

## CHAPTER ONE

### INTRODUCTION

#### 1. 1 Background of the Study:

Food security has now taken centre stage in policy discussions around the world. The World Food Summit (WFS) and subsequently, the Millennium Development Goals (MDGs) adopted at the United Nations unequivocally recognize the importance of achieving food security. The concept of food security in earlier times particularly in the 1970s concentrated upon building up national or global level food stocks i.e it highlighted the importance of the physical availability of food stocks (Frankenberger and Maxwell, 1992). Thus in the 1970s, food security was understood as the ‘availability at all times of adequate supply of basic foodstuffs’ (UN, 1975). However the concept of food security has undergone considerable modifications in recent years. Amartya Sen (1981) added a new dimension to food security and emphasized ‘access’ to food through what he called ‘entitlements’- a combination of what one can produce and exchange in the market, along with the state or other socially provided supplies. Subsequently, Sen and other scholars put much stress on the aspects of adequate nourishment and adequate healthiness in achieving food security. Accordingly, there has been a substantial shift in the understanding of food security, and WFS in 1995 declared, ‘Food security at the individual, household, national, regional, and global level exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life’ (FAO, 1996).

However in India, there is a dearth of research works on the analysis of food security by bringing all these dimensions together. The available literatures mostly address the

issue by analyzing the dimensions separately. Moreover studies on food security have restricted mostly to inter-state level analysis. But states in India are typically large and diverse. Intra-state disparities in socio economic development are likely to affect the food security status of the households. For effective policy and focused intervention, identifying the worst-off areas is important. This requires the rigorous research works at district level, the level at which food security interventions are implemented.

Macro level analysis of food security covers a large number of issues confronted at household level. Food security at household level indicates the availability as well as access to food over time, and across all the members of the household. At micro level the importance is not only to the notional availability but also actual consumption across different socio-economic groups as well as distribution in the intra-household context. Within the household, intra family consumption behaviour occupies significant space because allocation of food among the members is suspected to be unequal, allegedly discriminating against the female members of the household (Sen, 1984). Hence micro level studies have to be taken up to get a real understanding of the nature and dynamics of food security situation at inter as well as intra household level.

The present study is an attempt to look into the food security issue by taking into consideration all the possible dimensions of food security. It has conducted the empirical work in Assam as Assam is lagging behind the other states of the country on many fronts and hence it would be of prime interest to see its relative status on the matter of food security. Moreover the available studies on food security in Assam have mostly focused on the availability dimension and district level analysis of food security in the state has not been carried out yet. At this back drop, it would be an important exercise to analyze the food security situation in Assam through the axes of availability,

accessibility and absorption or utilization of food. It is further to be noted that in the present study, we attempted to highlight the issue of food security in the rural context only. This is because the people in the rural areas are more vulnerable in meeting the basic needs of life as compared to their urban counterparts.

### **1.2 Objectives:**

The main objectives of the present study are:

1. To look into the status of food security in rural Assam vis-à-vis to the rest of rural India.
2. To make an inter-district study of food security in rural Assam.
3. To assess the role of Public Distribution System (PDS) as a policy tool to deal with the issue of food security in rural Assam.
4. To look into the status and determinants of food security at household level in rural Assam.

### **1.3 Research Questions:**

The present study seeks to answer the following research questions

1. What is the relative status of rural Assam on the matter of food security as compared to other states in rural India?
2. What is the status of food security in rural Assam across districts?
3. What is the role of Public Distribution System (PDS) as a policy tool in improving the level of food security in rural Assam?
4. What is the status of household level food security in rural Assam?

#### **1.4 Coverage of the Study:**

The analysis of the first two objectives pertains to two cross sections viz. 2001-05 and 2007-11. Two cross sections are considered with a view to assess the progress of rural Assam on the front of food security over two points of time. It should be noted that during 2001-05 there were 23 districts in Assam but since 2010, four more districts are created (Statistical Hand Book of Assam, 2015). Since relevant data for the new districts is not available for the earlier years and our aim is to compare the progress of food security over two cross sections, inter-district analysis of food security in rural Assam is carried out for 23 districts. As far as the third objective is concerned, the study period consists of 1999-2000 to 2007-08 when the analysis is made in respect of per capita purchase of food grain, while the study period confines to 1993-94 to 2009-10 when the analysis is made in terms of diversion of food grain. The last objective related to the analysis of household level food security is based on the collection of primary data during field survey during May- June, 2015.

#### **1.5 Data Base and Methodology:**

##### **1.5.1 Data Source:**

The present study is based on both secondary data and primary data (for details refer Table 1.1). The data sources of various indicators are presented in Tables 1.2 to 1.5 respectively.

**Table 1.1 Data Base for studying different Objectives**

Serial No	Objectives	Data Base
1	Inter-state analysis of food security in rural India	Secondary
2	Inter-district analysis of food security in rural Assam	Secondary
3	Assessment of the role of PDS in rural Assam	Secondary
4	Analysis of food security status at household level in rural Assam	Primary

**Table 1.2 Data Source for different Variables/Indicators used for Studying First Objective**

Indicators / Variables	Sources	Reference Year
<b>(a) Food Availability</b>		
1.Per capita production of food grains <sup>1</sup>	Hand Book of Statistics on Indian Economy (RBI, 2013)	2001-02 to 2004-05 and 2007-08 to 2010-11
2. Irrigation intensity	Ministry of Agriculture, Govt. of India	2001-02 to 2004-05 and 2007-08 to 2010-11
3. Percentage of non-forest area to total geographical area	State of Forest Report	2005 and 2011
4.Percentage of inhabited villages having access to paved road	Census of India	2001 and 2011
<b>(b) Food Accessibility</b>		
1.Percentage of non-agricultural labourers to total labourers	Census of India	2001 and 2011
2.Percentage of SC and ST population to total population <sup>2</sup>	Census of India	2001and 2011
3.Share of working age population	Census of India	2001 and 2011
4.Per capita monthly consumption expenditure on food (inequality adjusted)	61 <sup>st</sup> NSSO round and 66 <sup>th</sup> NSSO round	2004-05 and 2009-10
5. Wage rate of casual workers	61 <sup>st</sup> NSSO round and 68 <sup>th</sup> NSSO round	2004-05 and 2011-12
6. Rural female literacy rate (7+)	Census of India	2001 and 2011
<b>(c) Food Absorption</b>		
1.Percentage of households having access to safe drinking water	Census of India	2001 and 2011
2. Percentage of inhabited villages having access to Primary Health Centres (PHCs)	Census of India	2001 and 2011

<sup>1</sup>Per capita food grain production is found by dividing total food grain production of a state by its total population. Since annual data on total population is not available, it is found by using the following formula

$$\text{Total Population} = \frac{\text{Gross SDP}}{\text{Per capita SDP}}$$

The data on total food grain production, gross SDP and per capita NSDP required to find per capita food grain production are taken from Hand Book of Statistics on Indian Economy (RBI, 2013). In order to take into account the cyclical nature of food grain production, we have used an average of four years food grain production from 2001-02 to 2004-05

<sup>2</sup> The direction of this indicator has been reversed to have a positive association with food security

**Table 1.3 Data Source for different Variables/Indicators used for Studying Second Objective**

Indicators / Variables	Sources	Reference Year
<b>(a) Food Availability</b>		
1.Per capita production of food grains <sup>3</sup>	Statistical Hand Book of Assam	2001-02 to 2004-05 and 2007-08 to 2010-11
2. Irrigation intensity	Statistical Hand Book of Assam	2001-02 to 2004-05 and 2007-08 to 2010-11
3. Percentage of non-forest area to total geographical area	State of Forest Report	2005 and 2011
4.Percentage of inhabited villages having access to paved road	Census of India	2001 and 2011
<b>(b) Food Accessibility</b>		
1.Percentage of non-agricultural labourers to total labourers	Census of India	2001 and 2011
2.Precentage of SC and ST population to total population	Census of India	2001 and 2011
3. Rural female literacy rate (7+)	Census of India	2001 and 2011
<b>(c) Food Absorption</b>		
1.Percentage of households having access to safe drinking water	Census of India	2001 and 2011
2. Percentage of inhabited villages having access to Primary Health Centres (PHCs)	Census of India	2001 and 2011

Note: Due to data unavailability at district level, three indicators viz. share of working age population, per capita monthly consumption expenditure on food (inequality adjusted) and wage rate of casual workers are left out from the analysis of inter-district status of food security in rural Assam.

<sup>3</sup>Per capita food grain production is found by dividing total food grain production of a district by its total population. Since annual data on total population is not available, it is found by using the following formula

$$\text{Total Population} = \frac{\text{Gross DDP}}{\text{Per capita DDP}}$$

The data on total food grain production, gross DDP and per capita NDDP required to find per capita food grain production are taken from Hand Book of Statistics published by Directorate of Economics and Statistics, Assam .In order to take into account the cyclical nature of food grain production, we have used an average of four years food grain production from 2001-02 to 2004-05

**Table 1.4 Data Source for different Variables/Indicators used for Studying Third Objective**

Variables	Data Source
Per capita purchase of rice and wheat	Taken from Khera (2011) <sup>4</sup>
Diversion of grain	Taken from Khera (2011) and Kumar et al (2012) <sup>5</sup>

**Table 1.5 Data Source for different Variables/Indicators used for studying fourth Objective**

Variables	Data Source
Variables relevant for studying Household level food security in the present study and socio-economic characteristics of sample households	Head of the household/knowledgeable person of the household

### 1.5.2 Methods of Analysis:

We have tried to analyse the status of rural Assam to the rest of rural India by constructing a composite Food Security Index (FSI). Similarly the inter-district status of food security is also analysed in terms of composite Food Security Index (FSI). For assessing the status of PDS in rural Assam, Khera's framework (2011) is used which consists of examining the status of PDS of a state in terms of per capita purchase of

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<sup>4</sup>. Khera (2011) has calculated per capita purchase of rice and wheat by the households from PDS for rural and urban India. These data are used in the present dissertation for studying the effectiveness of PDS in rural Assam in relation to the rest of rural India.

<sup>5</sup>Khera (2011) has calculated diversion estimates of food grain to the open market for the time periods 1999-2000 to 2007-08 and Kumar et al (2011) has calculated diversion estimates of food grain for two cross sections 1993-94 and 2009-10. These data are used in the present dissertation for studying the effectiveness of PDS in rural Assam in relation to the rest of rural India.

food grain from PDS and diversion of food grain from PDS. Household level food security is analysed in terms of a composite Household Food Security Index (HFSI) developed by the present study. A logistic regression is also carried out to explore the determinants of food security at household level in rural Assam. Besides this, use of percentages, descriptive statistics, Pearson's Correlation Coefficient, Spearman's Rank Correlation Coefficient, Student's t test for testing the significance of the difference between two sample means are made wherever necessary. The detailed description about statistical and econometric tools used for analyzing each and every objective in the study is incorporated in Chapter 3.

#### **1.6 Scheme of the Thesis:**

The present study is organized into six chapters. The structure of the thesis is depicted below.

Chapter 1: Introduction

Chapter 2: Review of Literature

Chapter 3: Conceptual Framework and Methodology

Chapter 4: Profile of Sample Households

Chapter 5: Results and Discussions

Chapter 6: Summary, Conclusions and Suggestions

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