data from 1973-98 colleted from the secondary source of FAO-STAT through internet services. The total time period was divided into – Period-I – the pre-liberalization era (1973-90) and Period-II – the post liberalization era (1991-98). The linear multiple regression was used to regress the coefficient of variation of per capita calorie consumption on the co-efficient of variation of per capita food production, the co-efficient of variation of per capita GNP and drought years as dummy variable, to examine the transmission of production and income variability into consumption fluctuation. The basic approach was to project separately the demand for individual

commodities on per capita basis and then multiplying the projected per capita demand with the corresponding projected population to get the total demand or consumption needs of individual food crops by the year 2005. in the result section the study has discussed food security in the light of calorie supplies which was found to be very low and unstable and the causes behind that were the poor performance of food grain sector aggravated with a high population growth. The national level of average food intake from domestic production ranged between 1600 to 1700 calories per day and was below the minimum recommended 2100 calories per day by FAO, 1993. It has also been observed by the study that the basic food grin supply forecasts revealed that the output of basic food staples will increase at a compound growth rate if the 1973-98 food production trends continues in the country. Together with the increased in cereal supply, pulses and starchy tubers will also increased. On the consumption side, with growth in per capita income and population expansion in the country, the demand for basic food staples will also expand at an annual rate of 3.03% during 1993-2005. The study while analyzing domestic production variance indicated that there is multi-dimensional nature of food insecurity in Ethiopia. To stabilize consumption, the study has reservation about food import which otherwise may have destabilizing effect on non-food goods imports. The Food imports should be kept low and must coinvde with increasingly high export earnings with stress on self reliance together with the increase in domestic production. The food production-demand projection for the year 2005, have shown deficits of domestic production which will persists. The study feels the importance of population policy an integral component of traditional food policy agenda.

K.P. Kannan with S. Mahendra Dev & Alakh Narain Sharma has made a study on food security where they expressed their concerns on food security (Kannan et al, 2000). According to them India's food security is likely to worsen where the demand is likely to grow faster than supply & integration of world trade is mainly responsible for this. The solution can be found out through PDS but targeting remains a problem. Research & Development may be a long-term solution in agriculture.

Ninno, Carlo Del, et al. (2003), in this literature have studied the various public policies, market and household coping strategies in Bangladesh which could avoid the food security crisis following the 1998 floods in that country. In 1998 the floods in Bangladesh covered two thirds of Bangladesh, causing severe damage to the major rice crop and threatening the food security of tens of millions of households. In this paper the contribution of government policy interventions were first highlighted including trade liberalization in the early 1990s to stabilization of rice markets during and after the flood. In the next section household impacts and coping strategies were measured and discussed using a panel data set covering 750-households in three rounds over a 13 month period, in terms of impacts of the flood on household assets, consumption and nutritional outcomes. For calorie consumption a static model was used. In the final section of this literature, the researchers have presented an empirical estimates of the contribution of rice market stabilization and government transfers to household food consumption. They have also viewed here that private markets contributed significantly to food security in that country following a major natural disaster. Import of rice from India supplemented domestic food supplies, stabilized rice prices and prevented further deterioration in household's purchasing power and calorie consumption. This literature specially illustrated the crucial role of private markets and appropriate government policies and investments programmes for maintaining food availability, supplementing household access to food and those efforts avoided a major food crisis in Bangladesh after the natural disaster in 1998.

Lodha, Neeta and Ritu Singhvi (2003), have tried to find out the relation between food security and nutrition, in this literature which is considered a challenge of the millenium. The researcher in this study have shown an in depth understanding of the food insecurity, hunger and malnutrition which are interrelated phenomena and is at the centre stage of various debates, discussions, strategies and policy formulation for a few decades now. According to them food security is a complex issue having several dimensions such as poverty, unemployment, famine, gender discrimination, equity, starvation, food and nutritional practices, human growth, political elements, natural disasters etc. Now, poverty has global recognition of both as a cause and consequence of food security. As most of the poverty stricken people live in the rural areas and depends

for their livelihood on agriculture, so this study is considering the agricultural development as one of the most important tools to tackle the problems of food security. They have visualised the world scenario regarding production of foods and the underlying factors that causes hunger which is aggravated by regional disparities and most importantly individual family or intra-household food situations. Then their discussion is heeding towards the challenge to Indian's development with respect to hunger and mal-nourishment, which have social and economic implications and costs too. Not only the sufferings of the poor are there for poverty, but the reduced productivity among workers, a decreased education in children, increased vulnerability to disease and death and 'wastage' in reproduction have got importance in their writing. For understanding poverty, on three aspects Lodha is going stress for estimation – first, a calorie norm recommended by Indian council of Medical Research (ICMR) is used to evaluate household adequacy, second, within every household there is a possibility that the food purchased and cooked is not allocated to its members is keeping with their requisite shares, lastly, pregnancy and lactation place an additional energy burden on woman gradually converted to maternal 'depletion'. Like other researcher, Lodha also identified a few main elements which encompasses food security are :- Availability of food; the quantity and quality of food supply; Access to food; Entitlement of food through purchases, exchanges and claims, Timing, severity of food insecurity and food utilization. In this literature with the picture of mal-nourishment they have visualized role of state intervention to ensure food security is gaining importance. Rural and urban wage employment programmes have sought to increase household purchasing power. Food for work schemes also aimed to reduce poverty and to increased calorie adequacy of the household. The provision of food at subsidized prices thorough the PDS helps in increasing availability of food grains to the households. Supplementary feeding programmes have reduced the number of biologically vulnerable. Numerous health programmes together with the Integrated child development services scheme have provided health care and nutrition education. So, this literature is basically the analysis of hunger and malnutrition arresting the concept of food security and throwing light on various government programmes to assess the millenium challenge.

Dubey, Amaresh and Orester Kharpuri (2003), in this literature delves into the problem of food security among the states in the North-eastern (N.E.) region of India. Dubey have studied that there is wide variation in the incidence of poverty across the states in the country. Since poverty is related to the inability to have enough food, there will be wide variation in food security at the individual level. It has also been observed that the study of regional variations in individual food security is closely associated with variations in poverty. Very little literature is available about the incidence of poverty among the smaller states in the NE region. The study have calculated the association of food security at the individual and household level and the incidence of poverty in eight states in the region. This study is probably the first of its kind in which NSS consumer expenditure survey data is used for counting the poor in the NE region which includes Sikkim also. In this paper the consumer expenditure data from two most recent quinquennial rounds of survey, 1987-88 and 1993-94, are used to study the incidence of poverty and food security among these states. Separate poverty estimates for the states in the NE region are not reported in the official circles. The household level consumer expenditure data collected by the National Sample Survey Organisation (NSSO) are used to study poverty incidence and access to food in the region. The data were collected during the periods, July, 1987 to June, 1988 (the 43rd round) and July, 1993 to June, 1994 (the 50th round). This paper have used the poverty norm, defined as the minimum consumption expenditure of Rs. 20 per capita per month at 1960-61 prices above which a person is considered non-poor. Since, the study is interested in spatial disparities, it has also considered different price vectors in different regions. For the purposes of computing poverty incidence, the study have assigned the Assam Urban Poverty line to the Urban Sector of Tripura, Meghalaya urban poverty line has been used for Arunachal Pradesh, Manipur, Mizoram, Nagaland and Sikkim. Manipur rural poverty line has been used for rural areas of Arunachal Pradesh, Meghalaya, Mizoram, Nagaland and Sikkim. It has been observed that for the states in the NE Region, the rural poverty lines are higher than that in the urban sector. After measuring the poverty and its incidence among the states in the NE region, disparities in development, and access to food in the NE region, the study has also measured the role of PDS and IRDP in ensuring food security in the NE region. The main findings of this paper is that in 1993-94 the NE region had become poorer as compared to 1987-88. The change

over the two rounds happened to be exactly the opposite of what had happened at the all India level. Out of the eight constituent states, Meghalaya and Sikkim are the only two states where poverty rations have declined over the two years. The urban sector has a much lower incidence of poverty than the rural areas of the region. This findings according to Dubey and Kharpuri has important implications for food security in the region as a whole as well as within the states in the region. They have viewed here that the PDS is accessible to most of the households in the region and that it is the lack of purchasing power that comes in the way of ensuring food security to them. This is relevant and consistent with the economic structure of most of the states in the NE region where the most important source of earning is the service sector and job opportunities are available only in the government services which centered in urban areas only. Therefore, this study is suggesting the creation of more income generating opportunities for ensuring food security in this region and accessibility of poor households to this in the rural areas in the short run is an essential one. But this effort is actually neutralized by political instability and ethnic violence in many states of the region. So, the study feels that general security situation in the region is a determining factor for both the overall development of the NE region and the level of food security.

Ahmed, Shahid and Saba Ismail (2004) has conducted a study related to food security in the emerging economic scenario of India. In the introductory portion they have defined the food security rather household food security from different angle. In their study they have shown comparison between Developing World and the Asia regarding food security scenario. According to them during the last twenty five years the people of these countries are having improved standard of living. The number of poverty stricken people have declined, the average incomes per person have doubled, infant mortality rate has declined by 50% and people are expecting to live longer by ten years than in 1970s. With this development, world agricultural productivity shown sharp rise together with the raised supplies of per capita calorie. Real food prices have also fallen by 50% or more. The diets of the consumers have varied both in terms of calorie consumed and variety of foods eaten with the increased productivity globally. They have discussed in their article about the investments in research both at national and international levels and deliberate actions taken in the past as the driving force behind these improvements

in these countries. Despite these improvements 1.3 billion people are struggling with poverty. The number of hungry, undernourished people are remarkable present in these countries. Around three-quarters of hungry and rural people are living the food grown areas. In Asia Green Revolution technologies helped triple cropping by the successful small holder farmers. Still the battle to ensure food security is far from won in South Asia specially. They have discussed the Indian Food Security Management and Per Capita Availability of food grains in their study. They have viewed that at the time of Independence the country has suffered two major nutritional problem the threat of famine and acute starvation and the other was the chronic under-nutrition due to lack of low intake because of low purchasing power. To protect the country from the threat of famine the Govt. of India adopted many policy packages like land reforms, huge investment in agriculture, green revolution technology, positive price policy for producer of food grains cheap food through PDS, buffer stocks for drought period etc. As a result the country remained insulated from the very high world food prices during 1970s and 1980s. But this result did not touch all Indians. They have discussed the per capita availability of food grains after independence and compared the scenario between 1951 – 91 and 1991 – 2000. Here, they viewed that the initial increase in the par capita availability of food grains and its maintenance could not be maintained. They have also stressed on the new economic scenario of India where the food security problem in particular will assume importance with the increasing population and growth rate of the country, higher prices of agricultural commodity withdrawal of subsidies on essential inputs, affecting the agricultural output in an adverse way and the fiscal correction. The economic reforms in recent year in India better known as stabilization and structural adjustment programme have its far-reaching impact on agricultural exports and imports. The study have shown the per capita availability of food grains and the management of food security in the changing economic scenario through demand and supply of food grains. Availability of food grains is important from the food security point of view. But adequate purchasing power is also necessary to avoid food scarcity. They have discussed here that lack of purchasing power due to unemployment and poverty results in food insecurity. According to them, at the national level self-sufficiency of food grains and at the local level availability of food grains at affordable cost has not been transformed into the household level food security for

poor people. In spite of mounting food subsidies, evaluation studies indicate that supply of subsidized food grain through PDS has not resulted in improvement in household level food security. The availability of per capita distribution of food grains was just 16 kilos/year at the all India level. This is very much sufficient to provide and maintain food security of the poor and stabilization of market price is also possible. According to this study corruption is so rampant in the delivery system that have-nots are not able to get food from the PDS as entitled to them. They have viewed the mounting food stocks amidst substantial poverty and under-nutrition put questions on our agricultural policy. Because, it has been observed by them that at the global level, those countries that have achieve greater national and household food security to all have a track record of strong political emphasis on agriculture, careful consideration of economic incentives for agricultural production and human and economic investments in research, extension and training. Similar type of economic and political emphasis is also essential in India. The agricultural policy according to them in India must target the achievement of the goal of growth, allocative efficiency, equity and sustainability. And this requires a lot of changes in policy approaches towards agricultural sector to provide the food security. The policies suitable for India viewed by the study are – improving emergency preparedness planning for providing food aid during natural disasters like drought, flood, earth quakes etc., to accelerate growth in the food and agricultural sectors which provide direct sources of food and income to the persons involved, improving rural development programmes etc.

Kenichiro, Yamada et. al (2004), in this literature has examined the use of natural biological resources and their roles in household food security in North West Laos. The present study focuses on agriculture – forestry – based livelihood systems of North Western Lao people through village studies, including semi-structured group interviews, questionnaire survey, participatory observation and wealth ranking in Luang Namtha province. Rural people of the study areas have adopted practical means to cope with rice deficiency. Kenichiro have mentioned here that other research findings reveal that natural biological resources play a significant role in household food security. Natural biological resources in this study, have been defined as all the biological materials that may be extracted, from natural ecosystems and utilized within the household, marketed, or that have

social, cultural or religious significance and play an indispensable role in diversifying daily diet of local people. This is an important contribution to their food security because though household access to staple food is an important part of household food security, other food items that comprise household's daily diet, are also to be considered. The study has also identified another role of natural biological resources as a source of cash income. The study has generalized the fact of environmental degradation in Laos also with other parts of the world during the last decade caused by increased population pressure and expansion of agricultural land induced by changes in the economic system and spread of market economy. As Laos is bordering with China, which is the main importer of natural biological resources, cross border trade in these resources is also taken into consideration by the study. The field survey was done between May, 2000 and September, 2001. The study carried out in 13 villages of Luang Namtha Province of the North Western part of Laos. Keeping in view the aims of study, the researcher has examined the diversity of Livelihood systems in an Agriculture-forestry complex, farming activities, about cash income, hunting and gathering activities, sale of natural biological resources and rice balance. The findings of the study suggest the necessity of reconsidering the role of forest resources in the development strategy of the mountainous areas. Thus, forest land is a treasure house of biological resources and its protection is undoubtedly important, but this does not always mean that people's access to forest land must be prohibited. Forest land is also a growing space of natural biological resources such as non timber forest products which are renewable resources and their growth can be enriched by regular intervention by human beings. In forest resources evaluation, more emphasis to be given to the production aspect of forest land for the bio-diversity conservation for the next generation. The researchers has viewed that Laos, particularly the study area, still has comparatively rich resources, which can be a great economic advantage to the area if managed in a sustainable manner. The development strategy of the mountainous areas should be a combination of agriculture and forest use with a blending of shifting cultivation and productive fallow.

Hussain, Monirul (2004), in this literature has discussed the food security in the North-eastern region. This article reveals the fact that the entire north-eastern region of India is deficit in food production. In addition to the worsening problem

of land-less-ness, a significant section of the population of this area suffer from environment, development and conflict induced displacement. Food security of the North-east has been ignored so far due to the excessive engagement with questions of 'identity' and 'insurgency' in the region. The researcher has mentioned in this connection the very concept of food security here, which is based on certain fundamental human values aimed at protecting humanity from the scourges of famine, hunger and malnutrition. Therefore, it is not wise to look into the question of food security in isolation from the larger question of 'human security'. The problem of food security would be linked fundamentally to the human security. The researchers have observed that only in recent times the emphasis shifted gradually towards human security. In today's world the food security is regarded as one of the constitutive components of human security and with this idea one needs to locate the individual or citizen in the context of state, civil society and the emerging market situation. The inter action between them will determine the issue of food security. This study is very relevant with the economic and political scenario of the north-east India in macro aspect of the issue of food security. The study has explored the question of food security in the north-east in general and Assam in particular. As mentioned by the researcher in this study that entire north-eastern region as food deficit and perennially dependent on the rest of India. The simultaneous paradoxical co-existence of different modes of agricultural production from slash and burn method in the hills to the slow penetration of modern methods in the plains of the Bhramaputra Valley, the Barak Valley in Assam and the small Imphal Valley in Manipur has made the scenario a typical one. Here slow pace of urbanisation and extremely lethargic and distorted process of industrilisation have failed to generate alternative means of livelihood in this region. The state here is engaged in downsizing of the government machinery and shrinking PDS together with the environment, development and conflict – induced displacement has generated a new category of people or cluster of communities – the internally displaced persons (IDPs). Though it is a temporary or transitory status, the IDPs are most vulnerable people susceptible to food insecurity in the north-east and is the essence of the study carried out by Hussain. The plains of Assam suffer immensely due to floods and river-bank erosion and the plight of IDPs of river bank erosion is worse than flood erosion because here land becomes a part of the

river, bed. During these crisis not only shortage of food grains occurs but their stored food grains and standing crops are also destroyed. Ethnic conflicts, political environment of Assam also gave rise to food insecured group. Therefore, the study by Hussain suggests that there is the need to create condition for ensuring human security of each and every community as well as individual in the North-east which will enable us to address the problem of food insecurity in a better way.

Ramachandran (2004), in her article has tried to visualize the fact that when Indian economy is backed by unprecedented high levels of foreign exchange reserves and vast stocks of grain supported by a good monsoon after several years of scarce rain fall there exists a large proportions of the population under-fed, unlettered and devoid of hope. That is why she feels that issue of sustainable food security is very much relevant in this context and discussed about the vision for new India in [Dr. A. P. J. Abdul Kalam] the line of thinking of President, to stress on the development of both the natural resources as well as human resources. Referring many more economists on this issue, Ramachandran has said that adapting the goal of food security would force poverty alleviation programmes to stress on vulnerability, seasonality, coping mechanisms and intra household distribution of resources. Because unless the human resource is not adequately nourished with the capacity to function at peak level, both mentally and physically no broad-based development can take place. The country's commitment to World Food Summit towards a "Hunger Free India" by 2007 was also mentioned by Ramachandran in this context. She has taken a look at the economics of hunger with hidden impacts of hunger and malnutrition which has a powerful impact on child deaths. She has suggested in her write-up the Food Security Net and The Current Model in this regard. A mention of shift in food policy focus from macro food security to food and nutrition security at the individual level, i.e., at micro level was made by her. A series of directives by the Supreme Court as an intervention has strengthened the food security scenario regarding implementation by both the Central and State Government within a fixed time frame was an important observation by the study. According to this writing the country's food-based safety nets comprise consumer food price subsidies, supplementary feeding programmes and food for work schemes. There is a renewed focus on efforts for

elimination of hunger and malnutrition, providing better health care and education and an improved quality of life for all. For the change in focus to micro food security from macro food security, Triple Thrust Approach is considered by the study in agriculture, nutrition and health, and sustainable livelihoods, Raising cropping intensity is possible only with the assured water to meet future food requirement and priority should be given to the development of rural infrastructure support. Non-farm activity and generation of employment should be stressed. Regarding nutrition and health the change in policy level has happened through nutrition security at family and individual level. Persisting malnutrition can be addressed by universal screening of all pregnant women, infants, pre-schoolers and school children nutrition monitoring and surveillance, targeted food supplementation, promoting appropriate intra-family food distribution and dietary diversification to meet nutritional needs is suggested by the study. Long term solution to the problem of food security must necessarily be sought through sustainable livelihoods. The study thinks that anti-hunger programmes are most effective when food assistance is sensitive to various social, economical and cultural realities. Ensuring individual food security amidst of surplus is the key to sustainable development is very relevant to the India's recent economic scenario specially economics of food scenario.

Anda Gustavo Gordillo de (2004) in his article "Food Security and Family Farming" discussed the ability of a proposal given by 148 Nations as a result of the Rome declaration. In this paper he has viewed the Latin American and Carribean situation of food insecurity. He has narrated about FAO (Food and Agriculture organisation) of the United Nations and its launching of the special programme for food security (SPFS). He made an enquiry about the political and theoretical viability of such proposal in Latin America. The study has considered the social mobilization as a generating means of institutions from the stand point of Latin American profound changes. The central hypothesis formed by the study is that the structural link can be centered upon family farmers. According to Gustavo, the institutional framework is energy from continuous changes are actually reflecting the right to food as a territorial expression of civic rights and inviting decentralization in the framework of a regular development policy. Anda has described in his article process of developments in the rural Latin America in

recent years which is a long transitional change towards institutionalized forms of democratic governance. In this scenario he has realized the fact that strengthening the role of family farmers means improving their competitions in markets, for land products labour and financing which requires their accessibility to information needed for them to be operative in those markets. Information asymmetry, misallocation and scarcity of public goods hinder the development of rural sectors. To raise the income level of the family farmers is to be the target of different policy formulations and regulations for allowing then to enjoy food security. He has also suggested a minimum programme to support agriculture and rural developments. Anda has stressed the country side to be developed. Basically this article is an analysis of different policies to improve food security of the rural people specially the family farming community and a search of the implementation of those policies in the rural areas of Latin America and Caribbean countries.

David, A.W.P. (2004) addressed transient food security in his article. He has defined food security, found out factors and types of food security and then defined transient food insecurity in his writing. Transient food insecurity according to David is the temporary loss of availability, accessibility and absorption of food. David in his article has tried to link up the issue of food security with the disasters, based on the Annual World Disasters Report produced by the Red Cross in 1999. The paper stressed on the magnitude of the disasters related problem, loss of livelihood and effects on food absorption, and have indentified the most vulnerable section as poor. As all know about the women's is role in the food production, process and distribution of the same at the household level and also their additional role during the emergency. The relation between food security and migration has also been taken care of in his writing as because during emergencies there is a natural tendency amongst population to migrate to other places in search of livelihood. Then gradually David searched about the special features of disaster induced hunger and for this he has referred and analyzed the cases of Bhuj Earthquake, Ahmedabad Riots, Rajasthan Drought and Assam Floods-2003. He has mentioned about the of "SANTUSHTI" a project which made provision of food for creating assests, for the reduction of impact of disasters. Other initiatives of the project is to prepare acceptable projects and

preparation of a tolerant environment for the execution of the project. The four major disasters cited the evidence of the food insecurity which have affected the community during and after the disasters. Various defects were also been identified by David in the relief operation specially the food security affair. The article has showed the lessons learnt from and suggested future recommendations and action plan to restore food security. Some of the suggestions are establishing local co-ordination networks in the areas of health, water and food, the vulnerable groups should be focused in the food supply and distribution chain management, rapid food insecurity assessment methods and joint monitoring system to identify food insecured communities. The immediate problem of malnutrition should be addressed linking humanitarian food requirements with development projects etc. Looking at the today's world, this article can throw light on food security and its relation to disasters as the world is regularly hit by the different patterns of disasters and here is the importance of this article by A.W.P. David.

Krishnaraj, Maithreyi (2005), in this literature have discussed about food security – for whom it is being conceptualized and how it can be achieved. Here also food security's three pillars - availability, accessibility and affordability got importance. She has also viewed that while availability and accessibility relate to production and distribution, the affordability question is linked to Amartya Sen's concept of 'endowment' and 'exchange entitlements' that is, the resources at one's disposal that determines one's capacity to buy food. This study deals precisely with the problem of endowment and exchange entitlement especially with regard to women. The attention by the researcher is drawn to the resources, mainly employment, available to women for procuring food. Apart form inadequate opportunities for wage labour, lack of command over productive resources acts as a major constraint on those women who do undertake farming for the household. She has mentioned in this literature that census relies on ownership of and when the question of definition of cultivators comes. When women actually cultivate they are seen as family labour. In the proportion of men and women cultivators calculation, this fact is not reflected, which also led to the controversy of 'feminization of agriculture in India'. Krishnaraj examined the farming system of 'north-east India' in detail, where women preserved the bio-diversity, have extensive knowledge of seeds and their characteristics. Women's share for

exceeds that of men, in terms of total amount of work. In north-east excepting Garos and Khasis, all societies are patrilineal. Here, women are excluded from community decision and poor economic conditions necessitates the greater co-operation in joint activities which hide unequal power in gender relations. Participation in the production of food, does not guarantee commensurate returns. While she has studied other work on food security among poor women and rice farming, she could find out the general situation only, which suggests the urgency of public measures for the protection of this vulnerable section.

Marinda, A Pamela (2005), in her Study tried to find out the effects of gender inequality in resource ownership and access on household welfare and food security in rural Kenya's West Pokot district in Rift Valley province. The research, objective of Marinda's study is to assess gender-based differences regarding access and `ownership to and control of land financial and human capital & how the household socio-economic warfare and food security is affected by these factors. The specific objectives- for the study are to asses inter and intra-household allocation of land, human capital and financial capital based on gender, to determine the food security situation in the study region and make comparisons based on the gender of the household head and access to key production resources- land, financial capital and human capital, to analyze technical efficiency in crop production in male and female managed farms to assess the cost of unequal resource allocation in terms of nutritional status of household members, agricultural productivity returns to non-agricultural activities and fertility rate and child morbidity . The study made by Marinda is based on the following hypotheses for testing :

I) There are significant differences in agricultural productivity between male and female- headed household as a result of limited access of female- headed household to land, education and financial capital,

II) Women's limited access to education and financial capital leads to poor nutritional status of children within household,

III) There are significant differences in household incomes by level of education of respondents and

IV) Given the same level of production technology, there should be no significant differences in the level of maize productivity between male and female farmers.

Hence, any significant differences would be attributed to differences in access to production resources. The study has tried to find out the relation between gender equality, economic growth and food security. The study has discussed the role of gender in food and nutrition security and viewed the positive impact of female control of income of household food expenditure, calorie intake, and anthropometric indicators in Asia, Africa and Latin America. In this study gender equality has been measured with two composite indexes- gender development index (GDI) and gender empowerment measure (GEM). The household level food security in her discussion centered around poverty. From Welfare Monitoring Survey (WMS) she could identify the food in-secured groups which are concentrated among female headed households, especially in rural areas, urban poor, poor pastoralists, the poor in drought prone areas and households that are resource poor but live in high, potential areas. In this study also for child nutritional status body characteristics of the child and for measuring adult nutritional status BMI (Body Mass Index) has been used. So far as methodology part of the study is concerned, both unitary model (where the household posited to act as a single decision marker) which is also known as common preference model or altruism model or benevolent dictator model and the bargaining model also known as collective models were used to known whether household welfare and food security at the study site are sensitive to differences in the distribution of income and human capital between man and woman, Multiple regression model has been used to find out any systematic differences between female-headed household and male-headed household in crop productivity. To measure the production frontiers of male and female farmers Cobb-Douglas Stochastic Frontier Analysis model was used. Mincer's theory of investment in human capital examined the relationship between schooling and earning in this study. Descriptive statistics helped out the analysis of access to credit and savings behaviour of household members in Marinda's work. The tools used for determining the household food and nutrition security are dietary assessment and indices of household coping strategies given by Hoddinott (1999). Prediction of malnutrition was done by binary logistic regression. Two stage least square (2S

LS) estimation regression analysis was used to determine the child nutritional status by Marinda in her study. Gender division of labour in crop and household production activities were considered with time use for on- farm and off-farm production as well as household production. So far as selection of survey site is concerned multi-stage sampling was carried out for the ensurement of representativeness in her study and 1999 population census statistics was used as base. She has made purposive sampling of two divisions out of ten division in West Pokot in first stage. In second stage, random sampling was carried out by her for selection of four locations from each of the divisions. In the third stage, again random sampling was done for the selection of eight sub-locations from each of the locations. With the help of sub-chief of each sub-division male and female headed household were identified & a list of this formed the sampling frame. The have used the SPSS sample selection function hare to calculate the simple size and using this method she has selected 200 households for her study. For data collection cross- sectional survey method was used by her of three different agro-echological regions, to ensure and have clear picture of the food security phenomenon in the region. Here both the transitory and chronic food insecurity was present. Primary data was collected through standardized questionnaire together with group discussion and market survey. For food consumption survey a seven day recall method was used. Secondary data were collected from international publication and national data on various related aspects concerning West Pokot district. In finding or the result for her study revealed that male was in an advantageous position with respect to education, access to property in the from of land. Women were engaged in both farm and household activities. In terms of availability of food household with their own production of food were more food secured. In terms of use and utilization of food neither the average male or female respondents the recommended dietary intake for their age and level of activity. There were in sufficiency in respect of child nutrient intake. Anthropocentric analysis in her study regarded the high incidence of stunting, wasting and underweight among children. Children in female headed, households were mostly undernourished. BMI was normal for child-bearing woman in more then half of the studied simple but underweight among them were prominent. Female- headed household used more severe coping strategies during food-scarcity period. High frequency of illness was present in the study area. Income from non-farm source

enhanced the productivity level of the households in both cases. The household food expenditure, food stores and household size were detected as the most important factors in determining food security so far as calorie and protein intake among children are concerned. Nutritional status of children mostly depended on education of mother, which is the most stunning analysis of the study. And she has concluded that in her study there is a clear evidence of access to human capital, financial capital and land have an impact. Impact on household food and nutrition security and on the socio-economic well-being of household member where the household head and household members had good combination of access to education, land and income were food secure households in terms of availability, access to and utilization of food. Therefore, in West Pokot food insecurity cannot be solely blamed on erratic climatic conditions in region. Policy recommendations by her were in forms of investment in education and healthcare services, eradicating discrimination in land ownership, financial support for woman, nutrition and agricultural extension campaigns, micro-nutrient supplementation, using of labour- saving technologies, development of rural infrastructure training and labour market participation together with rural development activities.

Anderson (2005), has written in his article about the food security in South Asia in the 2020 perspective. Initially he has discussed about the report of Food and Agriculture Organisation of the United Nations (FAO) which shows that 303 million people of South Asia are food lacking sustainable access to sufficient food to lead healthy and productive linens. According to the study, malnutrition in South Asia is prominent nad the effort on the part of this region to reduce malnutrition is very slow but steady progress has been made since mid 1980s. death due to malnutrition among the children under five is remarkably high and who survive, irreversible damage occurs to their physical and mental development. Low birth weight is also responsible for this malnutrition. He referred the case of Bangladesh, India, Nepal, Srilanka and Pakistan where there is clinical Vitamin-A deficiency among pre-school children than other Asian countries. Anderson has observed that food insecurity exists not because of lack of food but because the people are too poor to afford the food that is available. The study has mentioned that in the year 2020 South Asia will face substantial food insecurity as projected by IFPRI if no change occurs in national and global

policies. For this required changes he has identified nine driving forces – (1) Accelerating globalization, including further trade liberalization, (2) Sweeping technological changes, (3) Degradation of national resources and increasing water scarcity, (4) Emerging and reemerging health and nutrition crises, (5) Rapid urbanization, (6) The rapidly changing structure of farming, (7) Continued conflict, (8) Climate change and (9) the changing roles and responsibilities of key actors which are globally important where relative importance may vary amongst countries. For achieving sustainable food security for all, policy action and institutions that may reduce food insecurity, malnutrition and unsustainable management of natural resources within the context of the driving forces mentioned in the study also include some other policies as priorities are public investment, investment in Human Resources, improving access to productive resources and employment, policies for pro-poor technological change, increasing globalization, agricultural input and output markets and rural infrastructure, rural capital and labour markets, risk management and coping strategies, rapid urbanization, rural industrialization, environmental concerns and less furred areas, growing water scarcity, decling soil fertility, impact of HIV / AIDS on food security, etc. Anderson had shown his concern not only about the required investment and changes in policies and institution involving huge money, but also with substantial payoff in terms of economic growth, equity and substantial management of natural resources to the benefit of both well-fed and food insecure South Asians. This study is revealing the present-day scenario of South Asian region where food security is in question together with high food prices and drastic changes in climate.

Thorat Sukhdeo & Joel lee (2005) made a study on caste discrimination and food security programmes. In 2003 a survey was conducted by the Indian Institute of Dalit Students (IIDS) in 531 villages of 30 district in 5 states to reveal the patterns of exclusion and caste discrimination which hampered the real intention of the Govt's mid-day meal (MMS) and public distribution system (PDS). From that survey this article discussed about the key findings in the form of the dalit participation & also tried to measure the physical accessibility, participatory empowerment & community-level accessibility in the said programmes. Of the five surveyed states – Rajasthan, Uttar Pradesh, Bihar, Andhra Pradesh & Tamil

Nadu two states Andhra Pradesh & Tamil Nadu have implemented the MMS under which hot & cooked mid-day meal was provided at free of cost to the children at govt. schools. The other three states – Uttar Pradesh, Bihar & Rajasthan have not implemented the MMS. Instead of that they have continued the programme by providing a fixed quantity of dry grain to the school children studying in the govt. school on a monthly basis. In their study Thorat & Lee has observed and discussed about the MMS organizers, the locality of the school whether the upper caste areas or in the dalit areas, who are the cooks – from the upper cast or from the dalit section. There was the large scale opposition against the dalit cooks by the upper cast have also been noticed in the surveyed areas. The PDS was the targeted PDS in all the surveyed villages in the five states. The major no. of fair price shops in the dalit colonies was 30% & in the Andhra Pradesh villages. The lowest is found by them is in the state of Rajasthan. Regarding distribution of PDS items favoritism was observed in the case of upper caste population in the surveyed villages as pointed out by Thorat & Lee. The PDS dealer served the upper caste throughout the week, whereas dalits were served occasionally once or twice in a week, a strong case of favouritism identified by the study with an essence of untouchability. The study made by them showed that where the dalits have higher participatory power in MMS & PDS there is the case of lower exclusion & caste distribution. The state Andhra Pradesh has the highest percentage of dalit cooks, dalit organisers & MMS implemented in the dalit localities & reportedly caste discrimination was less. That way the purpose of MMS to reach all school children have succeeded in attaining the goal. Conversely, Rajasthan has the lowest no. of dalit cooks organisers & MMS implemented in the dalit localities. Which reflected caste discrimination & create a doubt in mind about the attainment of the goal of higher accessibility & participation in the MMS. In Andhra Pradesh, the success story reveals the fact of civil society's initiative & active participation of NGOs, dalit women's group together with the govt. willingness & initiation in implementing the programme with sustained people's movement. They have identified & suggested two policy measures to tackle the exclusion & caste discrimination. First, Govt.'s relocation of the MMS & PDS in dalit colonies or caste neutral areas & Second, the Govt. can seek the joint effort from NGOs, dalit women's group & community to implement and monitor the scheme. Then only incidence of exclusion &

discrimination can be avoided & accessibility to the programme can be assured to have food secured population in every corner in the country.

Tarozzi, Alessandro (2005), in his article has studied the role of Indian Public Distribution System (PDS), as a provider of food security in India in the state of Andhra Pradesh. Here, together with the discussion on role of Indian PDS he tried to found out if there is any negative impact of PDS on child nutritional status through anthropometric measurements. In the existing literature several insightful descriptive studies of the programme that analyze its functioning and ability to reach the poor and the implicit subsidy it offers has been revealed. Tarozzi has observed that given the size of the programme and its importance in policy debates in India, the evaluation of its role in improving the nutritional status of the beneficiaries is still missing. The goal of this article is to fill this gap. The researcher in his writing used the data on child anthropometric indices from the 1992 – 93 Indian National Family Health Survey (NFHS). On the non-availability of child height during the survey period the only anthropometric indicator used in the study is weight-for-age which was recorded for 1575 upto 4-year-old children from a sample of 4276 women. He has supported his consideration of the only indicator by stating that it is the best measures to assess children's nutritional status because weight responds rapidly to changes in calorie intake, which is an well accepted fact also. A few months after the price rise i.e., a sudden drop in the level of the subsidy offered by the system that took place in the state of Andhra Pradesh, the health survey started to record weight for a large sample of children. The data collection continued for several months, so that children measured later lived for a longer period of time in a less favorable price regime. In NSS data, actual calorie availability calculation was done by using the household consumption information of more than 200 different items and in the study this information has been used by Tarozzi. Non-parametric growth chart and its analysis was used first in this study. Later the study shifted to parametric and semi-parametric analysis to separate the effect of the change in PDS rules from that of any systematic difference across family units interviewed in different months. Difference in differences estimates were also taken to compare child out comes in Andhra Pradesh with that of the children from the other states e.g. Tamil Nadu, West Bengal and Madhya Pradesh over the same time span. The

researchers has viewed that while he has used a number of different estimators, the result showed that a subsidy reduction estimated to be equivalent to about 5% of the poorest household's budget, did not affect child nutrition, as measured by weight-for-age. A (-)ive impact was found on only girl weight but not significant statistically . Therefore, according to this study, relatively large changes in food subsidies can have little or no effect on child nutrition.

Shariff, Abusaleh (2005), in this article has analysed the household food and nutrition security in India. The scholar here could identify the incongruence between adequate food supply at the macro level and food insecurity and under-nutrition at the micro-level among a large part of the population. This can be attributed to various supply-and-demand constraints, including lack of purchasing power among poor people and inefficiency in the delivery of public food programmes. The causes for micro-or-household level food insecurity have been due to either the lack of purchasing power, high food prices, food shortage, poorly developed markets or some combination of these factors. Natural calamities also according to this study, such as floods, cyclones and drought, have also brought food insecurity. After identifying all these the literature paid attention to the structure of food and nutrition insecurity among households were chronic food insecurity, nutritional insecurity, lack of food absorption, and transitory food insecurity received special importance. The vulnerable groups according to this study are those who lack land and other assets, live in drought prone areas, belong to tribal groups and live in forested areas, belong to scheduled castes or live at high attitudes and have higher degrees of food insecurity. Rise in food prices significantly affects these groups. In connection with this the study have discussed the household and gender dimensions and their measurement when the question of intensity of food insecurity at the household level are concerned. Dietary practices, patterns in nutritional intake and coping strategies are also taken care of in this study. Different food and nutrition programmes that have been undertaken in India since independence for achieving food security retrieved here by Shariff. Nutrition supplementation, midday meals, ICDS, dietary supply in hospitals, vitamin A supplementation, salt iodination and iron and folic acid prophylaxis are only some of the important programmes that have been put into place for a food security strategy. There is also suggestion on the part of this study in the form of

market intervention strategies to contain prices and arrest the reduction in food supplies. Evaluating income transfer, subsidized food, and nutrition programs are important to improve their efficiency and targeting. The study could find out that PDS has not lived up to the people's expectations especially in the north and northeastern states. As in other studies made by different scholars this study has also noticed that use of PDS varies by religious affiliation and education level. The use of surplus food stocks in innovative ways for promoting female literacy programs and school attendance should be explored. The study is having the view of asset creation through community work such as irrigation channels, wells or protected water-sheds to improve the livelihood of not only the family but of the entire community as well. This paper is not using any methodology or setting any objectives to achieve but only discussing the crux of the problem of food and nutrition security which have been analysed in an literal way. The role of different government programmes and remedial steps to improve the situation have been shown by the study.

Rao, Nitya (2005), in this literature have made discussions of rice farming systems, and in the process have tired to reveal the relation between gender equality, land rights and household food security and put questions on some of the assumptions being made therein. This study has made a brief analysis of shifts in various policies and practices which embraces both the international and national arena of the economy in terms of agricultural and production and land management as vital for food security. Feminist scholar's views have found place in his writing together with the different conferences and committees on women to raise voices over the issue of land rights for women. The study focuses on A. Sen and Zean Dreze's views on chronic under-nutrition which is related not just to food intake, but also to access to education and health care, employment opportunities and the provision of security as a back-up against entitlement failures within society and where women's food entitlements are more likely to be quasi-legal involving common property resources and social support systems if not just direct control over land and production. Attention has been given to rural societies of Asia and Africa, with growing population and rising pressure on land,

which have shown that diversification of livelihoods become essential here both for survival and spreading risk. Given the disadvantage faced by women in terms of lower literacy levels, less paid jobs in the labour markets, restrictions on mobility caused by responsibilities for children and household maintenance, men have usually moved into non-farm activities, leaving women behind in rural areas to tend the land. These evidences are very clear in Zimbabwe, Tanzania as well as in India too, and the world 'feminisation of agriculture' again comes here, because women are surpassing men in agricultural field activities. The researcher here points out the relevance of growing emphasis on women's access to resources, particularly land, for ensuring household food security. National Policy in India e.g., the 1st FYP, document, Report of the Committee on Status of Women in India (CSWI) in 1974, the 6th FYP, the 7th FYP, the 8th FYP, there was a stated commitment as have been noticed by the researcher to social-justice and redistribution through land reform, which recognizes the inequalities in landholding and one of the primary forms of social and economic inequality. So far as implication. Rao in his study has examined the implications of several elements for both household food security and gender relations some of them are – additional responsibilities for women, focus on group activities, especially in relation to waste land, male role as providers, changes in livelihood systems, changes in macro-policies, lessons from land struggles etc. His examination of all these elements has revealed that it is the socially embedded nature of land within kinship and marriage system, its strong association with cultural symbolism and identity which makes it different from other aspects of gender inequality such as violence, sexual harassment, poorer literacy or health status, and also different from other resources. The concept of land rights becomes more ambiguous, together with its significance. Therefore, the means of achieving land rights though non-negotiable appear to be more diverse and contextual. After examining and analysing different national and international scenario the researcher feels that with increasing land scarcity, combined with diversified livelihood systems, as well as the broader understanding of food security, land alone cannot give women work and income, improve their status or even ensure household food security. This has to be integrated with other opportunities as well conscious attempts to shift macro-policies to support women's work in the rural economy together with the gendered valuation of work and worth.

Kumari Veena & R.K.P. Singh (2006) made a study on rural Bihar at the village level. In this article giving the definition of food security they have actually made a micro-level study on food and nutrition security at household level. The objectives of this study are to examine the food security at household level through the analysis of physical access to food grains for consumption, access to health services, safe drinking water, hygienic conditions and basic educational. The methodology of the study followed primary data base through random survey method in selected villages – Krishnanagar, Mahishi & Tilakpur of Bhagalpur district where the socioeconomic situation were truly representative. Sample size was 120. Where samples were from land-less marginal (< 1 hectares) ,small (1 –2 hectares), medium (2-4 hectares), large household (4 hectares and above) selected randomly. The data were collected twice on consumption pattern of the households with an interval of one month on 2000-01. The data collected were related to the seven proceeding days of the respective interview dates. The female members of the sample households were interviewed to have correct information on consumption as they are responsible for preparing & serving food items to the family members. The findings of the study discussed the availability of food materials, intake of food materials, intra-family consumption, access to health & hygienic facilities and living conditions of the selected samples. The net availability of food grains for consumption was calculated on the basis of the information collected from respondents under study. Household's total annual available sources were production, purchase & wages in kinds. It has been observed by Kumari & Singh that large farm households have comparatively higher availability of food grains due to large scale food grain production because of larger land property. Non-consumption of food grains was also to these group of households. Land-less & marginal farm households was compelled to sell their food grains to meet urgent needs. Medium farm households had also comparatively high availability of food grains because they preferred to keep stock of food grains for making payment of wage labours. Regarding intake of food materials the definition on Recommended Dietary Intake has been defined by them according to the norms given by the expert committees of different countries depending on the information on nutritional requirements & national food habits & are given for different groups. According to NSS, 1999, in Bihar, per capita annual intake of important food materials like cereals, pulses, oils & fats,

vegetables, root & tubers, milk, meat and fish account for 90% of the total food consumption of the household. Depending on this information given by NSS, the study showed that in sample villages also these types of consumption are prevalent. Land-less household's consumption pattern has shown that they consumed comparatively high quantity of cereals annually. Annual consumption was comparatively high for small medium large farm households under study because almost all the households have agriculture as the primary or secondary occupation & could produced sufficient quantity of cereals for consumption purposes. Moreover, in Bihar during the last 10 years of the study period price rise in the case of cereals was not significant & cereals was accessible. The pulses consumption by medium households was higher which was probably due to higher production by them. Consumption of leafy vegetables, oils & fats, fish & meat which are considered as nutritious food is lower where purchasing power is the limiting factor in the rural areas. Intra-family consumption analysis shows that female members are still far behind than male members with regards to the consumption of milk, vegetables, pulses, oil & fats where it support the testing o hypothesis also. Despite the availability of milk, the children of the weaker section of the study area consumed less & preferred to sell milk for purchasing other domestic requirements & cheap food materials. So far as health and hygiene facilitate are concerned, the researchers have observed that more than ¾th of the child birth took place in unhygienic dwelling houses & the child were not vaccinated against dreaded disease. Insufficiency of living space & non-availability of safe drinking water made the scenario worst. They have viewed that poor health and unhygienic condition in Bihar is only due to weak health infrastructure and poor health services. If there is any service at all it remained in accessible for the people of the study area due to poor economic conditions of the households. The researchers in this article have concluded that for the immediate improvement of the household food security along with health and hygiene facilities urgent efforts are required in the study area in particular. For the welfare of rural households in the state of Bihar, programmes relating to food security, health and drinking water facilities requires sincere implementation. If the educational infrastructures are there, then people in the study villages can educate themselves and in course of time they will learn to remove the intra-family differences in consumption levels.

Reddy, B. Sambi (2006), in this literature has visualised food security in the Post-reform period in India. According to Reddy, though India attained self sufficiency in food production at national level, the declining growth rate in food production in the post-reform period is a cause of concern for future food security. This paper analyses the production and consumption of food-grains at national level and state level and tries to identify the surplus and deficit regions or states in food production and consumption. The paper mainly focuses on aggregate physical availability and consumption at macro level, but does not discuss the economic access of food at household level. The available data on food production and consumption were analysed to understand the present food scenario in terms of net production for human consumption and actual consumption at regional / state and national level to draw a few policy conclusions. He has compared growth of agriculture and food production both in pre and post reform period. Instability in food production in Indian agriculture is inevitable due to seasonal variations in weather conditions and affects the rural economy year-to-year. It has been also studied in this context that states like Bihar, Gujrat, Orissa and Maharastra are highly unstable. Whereas the states like Punjab, Hariyana, Uttar Pradesh and Himachal Pradesh attained more stability in the nineties compared to the pre-reform period in food production. Self sufficiency in food grain production analysis reveals that states like Gujrat, Bihar, Assam, Maharastra and Tamil Nadu could not fulfil the recommended level of per capita net production and fall into the category of 'Chronic food Deficit Production State' for selected three year. It also highlights the variations in cereal consumption between the poor, middle and rich fractal groups of population during the last three decades. Higher consumption levels of other food items like vegetables, fruits, eggs, meat, fish etc. also influence a decline in cereal consumption. A comparison between consumption Index (ratio of per capita consumption of cereals to the ICMR recommended form) and those of self-sufficiency index (a surplus or deficit status when compared to a recommended normative desired level) at the state level indicates in this study that higher production at regional level need not influence higher consumption levels of cereals. Further, to what extent the Public Distribution System (PDS) in India helped to achieve food security for the rural poor is also assessed. To performance of the states in food production, consumption and distribution through PDS is measured and highlighted in this

literature for policy purpose. It has been found that states like Kerala, Tamil Nadu, Himachal Pradesh and Andhra Pradesh could provide food security to the poor to some extent, where the food supplies through PDS exceeded 20% of the normative desired level in rural areas. Reddy's analysis confirms the uneven nature of PDS and corrective measures identified by him as policy prescriptions are proper targeting and higher levels of allocation or distribution in the poor performing states.

Dr. Kumara Charyulu together with **A.V. Ramanjaneyulu** and **T.L. Neelima** made a study on the role of integrated water management towards a hunger free India (Charyulu et al, 2007). In the present article, they have identified water as a critical factor for sustaining agricultural sector in the coming years. (The year 2007 was declared as the year of "Water Productivity" and "Year of Food Processing Industry"). They have studied that if the present trend of water use and management remains unchanged, the Indian Agriculture will face severe challenges in the future so far as availability and utilization of water resources is concerned. They have mentioned the factors which necessitate the protection of water resources and promote their judicious use as the increasing demand of water for personal, industrial and agricultural requirement is rising more of supply, falling water tables, water abnormalities, high dependence on rain fed agriculture water. To them integrated water management in the form of interlinking of rivers, inter basin water, methods of water harvesting and ground water recharge, recycling and reuse of municipal and industrial waste water, improving water use efficiency through better technology, reducing seepage losses and desilting of tanks, dam concept, avoiding all forms of pollutions etc. are necessary to meet the demand of water for agricultural use, drinking and industrial needs. In this paper they have viewed that some of the steps have been taken up by the government of India and these are restoration of water bodies, flood management, accelerated irrigation benefits programme, water conservation mission. They have made conclusion after their study that the emphasis to be given on soil & water conservation in dry agriculture, use of micro irrigation, organic farming, integrated nutrient, weed, pest & disease management, more investments in irrigation, crop diversification, cultivation of HYVs resistant to drought, flood,

salinity, sodicity etc to combat with the problem of food insecurity, malnutrition & hungry India.

Neetu Choudhary with D. Parthasarathy has cited the role of women in food security (Choudhary et al, 2007). Their study made it a point that through women's role in food security have got acknowledgement but it is not possible to measure how much & in what ways women actually contribute to household food security. According to them absence of proper methodology of assessment will make the contribution of women in food security not only vague but lack of solid data will not be very helpful one in the policy formulation in terms of operationalisation of food security & women's empowerment. Their article is based on Research conducted in two villages in Nanded of Maharasthra seeks to quantify women's contribution to household food security. Through investigation into the time-use pattern of women's articles, it also arrives at a method to estimate how much women contribute to food security with their visible & invisible work.

Ahmed Naushad and Rifat Zehra (2007), has written an article about regional imbalances in food security in North Bihar plain. The study area is one of the backward regions of India and its economy is predominantly agrarian and rural population is a majority there. In their paper food security assessment has been done in terms of 10 indicators in relation to food availability, food stability and food accessibility. The two objectives of their study are assessing the underlying reason for regional imbalances in food security and suggestion of remedial measures to solve the problem of food insecurity in the study area. Regarding database and methodology, they based their study on secondary data. They have chosen the district as spatial unit of analysis. They have collected data from Hand Book of Agricultural Censes of Bihar through figures published by Directorate of Statistics and Evaluation of Bihar and various other Census Publications. Food availability was calculated in terms of kg./head/annum by finding out the total production of cereals, pulses, oilseeds and vegetables grown in each district and it was divided by total population of the district. Calories calculation was worked out by converting the physical production into calorific value in each district/head /day together with the age and sex composition of population in the study area and

their specific requirement. For food stability and food accessibility the study based on a large number of indicators including percentage of population, above property line, percentage of working population to the total population, storage capacity, length of surface road and urbanization etc. using the standard Z-score. The study has elaborately discussed the regional pattern of calorie availability, food grains availability, over all food availability. From the analysis they have found that calorie intake is highly different in a large number of districts. There is an overall deficit in the food grains supply to the extent of 35 kg./capita/annum. It is also found that the majority districts were in the categories of either low or medium overall food availability in the region. The distribution of food accessibility is uneven in the study area as the population of the area have inadequate access to natural resources, jobs, income or social security. Four districts, viz. West Champaran, Saran, Suvan and Suharsa are highly food stable zone but the storage capacity was found to be very poor. Half of the districts revealed as medium stable zone. In case of food accessibility five districts of North Bihar plain, Saran West Champaran, Muzaffarpur, Darbhaga and Bhagalpur are found out to be the high food accessible zone. The study reveals that marked variations occurred among various districts of the region. Out of ten in dictators eight contributed positive values in West Champaran seven in Khagaria, six in Madhepura, Saran, Gopalganj and Bhagalpur and stated to be most food secured zone. Eleven out of twenty two districts are moderately food secure. Five districts are low food secured zone. That is the western and eastern half of the region maintains better food availability to their population. The suggestion made by Naushad and Zehra include assured irrigation facilities, new flood control measure. minimizing post-harvest loss of food grains, availability of food grains in government ration shops under PDS, enhancement of purchasing power of people and checking of high growth rate of population which will immensely help North Bihar plain to be in a better position.

Amartya Sen made a study on world food crisis (Sen, 2008). He was in doubt whether the food crisis in world will ease up or grow worse over time. According to him, the recent rise in prices of food items has occurred due to temporary drought in Australia and Ukraine. He also assured the world that the crisis will be over if huge rescue operation is done at the earliest possible way. In his writing he

has also told that unless we recognize the basic problem underlying the food security, it will only intensify itself. He has examined in this article the case of Bengal Famine in 1943 and found that misdirected government policy was responsible for the famine. Because the British Rulers during the war against Japan tried to protect the urban areas of Calcutta and bought food from villages and sold at heavily subsidized price in the cities which have worsened the rural prices. The urban dwellers earned huge income due to expenditures for war and which have increased food prices at least four times and millions of low earners in the villages starved. In his article he praised the rapid economic expansion of China, India and Vietnam where the demand for food has increased and opined that if they can reduce unequal internal growth then the people who were left behind during the process of economic growth would be able to feed themselves. But these types of growth would affect global food markets through increased food imports. Some countries with an intention to moderate their home food prices ban exports or put restrictions as being done on India, China, Vietnam and Argentina which have affected Africa heavily. He has also discussed the case of agricultural crops like corns and soybeans used for ethanol as motor fuel and criticised that the hungry stomachs are competing with fuel tanks. In this case also he has accused the government policy of U.S. Congress in 2005. He has observed the World Scenario and made conclusion that world food problem is not due to falling trend in agricultural production, but due to accelerating demand of food and population growth is only one of the factors of growing demand for food. Long term climate change and global warming is also threatening agriculture. He suggested domestic economic reforms in many slow-growth countries together with more global cooperation and assistance.

Bedanga Brdoloi and **Etali Sarmah** have made a study on different policies & programmes taken to curb the problem of food security (Bordoloi and Sarma, 2008). In their writings they have discussed the World Development Report, 2008 and found that most people living in rural areas in developing countries dependent mostly on agriculture for their livelihood and live on between $2 and $1 a day. These poor people are vulnerable to climate change and facing crop failures and livestock farming with huge economic losses undermining food security. Sub-Saharan Africa is facing this sort of situation. Climate change is responsible

directly or indirectly for hampering agricultural production and productivity & results in food insecurity and finally riots & unrest is occurring in different pars of the world. In their article they have also enquired about the development of appropriate policy measures of the respective ruling governments of those counties for coming out of these sort of problems. In their study, India's achievements of self-sufficiency in food is reflected where they have discussed, the Economic Survey, 2008 that during the period of 1950-51 to 2006-07, production of food grains and increase in population were at the rate of 2.5% and 2.1% respectively and hardly any imports were there during 1976-77 to 2005-06 except occasionally.

Manipada Jena has made a study on food insecurity among the tribal communities of Rayagada district in Orissa (Jena, 2008). The people in the Raygada district suffers regular outbreak of disease caused by food scarcity, unemployment & lack of health care services. He has studied that the epidemic like cholera after flood which has affected the tribal communities in Rayagada is not due to the absence of proper health & sanitation alone but due to lack of employment, health care services & a corrupted administration. Lack of food & nutritional security has resulted in "starvation deaths" in Raygada .He has identified some major factors playing against the food security in the said district. The factors like – absence of community voice to influence Govt. Priorities is prominent. Voice of the G.P. has failed to approve schemes, programs & projects for social, nutritional & economic development of the people in the district as a whole. In his study he has observed that women are playing an important t role to manage disaster – induced food shortages & providing emergency food security. According to him, Community Grain Bank, which is a powerful social cohesion from the angle of food security, is gradually disintegrating in the district, which remains cut off during Monsoons. Stream water contamination, malnutrition, least assured food source creates havoc in the district. Jena has mentioned in his article that while most of the tribal lands in Orissa is under Govt. control, the tribal people practices the shifting cultivation with the fallow cycles on Govt. land & the primary source of food to them becomes more insecure.

Ramesh Chand , in his article have discussed about the various factors that are identified as responsible for the current global crisis incase of the availability of food & the rise in the cereal prices,(Chand , 2008). From his study, it is clear that the price of food, which is rising recently causing worldwide concern, may be staying at these levels or may rise even more. The price increase is more prominent incase of staple foods which has caused food riots in different parts of the world & the responsible factors are the followings –

1. Diversion of food grains for bio fuels,
2. Adverse weather & the climate change,
3. Increased crude oil prices ,
4. Dietary shifts in India & China due to an increase in income & living standards of people in these two countries &
5. Neglect of agriculture for long time.

He also has analyzed in his paper the condition of India who has insulated itself against abnormally high global priced cereals transmissions. India could not at all avoid the price rise but it is mode rate in its true sense. He has tried to know that whether the high cereal prices will only be there for two years as was in 1973-75 or will return to their previous levels or the high prices of cereals will stimulate the supply & will make the crisis a short one. The prospects of the demand and supply will help us to assess the future trend about the scope of rising production through area expansions in Europe & North America and a productivity increase in developing Asia and Eastern Europe. In his article, he discussed that there is a possibility of a large-scale food production also exists in Africa. On the demand side, population growth is very big factor & the net addition to the demand for food should be taken care of. According to him, to reduce the magnitude & impact of the price rise requires a shift towards a vegetarian diet & less intake of meat products, by practicing organic farming. For food security stress on food self sufficiency is the need of the hour.

FAO (2008), in its global estimates showed that high food prices have increased world hunger. It is an estimation rather to understand who ultimately gains and who losses from high food prices, especially among the poor and why. The study has examined the impact of high food prices on household levels. In the short run period majority of the poor urban and rural households are hit hardest and among the poor it is the female-headed households & landless are the most vulnerable to sharp rises in basic food prices. The study has also observed that the households whose expenditure of income is proportionately more on the internationally traded food staples are more likely to lose their overall welfare and affect mostly the urban households. The extent of loss of welfare depends on the ability of a household to shift their consumption towards less-expense food which are globally not traded. But the households with land and produce and sell these food staples which are internationally traded could benefit from the higher prices. In this study FAO has done simulation on the short-term impact of 10% increase in the price of key internationally traded staple foods on the income of the different rural and urban households. It could not use actual price changes in each country as local currency prices do not always reflects world prices consistently. The study has showed that less affected households are in those countries where the diet consists largely of food staples that are not globally traded, e.g., Ghana, where, cassava and sorghum are the local staples. The effects of rising prices are also not uniform and may vary substantially among countries that have similar dietary patterns but dissimilar land distribution pattern and productivity levels e.g., Vietnam and Bangladesh. In Vietnam land distribution is egalitarian but in Bangladesh the households have limited access to land. Household livelihood strategy is another important factor which determines the impact of increased food prices on welfare of the household. Agriculture-based households are likely to gain from the price increase depending on the extent of staple crop production, e.g. – Pakistan, Vietnam and even Bangladesh, where benefits accruing even to some poorer households. The effect of price rise varies by gender also where urban households (primarily net buyers of food) female-headed households suffer a larger proportional drop in welfare compared to their male counterpart. The study observed the exception in Pakistan where female-headed households forms the larger proportion among the wealthier income groups. Overall, at the national level, the female-headed households loss of welfare occurs for two reasons – first,

they tend to spend more on food proportion to their income and second, they face a variety of gender-specific obstacles such as inputs & services that limit their ability to produce more food and thus benefit from an increase in food prices. The study depicts the real scenario of today's world where there is exorbitant rise in food prices affecting the households in both the rural and urban areas.

FAO (2008), has made a global study on coping strategies and nutritional outcomes when there is high food prices. It has been observed by FAO that in the medium to longer term, different strategies are adopted by households to cope with the drop in purchasing power caused by higher food prices depending on the severity, frequency and duration of food prices increases resorting to food-based, non-food-based or combination on both. In countries where people have access to more diversified diet, the response to a sudden and dramatic increase in food prices here be the reduction of consumption of number of foods from different food grains groups keeping the overall cereal consumption unchanged. The high prices of internationally treaded commodities – staple grains and vegetable oils increase the malnutrition among both urban and rural households giving a greater shock to these countries with low levels of dietary diversity. The food-based coping strategies involve a change in the quantity, quality and diversity of food tens consumed when a sudden loss in purchasing power occurs. The non-food based coping strategies include a reduction in expenditure on health care and education, in addition to seeking other sources of income to offset the loss in purchasing power. The study shows that in low-income countries, the households generally get a larger share of total energy intake from cereals. Therefore, the relative impact of high food prices, particularly of high cereal prices may be largest in those countries. The effect is manifold in those countries where majority of the population is already under nourished and diets are less diversified and only choice left to them is to reduce the number of meals and or the portion size resulting in reduced energy intake together with increased levels of undernourishment. When we go through the country-level data from food balance sheet made by the FAO study, it becomes clear that the share of dietary energy from animal foods, vegetable oils, sugar, fruits and vegetable increases with higher per capital income levels, while that from roots, tubers and pulses tends to decrease. That is why, poor in developing countries usually suffer

disproportionately from malnutrition in part because diverse, nutritionally well-balanced diets are unaffordable. The study made an expectation that under-nutrition in children under five years of age will increase if food price remain high and corrective measures are not taken care off. The non-food coping strategies highlighted by the study are related with the longer term negative effects on nutritional levels and their consequences. Reduced expenditure on healthcare and education means deterioration of health conditions and reluctancy on the part of children for less schooling affecting their future-earning opportunities and overall development prospects. The households attempt to engage in new income-generating-activities resulting in time constraint among women leading to less or lower quality child-care at home. The study has rightly viewed the present day world specially the children turned labor both home and outside. With negative nutritional consequences for children and interfere with their education.

Panda, B. K. (2008) and P. S. Sarangi has made a study on Orissa revealing the severity of poverty, hunger and food security there. They have made their study in 'KBK districts' of Orissa comprising eight districts viz. Koraput, Malkamgiri, Nawragpur, Rayagada, Bolangir, Sonepur, Kalahandi and Nawapada. Geographical terrain of this area is hilly and the region is regularly affected by severe droughts and floods. The study area, demographically comprises dominant tribal communities and 38.4% of total population are ST population, which shows that the area is a very backward one. This study has number of objectives, to understand the magnitude and trend of poverty in Orissa among the SC, ST and other classes in the state, to estimate the incidence, depth and severity of poverty in the state on the basis of food poverty and income poverty line, to study the anthropometric indicators of Orissa in relation to few major Indian states for ascertaining the food security situation of the state, to estimate the incidence, depth and severity of income poverty and food poverty, especially in the "KBK districts" of Orissa etc. Regarding methodology both the primary and secondary data were the basis. For measuring the level of poverty, status of food insecurity and hunger in the study area, they have used the unit record data of NSSO. This study is based on validated 30 days recall period NSS unit data of 600 households. Of these 600 households sample, 200 households from each of SC, ST and Others were taken by Panda and Sarangi. In this study Foster, Greer and Thorbecke

(FGT) class of poverty measures are estimated by them for their ascertainment of the incidence, depth and severity of food poverty and income poverty in the state. In the absence of consumption expenditure data of KBK districts Panda and Sarangi collected primary cross - section data of 300 households of six villages from the three adjacent KBK districts viz. Rayagada, Koraput and Kalahandi to have the estimate on poverty measures, the status of food insecurity and hunger. Three KBK districts and two villages from each block of the three districts were selected by them purposively. Six villages thus selected are Uparjhiri and Baharpadamajhi of Kashipur block of Rayagada district, Koler and Hatipakhana of Baipariguda block of Koraput district and Kosabera and Kathakhura of Thuamul Rampur block of Kalahandi district. 50 households were selected randomly from each village – where three villages have irrigation facilities and other three without irrigation facility. The households survey schedule were used for all 300 households in six villages by personal interview method preferably with the head of the households during September and October, 2005. One month was the reference period for most of the items and for few items, one year preceding the date of survey was considered by them. For nutritional status analysis, Panda and Sarangi used the human development report (2004), National Health and Family Survey – 2 Report (1998-99), National Nutrition Monitoring Bureau Report (1991), Planning Commission Reports, UNDP(2005), and UNICEF (2005) Reports. In this study, Panda and Sarangi estimated food and income poverty lines with the help of Greer – Thorbecke's (1986) cost of calorie function. The incidence of hunger and food insecurity is measured by using calorie norm. The Sen-Index and FGT Index are estimated in the study for measuring the incidence, depth and severity of poverty. They have given the conceptual clarification of the definition of food security, food insecurity, hunger, Chronic Energy Deficiency (CED), Body Mass Index (BMI). The anthropometric measures were preferred by them amongst all the anthropometric measures, clinical signs of malnutrition, bio-chemical indicators and physical activity for assesing malnutrition. In the findings we observe that the long term trends was focussed in the incidence and other measures of rural poverty in Orissa. From the study we get the scenario of poverty in Orissa and its KBK districts. They have empirically analysed the food and income poverty, poverty and food security in KBK, status of malnutrition, anthropometric indicators, nutrition relevant

parameters, clinical signs of malnutrition and status of hunger in their paper. There is high incidence of poverty in the state and the possible cause according to them may be the higher percentage of poor people among the ST and SC population. The backward southern and northern KBK regions of the state is poverty stricken in a serious way due to the prevalence of ST and SC population. The incidence, depth, severity, intensity of poverty are highest within the ST households, other households and SC households respectively. The extent and depth of food insecurity is also prominent among the ST households, other households and the SC households respectively. There is a difference when the state picture is viewed 'other' households are mostly poverty striken when we go through the analysis made by them regarding malnutrition, between early 1970s to 2000-01 we find that as per anthropometric indicators, malnutrition among 1 – 5 years pre-school children has not changed much. Clinical signs evaluation showed deficiency sign of some nutrients or other when each of 5th child examined. On the basis of food poverty line, 86% of the households in irrigated areas and all households in the non-irrigated (rainfed areas) are food poverty stricken, which is the other name of food insecurity. The income poverty line analysis in their study reveals that 84% households in the irrigated areas and 97% of the households in the non-irrigated are having incidence of income poverty. The tribal spends lavishly on liquor and festivals and it is reflected in the substantial gap between food poverty line and income poverty line. According to the study, about 57% of the households faced varying degrees of food shortage during some part of the year and they have identified the month of June as the 'peak hunger period'. As suggestion, they have extended some ideas to promote food security in Orissa amongst which the important one are creation of irrigation facilities in the rain-fed areas, agriculture development in the tribal belt to promote employment, broad-based and sustained growth of agriculture along with the Govt. intervention in the areas of health care, basic education, nutritional support, PDS etc. Only then poverty and food security can be managed in the KBK district together with the whole state.

Olorunfemi, Sola et.al (2009), made a study to find out the determinations of household food security in South Western Nigeria. They have retrieved to achieve the goal by identifying the factors responsible for food security among households

in the South-Western Nigeria, measuring the relative importance of the identified factors & determining which state / states is / are food – secure or food – insecure in the geo-political zone. The study have used both the primary & secondary data. Through a multi-stage random sampling from South Western Nigeria primary data were collected. From the six southern states – Ekiti, Ogun, Lagos, Ondo, Osun & Oyo three states – Dkiti, Ondo & Osun were selected for the study. The households from the selected states were chosen proportionately according to the no. of Local Govt. Areas (LGAs) & their populations. Five LGAs & three town / villages were randomly selected. Well structured questionnaire schedule were used for data collection by interviewing 300 heads of households at intervals of two weeks for three months. Secondary data were collected from various issues of different publications of the country as well as of the international status. In analysing data frequency distribution such as mean & standard deviation, here used for demographic variables. Discriminate analysis was used for identifying the influencing factor affecting household food security in the study area. This study have empirically identified & estimated the determinants of food security among the households in the South-Western Nigeria & also measured the relative importance of these factors which determined the food-secured / food – insecure in the study area. The household food security indicators, after identification were listed according to their rank. All the indicators were analysed & compared to reflect the food security status in the study area. But regarding educational status of the household heads no relationship between food security & educational effect have been reflected in this article where in other study this relationship have been reflected by the respective researcher. Data collected by Olorunfemi included ages of heads of households, households sizes, and number of wage earners per household, household income quantities and types of food consumed and household food security problems. After the analysis he could found out the that the mean ages of household heads were highest in Osun state and lowest in Ekiti state. The mean household sizes for the three states followed the same pattern with Osun and Ekiti states haling 7 & 5 household size respectively. The analysis also showed that the three states had the same mean percentage of household monthly expenditure on food stuffs, where Osun state was in highest and Ekiti state was in lowest mean percentage. He has viewed that according to the world standard of minimum requirement of 2260 k. calos of energy and 65gm of protein per capita

per day for household food security the Ekiti state was food-secured in the study area. When other determinants such as war and natural disaster checked few percentage of the Osun, Ondo and Ekiti states were food – secured and some percentage were food – insecured. Olorunfemi has also observed that average calories and protein intakes were not adequate in Osun state. The study has recommended for the I) Small family norms to reduce pressure on family income & ii) Public enlightenment on household nutritional requirement & improvements in the consumption status.

Lombe, Margaret et. al (2009), in this literature have assessed the effects of Food Stamp Programme (FSP) participation on child food security in vulnerable households together with the informal supports of food items. This study was carried out in U.S.A. where the financial turmoil currently being experienced and is very relevant. The FSP (now the supplemental Nutrition Assistance Program) is one of the largest federal welfare initiatives undertaken to address the problem of hunger and nutrient intake among households in poverty. The scholar has observed that although United States is one of the richest countries in the world, still persistence of hunger among households in poverty is the most extraordinary aspects of vulnerability in this wealthy nation. Systematic assessments of multiple factors that influence food security among children are rarely undertaken. So, this study have produced new insights on food stamp take-up and its effect on enrollees. Three research questions have been formulated in this study – regarding sociodemographic characteristics, food stamp take-up and informal food assistance relation to child food security, significance of household type and the third is the status of informal food assistance to the child food security. Regarding methodology, this study uses the data from the December, 2003 CPS-FSS. The survey is conducted jointly by the Bureau of Labor Statistics and the Bureau of the Census each year. The data sets include about 1,12,000 persons 15 yrs and older and approximately 31,000 children 0-14 years old. The sample for this study is made up of individuals who completed the CPS-FSS in December, 2003. Measures were taken for child food security by asking the head of the household, using items taken from the USDA 18 item core Food Security Module. Food stamp take-up, Informal food Assistance where their responses were dichotomized and household type were detected. Statistical analyses of the study include,

univariate analyses, chi-square test and t-test, non-parametric bivariate correlation, and multiple linear regression models. All analyses in this study were conducted using SAS9.1. The literature have the opinion that the goal of FSP is to ensure that vulnerable American Households have access to and adequate and nutritious food supply. This investigation provides a context for understanding factors related to food security among children and in vulnerable households participating in FSP. The initial findings suggest racial ethnic disparities in food stamp take-up. Indication of association between a number of demographic characteristics and food security among children is also observed here. The study made an interesting observation where lower household income was indicated as a predictor of food security among children. A possible explanation has also been given by the study that compared to respondents with higher incomes, more vulnerable households may be particularly resourceful in negotiating the limited resources their households' command. The results of the study also reveal that FSP plays an important role in alleviating food insecurity among children in vulnerable households. The assertion that informal or community food assistance programs is important to household food security is supported in this literature. For children in African – American households, households in which the head works fewer hours and households whose heads report lower levels of education, there is the gap between the supports provided by the safely nets and their consumption need. This gap is to be eliminated as this study is suggesting here. Vulnerable households are likely to turn to informal food assistance networks to cushion consumption. This literature pushes social work practitioner and policy makers to think creatively about how both formal and informal assistance enterprises may be strengthened to adequately meet the consumption needs of children in vulnerable households. Further, the program should be more extensive and responsive by increasing the level of benefits.

Sharma Alakh N. (2010), has written an article on "Food and Nutritional Security in India", where he has analysed the food and nutrition security scenario in India focusing on policies and programmes. In his paper he tried to introduce the concept and context of his study where he has defined food security in four dimensions as availability, access, utilization and vulnerability. Their interactions determine the food security status of a country according to him. Next he has

shown the dimensions of food security in India in the basis of Government of India's report 2004. Both the supply side and demand side of food grains is discussed by him. In the supply side net availability of cereals per day has increased over the years (1951-2003) and that of pulses has decreased according to the study. On the demand side he has observed that there is a declining trend in the total consumption of cereal from 1972-73 to 1999-2000 because of higher increase in the non-food consumption expenditure. With this, he has also shown that the non-cereal consumption expenditure has increased in rural areas which indicated a decline in calorie intake by the rural Indian population. He has shown the trends in per capita daily intake of calories across different consumption classes. The study has identifies along with the other references that there is a clear switch over from coarse to superior and more expensive cereals like rice and wheat which owed to less requirement of energy due to an increase of sitting jobs, increasing mechanization of agricultural activities, household domestic activities, mechanized modes of transport particularly in rural areas and improvement in medical facilities. And the declining trend according to Sharma is among the top 30% expenditure classes and among the bottom class the absolute level is relatively much lower than recommended Dietary Energy Requirement (DER) and is a matter of concern. He has also reviewed that National Institute of Nutrition's report of dietary patterns in nine major states of India is more or less at per with Indian Council of Medical Research's (ICMR) recommended Dietary Allowances (RDA) in case of the calorie intake of an average Indian. With regard to further demand for and supply of food grains he has viewed that India would be able to produce enough cereals to meet the food and feed demand of the total population by 2020 if the total factor productivity (TFP) is increased. So, far as international trade is concerned the study warned India to trade carefully by bringing greater flexibility in trade in agriculture, without sidelining the policy of reasonable self – sufficiency in food grain production and non reliance on international trade to obtain food grains. The study has also noticed the fact that over the years, regional unevenness in the spread of hunger has considerably declined. The Scheduled Castes (SCs) and Scheduled Tribes (STs) when compared with other groups, both in rural and urban areas of India have much higher incidences of hunger. Nutritional dimensions when approached by the study shows that malnutrition is very wide spread in India and is more prominent in case of women and children

and in the backward areas. Regarding vulnerability to various risks, environmental disasters is faced by majority of Indian households causing 'transitory food insecurity' and forces the affected families to migration and destitution. The study discusses the vital food intervention programmes and policies in India and came to a conclusion that at the implementation level all these policies and programmes suffer serious short comings and the Supreme Court directives have tried to mitigate this by legal entitlements of the intended beneficiaries i.e. – pre-school children and women in the case of ICDS, school going children in the case of the midday meal scheme and the poor in PDS and FFW. So, food and nutrition security provision should form an important strategy and policy in India given the severity and multi-dimensional nature of the problem is the suggestion by the study.

Parikh (2012), in his essay has tried to view the food security in India both at individual and national level. A household is said to be food secured when every individual of the household is food secured. That is why individual's security with food is matter of concern. In his article he has defined the food security of a country when 'adequate' food is available to its all citizens under all circumstances. And according to him this is problem for the poor people and poor nation and he viewed that food should be provided to all as a right and without humiliating the poor. He has mentioned about the persistent and transient hunger the extreme form hunger. The study mentioned that food security can be achieved by an individual either by increasing money income by him / her or through reduction in price at which adequate food is made available to him / here. The study is concerned with the policy options to deal with these two facts. In the second section food security in India is discussed by him where he has mentioned that large number of persons turn from being non-poor to poor and vice-versa from year to year. National level food security can be measured by production, trade and availability of food grains. The average per capita availability of food grains is an indicator of food security at the national level considering by him together with the variability in the consumption of the poor also. In the third section of the article the policies to provide food security to individuals is elaborately discussed by Parikh. These programme include security in the long run, food security through PDS, food security through employment programmes.

In the long run economic growth can provide productive employment to all & with adequate income all can afford food at a reasonable price from the available food system. Generation of employability and skills among the people to get jobs & compulsory elementary education should be the priority. Parikh has also examined the costs and effectiveness of PDS as a food security measure because of its importance in providing food security to the poor. The study has summarized the resources required to provide food security through the PDS both in terms of monetary measure as well as in quality of cereals. Various employment programmes are also discussed by him for providing food security and total wage bill for such programmes were calculated. According to him, Maharashtra Employment Guarantee Scheme (MEGS) is the best known and longest running and its benefit is in the form of an alternative opportunity for employment to rural workers which is increases their bargaining power and rural wages in turn. He is in favour of purchasing such programmes as longer the country has enough food grain available. For national level food security Parikh has mentioned about the estimate of cost to provide food security through price stabilization, which is the key to this measure and has to be done by a public programme. Estimation of variabilities regarding price which arises due to variability of production, demand and world price variability as identified by him in an important work by him. Cost of food stock operation which is a monopoly of the Food Corporation of India (FCI) in the form of transaction costs and costs of storage and are much higher than the private traders as was observed by the study. How to minimize these costs for food security is an matter of concern and it was found that optional stock levels depend critically on storage costs. As suggestion in the conclusion he has put forward the policies of nation wide EGS are increased and easy access to all for individual level food security along with PDS to reach the old and the infirm who cannot work on EGS. For the national level his suggestion for food security is the stock-trade policy to ensure availability to stabilize domestic prices of wheat and rice at modest stock levels.

Hwalla, Labban & Bahn (2016) has discussed about nutrition as an integral component of food security and argued that nutrition should encompass all four dimensions of food security availability, access, utilization and stability. In their article “Nutrition security is an integral component of food security”, they

highlighted the latest situation of food security in the Middle East and North African region, where the population are shouldering the triple burden of undernutrition, micronutritent deficiencies and overweight /obesity with their co-existence. Earlier in this region only the availability dimension got highlighted without any vigil to other three dimensions of security and nutrition was not at all concerned with the different dimensions of food security. To achieve food and nutrition security in the region of Middle East and North Africa they have identified the importance of nutrition as core concept of food security together with the different world literatures. All four dimensions should have nutrition aspect for the purpose of assessment of the situation, policy formulation and programming as well as capacity building. The countries in the region can increase the availability and accessibility of safe and nutritious food through the different policies and programs of food subsidies, dietary guidelines, public awareness and education was the suggestion of Hwalla, Labban and Bahn, only then the region can cross the hurdles of achieving the food and nutrition security in present and future was their idea.

Abhay Bang (2016), has written about health care in tribal areas on scheduled Tribes (ST) population. He has enquired about their health status in his article "Health Care in Tribal Areas : Present and the Future". When a comparison of some indicators of child mortality is carried out by him on ST children he has found out that the infant and child mortality rates in STs are higher by about one-third than in the other population. There is huge variation between the states, and significantly high in 7 states. He has observed a very gloomy picture about the nutritional status of ST children and adults as well. His observation revealed the fact that 53 percent boys and 50 percent girls in pre-school age are underweight 57 percent boys and 52 percent girls are stunted in height. 49 percent of ST women are having Body Mass Index (BMI) less than 18.5 indicating chronic energy deficiency. Tribal households of his study showed a large deficiencies in dietary intake in terms of protein, energy, fats, iron, vitamin A and riboflavin. He has viewed that over a period of time. (1985-87 to 2007-08) the under-nutrition in children and adults of ST population has decreased, but still unacceptably high. Number of diseases are prevalent in tribal areas, such as – malnutrition, communicable diseases, maternal and child health problems and are caused due to

under development. Diseases common to ST population also identified by him are sickle cell diseases, animal bites, accident. Modernity also affected ST population with all lifestyle diseases. The public health care system in ST areas are characterized by low output, low quality and low outcome delivery thus targeting wrong priorities as is discussed by him in the article. Among all determinants of under-nutrition in the ST population, Bang (2016) has stressed on social developments like literacy, income, water, sanitation, fuel, food security and dietary diversity, gender sensitivity, transport and connectivity together with inter-sectoral coordination for improvement in other sectors. Proper sanitation, reduction of use of unclean fuel, availability of income & health service, empowerment of ST population, are some of his suggestion for the improvement of nutritional status of ST population.

2.2 Research Gap:

The above reviews of available literature bring into forth the fact that very few of them have attempted to examine the problem of food security in its totality. The three important areas of food security, namely, food access, food availability and food utilization have not been properly addressed in these studies in a composite manner. The works have explored different aspects of food security, poverty and nutrition but all the three dimensions of the problem have not been discussed in the same canvas. This is a serious research gap that reduces the utility of such research works in understanding the problem of food security.