

# STUATUS OF POVERTY AND HUMAN DEVELOPMENT IN ASSAM: A DISTRICT LEVEL ANALYSIS

Bhargab Das, MPhil Research Scholar, Dibrugarh University

Ankita Kotoky, PhD Research Scholar, Dibrugarh University

**Abstract** - The development experience of many fast growing developing countries reveal that their higher Gross National Product (GNP) growth rates failed to reduce the socio economic deprivation of substantial section of their population. This establishes the fact that expansion of output and wealth is only a means to development. The end of development is the welfare of human beings. As a result of this the concept of human development and its measurement through a measure called Human Development Index was introduced by UNDP in 1990 in its first Human Development Report. In the human development framework, the notion of poverty essentially constitutes multidimensional deprivation. Multi-dimensional poverty recognizes interactions amongst various dimensions of deprivation and any failure to achieve one dimension results in failures in other dimensions. The present paper, in this regard, is an attempt to analyze the level of human development and poverty in the state of Assam. The present study has used simple statistical techniques for data analysis like average, Standard Deviation, Correlation Coefficient and Regression. Results of the paper reveals that as a whole the human development in Assam remains about half way in relation to the desired level. The progress and status of human development in Assam is far from satisfactory. There has been high degree of inequalities and disparities among the different districts of the state as reflected in levels of human development in various dimensions of human development. Further inter district disparities are also noticed in the Multidimensional Poverty Index. The position of different districts in terms of HDI and MPI varies. Moderate degree of negative correlation between HDI and MPI exist in the state. What emerges from the analysis is that poverty is not only a outcome of lower income but also due to deprivation in health, education, shelter, water supply and sanitation of the people.

Key Words: HDI, MPI, Assam, Inequality.

## Introduction –

The development experience of many fast growing developing countries reveal that their higher Gross National Product (GNP) growth rates failed to reduce the socio economic deprivation of substantial section of their population. Even developed industrial nations realized that higher income is no protection against the rapid spread of problems such as drugs, alcoholism, AIDS, homelessness, violence etc (HDR,

1990). This establishes the fact that expansion of output and wealth is only a means to development. The end of development is the welfare of human beings. As a result of this the concept of human development and its measurement through a measure called Human Development Index was introduced by UNDP in 1990 in its first Human Development Report. After the introduction of human development, it has emerged as a very important branch of study which provides information on standard of living and quality of life of people. The concept of Human Development is based on the idea that people are the real wealth of a nation and should, therefore be the main beneficiaries of economic development (HDR, 1990).

In the human development framework, the notion of poverty essentially constitutes multidimensional deprivation. Multi-dimensional poverty recognizes interactions amongst various dimensions of deprivation and any failure to achieve one dimension results in failures in other dimensions. The Multi-dimensional Poverty Index (MPI) offers significant insights into multi-dimensional deprivations – both its magnitude and breadth (AHDR, 2014).

The present paper, in this regard, is an attempt to analyze the level of human development and poverty in the state of Assam. A brief profile of Assam is provided along with the data analysis and interpretation about level of Human Development and poverty of Assam.

#### **State Profile from Secondary Sources –**

Assam is one of the 35 states and union territories of India. The total geographical area of the state is 78,438 square kilometers with a total population of 3.12 cores. Assam is primarily a rural state with more than 98% of its area falling under rural areas and with a 86% of rural population. The state accounts for about 2.4% of the total geographical area and 2.6% of the total population of the country (census 2011). The geographical location of the state itself is quite unique. The state shares borders with seven states and two countries i.e. Bhutan and Bangladesh, having 2,276.3 kilometers interstate and 529 kilometers international borders.

The economic resources of the state including oil and coal attracted colonial interests followed by the possibilities of tea plantation. These continued to be the state's economic backbone subsequently. The economy of the state, therefore, remained primarily 'extractive' with very limited domestic vibrancy. It may be noted that the infrastructure built in the state due to the economic interests of the colonial power remained mostly lopsided, contributing little to domestic development.

The state has a large number of tea gardens. There are some 765 large tea gardens with 2.33 lakhs hectare of area under their possession. The economy of the state is primarily agricultural. In the hills, people have been practicing shifting cultivation since time immemorial. British occupation of the region resulted in cultivation of cash crops during the early 19<sup>th</sup> century together with a sizeable plantation economy. Even though the state is rich in terms of oil, gas and other natural resources, industrialization remained limited. Notwithstanding, the service sector has become important in the state's economy in the recent past.

Census 2011 makes it clear that about 50% of the total workforce still depends on agriculture. Data also reveal that during 2001-11, the proportion of cultivators to total workers has declined from about 40% to 34%.

In the last few years, the state has been passing through a crisis such as stringent financial position, insurgency, and recurrence of natural calamities in the form of flood, soil erosion and at times draught, thereby making the task of desired development difficult. Despite such constraints, the state has been able to achieve considerable progress in diverse fields reflected through higher growth of SDP in the last few years.

### Objectives –

1. To analysis the inter district disparities of human development in Assam.
2. To examine the linkage between Human Development Index and Multidimensional Poverty Index of Assam.

### Data Source and Methodology –

For the purpose of the study the relevant district level data relating to socio economic indicators of the state of Assam are collected from Assam Human Development Report 2014 and Statistical handbook of Assam. For calculating the Human Development Index, UNDP's methodology for calculating HDI has been followed. The HDI is based on three dimensions:

Long and healthy life: measured by life expectancy at birth.

Knowledge: measured by mean years of schooling and expected years of schooling.

Standard of living: measured by per capita annual income.

The Human Development Index is the geometric mean of the three dimension indices.

$$HDI = \sqrt[3]{I_{Health} \times I_{Education} \times I_{Income}}$$

To compute the dimension indices minimum and maximum values (goalposts) are chosen for each underlying indicators. Performance in each dimension is expressed as a value between 0 to 1. Except standard of living, all other indicators are obtained by

$$I_{ij} = \frac{X_{ij} - \text{Minimum}(X_i)}{\text{Maximum}(X_i) - \text{Minimum}(X_i)}$$

Where  $I_{ij}$  indicates individual indicators for the  $j$ th district with respect to the  $i$ th variables.  $X_{ij}$  Indicates the actual value of the  $i$ th indicator with respect to  $j$ th district,  $\text{Minimum}(X_i)$  indicates minimum value of the  $i$ th indicator and  $\text{Maximum}(X_i)$  indicates the maximum value fixed for the  $i$ th indicator.

However, for the standard of living which captures command over resources, the index was computed by

$$I_{ij} = \frac{\ln(Y_j) - \ln(\text{Minimum } Y)}{\ln(\text{Maximum } Y) - \ln(\text{Minimum } Y)}$$

Where  $Y_j$  = Actual value of economic attainment for district j.

Minimum(Y) = Minimum value fixed for economic component, and

Maximum (Y) = Maximum value fixed for economic component.

The goalposts used for normalization as follows:

INDICATORS	MINIMUM	MAXIMUM
Life Expectancy	20	85
Mean Years of Schooling	0	15
Expected Years of Schooling	0	13
Income	5090(Bihar)	119032 (Goa)

The Multidimensional Poverty Index has supplanted the Human Poverty Index, which had been included in the annual Human Development Reports since 1997. Like development, poverty is multidimensional. The Multidimensional Poverty Index (MPI) complements money-based measures by considering multiple deprivations and their overlap. The index identifies deprivations across the same three dimensions as the HDI and shows the number of people who are multidimensionally poor. The MPI is composed of three dimensions made up of ten indicators. The three dimensions and 10 indicators of MPI are mentioned below –

S/N	Dimensions	Indicators	Weights
1	<b>Health:</b>	<b>Nutrition</b> – having at least one household member malnourished.	1/6
		<b>Child Mortality</b> – having one or more children die in the family.	1/6
2	<b>Education</b>	<b>Years of Schooling</b> – no household member has completed 5 years of schooling.	1/6
		<b>School Attendance</b> - at least one school age child who is not attending school.	1/6
3	<b>Living</b>	<b>Electricity</b> – Not having electricity.	1/18

	<b>Standard</b>	<b>Drinking water</b> – Not having access to clear and safe drinking water near to the premise.	1/18
		<b>Sanitation</b> – Not having access to adequate sanitation.	1/18
		<b>Floor</b> – having a home with dirty floor.	1/18
		<b>Fuel</b> – Using dirty cooking fuel.	1/18
		<b>Assets</b> – Not won more than one of TV, mobile phone, telephone, motorbike, agricultural land, refrigerator and does not own a car or tractor.	1/18

**Source:** Alkire and Santos (2004)

Multidimensional Poverty Index (MPI) is mathematically expressed as;

$$\text{MPI} = H \times A \dots\dots\dots (3)$$

Where;

H is the multidimensional headcount ratio

A is the intensity of poverty

The multidimensional head count ratio (H) is expressed as;

$$H = q/n \dots\dots\dots (4)$$

Where;

q is the number of people who are multi-dimensionally poor and

n is the total population.

The intensity of poverty (A) is expressed as;

$$A = \frac{\sum c_{ik}}{q} \dots\dots\dots (5)$$

Where;

$c_i(k)$  is the censored deprivation score of individual i and q is the number of people who are multi-dimensionally poor.

A rural household is considered to be multi-dimensionally poor if the sum of the weighted deprivations is 33 per cent or more of possible deprivations.

The present study has used simple statistical techniques for data analysis like average, Standard Deviation, Correlation Coefficient and Regression.

## Human Development in Assam –

The HDI for the state of Assam and her districts were estimated and presented in Assam Human Development Report 2014. The HDI for the state was 0.557 and the corresponding figure indifferent districts ranged from the lowest figure of 0.437 of Hailakandi district to the highest figure of 0.703 in Kamrup (M) district (AHDR 2014). 15 districts including Barpeta, Bongaigaon, Chirang, Dibrugarh, Dima Hasao, Goalpara, Jorhat, Kamrup, Kamrup(M), Karbi Anglong, Lakhimpur, Marigaon, Nagaon, Nalbari and Sivsagar had HDI higher than the state average. On the other hand, the remaining 12 districts had HDI below the state average.

The below table shows the districts having lower and higher HDI values as compared to that of state average. In order to calculate the human development index, three indices, namely, education index, income index and health index were constructed. District wise data regarding all the three indicators were procured from Assam Human Development Report (2014). The composite index was calculated by using the UNDP method. It is revealed that 15 districts of Assam were having HDI higher than the state average. On the other hand, all other districts of Assam were having HDI below the state average. The reason to lower HDI in different districts of Assam could be attributed to factors like lower attainment in the field of education, health services, and limited economic opportunities to earn sufficient livelihoods. The dearth of employment opportunities for educated people was borne out by the increasing number of people with high educational and professional qualification as revealed from the live registers of different employment exchanges. Unemployment continued to be a serious problem, especially among educated youths. Within the state there were considerable inter district disparities.

**Table: 1 Districts with higher HDI than the state average**

Districts	Dimension index: Health	Dimension index: Education	Dimension index: Standard of living	HDI
Barpeta	0.768	0.684	0.462	0.624
Bongaigaon	0.530	0.667	0.507	0.564
Chirang	0.746	0.677	0.457	0.614
Dibrugarh	0.518	0.700	0.483	0.560
Dima Hasao	0.748	0.662	0.525	0.638
Goalpara	0.718	0.612	0.470	0.591
Jorhat	0.587	0.744	0.643	0.655
Kamrup	0.798	0.648	0.483	0.630

Kamrup (M)	0.554	0.783	0.800	0.703
Karbi Anglong	0.743	0.645	0.480	0.612
Lakhimpur	0.612	0.693	0.468	0.583
Marigaon	0.730	0.678	0.386	0.576
Nagaon	0.588	0.684	0.516	0.592
Nalbari	0.496	0.721	0.535	0.576
Sibsagar	0.521	0.758	0.630	0.629

Source: Assam Human Development Report, 2014.

From the above table we can see that Kamrup (M) had the highest Human development index followed by Jorhat, Dima Hasao, Kamrup, Sivsagar, Barpeta, Chirang and Karbi Anglong. The districts namely, Nagaon, Kamrup, Jorhat, Dima Hasao and Bongaigaon are having higher HDI values in all the three independent indices compared to the corresponding state average. It may be mentioned that these districts have contributed significantly to the higher value of the index at the state level.

**Table: 2 Districts with lower HDI than the state average**

Districts	Dimensional index: Health	Dimensional index: Education	Dimensional index: Standard of living	HDI
Baksa	0.340	0.606	0.404	0.437
Cachar	0.319	0.647	0.479	0.463
Darrang	0.620	0.566	0.399	0.519
Dhemaji	0.481	0.688	0.393	0.507
Dhubri	0.510	0.579	0.380	0.482
Golaghat	0.543	0.684	0.431	0.543
Hailakand	0.366	0.605	0.376	0.437
Karimganj	0.360	0.627	0.420	0.456
Kokrajhar	0.539	0.645	0.402	0.519
Sonitpur	0.444	0.615	0.532	0.526
Tinsukia	0.425	0.625	0.483	0.505
Udalguri	0.538	0.602	0.441	0.523

Source: Assam Human Development Report, 2014.

From the above table we can see that Hailakandi and Baksa district had the lowest HDI values followed by Karimganj, Cachar, Dhubri, Tinisukia and Dhemaji. The districts namely, Baksa, Karimganj, Tinisukia, Hailakandi, Dhubri and Cachar are having lower HDI values in all the three independent indices compared to the corresponding state average. It may be mentioned that these districts had contributed significantly in pulling down the HDI value at the state level.

The main task of human development is to achieve higher growth for all, to bring basic services within the reach of every citizen of the state and to reduce regional disparities and inequalities among the people. The below table shows the mean and Standard Deviation of the HDI values of districts having higher and lower HDI values than that of state average in order to show the variability or scatteredness of HDI values of different districts.

**Table: 3 Analyses of Data**

State/ District	Mean	Standard Deviation	Maximum	Minimum
Assam	0.5579	0.0697	0.703	0.437
Districts (15) having higher HDI than that of the state average	0.6029	0.0436	0.703	0.560
Districts (12) having lower HDI than that of the state average	0.4930	0.0367	0.543	0.437

The above table clearly depicts that the mean HDI of the districts (15) where HDI value is higher than that of the state average is much higher than the mean HDI of those districts (12) where it is lower than that of the state average. Gap between maximum and minimum value of HDI of districts (15) having higher HDI than that of the state average is also much wider than that of the district (12) having lower HDI than the state average. Again the Standard Deviation of districts (15) having higher HDI than that of the state average is much greater than that of districts (12) having lower HDI. This implies that the human development level of the districts (15) having higher HDI is much dispersed or scattered from the mean value. In case of districts having lower HDI than that of the state average (12), the Standard Deviation is lower which reveals that the level of human development in these districts is, by and large, very close to one another. On the other hand, if we look

at the Standard Deviation of the HDI values of all the districts of Assam, we find a very high value of Standard Deviation which implies human development level of all the different districts of Assam is very much dispersed, or scattered from the mean value. Thus we can say that there are considerable inequalities and regional disparities with respect to health, education and standard of living among the different districts of Assam.

While the income is considered as an exclusive measure of well being, per capita domestic product is one of the three components of HDI. This is because income is an important determinant of access. Income provides the means that allow people to attain wellbeing, but income can't be only indicator of well being. Nor do per capita income figures necessarily reflect social well being, whether income get translated into long and healthy life, higher education and better standard of living is dependent on the choices of the people, societies and government makes. To enhance the level of human development in the state, step should be taken to increase the level of income and employment in the state and reduce poverty. The average level of income and rate of growth of income in Assam are much below the corresponding averages at the national level. The state has an extremely high level of poverty, more than 31% of its population are living below the poverty line. The percentage of the poor in the state is one of the highest percentages among the different states of India. Therefore policy of the state must be oriented to forge a strong linkage between HDI and MPI so that both become mutually reinforce.

Commonly, poverty which is defined in terms of inadequacy of income is a severe failure of basic capabilities. Multidimensional Poverty Index (MPI) in this context has been constructed to measure the acute multidimensional poverty. The MPI reveals a different pattern of poverty than conventional income poverty, as it illustrates different dimensional deprivation. These deprivations concentrated on three dimensions, namely, health, education and standard of living. The MPI is composed of three dimensions made up of ten indicators.

The results obtain reveal that there is a wide variations across districts in terms of HDI and MPI.

In most of the districts where HDI is higher, MPI is correspondingly lower, implying that higher human development is accompanied with lower poverty. Let us consider the following table where the HDI and MPI values of different districts of Assam are shown with their corresponding ranking in terms of HDI and MPI.

**Table: 4 District wise HDI and MPI in Assam**

Districts	HDI	HDI Rank	MPI	MPI Rank
Baksa	0.437	26	13.61	9
Barpeta	0.624	6	11.08	18
Bongaigaon	0.564	14	12.71	12

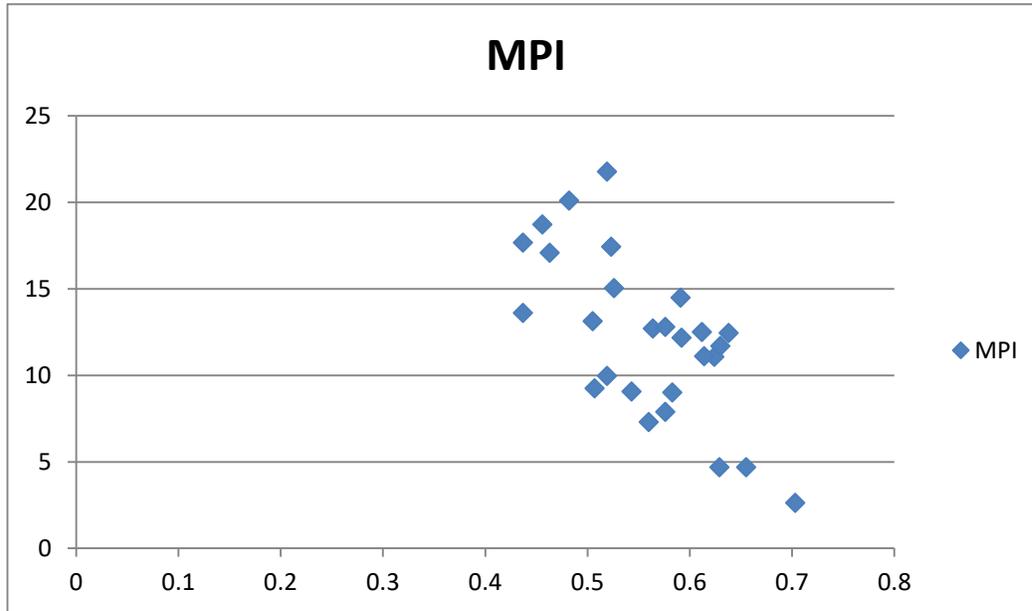
Cachar	0.463	24	17.10	6
Chirang	0.614	7	11.12	17
Darrang	0.519	19	21.79	1
Dhemaji	0.507	21	9.25	20
Dhubri	0.482	23	20.10	2
Dibrugarh	0.560	15	7.30	24
Dima Hasao	0.638	3	12.45	14
Goalpara	0.591	10	14.50	8
Golaghat	0.543	16	9.08	21
Hailakandi	0.437	27	17.68	4
Jorhat	0.655	2	4.69	25
Kamrup	0.630	4	11.70	16
Kamrup (M)	0.703	1	2.63	27
Karbi Anglong	0.612	8	12.52	13
Karimganj	0.456	25	18.73	3
Kokrajhar	0.519	20	9.97	19
Lakhimpur	0.583	11	9.01	22
Marigaon	0.576	13	12.80	11
Nagaon	0.592	9	12.18	15
Nalbari	0.576	12	7.89	23
Sibsagar	0.629	5	4.69	26
Sonitpur	0.526	17	15.05	7
Tinsukia	0.505	22	13.13	10
Udalguri	0.523	18	17.45	5
Assam	0.557	-	12.49	-

Source: Assam Human Development Report, 2014.

From the above table we can see that the districts in which MPI is lower are Kamrup (M), Sivsagar, Jorhat, Dibrugarh, Nalbari, Lakhimpur, Golaghat, Dhemaji, Kokrajhar and Barpeta. In these districts poverty is less acute.

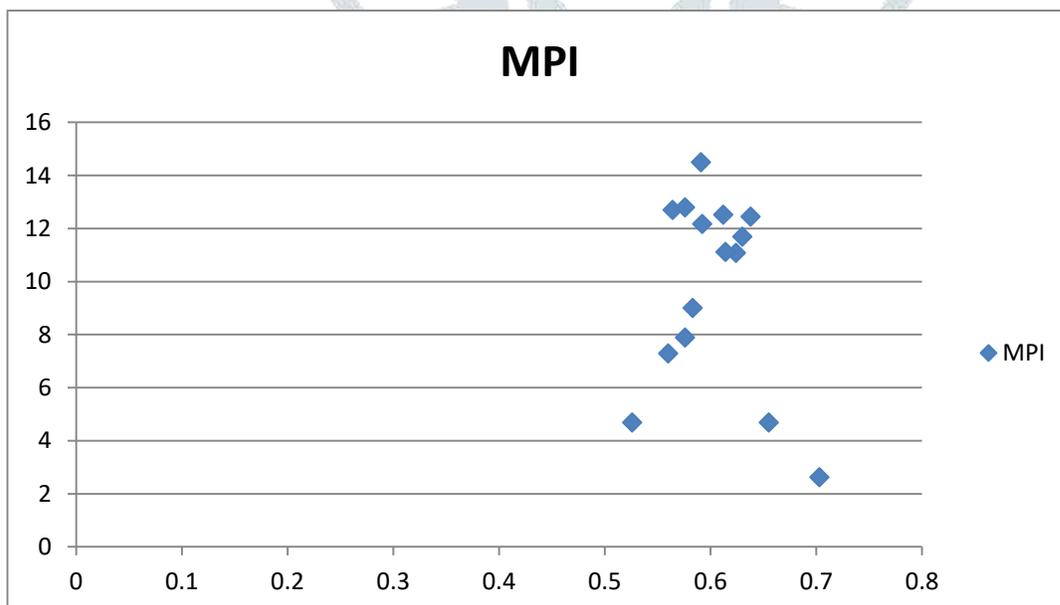
In order to examine the relationship between HDI and MPI the correlation between HDI and MPI is estimated. The correlation between HDI and MPI of the different districts of Assam is estimated to be -0.6826. Thus there is a high moderate degree of negative correlation exist between the different districts of Assam. This can be seen from the below figure.

Figure: 1



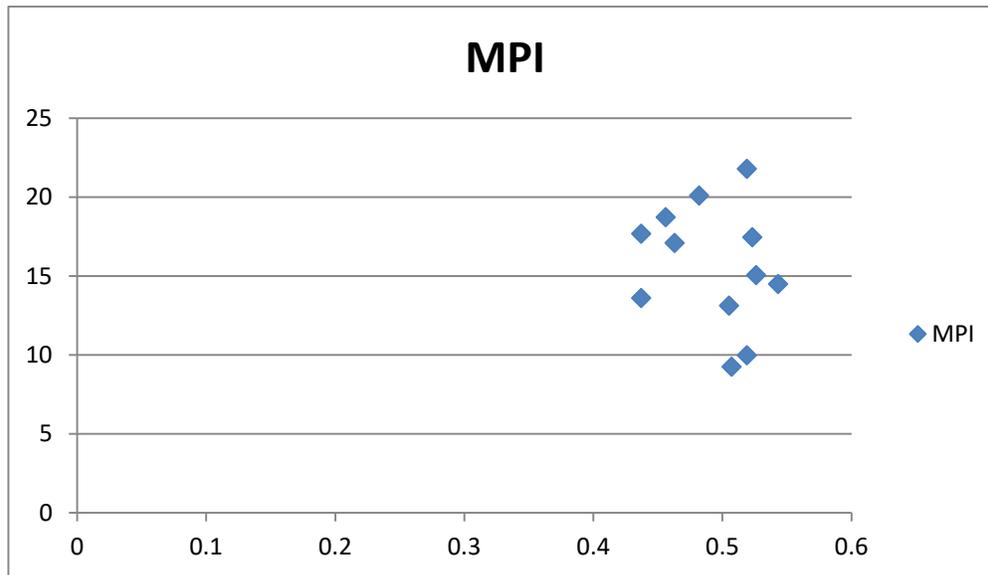
Again the districts where HDI values are higher than the state average the correlation between HDI and MPI is -0.2190. Thus there exists a weak negative correlation between HDI and MPI in the districts where HDI values are higher than the state average. This can be seen from the below figure.

Figure: 2



Again the district where HDI is lower than that of the state average, the correlation between HDI and MPI is -0.2174. Thus we can say that there exist a weak negative correlation between the HDI and MPI. This can be shown in the below figure.

**Figure 3**



We have also regressed HDI on MPI to study the casual relationship between them. The following is the estimated equation:

$$\text{HDI} = 0.681 - 0.010\text{MPI}$$

Where  $R^2 = 0.466$

What emerges from the analysis is that poverty is a result not only of lower income but also due to human deprivation in terms of health, education, shelter, water supply, and sanitation. In Assam there is a need to prioritize and target relatively backward areas of the state and disadvantaged people. A development strategy, which is decentralized and seeks to involve a large community, needs to be developed by the government in the sector in which the state has potential advantages. In the context of poverty, the adequacy of funding of public initiative is even more urgent.

### Conclusions –

The above discussion suggests that, on the whole the human development in Assam remain about half way in relation to the desired level. The progress and status of human development in Assam is far from satisfactory. There has been high degree of inequalities and disparities among the different districts of the state

as reflected in levels of human development in various dimensions of human development. The districts, namely, Kamrup(M), Jorhat, Dima Hasao, Dibrugarh, Sivsagar are performing much better than the state as whole. On the other hand districts like Hilakandi, Baksa, Karimganj, Cachar and Dhubri are performing poorly. Inequalities in opportunities with regard to health, education and income have been pervasive and these results in considerable loss in potential development achievements in the state. Further inter district disparities are also noticed in the Multidimensional Poverty Index. The position of different districts in terms of HDI and MPI varies. Moderate degree of negative correlation between HDI and MPI exist in the state. What emerges from the analysis is that poverty is not only a outcome of lower income but also due to deprivation in health, education, shelter, water supply and sanitation of the people. Therefore, there is an urgent need to set priorities and target for relatively backward regions of the state and group of disadvantaged people. A development strategy which is decentralized and seeks to involve a large community needs to be adopted by the government.

#### References:

1. Assam Human Development Report, 2003: Directorate of Economics and Statistics, Government of Assam.
2. Assam Human Development Report, 2014: Planning and Development Department, Government of Assam.
3. Nayak, P. (2010), "Human Development in North East India", in P. Nayak (ed), *Growth and Human Development in North-East India*, Oxford University Press.
4. Nayak, P. and S. Ray (2010), "Inter-District Disparities in Meghalaya: A Human Development Approach", in P. Nayak (ed), *Growth and Human Development in North-East India*, Oxford University Press.
5. Roy, H. and Adhikari K. (2010), "Human Development in Assam- An Analysis", in P. Nayak (ed), *Growth and Human Development in North-East India*, Oxford University Press.
6. Roy, N. (2010), "Inter- District Variations in the Level of Human Development in Assam", in K. Sengupta (ed.), *Human Development: Multi Dimensional Approach to Human Well- Being*, Concept Publishing Company Pvt. Ltd., New Delhi.
7. Statistical Hand Book, Assam, 2014.
8. UNDP Human Development Report, 2010.
9. UNDP Human Development Report, 1990.
10. 2011 Census Data.