



*International Journal of Humanities & Social Science Studies (IJHSSS)*  
*A Peer-Reviewed Bi-monthly Bi-lingual Research Journal*  
ISSN: 2349-6959 (Online), ISSN: 2349-6711 (Print)  
Volume-I, Issue-IV, January 2015, Page No. 138-144  
Published by Scholar Publications, Karimganj, Assam, India, 788711  
Website: <http://www.ijhsss.com>

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## **Analysis of Poverty Profile and Determinants of Welfare among Rural Households: A Case study of Udalguri District, Assam**

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### **Abstract**

*Poverty is almost a social misery contaminated in every socio-economic zone. Poverty is a plague afflicting people all over the world and is one of the most serious manifestations of human deprivation. Hence, the issue of poverty is a global concern. Poverty encompasses inadequate income and denial of the basic necessities such as education, health services, clean water and sanitation which are essential for human survival and dignity. Eradication of poverty is one of the major objectives of Millennium Development Goals.*

*This study, therefore, seeks to assess poverty levels and socio-economic determinants of household welfare in Udalguri district of Assam with the view to providing recommendations for policy formulation that could help reduce poverty and improve the living conditions of the people in the study area.*

***Key Word: Household, Poverty Index, Welfare, Udalguri.***

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**1. Introduction:** The experience of poverty is a socio-economic phenomenon, actually requires no definition, since everyone knows or recognizes who is actually poor. In general, those who are unable to fulfill their minimum nutritional needs due to inadequate income are considered to be poor. Thus poverty means the people who have nothing, lives in constant danger due to the lack of income and all basic resources that are essential for human survival. Mollie Orshansky explains poverty as, "To be poor is to be deprived of those goods, services and pleasures which others around us take for granted" [1]. It encompasses different dimensions of deprivation including inadequate income and denial of the basic necessities such as education, health services, clean water and sanitation (World Bank, 2007) that are required for meaningful life. It manifests itself not only in economic deprivation but also in terms of an individual's inability to access basic social amenities (World Bank, 1999), and denies its victims the most basic needs for survival, such as food, water, clothing and shelter (Gass and Adetunmbi, 2000). In general, extreme poverty means extreme deprivation i.e. deprivation of all basic amenities of life.

The issue of poverty is thus a global concern and triggered renewed efforts by researchers in recent years to investigate into its causes that linked to human capital development. Reduction of extreme poverty has become one of the basic agendas of Millennium Development Goals set by The World Bank and United Nations. However, the scenario of poverty is still persistent in developing countries including India. In India, despite considerable efforts through various poverty alleviation programmes, widespread poverty remains a core problem in both rural and urban areas. As per the government estimates an astonishing number of 45.02 crore people are below the poverty line in India (Economic Survey of Assam, 2011-12 and Census of India, 2011). The intensity of poverty is higher in rural areas than in the urban areas. The situation of Assam is worse compared to many other states of India. Various studies have proved the fact that Assam is lacking behind in terms of various socio-economic development in relation to the other states of our country. According to the Planning Commission (GOI, 2001b) estimates, in 1999-2000, the percentage of people below poverty line in India was 26.10 percent and the percentage was approximately 10 points higher in Assam at 36.09. Among fifteen major states in India, the Rank of Assam, as per Life Expectancy Index is 14th with the Life Expectancy Index of 0.37(GOI, 1998). The National Human Development Report (GOI, 2001b) placed Assam at the 14th place among the 15 major States of India and at the 27th place

among the 32 States of the country in terms of the Human Development Index value. Again in India Human development report, 2007-08, the HDI value of Assam was 0.444 as against 0.467 of India as a whole. The rank of Assam is 16th out of the 23 states of the country (IAMR and Planning Commission, 2011). Baro and Dutta, (2014), through construction of household ill-being index revealed a dismal picture well-being of Bodos in Assam and suggested that the household ill-being is much higher in rural areas when compared to urban areas. A case study undertaken by Keshab, (2005), found that Bodo inhabited districts in Assam are lagging significantly behind some aspects of development as compared to the state average and marginally behind the rest of the state in overall expansion of human capabilities. Another study made by Ghosh, S., (2013), estimated multidimensional poverty in Barak Valley of Assam and the study suggested that 48 percent of the farmer households were multidimensional poor. All these figures represents that the people of Assam, though rich in natural resources, is deprived and despite considerable efforts made over the last few decades, rural poverty continues to be significant. Therefore, there is need to focus on the extent of poverty situation along with the socio-demographic characteristics of households in Assam through micro area study that will provide inside to some basic underlining factors to widened income gap and poverty in a tribal community. This will provide guides for formulating policies and interventions that will help alleviate poverty in the study area. Hence, this study intends to assess the poverty levels and the socio-economic determinants of household welfare in Udalguri district of Assam with the view to providing recommendations for policy formulation that could help reduce poverty and improve the living conditions of the people in the area.

## **2. Objectives of the Study:**

The specific objectives of the study are,

1. To study the extent of poverty among rural households in the study area
2. To identify the determinants of poverty among rural households in the study area.
3. To suggest some policy recommendations.

## **3. Materials and Methods:**

**3.1 The Study area:** The area undertaken for the study is the Udalguri district, one of the most backward districts of Assam. The district lies between 26°46' and 27°77' North Latitude and 92°08' and 95°15' East Longitude. Udalguri district was carved out of Darrang district after creation of Bodoland Territorial Council (BTC) in 2003. Udalguri district became one of the four districts under the BTC with the creation of Bodoland Territorial Autonomous District (BTAD) formally on July 14, 2004. This district is bounded by Bhutan and Arunachal Pradesh in the north, Sonitpur district in the east, Darrang district in the south and Baksa district in the west. The total geographical area of the district is 1674 square kilometers with a population of 8.33 lakh meaning that the population density is 497 persons per square km. Approximately, 96 percent of the population reside in rural areas as per 2011 census. The literacy rate is 66.6 percent and the sex ratio is 966 per thousand male. The district is mainly inhabited by Bodo community including other communities like Assamese, minorities and other tribes such as Rabha and Sarania. The Headquarter of the District is situated about 140 km away from the state capital of Guwahati (Source: Official Website of Udalguri District). People of the district are mainly dependent on agriculture. There are 38,786 operational holdings with an average size of tilling less than 1.25 hectare in most of the villages, which is the result of excessive fragmentation of land holdings. (Source: [http://slnaiwmpassam.gov.in/xfiles/udalguri\(I\)-2009-10-nanoi%20iwmp.pdf](http://slnaiwmpassam.gov.in/xfiles/udalguri(I)-2009-10-nanoi%20iwmp.pdf)).

**3.2 Method of data collection:** The study is mainly based on primary data supported by secondary data. Primary data are collected through face to face interviews using structured questionnaire through field survey. Secondary data are collected from various published sources such as journals, books, internet website, and other sources.

**3.3 Sample and Sampling procedure:** Multistage random sampling technique was employed to select sample households in the study area. The sample frame as follows:

In the first stage, out of eight development blocks in the district, two development blocks were the randomly selected. In the second stage, five villages from each development block were selected. This made up a total number of ten villages. The final stage involved random selection of 9 households from each village making a total of ninety households as final sample size. Questionnaire was

administered mainly to households’ heads, but other household members were allowed to provide relevant information which could not be sufficiently supplied by the households’ heads.

**3.4 Tools for Analysis and Model Specification**

The data collected from the sample households are represented and interpreted through statistical tables and pie chart. Computer software like Microsoft-excel and SPSS are used to apply various statistical techniques and to draw pie chart.

**3.4.1 Estimating Poverty**

We examine the poverty profile of the households using standard measures of poverty such as the headcount ratio, poverty gap index and the squared poverty gap or Foster-Greer-Thorbecke (FGT) index. They are widely used because they are consistent and additively decomposable (Foster *et al.*, 1984). The FGT index is given by

$$P_{\alpha} = \frac{1}{N} \sum_{i=1}^q \left[ \frac{Z - Y_i}{Z} \right]^{\alpha} \dots\dots\dots(1)$$

Where; Z is official the poverty line, Yi is the value of poverty indicator/welfare index per capita in this case per capita income in increasing order for all households; q is the number of poor people in the sampled population of size N, and α is the poverty aversion parameter. The measures are defined for α≥0, where α is a measure of the sensitivity of the index to poverty. When α=0, we have the headcount index and P<sub>0</sub> measures the incidence of poverty, α=1 is the poverty gap index where P<sub>1</sub> measures depth of poverty and α=2 is the squared poverty gap index measuring P<sub>2</sub> the severity of poverty. The Planning Commission (GOI) fixed state specific official poverty line (Z) for the year 2011-12 at Rs. 828 for rural areas for the state of Assam. Accordingly, this official poverty line is used in our study.

**3.4.2 Welfare model:** The Ordinary Least Square Multiple Regressions was employed to analysis the various socioeconomic factors influencing household welfare in the study area. The model is as specified:

$$\ln Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + e$$

- Y = Household per capita Expenditure (Rs.)
- X<sub>1</sub> = Educational status of household head (years)
- X<sub>2</sub> = Educational status of household head (years)
- X<sub>3</sub> = Household head age (years)
- X<sub>4</sub> = Gender of household head (1 = female, 0 = male)
- X<sub>5</sub> = Remittance dummy (1 = if household received, 0 = otherwise)
- X<sub>6</sub> = Household head’s occupation Dummy1(1=farming, 0=otherwise)
- X<sub>7</sub>= Household head’s occupation Dummy2 (1=casual labour, 0 = otherwise)
- X<sub>8</sub>=Size of the family
- e = Error term

**5. Results and Discussion:**

**5.1 Living status of Sample households:** The housing conditions of a family provide good indicators of welfare measurement. Table 1 provides with the description of households by major source of water for drinking and cooking, sanitary conditions and sources of electricity supply. It was seen from the table 1 that majority (60 percent) of the respondent households lived in katcha houses, followed by only 20 percent semi-pucca and pucca house each. The information on the sources of water for drinking and cooking, sanitary conditions as well as supply of electricity could provide insight to the living **Table 1: Distribution of households by type of house and household amenities**

Particulars	Frequency	percentage	Particulars	Frequency	Percentage
<b>Type of house</b>			<b>Sanitation facility</b>		
<b>Kutchha</b>	54	60.0	Kutchha	69	76.7
<b>Semi-pucca</b>	18	20.0	Open	5	5.6
<b>Pucca</b>	18	20.0	Pucca	16	17.8
<b>Total</b>	<b>90</b>	<b>100.0</b>	<b>Total</b>	<b>90</b>	<b>100.0</b>

Drinking Water Source			Cooking Fuel Used		
Well	5	5.6	Firewood	69	76.7
Tube-well	76	84.4	LPG	21	23.3
Others	9	10	<b>Total</b>	<b>90</b>	<b>100.0</b>
<b>Total</b>	<b>90</b>	<b>100.0</b>			
Livestock Assets Possessed			Electricity Facility		
No	24	26.7	No	19	21.1
Yes	66	73.3	Yes	71	78.9
<b>Total</b>	<b>90</b>	<b>100.0</b>	<b>Total</b>	<b>90</b>	<b>100.0</b>

Source: Field Survey

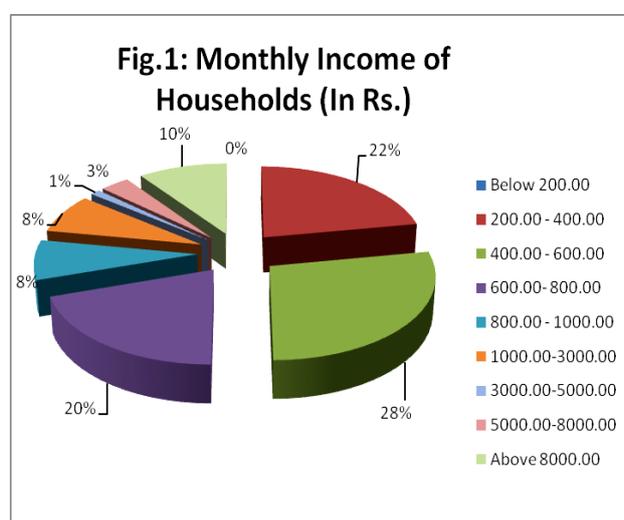
conditions of people. The result in Table 1 shows that the most common source of water available to households was tube-well which accounted for more than 84 percent. Majority (78.89 percent) of the households possess electricity facility which indicates well access of this facility. However, the access of facilities such as sanitation and cooking fuel use indicate a distress condition of the living standards in the study area. As can be seen from the table 1 that only 17.8 percent of the household possess well sanitation (pucca toilet) facility in the areas under study. **5.2 Monthly Income of the households in the study area:**

**Table 2: Distribution of households based on Monthly Per Capita Income**

Income Level	Frequency	Percentage
Below 200.00	0	0
200.00 - 400.00	20	22.2
400.00 - 600.00	25	27.8
600.00- 800.00	18	20.0
800.00 - 1000.00	7	7.8
1000.00-3000.00	7	7.8
3000.00-5000.00	1	1.1
5000.00-8000.00	3	3.3
Above 8000.00	9	10.0
Total	90	100

Source: Field Survey

Majority (76.67 percent) of the households use katcha latrine and around 5 percent of the household still practice for open defecation. Livestock assets constitute an important category of assets for the rural poverty, as they can be classified as 'income generating assets and provides means of livelihood and hence determine welfare of the households. Survey findings showed that out of 90 households, 73.3 percent had possessed at least one kind of livestock assets such as cow, bull, goats, duck and poultry.



The sample households are distributed according to their monthly average per capita income among different income groups. The classifications of household's average monthly per capita income revealed that majority (25 percent) of the households are in the income bracket of Rs. (400-600), followed by 22.22 percent earning only from Rs. 200-400 per month and 18 percent earning in the income bracket of Rs. 800-1000. Thus, the figures have indicated a low level of living among majority (77.8 percent) of households in the study area (Table 2 and Fig-1).

**Table 3** shows extent and pattern of poverty among rural households. Out of 90 sample households surveyed, 63 households are

income poor and only 17 households are income non poor. Results from the FGT model showed poverty incidence to be 0.70, poverty gap to be 0.283899 and poverty severity to be 0.1378. This implies that 70 percent of respondents are income poor, the averagely poor have about 28 percent deprivation of income (or are 28.3 percent below the poverty line) and the severity of poverty (core poor) are about 14 percent worse off compared to the averagely poor. The mean income of the households was Rs. 1098.78 with minimum income Rs. 208.33 per member per month and maximum income Rs.8364.58.

### 5.3 Poverty Status in terms of Incidence, Gap and Severity:

**Table 3: Incidence of Poverty**

Classification of Poverty	Frequency	Percentage
Income non-poor	27	30.00
Income poor	63	70.00
<i>Official Poverty Line</i>	<i>Rs.828</i>	
<i>Incidence of Poverty (HCR)</i>	<i><math>P_0 = 0.70</math></i>	
<i>Depth of Poverty (PGI)</i>	<i><math>P_1 = 0.283899</math></i>	
<i>Severity of Poverty (SPGI)</i>	<i><math>P_2 = 0.1378</math></i>	

**5.5 Assessment of welfare model:** The result of the estimated welfare model is presented in Table 4. The coefficient of multiple determinations ( $R^2$ ) with value 0.322 implies that 32.2 percent of the total variation in the dependent variable, household expenditure per capita, is accounted for by all the explanatory variables in the regression model. The significance of the F-value (2.797) implies that all

**Table 4: Result of Household Welfare Model**

Variables	Unstandardised Coefficients		Standardised Coefficients	t-value	Sig.
	$\beta$	Std. Error	beta		
Constant	6.508	.275		23.624	.000
Family Size	-.076	.030	-.350	-2.516	.015
Land holding(bigha)	.037	.015	.362	2.413	.019
Livestock possession(1=Yes)	-.089	.090	-.115	-.988	.328
Occupation Dummy1 (1-farmer)	-.323	.115	-.478	-2.802	.007
Occupation Dummy2(1-labour)	-.372	.107	-.555	-3.466	.001
Remittance facility (1-Yes)	-.019	.099	-.023	-.195	.846
Education of spouse	-.011	.011	-.126	-1.037	.305
Education of household head(years)	.005	.010	.058	.486	.629
Age of the household head	.008	.005	.196	1.670	.101
Highest education in the family	-.015	.011	-.169	-1.335	.188
<b>R-Square</b>	0.322				
<b>F-value</b>	2.797*				

Source: Computed from Survey data, 2013; \*Significant at 5% level

explanatory variables jointly explain variations and exact significant influence on household welfare (as proxy by household expenditure per capita). Out of the variables used five variables are found to be statistically significant. They are family size, agricultural landholding (measured in bigha; 1-bigha=0.4 acre), occupation dummy (both farmer and wage labourer). The result shows that there is a negative and significant relationship between the size of the family and economic welfare of the household which suggest that an average household with small family size seems better in terms of living conditions than those of big size family household. The coefficient -.076 of family size implies that a unit increase in household members which increases dependency ratio will lead to 7.6 percent decrease in the household consumption per capita. This scenario also poses a serious threat on the welfare of members of households in the study area, especially among the low income poor groups.

Agricultural landholding has positive influence effect on household welfare (measured by household per capita expenditure). This implies that an increase in the size of landholding would lead to rise in household income and in turn the welfare of the household member.

Farming and wage labourer as occupations of the household, both have exact negative impact on household welfare suggesting that household welfare would decrease as long as household occupations continues to be farmer and wage labourer. Other variables are not having statistically significant impact on household welfare, notwithstanding have important bearing on household living standards.

**Conclusion and Recommendations:** This study has so far examined incidence of poverty, its gap, severity and determinants among rural households in Udalguri district of Assam. The study establishes evidence of poverty and decline living conditions in the study area. The incidence, depth and severity of poverty are high and burden of poverty is borne disproportionately by households of different socioeconomic status. Based on our results we can conclude that poverty in the study area is more a serious issue considering the fact that 70 percent of households are income poor. This could cause a great deal of trouble to society and should be considered since “poverty anywhere is problem everywhere”. The study also indicates that the averagely poor have to mobilize financial resources up to 28 percent of Rs.828 household per capita expenditure per month to escape poverty while the severely poor have to mobilise additional 13 percent of Rs.828 household per capita expenditure financial resources to achieve the same feat. We further found that income poverty in Udalguri is mostly determined by the agricultural landholding and occupation in agricultural sector as farmer and agricultural labourer. The most important reasons of poverty are excessive dependence on agricultural sector, disguised unemployment, poor development of marketing facilities, connectivity and poor agricultural productivity, absence of any significant manufacturing activities, hourglass shaped occupational distribution and so on (Mishra, 2004). Therefore, measures to reduce poverty among agricultural households in this area should be aimed at improving the fertility of the land and output. The study also recommends engaging households in regular job in order to improve household welfare in the study area. The provision of basic infrastructure in the rural areas in particular is a necessary precondition for rural poverty alleviation. Along with this, access to credit facilities by farmers could be enhanced through cooperative societies, SHGs which in the study area. All these will improve the income of cultivating households and consequently their standard of living will improve and thereby reduce poverty. Thus, any effort to removal of poverty must aim at the development of the manufacturing sector, creation of infrastructural facilities and enhancement of agricultural productivity.

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