

CHAPTER –IV

Conceptual, Theoretical Framework and Methodology

4.1 Food Security: The General Concept

The concept of food security implies a situation that exists when all people at all time have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life [FAO (Food and Agricultural Organisation), 2012]. In economic jargons food security has been variously defined, but mostly accepted definition is one given by the World Bank (1986) - “access by all people at all times to enough food for an active healthy life”. Similarly Rome Summit on World food security and world food plan action (Singh, 2008) observed that the “Food security at the individual, household, national and global level exists when all people at all times have physical and economic access to safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.” In most of all definitions of food security, emphasis has been given on economic accessibility, physical availability of food to the people and to meet nutritional requirements of the people. The crux of food security is to ensure healthy and active life by physical and economic accessibility to food at all times at the household level. Generally, food security is synonyms with the absence of hunger or otherwise the provision of calories in pre-determined numbers at the household level. Most of the definition of food security embraces macro aspect of the concept which is determined by agrophysical socioeconomic and biological factors (Chung, et. al., 1997).

The food insecurity, hunger and malnutrition are inter-related phenomena and are mostly in discussions for strategies and policy formulations in recent years and decades. Various international, national NGOs, State Departments and number of United Nations agencies from different parts of the World are continuously engaged in ensuring a world for hunger free and healthy population.

Refuting Malthusian pessimism, based on the expectations of falling output per head, Prof. Amartya Sen develops the view rather than tried to establish his view that it is only misguided focus of hopelessly delayed response of public policy that intensified the regular but non-extreme hunger. People experiences hunger in famine like situation not because of reduction in output per head or food availability but because of their inability to acquire food either through their own production purchase, or selling services and earning income. (Sen, Dreze & Hussain, 2011, PP- 50). Sen, calls this as “entitlement problem” and is centering around the hunger and starvation in the world.

For the analysis of famine, Prof. Sen in 2011 coined the term entitlement approach where causation of famine is triggered not by one particular cause but by a general cause that a famine reflects the widespread failure of entitlements on the part of mass sections of population. Prof. Sen, has stressed on long run policy focus on entitlement and entitlements that will have to enhance secure and guarantee entitlements rather than going for simple formula similar to an expanding output of food.

Mass starvation gives widespread malnutrition and undernourishment. FAO’s estimate of latest undernourishment report figures to 10.9 percent in 2014-16 where in two regions – sub-Saharan Africa and Southern Asia, the progress of hunger reduction is slow, (FAO, 2015). Naturally, these countries are facing the problems of reduction in the number of people in hunger and starvation and ensuring food security for their people. The highest burden of hunger occurs in Southern Asia, where as many as 281 million people are undernourished in the region. In sub-Saharan Africa, one in every four people or 23.2 percent of the population are hungry.

Reducing the intensity of food insecurity, hunger and malnutrition has become the primary goal of those countries who are challenged with this problem. Various approaches and new kinds of effective strategies are being developed and introduced for arresting these problems. Enormous efforts in the form of resources have been mobilised and utilized still, hunger and malnutrition exert pressure and difficulties to be dealt with. Food insecurity having number of dimensions such as unemployment, poverty, famine, starvation, gender discrimination, equity, food

and nutritional practices, human growth, political elements, natural disaster and many more which made the concept a complex one. Globally poverty is considered both as a cause and effect of food security. Producing enough produces, feeding the hungry stomach do not settle the problem but to attack the root causes of hunger and malnutrition is the main issue today in the world. Regional disparities, intra-household food situations aggravates the situation of hunger.

There is chronic malnutrition within the women where gender discrimination with all its characteristics are present in case of intra household food situations. Hunger and malnourishment poses many other problem in the economy. Decreased educational potential in children, low productivity of workers, increased vulnerability to disease and death, and reproduction activity among women are worstly affected by miscarriages, stillbirths, infant deaths due to lower weight during birth. This involves lots of social costs and economic implications (Lodha and Singhvi, 2003).

Comparing this situation nutritional security is incorporated by the social scientists and researchers while defining food security as the ability of providing all people with adequate diets to sustain work, other daily activities, growth and healthy reproduction. Absent of adequate diet leads to the hunger. Extent of hunger has wide range of opinion in India which clearly reveals that there are difficulties associated with the numerical appraisal of the problem. For in depth study of food security we should know the meaning of hunger and malnutrition first. Because with the changing world, present scenario and the meaning of food security has changed which require a new set of concept and definition of food security.

4.1.1 Hunger and Malnutrition

Hunger is having different meaning to different social scientists. Starvation from insufficient food means hunger. A set of conditions, starting from acute and extreme starvation to hidden or transient hunger or malnutrition caused by the lack of right type of food, manifest the condition of hunger. Hidden hunger or malnutrition is not always clinically visible but may make a clear difference

between a healthy and fit person with a person who is not sick but not in a sound state of health, whose mind and body is not being efficiently utilized to its fullest potential. These subjective definitions are constrained by lack of dietary standards and available statistics on food consumption. People who do not consume sufficient quantity of food are undernourished and the people who do not consume adequate quantity of food are malnourished. This definition is applicable to adult only. The quantitative deficiency of diet is under nutrition and qualitative deficiency of diet is malnutrition. The energy content of the diet when expressed in calorie term measures the quantity of food consumed with a uniform basis. Inadequacy in calorie intake is under nutrition and if it continues for a long period of time may result in normal body weight loss for the similar physical activity or there may be reduced physical activity for the same body weight or both may happen. For children this definition is not applicable, because in case of children inadequate calorie intake reflects in them through satisfactory growth and physical development where activity performance may greatly be affected in comparison to a healthy children. Insufficient calorie intake or inadequacy in calorie may change the whole life of a person and may cause listlessness, insufficient physical activity, lack of initiative and excessive rest (Pandurag, 1995).

Hunger and malnourishment are the clear manifestation of poverty and related economic distortions. Poverty constraints of individuals and families prevent them from purchasing adequate food to meet their needs. The relationship between poverty and mal-nourishment is considered to be instantly understandable in case of India, because, here the poverty estimates are based on a nutritional benchmark. The poverty line is drawn at that level of consumption expenditure below which a household cannot purchase the amount of food requirement for providing its members their minimum daily calorie needs, (Lodha and Singhvi, 2003, pp37- 44). Since, the ability of households to achieve calorie adequacy is the basis of poverty estimation, so it is better to accept that these estimates provide only a minimum outlay of nutritional inadequacy. The measurement of consumption expenditure is done at the household level based on the consideration of five members per household, hence there are three important aspects of the method in which poverty is estimated and is pertinent to understand its constraint for complete convergence with mal-nourishment. First, Indian

Council of Medical Research's (ICMR) recommended calorie norm which is used for evaluation of household adequacy based on a desired mean consumption level for the population. It is sure that such a norm would not be same for all individuals. For some it may be too high or for some it may be too low. Second, there is a possibility within every household, that whatever food is purchased and cooked may not be distributed to every members according to their due shares. This may result in adequate feeding for some and for some members disproportionately under-nourishment.

It is a wide known fact that malnutrition burden falls unequally on woman and children who are labeled as vulnerable group. Within the Indian family, the most favoured person in case of feeding is the adult male wage earner or the household head. Third aspect is the additional energy burden on women during pregnancy and lactation, which is not always maintained by additional food intake during this period. In poor families women are faced with the deficiency of 1000 K calories / day during pregnancy, which is around 40 percent of the nutrition requirement. 'Maternal depletion'—a situation of nutritional deficit is created with the repetition of pregnancies in less than a stipulated time period pose a burden on the population with regard to both mother and infant with their ill health.

4.1.2 Poverty :- Poverty is regarded as the principal causal factor of hunger, and hence, food insecurity. Since, poverty is having relation to the inability to have enough food, food security at individual level must have wide variation and is closely associated with the poverty levels. The meaning of poverty is a state of deprivation of people or society, in which they are not able to meet their basic needs such as food clothing and shelter. For all this , they cannot deal with socio-economic and environmental exigencies. But this definition do not take into consideration education , healthcare and decent standard of living or defined life. Since, the FAO declaration in 1996 recognizes that poverty eradication is essential to improve access to food, we should divulge our attention to poverty aspect (Sharma, 2010).

4.1.3 Technicality in Poverty Measurements :- In household surveys, a key method to measuring poverty is data on prices at global level. But measuring poverty in a given country is that same real consumption level of two people should be treated in the same way irrespective of which regions they live (Ravallion, 2008). The real value of the absolute poverty line in different places or regions should be the same. Accordingly, International Comparison Program (ICP), motivated by Balassa-Samuelson effect collects price from large sample outlets in each country in each “benchmark year” for calculating poverty line. With rural urban cost of living differences facing the poor and urban-rural breakdown of global poverty measures using 1993 PPP, Ravallion (2007) in his discussion have stated the International poverty Line.

4.1.4 International Poverty Line :- The International poverty Line of the global poverty measures is \$1.08 per day (\$32.74 per month), means earning below this level indicate the poverty at 1993 PPP.

New International Poverty line for 2005 is \$1.25, and is the average line for the 15 poorest countries those consuming less than \$2 per day .

In 2015, the first Millennium Development Goal 1(MDG1) also considered the level of \$ 1.25 a day as the International Poverty line.

4.1.5 Head Count Index : Developing World has used another concept of poverty in the line of “head count index”, which is explained as proportion of the population living in households with consumption (or income) per capita below the poverty line and is popular measure in use but with the limitation that if the poor person gets poorer there is no change in the index. Conducting monumental survey, Charles Booth (1989-1991), for quantifying the extent of poverty in the London City, has estimated the proportion of people below the poverty line as an index of poverty and is popularly known as head count ratio or index. The index is a very crude one and is therefore given by

$$H = \frac{n}{N}, \text{ where}$$

n = the number of persons below the poverty line,

N = the size of the population, and

H = the poverty incidence ratio

This index measures the incidence of poverty in a population. Till the income change does not cross poverty line, same incidence of poverty is provided with this measure, (Panda and Sarangi, 2008). Sen in 2011 has observed that this measure is completely insensitive to the distribution of income among the poor. A pure transfer of income from the poorest poor to those who are comparatively better off will either keep it unchanged, or make it go down. Thus the measure H violates both the axioms :

i) Monotonicity Axiom – Given other things, a reduction in income of a person below the poverty line must increase the poverty measure.

ii) Transfer Axiom – Given other thing, a pure transfer of income from a person below the poverty line to any one who is richer must increase the poverty measure..

4.1.6 Poverty Gap Index :- Poverty gap Index is defined as the mean distance below the poverty line as a proportion of the line where the mean is taken over the whole population , counting, the non-poor as having zero poverty gaps, (Ravallion, 2008). Actually, the poverty gap index or income-gap ratio tells us the percentage of the mean short fall of the people from the poverty level (Sen, 2011). But this ratio is completely insensitive to the numbers involved as in head count ratio.

4.1.7 Poverty – An Ordinal Measurement :- According to Amartya Sen poverty is an ordinal measurement approach because the two major problems of poverty measurement faced with are – among the total population, identification of poor people and constructing poverty index using the available information on

poor. The first problem arises with the choice of a criterion of poverty like adoption of a 'poverty line' in terms of real income per head and then assessing the number who fulfill the criterion and the number who do not. And for facing the second problem the head count ratio is the right procedure though it is a crude one, (Sen, 2011).

4.2 Poverty in Indian Context : Poverty in India is an approach on absolute sense. Because poverty is considered as a social phenomenon in which a section of the population of the society is unable to satisfy even its basic necessities of life, (Datt & Mahajon, 2013). When a significant section of the society cannot effort a minimum level of living and continues at a bare subsistence level, that society is termed to be plagued with mass poverty. In all definition of poverty there is an approach to signify the average level of living in a society. All the definitions visualized the existence of inequalities in a society and how each society is cushioned to tolerate them is a question. This evident from the definition of poverty in India which elaborates that it is minimum level of living rather than a reasonable level of living. The crux of the elaboration is that relative levels of living prevalent in the country is a decisive factor of the absolute standard of poverty expressed in terms of minimum requirements of cereals, pulses, milk, vegetables, butter or otherwise calorie intake. Poverty becomes more laminating when a particular section of the population is far away from fulfilling their basic needs in contrast to the elite class living a gorgious life in the same society.

4.2.1 Absolute & Relative Standards : In economic literature two standards of measures – The Absolute and Relative. In the Absolute Standard the determination of the minimum physical quantities of cereals, pulses, milk, butter etc. for a subsistence level is done and the monetary value of the physical quantity are then calculated. The per capita consumer expenditure is determined with the aggregate of all quantities considered. The population whose Income / Expenditure level less than that calculated figure is termed as Below the Poverty Line. The relative standard on the other hand estimates the income distribution of the population in different fractile group and make a comparison of the level of living of the top 5 to 10 percent with the bottom 5 to 10 percent of the population.

Ultimate picture is the relative measure of poverty. Poverty Line for India has been discussed in the same section of in Chapter-IV of the Thesis.

4.3 Food Security and Food Insecurity

Food Security can be analyzed at the global, national, regional, household and individual level. This is because in World Food Conference of 1974, analysis of food security was done at the global and national levels apart from household and individual levels, (Bonilla, Thomas and Robinson, 2005). Main obstacles to food access was identified as variation in the trend of food supply and access, their sustenance over a long period of time with the addition to food supply, poverty and lack of income opportunities. Since Malthus' days nearly two centuries ago, food problems and food security have been formulated on the basis of probability of food production keeping pace with the population growth. The ill performance of the world food production in the 1980s the poor harvest of the early 1990s have regained interest on the neo-Malthusian persuasion. Accordingly, the definition and the measurement of food security centered around the Malthusian premature doubts. In common parlance, the short run definition of food security in a single country or in the world as a whole is the ability on the part of the food deficit countries, or regions within countries, or households within these countries to meet target consumption levels on a year-to-year basis, (Salih, 1995). The nutritional aggregate measure focuses on the energy intake required to maintain the body weight of an individual, which was determined by the World Health Organisation (WHO) and FAO of the United Nations (UN) as the minimum requirement of about 2350 calories per day. Instead of doubts to some nutrition specialists this is an widely used measure by the World Banks, FAO and many food analysts and nutritionists. Per capita food availability derived from food balance sheets are regularly published by FAO with updated information based on national averages. The per capita availability of food is more in developed market economy then the developing countries. The number or the proportion of undernourished person for each nation is determined on the basis of national average calorie intake per capita. Despite the attempt made by the FAO and the World Bank for consideration of some personal characteristics for undernutrition determination, the undernutrition is synonymously used for under nourishment.

The extent and scope of undernourishment faced severe objection to be an accepted entity. With the passage of time the arena of food security, its concept, philosophy and dimensions have gradually influenced by Prof. A. Sen's 'entitlement approach'. The corresponding definition of food security was in gradual adoption by the Sub-Committee of Nutrition of the United Nations Administration Committee on Co-ordination in particular and United Nations in general, (Salih, 1995, pp 4-5).

The definition of food security given by World Bank in 1986 as access by all people at all times to enough food for an active, healthy life is a long-term equilibrium view. In this definition, the emphasis was on both the demand (access) and the supply (availability) of food. The lack of access to enough food gives rise to food insecurity. The elaboration on the definition and underlying conceptual framework of food security focuses many more approaches.

In one parlance there are distinction between transitory food insecurity and chronic food insecurity, unequal distribution of income and wealth, seasonality and inter-annual variation and the functionality of an adequate diet. Transitory food insecurity is a temporary decline or shortage in a country's or household's and /or regions within the country access to enough food. Food production fluctuation, prices of food, incomes etc. causes these shortages. Chronic food insecurity is the result of the continuation of the shortages of food or persistence of inadequate diet due to the inability to acquire food. That is why the root cause of chronic food insecurity is considered the poverty. Even in the absence of these causes, the existence of food security may be there due to market imperfections. Food security is not just a matter of food-quality of food that ensures nutrition, health care that protects people from feebleness, diseases or parasitic attack on intestine that allows the leakage of nutrition are all the components of it.

4.4 Official Definition of Food Security

i) The Committee on World Food Security of the UN's FAO :- 'Food security ' means that food is available at all times, that all persons have means of access to it, that it is nutritionally adequate in terms of quantity, quality and variety, and that it is acceptable within the given culture. Only when all these conditions are in

place can a population is considered food secure. We aim to achieve lasting self-reliance at the national and household levels.

In this definition the Committee on World Food Security has stressed on economic viability, equity, broad participation and the sustainable use of natural resources. A multiplicity of meaning is covered in the definition such as self reliance and recognizes the complexities of the food world, where people are secured in relation to the depth of food stock. Food insecurity indications are there with malnutrition, poverty or vulnerability. Occurrence at international level happens when trade stocks are low, and at household level happenings of insecurity are there with unequal distribution, (Lang, 2002).

In October 1995, FAO stressed production issues at its 50th anniversary symposium-‘ The goal is to ensure an adequate quantity and quality of food for every individual at all times’.

In 1996 World Food Summit, one year later, managerialistic approach was abandoned with the new definition of food security and is defined as a situation in which all households have both physical and economic access to adequate food for all members and where households are not, at risk of losing such access. Three dimensions of this definition availability, stability and access are implicit here. Adequate food availability mans that, on an average, to meet consumption need sufficient food supplies should be available. Stability refers to minimizing the fall of food consumption below the required consumption level. Access stress on the issue that even with a bountiful surplus many people in the world go hungry because of their low purchasing capacity of food they need.

ii) World Bank :- Food security definition is very simple and is defined as access by all people at all times to enough, food for an active and healthy life

iii) Organisation for Economic Co-operation and Development (OECD) – The think tank for developed world in 1981 in a major paper on food policy defined food security as the ‘adequate and stable supply of farm products and food for domestic use’. In this definition OECD views a well connected economy perfectly

working in a system of efficient feedback loops and harmony between supply and demand promoting a liberalized trade regime in food.

4.5 Indian Scenario : A household or a community or a nation is food secure if

- Food, which is culturally acceptable, is available in the system;
- The household or the people have the ability to buy food;
- The household or the people have the freedom to choose what food to buy from the available food;
- There exist institutional license to access (or no institutional sanction against accessing) the available food; and
- The available food as the required nutritional value.

Food Security can be either at the household level, at the community level or at the national level or in a combination of all these levels, (Mukherjee, 2002).

4.5.1 M.S. Swaminathan Research Foundation (MSSRF) : This foundation has structured a Food Security Atlas for India for 2002. The foundation followed the definition of food security given by FAO of UNs. The Atlas uses 17 indicators that include affordability of food, absorption and access, access to housing, discrimination in livelihood access, again access to sanitation, safe drinking water with nutritional outcome (Krishnaraj, 2005).

Family Health Surveys and Nutrition Foundation of India (NFI) have many documentation of the health and growth outcomes due to poor food security which clearly have an insight on high proportion stunting and wasting among children, prevalence of anaemia among women, Vitamin-A deficiency related disease like blindness, high incidence of tuberculosis etc.

Household food security cannot guarantee good nutrition status on its own. The standard food-care-health conceptual model prepared by FAO/WHO in 1992 made the aspect very lucid about the provision of adequate care to women and children together with adequate water, sanitation and healthcare systems is needed to ensure good growth and development. The generation of a household

food security is dependent on the physical availability of food at the market or community level, the ability of the household to access the available food, the ability of individuals –particularly those vulnerable sections and food deficit such as women, infants and children – to eat the food, and finally the body’s ability to process the nutrients consumed.

4.6 Concept of Adult and Index Child

The working definitions of some of the terms like Adult and Index Child that are frequently used in the present study are given below.

Adult : Biologically an adult is considered as a human being or other organism that has reached sexual maturity. In the context of human being, ‘adult’ the term is having an additional meaning associated with social and legal concepts. Adulthood in human embraces psychological adult development. Social aspects of adulthood indicate the recognition of people by their culture and / or law as being adults. Legally, adulthood means that one can engage in a contract with all the attendant rights and responsibilities of adult hood. The legal definition of entering adulthood usually varies between age group of 16 – 21 years depending on the region in question. In most of the world, including the greater part of United States, a portion of United Kingdom (England, Northern Ireland, Wales), India and China, the age of legal adult is 18 (historically 21) for most purposes, obviously with some exceptions in some other countries.

The Majority Act of 1875 (Indian Majority Act, 1875 earlier) states that every person domiciled in India shall attain the age of maturity on completion of 18 years and not before. Unless a particular personal law specifies otherwise, every person domiciled in India is deemed to have attained majority upon completion of 18 years of age. But, in case of a minor for whose person or property, or both, a guardian has been appointed or declared by any court of justice before the age of 18 years and in case of every minor the super intendance of whose property has been assumed by the court of wards age of majority will be 21 years AND not 18. In case of this study an adult is considered as a person who has attained the age of 18 and above.

Index Child : Index Child concept is used in the study to represent a child of pre-school age. In the household when there are more than one child of pre-school age then the index child will be the first child according to the alphabetical order. One child from each household i.e., the index child was tried to study in an intensive way(Maxwell,et.all,2000). In the present study Index child means a child of pre school age i.e., 5 years or below.

Household : According to census, a household is usually a group of persons who normally live together and take their meals from a common kitchen unless the exigencies of work prevent any of them from doing so. In a household the persons may be related or unrelated or a combination of both. A separate household is formed when each unrelated person of a group live in a census house but do not take their meals from the common kitchen (Census of India 2001; Page/ 1-2). A person living in a census house alone and whether cooking or not cooking meals is treated as a household. Similarly, when husband and wife or a group of related persons are living together in a census house but not cooking their meals, also constitute a normal household.

4.7 The Three Pillars of Food Security

The concept of food security crossed evolutionary phases during passage of time. With an emphasis on national food self-sufficiency, the concept entails households 'entitlement' to food, nutritional adequacy, intra household distributive justice and many other issues. Different scholars put several variations on the core concept, but with a common consensious in various definitions.

All the definitions rest on three pillars of food security –availability, accessibility and utilization of food in the human body. It implies that the food insecure either have lost or are at risk of losing, availability of and access to food or the ability to utilize it, (Chung, 1997, P₅). With this concept of vulnerability social and cultural acceptability of food is also incorporated in the broad notion of food security (Chung, 1997).

Therefore, in order to understand the household level food security, a combination of availability, accessibility and utilization are conceptualized here with a reference to the nutrition security of the household. An elaboration of the relationship between the various components linking the food and nutrition security of the household and underlying factors is approached here.

The major components of food security analysis appears to be the availability of food to people, each individual's access to food irrespective of his / her income level and absorption capacity of human body and food utilization. Value addition possibility to this situation arises with the extent or depth of food security stability in a country (Modgal, 2012, p-301). Access to adequate food is a fundamental right of all human being which is required for the improvement of the nutritional status of people.

The concept of food security implies a situation that exists when all people at all time have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life [FAO (Food and Agricultural Organisation), 2012]. In economic jargons food security has been variously defined, but mostly accepted definition is one given by the World Bank (1986) - “access by all people at all times to enough food for an active healthy life”. Similarly Rome Summit on World food security and world food plan action (Singh, 2008) observed that the “Food security at the individual, household, national and global level exists when all people at all times have physical and economic access to safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.” In most of all definitions of food security, emphasis has been given on economic accessibility, physical availability of food to the people and to meet nutritional requirements of the people. The crux of food security is to ensure healthy and active life by

physical and economic accessibility to food at all times at the household level. Generally, food security is synonymous with the absence of hunger or otherwise the provision of calories in pre-determined numbers at the household level. Most of the definition of food security embraces macro aspect of the concept which is determined by agrophysical socioeconomic and biological factors (Chung, et. al., 1997).

The food insecurity, hunger and malnutrition are inter-related phenomena and are mostly in discussions for strategies and policy formulations in recent years and decades. Various international, national NGOs, State Departments and number of United Nations agencies from different parts of the World are continuously engaged in ensuring a world for hunger free and healthy population.

The study centres on a commonly accepted definition of food Security. “ When all people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life (Chung, 1997). Different scholars have incorporated in food security the broader notion of social acceptability and sustainability. There is a need to identify the worldly dimensions of the concept of food security. A persistent inability to attain food access over a long period of time is chronic food insecurity situation. Whereas, acute food insecurity . when the food security situation declines in short run as a result of seasonal variations in food access in a given area may have a regular occurrence. The food security status of households and individuals are influenced by a lot of diverse factors. The U.S. Agency for International Development (USAID) identifies a range of important factors that determine the household and individual level food insecurity in the developing world. These USAID identified factors of food insecurity include chronic poverty, rapid population growth, declining per capita food output, poor infrastructure, ecological constraints, limited arable land , disease, poor water and sanitation, inadequate nutritional knowledge, civil war, and ethnic conflicts. The general conceptual framework summarizes the diverse determinants of food security status. Specially the framework emphasize the imaginative causal relations between the various elements of food availability, access and utilization. The links between the resources in command of the household, level of farm and non-farm production, household income, household

and individual consumption and individual nutrition, all are important in exploring food security. And from that pattern of arrangements, it clearly implies that adequate food availability is a necessary, although not sufficient condition to achieve food access. Food access in turn is a necessary, but not sufficient for adequate utilization.

4.7.1 Availability :- Availability of food is a function of adequate quantity of food, its equitable distribution amongst all sections of the society, rate of growth and variability in food grain production, resources and application of science and technology, prices of food grain both domestic and international composition of food basket with change in tastes. These all are a macro aspect of the availability component of food security.

At the household level, net availability of food for consumption is one of the necessary factors for ensuring physical access to food. The household availability of food in this study is measured, with the different indicators identified as

- 1) Amount of food purchased
- 2) Own production of food items.
- 3) In-kind wages
- 4) Gift and Transfers
- 5) Food in stock of the households.

On the basis of above indicators the study has resorted for measuring household's availability component of food security though diets of households are also influenced by lifestyles, social relationships, marriage patterns, family structures, the availability of packaged and processed foods advertising and the media. Processed and packaged foods are having wide availability in urban than in rural areas, because food manufacturing and processing units are situated in the vicinity of the urban areas, (Maxwell, et. al., 2000).

4.7.2 Accessibility :- One important aspect of undernourishment is its close association with people's financial capacity to purchase food, (Chowdhury, 2000). There are 800 million people in the developing countries in the world, cannot afford to purchase the food they are in need for maintaining a healthy life and are trapped in undernourishment . There should be a focus on the issue of the ability of the poverty-stricken people to command adequate food from the existing supplies. If a country produce enough food and make it available to its population in all seasons and in all its regions even then the entitlement problem is bound to occur. The reason behind this is the income stream in household's command. (Vyas, 2003).

The meaning of food security get looses when the cost of procuring nutritional food falls short to that extent of a household's income. Better food and agricultural policies can improve the poor people's accessibility of needed food. When developed countries reduces subsidies on agriculture –being rich it can go for cost-saving technologies, which may lower the international prices for agricultural commodities, but for a developing nation like India, it may not be a beneficial one. The government policy of food management should be a satisfactory one.

A. Sen I 1989 has viewed that ability to acquire food of a person is affected by his endowment (land, labour, power) or exchange based acquirement (employment, wages, food prices, prices of goods and services sold by the person, social security measured. Therefore, the ability to acquire food is important for food security and is to be reinforced. Food security provision at individual and household level is very difficult as because people are unequally endowed with the capabilities and command over food which is affected itself by different factors – e.g. income gender relations, social structure caste religion etc. Poverty of a person or household is one of the factors affecting the ability to acquire food, in turn is the result of a number of factors. The different indicators considered for the study with respect to accessibility of food are :

I. Average Total Monthly Income and

II. Average Total Monthly Savings.

4.7.3 Food Utilization : Food utilization is the proper biological use of food, requiring a diet providing sufficient energy and essential nutrients potable water and adequate sanitation. Effective food utilization depends in large measure on knowledge within the household of food storage and processing techniques, basic principles of nutrition and proper child care and illness management. Food utilization is reflected in the nutritional status of an individual. The nutritional status of an individual can be judged in terms of calorie intake. Although age, gender-wise calorie requirement chart is available in the related literature, the measurement of calorie intake is difficult and requires close observation. The state of calorie deficiency can also be judged by measuring indirect indicators like reporting tiredness weakness, and frequent illness. Anthropometric measurements also pose a very good nutritional status indicator – like BMI for adult people and z-score for children below 5 years of age (0 – 59 months).

Indian literature review reveals a specific set of indicators that are conceptualized as important aspect of food security status. Malnutrition among pre-schoolers are correlated to lower caste, lack of land, poor maternal knowledge of nutrition, mother forced to work outside the home, young age of mother at marriage, having late birth order, gender and recent diarrheal infection (Chung, 1997).

The study has resorted for indicator of food utilization as the

- i. Reporting Against Tiredness,
- ii. Reporting Against Weakness,
- iii. Reporting Against Poor Concentration,
- iv. Reporting Against Hair Loss,
- v. Reporting Against Weight Loss and
- vi. Reporting Against Frequent Illness.

BMI and z-score are also used as nutritional status indicators for food utilization components of food security.

The main objectives of the study are to measure food access, food utilization and food availability at household level. Food availability at household level is assessed by taking into consideration the amount of the purchased food in a month in an average (Purchased Food), amount of household's own food production in a month in an average(Own Food), wages received by household members in kind of food in a month in an average (In Kind Wages), food received by household as gift and transfer in a month in an average(Gift & Transfer), and food in stock of the household (Food in Stock) in reference month. The expressions in the parenthesis represent the name of the variables. Data pertaining to these are collected from household at the time of survey and are recorded in Kg. Since availability included availability of non-food items under the concept of food security, non-food items such as housing, fuel and light, clothing, nondurable goods durable goods household service health, transport, communication, recreation, education, donation, ceremonies, alcohol and cigarettes and miscellaneous, availed by the households in the reference month are also recorded at the time of survey. Food items purchased from market in the reference month are in total 129 items under different categories. These are rice, wheat, i.e., cereals pulses, species, fats and edible oil, milk & milk products, animals proteins, vegetables, fruits, nuts etc. All these items, food and non-food are converted to monetary units (Rs) for measurement purpose.

4.8 Design of the Study

The main objectives of the study are to measure food access, food utilization and food availability at household level. Food availability at household level is assessed by taking into consideration the amount of the purchased food in a month in an average (Purchased Food), amount of household's own food production in a month in an average(Own Food), wages received by household members in kind of food in a month in an average (In Kind Wages), food received by household as gift and transfer in a month in an average(Gift & Transfer), and food in stock of the household (Food in Stock) in reference month. The expressions in the parenthesis represent the name of the variables. Data pertaining to these are collected from household at the time of survey and are recorded in Kg. Since availability included availability of non-food items under the concept of food

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The concept of dimension index is used to measure household's food availability status. The dimension index is modified as follows,

$$\text{Dimension Index} = (\text{Actual value} - \text{Min Value}) / (\text{Max value} - \text{Min Value}).$$

By following Tendulkar Committee Report, the Min value in dimension index is replaced here by Goalpost value which is the poverty cut off figures, i.e., Rs.4140 for rural and Rs.5040 for urban household having 5 members taken as standard family size (**Tendulkar committee report, computed as per Tendulkar method of mixed reference period , GOI, Planning Comm., July 2013 , Press Information Bureau 22nd july 2013**). The Max value is the sample maximum of subsample of rural households and subsample of urban households.

$$\text{Therefore, Dimension Index} = (\text{Actual Value} - \text{Goalpost Value}) / (\text{Max Value} - \text{Goalpost Value})$$

In such a situation, if actual value is greater than the poverty cut-off figure, Dimension Index value is positive implying that the household is above poverty line and therefore, food secured. Higher positive value of Dimension index indicates better food security of household so far as availability dimension of food security is concerned. On the other hand, negative value of Dimension Index implies that the actual value is less than the poverty cut-off and therefore, higher negative value of Dimension Index will indicate higher food insecurity at household level. The maximum value of Dimension Index will be 1 where (Actual Value – Goalpost value) = (Max Value – Goalpost Value). However the minimum

value of Dimension Index will be negative (where Actual Value < Goalpost Value) and higher negative value will represent higher food insecurity. Further the value is from zero on negative and positive side, stronger would be the case of food insecurity and food security respectively in the area of availability dimension of food security problem. In case of food availability, the price value of the total of the food and non-food items available with the household family in a month is the variable that has been taken for estimating the Dimension Index. Since the price value of food and non-food items cannot be negative, the lowest possible actual value of this variable is restricted to zero.

Therefore the negative maximum of DI in case of Food Availability will be,

$$\begin{aligned}
 \text{DI} &= \frac{0 - 4140}{184687.33 - 4140} \text{ for Rural} \\
 &= \frac{-4140}{180547.33} = -0.023 \\
 \text{DI} &= \frac{0 - 5040}{326957.25 - 5040} \text{ for Urban} \\
 &= \frac{-5040}{321917.25} = -0.016
 \end{aligned}$$

On such a basis of the value of Dimension Index, the food security status of each household is ascertained. On this basis, the food security status of each household as Highly Food Secured, Food secured, Vulnerable, Food Insecured and Highly Food Insecured categories of households are identified with some arbitrarily selected class limits. The arbitrarily selected class limits for such classes are as follows.

$$\text{Highly Food Secured} = 0.5 \leq \text{DI} \leq 1$$

$$\text{Food Secured} = 0.2 \leq \text{DI} \leq 0.49$$

$$\text{Vulnerable} = 0 \leq \text{DI} \leq 0.19$$

$$\text{Food Insecured} = -0.010 \leq \text{DI} \leq 0$$

$$\text{Highly Insecured} = -0.010 \geq \text{DI}$$

The food availability dimension of food security is also checked by applying a basic law of economics science. The Engels law explains the relationship between income level and spending on the consumption of some goods at a given price. The Engel curve for necessity (the goods which are necessary for living) has less than unit income elasticity implying that consumption of goods which are necessity, rises with total spending but not as fast as the total spending. In simple language, as household's spending on good rises, its spending on necessities would rise less faster. In the area of food security, the analogy is that food secured households would spend less on food items as their spending on food and non food items increases whereas, in case of food insecure households, more of the spending would be on basic food items for survival. This is examined by finding out the following percentage for each household.

$$\% \text{ of expenditure of Food Items} = (\text{Expenditure of Food Items}) / (\text{Expenditure on Food} + \text{Expd. on Nonfood Items}) * 100$$

Households having percentage value more than 70% are identified as vulnerable to food insecurity.

In case of food access, the variables which are taken to represent this component of food security are (i) Monthly Average Total Income of the Household (in Rs) and (ii) Monthly Total savings of the Household (in Rs). Household total of these two variables are put to dimension index, as detailed above with poverty cut-off figures as the goalpost representing the minimum value of dimension index. On the basis of this, the food security status of each household is ascertained under five distinct categories as follows –

Since the variable representing (i) and (ii) above cannot be negative, the actual value of the same is restricted to a minimum of zero and DI is calculated to the same way as is done in the case of Food Availability.

In case of food access the negative most value of DI will be as follows :

$$\begin{aligned}
 \text{DI} &= \frac{0 - 4140}{57184.17 - 4140} \text{ for Rural} \\
 &= \frac{-4140}{53044.17} = -0.08 \\
 \text{DI} &= \frac{0 - 5040}{171666.67 - 5040} \text{ for Urban} \\
 &= \frac{-5040}{166626.67} = -0.03
 \end{aligned}$$

Highly Food Secured = $0.5 \leq \text{DI} \leq 1$

Food Secured = $0.2 \leq \text{DI} \leq 0.49$

Vulnerable = $0 \leq \text{DI} \leq 0.19$

Food Insecured = $-0.03 \leq \text{DI} \leq 0$

Highly Food Insecured = $-0.03 \geq \text{DI}$

The third component of Food Security, viz., Food Utilization is basically based on the status of nutritional intake by each of the household member. The nutritional status is measured in terms of calorie intake and also by other methods such as Body Mass Index, Basal Metabolic Rate, Z-score of children etc. Since calorie measurement is associated with varieties of problem and its accurate measurement is always shrouded with controversy, the present study attempts to measure calories deficiency by applying an indirect method. The following six variables are used to measure calorie deficiency of each member of the household. These are,

- (i) Percentage of the Members of a Household reporting against Tiredness
- (ii) Percentage of Members Reporting Against Weakness
- (iii) Percentage of Members Reporting Against Poor Concentration
- (iv) Percentage of Members Reporting Against Hair Loss
- (v) Percentage of Members Reporting Against Weight Loss
- (vi) Percentage of Members Reporting Against Frequent Illness

The aggregate of these percentages are worked out and Dimension Index is used to find out the calorie deficiency level of each household. The Maximum Value is

considered as 100% which indicates absolutely no calorie deficiency at household level and the Minimum value is considered as zero which shows absolute calorie deficiency at household level. With these goal post values the Dimension Index value for each household is estimated. DI ranges between 0 to 1 and 0 means absolute calorie deficiency and hence Food Insecurity. On the other hand, the value of DI at 1 indicate absolute no calorie deficiency and hence food security. On these basis, the food security status of each household as Highly Food Secured, Food secured, Vulnerable, Food Insecured and Highly Food Insecured categories of households are identified with some arbitrarily selected class limits. The arbitrarily selected class limits for such classes are as follows.

Highly Food Secured = $0.80 \leq DI \leq 1$

Food Secured = $0.6 \leq DI \leq 0.79$

Vulnerable = $0.40 \leq DI \leq 0.59$

Food Insecured = $0.20 \leq DI \leq 0.39$

Highly Insecured = $0 \leq DI \leq 0.19$

Each household is classified on the basis of DI value for different such categories and status of food security in the component area of Food Utilization is shown in the study.

The Food Security status of households is also checked by estimating the BMI of all adult members of a household and by estimating the Z-score of an Index Child. An index Child in a household is defined as a child in the age group of 0-5 years and is selected at random at the time of survey in case of households where there are more than one child of that category present in the household.

The BMI of each adult member is estimated by the formula as follows:

BMI= Weight in Kg/ Height in Meter Square.

The Nutritional status of an adult is judged and categories as follows

-	Underweight	≤ 18.0
-	Normal (ideal)	$18.0 \leq \text{BMI} \leq 23.0$
-	Overweight	$23.0 \leq \text{BMI}$
-	Obese	$30.0 \leq \text{BMI}$

* For Asian countries BMI value ranges between 18.5 to 23 for normal adult (no malnutrition).

* For others BMI value ranges between 18.5 to 25 for normal adult.

4.9 Anthropometric Measurement : Anthropometry is a science or a technique that uses body measurements of human being for drawing conclusions about the nutritional status of individuals and populations. This is done with the measurement of height and weight of adult members of a household.

4.9.1 Body Mass Index (BMI) :

To determine the adult nutritional status body mass index (BMI) is used. BMI calculation is done to get a ratio of weight in Kilograms divided by height in meters squared. BMI is having correlation with body fat, and is an indicator to assess the nutritional status of adult. World Health Organisation (WHO) has given the different categories of BMI for standisation of health status. The benchmark are as follows :

All adult whose BMI are less than 18.5 are underweight. As an Indian adult, BMI between 18.5 to 23.0 is in normal range. BMI between 23.0 to 29.9 is considered overweight and an adult with a BMI of 30.0 and above are considered obese. Height is a measure of past nutritional status and partially reflects the cumulative effect of socio-economic manifestation on access to nutritious foods during one’s childhood and adolescence. The nutritional status of an adult in the study is judged and categorized accordingly.

4.9.2 Z-score : In 1990 WHO constituted a working group on Infant Growth to develop recommendations for appropriate uses and interpretation of

anthropometry in infants and young children. The Working Group (WHO, 1994) concluded that the National Centre for Health Statistics (NCHS) / WHO international reference was flawed since it failed to depict physiological growth adequately; that its scientific weaknesses were sufficient to interfere with the sound nutritional management of young children and that new growth curves were needed.

Consequently, the WHO Multicentre Growth Reference Study (MGRS) was designed to provide data that describe “how children should grow” by including in the study’s selection criteria specific health behaviours that are consistent with current health promotion recommendations (e.g., breast feeding norms, standard pediatric care and non-smoking requirements).

Another key characteristics of the new standard is that it makes breast feeding the biological norm and establishes the breast feed infant as the normative growth model.

When their health and care needs are met, the children grow similarly across the world’s major regions. The child anthropometric are used in this study as indices of height for age (stunting), weight for height (wasting) height for age (underweight). These three anthropometric measures implies a situation of long-term and short-term nutrition situation of children between the age of 6 and 59 months. And the measurements are compared with the standard reference population stated by the WHO.

The weight for length / height index measures the degree of wasting i.e. the failure to gain weight adequately in relation to height or length (below 24 months) and (above 24 months) is a reflection of recent or acute under nutrition. Wasting results from a recent inadequate food intake or recent acute illness. Seasonal morbidity and food availability is associated with stunting.

Children who are below (<-2 SD) minus two standard deviations from the median of the NCHS reference are identified as wasting i.e. the children with acute malnutrition inadequate weight relative to length or height.

The weight for age (WFA) index measures the degree of underweight caused by either wasting or stunting or may be a combination of both. It reflects both chronic malnutrition and acute malnutrition resulting from inadequate weight relative to age. The age index value is a composite of height for age and weight for height indices. When the WFA index value is below minus two SD (<-2 SD), the child is classified as underweight according to WHO.

Height for age (HFA) index is used for measuring degree of stunting which reflects chronic malnutrition resulting to inadequate length or height relative to age. The failure to grow adequately in height in relation to age. No of factors such as low socio-economic status in correct feeding practices, inadequate food intake & ill health are having a cumulative effect on this index SD below minus two (<-2 SD) from the median or sometimes 80% weight / length of the reference population are classified as stunted (Marinda, 2005). HFA index reflects skeletal growth and past or chronic malnutrition.

Overnutrition is a situation of excessive fat accumulation that presents a risk to health is related to z-score as above plus two (>+2 SD) standard deviation. The anthropometric z-score method analysis is done with anthropometric calculator developed and recommended by WHO in 2005.

Definition	Index or Measure	Moderate	Severe
Stunting	HFA	<-2 and ≥ -3 z-score	<- 3 z-score
Underweight	WFA	<-2 and ≥ -3 z-score	<- 3 z-score
Wasting	WFA	<-2 and ≥ -3 z-score	<- 3 z-score
		Overweight	Obese
Overnutrition	WFH	>+2 and ≥ +3 z-score	> + 3 z-score

4.10 Methodology

The present study tries to examine the status of food security at the household level of Cachar district of Barak Valley which is located in the Southern part of Assam. The study is based on the primary data collected through a structured questionnaire by applying personal interview method from selected households of the rural and urban areas of Cachar. The target group for interview are the adults of households of all ages and sex and an index child of pre-school age. The status of household level food security is measured with the help of three dimensions of food security – such as availability of food, accessibility of food and utilization of food. Different indicators are identified for all these dimensions – such as purchasing power- i.e. monthly income, savings, different assets holding status, purchase of food, own production of food, gift and transfers stock of food, access to safe drinking water, sanitation facility available, average education level of the individual adult members and nutrition status of both adult and index children.

4.10.1 Population : The population living in the Cachar district of South Assam comprises the population of the study. The study is conducted on the population distributed among fifteen Community Development Blocks and two Sub-Divisions of the district. The development blocks are – Tapang, Salchapra, Katigorah, Kalain, Barjalenga, Sonai, Narsingpur, Palanghat, Rajabazar, Binnakandi, Banskandi, Lakhipur, Udharbond, Barkhola and Silchar. Two sub-divisions are Silchar and Lakhipur. One Zilla Parishad is also there in the district. The total number of population of the district is 1736617 according to 2011 census. The demographic characteristics of the district is discussed in elaboration in Chapter-3

4.10.2 Sample of the study :- The sample of the study comprises of 250 households, where 125 from urban and 125 from rural areas of the district. The sample units are selected with the help of purposive random sampling technique since the study have focused on the food security aspect of the population in the district. The surveyed sample households distribution throughout the district – both rural and urban is shown in the table (4.1) & table 4.2. In total 47 villages, of

44 gaon panchayats in all the 15 C.D. Blocks and 38 municipal wards (28 in Silchar and 10 in Lakhipur Town) are surveyed in the district for collecting data from 250 households. Blockwise numbers of households surveyed are : Tapang - 8, Salchapra -6, Katigorah-4, Kalain -4, Barjalenga – 8, Sonai – 6, Narsingpur – 9, Palanghat-6, Rajabazar-5, Binnakandi-6, Banskandi-5, Lakhipur-14, Udharbond-13, Barkhola -12 and Silchar-20.

Municipal Ward-wise (Table-4.2) numbers of households surveyed are : Silchar - 113 and Lakhipur-12.

Table- 4.1**AREA UNDER SURVEY (RURAL) FOR THE STUDY**

Directions	No. Of C.D Blocks	Name of Community Development Blocks	No. of Villages surveyed	No. of G.P Surveyed
South	1	Tapang	2	2
	2	Salchapra	2	2
	3	Katigorah	1	1
	4	Kalain	2	2
East	5	Barjalenga	2	2
	6	Sonai	1	1
	7	Narshingpur	3	3
	8	Palanghat	1	1
North	9	Rajabazar	1	1
	10	Binnakandi	2	1
	11	Baskandi	2	2
	12	Lakhipur	6	6
West	13	Udharbond	4	5
	14	Barkhola	6	3
Urban Block	15	Silchar	12	12
		Total	47	44

Source : Primary Data from the survey.

Table : 4.2**AREA UNDER SURVEY (URBAN) FOR THE STUDY**

Sub- Division	Municipal Area	Municipal Ward Number	Total Ward
SILCHAR	North	1 , 2, 3, 4.	28
	East	5, 6, 7, 8, 9, 10, 12	
	South	13, 14, 15, 16, 17, 18, 19.	
	Middle	20, 21, 22, 23, 11	
	West	24, 25, 26, 27, 28	
LAKHIPUR	Lakhipur	1, 2, 3 , 4, 5, 6, 7, 8, 9, 10	10
	Total		38

Source : Primary Data from the survey.

4.10.3 Data :- Primary data is the basis of this study. The units of study are individuals living in households i.e., the adult members of households and an index child. Through a well structured questionnaire, the primary data for the study is collected from the selected units of the sample. Interview method was used for data collection where information with respect to adults of households of all ages and sex and an index child of pre-school age was tried to cover. The data contains the information about household roster, household characteristics regarding education, occupation, income and savings, remittances, anthropometric measurement, land holding, housing and dwelling condition, purchase of food, own production, indirect measure of income, coping strategies, household food insecurity access etc. All these informations will embrace the three components of food security viz, food access, food availability and food utilization.

Apart from primary data, the secondary data is also gathered from the pool of published sources comprising national and international journals, magazines, reports, national daily news paper, etc. to cover the socio-economic aspect of the study area and to support the overall study from the academic acclaim.

4.10.4 Analytical Tools and Techniques for Data Analysis : For the assessment of all three components of food security – food availability, food accessibility and food utilization at the household level, the data analysis of the surveyed area is performed systematically. Per capita income of the households are estimated . The deviations’ of monthly per capita income from the annual per capita income is also calculated. Prices of the purchased food items both from market and PDS is collected. Per capita monthly expenditure on food is also calculated.

The distribution of households selected from Municipality areas (Urban) and Blocks (Rural) are shown in Table- 4.3 , 4.3(A) and 4.4.

4.10.5 Human Capital : The correlation between education & nutrition status is a well known fact. It was also tried to access in the study area by mapping the education level of both male and female adult members at each households level. The education level was quantified with the number of completed years of study in total of both male and female members of the surveyed households.

4.10.6 Estimation of Earning : Earnings in agricultural firm and non-firm activities are assessed. Non-firm employment included salaried employment in public / Govt. / private sector or any informal self employment (Marinda, 2005).

4.10.7 Financial Capital : In the study area household’s behavior with respect to access to credit and savings are assessed as a financial institution accessibility. The savings both formal and informal are calculated at each individual level of households.

4.10.8 Households Food & Nutrition Security :

Calorie Intake : The data on calorie intake assessed through household expenditure on consumption in accordance with the various National Sample Survey Organisation (NSSO) rounds. The survey was done on household food consumption on which numbers of different food items was captured. Accordingly expenditure on different categories of food items is quantified respect to market price.

TABLE 4.3**MUNICIPAL WARD-WISE DISTRIBUTION OF SAMPLE HOUSEHOLDS (URBAN)**

AREA	WARD NUMBER	HOUSEHOLDS
SILCHAR	1	5
	2	5
	3	5
	4	5
	5	1
	6	2
	7	6
	8	1
	9	2
	10	3
	11	2
	12	4
	13	3
	14	3
	15	4
	16	3
	17	3
	18	2
	19	3
	20	5
	21	8
	22	5
	23	7
	24	6
	25	5
	26	5
	27	5
	28	5
TOTAL		113

TABLE 4.3(A)**MUNICIPAL WARD-WISE DISTRIBUTION OF SAMPLE
HOUSEHOLDS****(URBAN)**

AREA	WARD NUMBER	HOUSEHOLD
LAKHIPUR	1	1
	2	2
	3	1
	4	1
	5	1
	6	1
	7	2
	8	1
	9	1
	10	1
TOTAL		12

Table: 4.4

**DEVELOPMENT BLOCK-WISE DISTRIBUTION OF SAMPLE
HOUSEHOLDS (RURAL)**

SL. NO.	NAME OF THE BLOCK	NO.OF HOUSEHOLD
1	TAPANG	8
2	SALCHAPRA	6
3	KATIGORAH	4
4	KALAIN	4
5	RAZABAZAR	5
6	LAKHIPUR	13
7	BINNAKANDI	6
8	BANSKANDI	5
9	UDHARBOND	13
10	BARKHOLA	12
11	BARJALENGA	8
12	SONAI	6
13	NARSINGPUR	9
14	PALANGHAT	6
15	SILCHAR	20
	TOTAL	125