

Human Development in India's North Eastern States: A study

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Abstract

The concept of human development lies in the very notion that wealth of a nation is its people. It aims to shift the focus of development back to the well being of people more specifically to the average ordinary individuals. Such an approach deviates from the earlier notion which perceived development in terms of economic performance vis-a-vis growth of GDP per capita. In times, it has been realised that economic growth does not imply development in true sense. Often it is found that there is no direct correspondence between economic attainment of a society and the quality of life. Regions and nations with high levels of income and economic growth need not necessarily have similar social attainments that are desirable, not only in themselves but also because of their role in supporting better opportunities for people. Development thus has to be seen in terms of the benefits and opportunities that are generated in various fields for its people and how these are eventually distributed among various strata of society.

India's North Eastern region is a "*rainbow country ...extraordinarily diverse and colourful, mysterious when seen through parted clouds*". It stretches from the foothills of

the Himalayas in the eastern range and is surrounded by Bangladesh, Bhutan, China, Nepal and Myanmar (Map 1). It includes the eight sisters - Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura, along with a small and beautiful cousin in the Himalayan fringes- Sikkim.

The region has a population of 45.5 million (as per 2011 census) comprising of 3.7 percent of India's population and geographically covers 8.05 percent of the country's total geographical area. The region is also the abode of approximately 225 tribes out of 450 in the country, the culture and customs of which have an important role in understanding biodiversity conservation and management issues.

The Northeastern states of the country are standing far behind from the rest of the country in terms of Per Capita State Income (PSI), Households in Pucca and Semi-Pucca Houses (HPSH), Access to Electricity (AE), Population above Poverty (PAP), Literacy rate (LR), Infant Mortality Rate (IMR), Population Served

per Hospital Beds (PSPHB) and Access to Safe-Drinking Water (ASDF). The present study makes an effort towards understanding the attainment of human development and shortfalls as well among the states of North-East India (NEI) by widening the scope of HDI.

The research paper calculates the HDI for India in terms of the selected indicators under study and makes a comparative study between all India attainments in human development with that of the respective states of NEI.

The research paper is a descriptive one. It is a cross-sectional study covering all the eight states of NEI. The methodology is based on UNDP approach of human development in the construction of a composite index on the basis of chosen indicators of development.

Purpose/objectives of the study:

The research paper attempts to widen the scope of HDI by keeping into the other dimensions of human life which are a reflection of their well beings too.

Specific objectives of the study are

1. To analyze various indicators of human development
2. To quantify dimensional index of each indicator
3. To develop a composite index to explain the wider aspect of human development.

Design/methodology/approach – The research paper is a descriptive one. It is a cross-sectional study covering all the eight states of NEI. The methodology is based on UNDP approach of human development in the construction of a composite index on the basis of chosen indicators of development.

Findings –Except Sikkim, all the states in NEI can be termed as least developed in human development attainment. None of the states of NEI could score HDI value equal to or above 0.5. Even all India HDI falls bellow 0.5 score. Sikkim has achieved moderate/medium level of human development and has topped the list among states in NEI. The HDI value for the states of Arunachal Pradesh, Assam, Meghalaya, Mizoram, Manipur, Nagaland and Tripura are 0.321, 0.243, 0.286, 0.323, 0.262, 0.275 and 0.262 respectively.

Arunachal Pradesh and Mizoram, are showing better position in the region than other states. Assam is the lowest ranked state with a HDI value of 0.243. Scoring a value 0.262 of Tripura is slightly better than Assam in human development

Research limitations/implications – The study face difficulties in obtaining statistical data's in uniform manner. Due to non-availability of statistics, the HPSH, AE, ASDW were based on 2001 census report while the PSI was based on 2011 census report. IMR and PHB were based on 2009 based data's. PAP statistics was based on 2005. Average life expectancy, which is a good health indicator for the population has not been included in the selected list of indicators. This is because of non-availability of data relating to life expectancy for the states of NEI region except Assam for the year 2001 and or any surrounding year. Information regarding incidence of poverty in states of India for the year 2011 is not available. Hence population above poverty has been restricted to the year 2005. Data on number of hospital beds available in respective states. Therefore, the Hospital beds available per lakh people have been considered.

Practical implications –There is the trace of high incidence of poverty in the states of NE region, which only speaks about the high volume of shortfalls in human development. However, the single area which shows considerable progress in the region is literacy rate. Therefore, it can be hoped that growth of literacy rates would bring positive changes to other indicators in the coming days

Keywords: **HDI: Human Development Index, NER: North Eastern Region, NEI: North East India, HDR: Human Development Report, PSI: per capita state Income, HPSH: Households in Pucca and Semi-Pucca Houses, AE: Access to Electricity, PAP: Population above Poverty, LR: Literacy rate, IMR: Infant Mortality Rate, PHB: Hospital beds per lakh population, ASDF: Access to Safe-Drinking Water Facility.**

INTRODUCTION

THE concept of human development lies in the very notion that wealth of a nation is its people. It aims to shift the focus of development back to the well being of people more specifically to the average ordinary individuals. Such an approach deviates from the earlier notion which perceived development in terms of economic performance vis-a-vis growth of GDP per capita. In times, it has been realised that economic growth does not imply development in true sense. Often it is found that there is no direct correspondence between economic attainment of a society and the quality

of life. Regions and nations with high levels of income and economic growth need not necessarily have similar social attainments that are desirable, not only in themselves but also because of their role in supporting better opportunities for people. Development thus has to be seen in terms of the benefits and opportunities that are generated in various fields for its people and how these are eventually distributed among various strata of society. This qualitatively different development paradigm thus expands the development objective beyond that of economic growth by incorporating other aspects of well being such as longevity, education, freedom, participation and so on.

Human Development and UNDP:

The UNDP, through its global Human Development Report (HDR), has been in the forefront of an effort to generate a policy focus on the broader attributes of human well-being in the contemporary development discourse. In fact, defining and measuring peoples well-being as the ends of development is the central message of the Report published annually since 1990. According to the report, human development is all about people and about how development enlarges people's choices. It is more than GNP growth, more than income and wealth and more than producing commodities and accumulating capital.

Defining Human Development:

According to HDR 1990, human development is a process of enlarging people's choices - the most critical of these wide-ranging choices are to live a long and healthy life, to be educated and to have access to resources needed for a decent standard of living. Additional choices include political freedom, guaranteed human rights, and self respect. It views that income is a good proxy for all alternative choices though it is partially true. Income is not the sum total of human life. A person's access to income, thus, may be one of the choices. Besides, people's choices are also influenced by the formation of human capabilities such as education or knowledge. Human development is not about capabilities formation only, it also concerns the use of these capabilities, be it for work, leisure or political and cultural activities. Human development thus defines as denoting both the process of widening people's choices and the level of their achieved wellbeing.

Measuring Human Development:

The 1990 HDR views that human development can be measured not by the yardstick of income alone but by incorporating as many as other relevant indicators. However, till now, the various HDRs have considered three basic dimensions of human life in measuring human development.

These are

- Ø Command over resources- the ability to enjoy a decent standard of living and have a socially meaningful life (measured by the log of gross domestic product per capita at purchasing power parity in USD) : economic indicator
- Ø The ability to acquire knowledge and be educated (measured by adult literacy at 15 years and above, and enrolment at the primary, secondary and tertiary level of schooling): education indicator
- Ø The ability to lead a long and healthy life (measured by life expectancy at birth) : health indicator

Based on the above mentioned variables, UNDP prepares a composite index called Human Development Index (HDI) in its Human Development Reports which measures level of human development of a country. Each year, UN member states are listed and ranked according to this measure. Countries fall into three broad categories based on their HDI: high, medium, and low human development.

About the Study:

HDI provides a normalized measure the extent of human development and deprivation as well, in respect of three basic dimensions of human life namely longevity, education and standard of living which are highly valued in themselves. However, such indicators are intrinsically limited in capturing the wider aspects of human life. There are many socio- economic determinants which influence the level of human well being and quality of life, and their absence only multiplies the miseries. Such multifarious dimensions are not incorporated in HDI. As such, the various deprivation/shortfalls that the average or marginalized sections faces specially in poor countries or regions are not well-depicted with such a measure. It is thus important to recognize those indicators and develop an index which captures the wider aspects of human development.

The present study makes an effort towards understanding the attainment of human development and shortfalls as well among eight (8) states of North-East India (NEI) by widening the scope of HDI. The research paper also calculates HDI for India in terms of the selected indicators under study and makes a comparative study between all India attainments in human development with that of the respective states of NEI.

North-East India (NEI): A Glimpse

India's North Eastern region is a "rainbow country ...extraordinarily diverse and colourful, mysterious when seen through parted clouds". It stretches from the foothills of the Himalayas in the eastern range and is surrounded by Bangladesh, Bhutan, China, Nepal and Myanmar (Map 1). It includes the eight sisters - Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura, along with a small and beautiful cousin in the Himalayan fringes, namely, Sikkim. The region is rich in natural resources, covered with dense forests, has the highest rainfall in the country, with large and small river systems nesting the land and is a treasure house of flora and fauna. Marked by diversity in customs, cultures, traditions and languages, it is home to multifarious social, ethnic and linguistic groups.

Troubled by history and geo-politics, the North East has remained one of the most backward regions of the country. The trauma of partition in 1947 not only took the region backwards by at least a quarter of a century, but also placed hurdles on future economic progress. It isolated the region, sealed both land and sea routes for commerce and trade, and severed access to traditional markets and the gateway to the East and South-East Asia

– the Chittagong port in East Bengal (now Bangladesh). It distanced the approach to the rest of India by confining connectivity to a narrow 27-km-wide Siliguri corridor, making it a "remote land" and constraining access for movement of goods and people. The uneasy relationship with most of the neighbouring countries has not helped the cause of development of the region either: with 96 per cent of the boundary of the region forming international borders, private investment has shied away from the region.

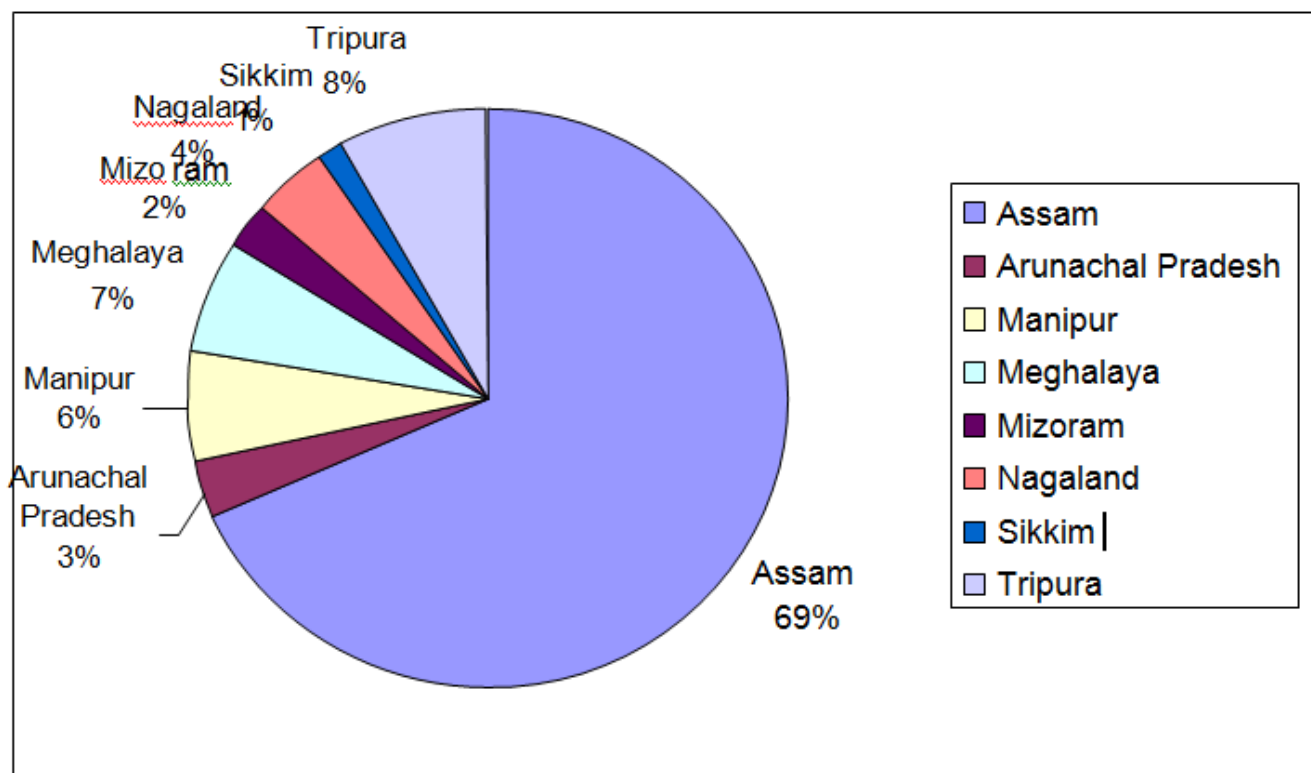
Poor infrastructure and governance is combined with low productivity and market access. Inability of governments to control floods and river bank erosion causes unmitigated damage to properties and lives of millions of people every year in the region. If the quest for ethnic and cultural identities has sowed the seeds, frustration and dissatisfaction from seclusion, backwardness, remoteness and problems of governance have provided fertile ground for breeding armed insurgencies.

The region has a population of 45.5 million (as per 2011 census) comprising of 3.77 percent of India's population and geographically covers 8.05 percent of the country's total geographical area. The region is also the abode of approximately 225 tribes out of 450 in the country, the culture and customs of which have an important role in understanding

biodiversity conservation and management issues.

Population in NER

States	Population 2011 census	% of total of NER
Assam	31169272	68.37
Arunachal Pradesh	1382611	03.03
Meghalaya	2964007	06.51
Mizoram	1091014	02.39
Manipur	2721756	05.97
Nagaland	1980602	04.34
Sikkim	607,688	01.34
Tripura	3671032	08.05
Total in NER	45587982	03.77
All India	1210193422	100.00



The NEI is, by and large, hilly in nature characterized by curves and terrains. Lack of developed transport (i.e. roads and bridges), communication facilities makes the region inaccessible and intensifies its geographical isolation. Provisions for economic and infrastructure overheads are poor. None of these states has been able to generate adequate funds to meet the budgetary requirement for their respective governments and, thus to a great extent, depends on the flow of financial resources from the central government under the provisions of Special Category States in which out of total central assistance to the state 90 percent accounts for grants and remaining 10 percent are loans.

Agriculture contributes a lion's share in the GDP of the states of the NEI. The share of GDP from agriculture and allied sector as on 21st July 2011 at 1999-2000 prices is highlighted in table-2.

Table-2: GROSS STATE DOMESTIC PRODUCT FROM AGRICULTURE AND ALLIED SECTOR AT CONSTANT (1999-2000) PRICES

		As on 21-07-2010										(Rs Million)	
Sl.No.	State\UT	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-09	2009-10	
1	2	3	4	5	6	7	8	9	10	11	12	13	
1	Arunachal Pradesh.	5253	5938	5628	5590	5796	5644	5769	6522	7000	7173	NA	
2	Assam	122655	121007	120237	121706	123549	121880	125246	124008	124844	132871	136057	
3	Manipur	8773	9142	9467	9144	10512	11506	10658	10395	10725	11126	NA	
4	Meghalaya	8206	8691	8966	9538	9711	10341	10824	11067	11469	12419	NA	
5	Mizoram	3491	3237	3261	3392	3347	3493	3584	3693	3798	3907	NA	
6	Nagaland	7871	10279	11607	13078	13799	15045	15577	15920	NA	NA	NA	

Source: "Agricultural Statistics At a Glance 2010". Government of India

With lack of productive investment, basic infrastructure facilities and prevalence of unskilled labour force, these states remain economically backward and reflect the character of agrarian economies with two-third of its work force dependant on agriculture. Still the region is not self-sufficient in agricultural production.

Table-3: Distribution of Workers in NEI by Category of Workers, as on March 2001:

India/ State/Ut	Total workers	Cultivators		Agricultural labourers		Household industry workers		Other worker	
		Number	%	Number	%	Number	%	Number	%
Arunachal Pradesh									
Persons	482902	279300	57.8	18840	3.9	6043	6,043	6043	6043
Male	293612	136336	46.4	10329	3.5	3177	1.1	143770	49.0
Female	189290	142964	75.5	8511	4.5	2866	1.5	34949	18.5
Assam									
Persons	9538591	3730773	39.1	1263532	13.2	344912	3.6	4199374	44.0
Male	6870960	2634068	38.3	832508	12.1	133902	1.9	3270482	47.6
Female	2667631	1096705	41.1	431024	16.2	211010	7.9	928892	34.8
Manipur									
Persons	945213	379705	40.2	113630	12.0	96920	10.3	354958	37.6
Male	527216	214282	40.6	49928	9.5	20547	3.9	242459	46.0
Female	417997	165423	39.6	63702	15.2	76373	18.3	112499	26.9
Meghalaya									
Persons	970146	467010	48.1	171694	17.7	21225	2.2	310217	32.0
Male	568491	255018	44.9	90888	16.0	9358	1.6	213227	37.5
Female	401655	211992	52.8	80806	20.1	11867	3.0	96990	24.1
Mizoram									
Persons	467159	256332	54.9	26783	5.7	7100	1.5	176944	37.9
Male	263008	130497	49.6	12775	4.9	3476	1.3	116260	44.2
Female	204151	125835	61.6	14008	6.9	3624	1.8	60684	29.7
Nagaland									
Persons	847796	548845	64.7	30907	3.6	21873	2.6	246171	29.0
Male	488968	270927	55.4	15985	3.3	9193	1.9	192863	39.4
Female	358828	277918	77.5	14922	4.2	12680	3.5	53308	14.9
Sikkim									
Persons	263043	13,258	49.9	17000	6.5	4219	1.6	110566	42.0
Male	165716	70107	42.3	8762	5.3	2849	1.7	83998	50.7
Female	97327	61151	62.8	8238	8.5	1370	1.4	26568	27.3
Tripura									

Persons	1159561	313300	27.0	276132	23.8	35292	3.0	534837	46.1
Male	831346	220962	26.6	162640	19.6	14830	1.8	432914	52.1
Female	328215	92338	28.1	113492	34.6	20462	6.2	101923	31.1

Industrially, the region is almost marked by non-existence of industries or manufacturing units. Only a few large and medium-scale industries have come mostly in Assam, Meghalaya and Arunachal Pradesh. The types of industries that prevail are tea, plywood, jute, petrochemical, paper mill, and fertilizer industries. Some agro-based and forest-based small scale units have come up and scattered in different states, about half in Assam followed Tripura and Manipur. The traditional industries in which production is carried out at substance level are handicrafts and weaving industries. The swelling tertiary sector is the result of an arbitrary arrangement in which a lion's shares of states outlay are used in paying salaries and maintaining the huge army of unproductive government employees. Naturally financial resources of the states including central transfers are directly used to meet consumption needs of the employees that otherwise could have been used for productive investment, escalation of assets, infrastructure, etc., which are so essential for industrial as well as economic growth and overall economic development.

Table-4: A glimpse of Industrial Development in NEI

State-wise Estimates of Some Important Characteristics of Annual Survey of Industries, (2007-2008):

(Value figures in Rs. Lakh, others in Number)

Characteristics	Nagaland	Manipur	Tripura	Meghalaya	Assam
Number of Factories	104	69	340	90	1859
Fixed Capital	2792	1141	24494	61033	891081
Working Capital	2409	831	21303	55121	346159
Invested Capital	6953	2006	46419	83251	1301965
Outstanding Loans	3149	518	10416	34168	245789
Number of Workers	2494	2442	20696	4574	113132
Total Persons Engaged	2974	2722	22896	5587	134284
Wages to Workers	501	569	3579	2950	42729

Total Emoluments	743	681	5035	4839	75245
Prov. Fund and Other Welfare Exp.	71	33	546	620	16880
Fuels Consumed	528	728	4989	20778	114891
Materials Consumed	8188	3556	41365	75215	1979153
Total Inputs	9646	4623	60280	110950	2705324
Products & By-products	13188	5682	65050	165917	2779940
Value of Output	13606	5825	76615	171468	3104360
Depreciation	244	107	1987	6549	71563
Net Value Added	3716	1096	14348	53969	327473
Rent Paid	41	31	296	1088	6463
Interest Paid	222	81	1213	4060	36889
Rent Received	5	2	5	86	347
Interest Received	1	0	200	343	8427
Net Income	3453	984	12839	48822	284121
Net Fixed Capital Formation	83	11	2073	7494	7123
Gross Fixed Capital Formation	327	118	4060	14043	78687
Addition in Stock of					
(a) Materials, Fuels etc.	97	-48	-2178	5524	1935
(b) Semi-Finished Goods	-242	19	6917	-575	8528
(c) Finished Goods	-67	12	647	-293	17161
(d) Total	-212	-17	5386	4656	27623
Gross Capital Formation	115	101	9446	18698	106309
Profits	2639	269	7257	43363	191995

Source : Compiled from Various Reports of Annual Survey of Industries.

Given these situations, it would be interesting to examine how these states fare in the domain of human development which is the main purpose of this research paper.

REVIEW OF LITERATURE

The concept of human development has evolved over time. It started with purpose of measuring how well the people of a region or country. In the pursuit of constructing a composite index which quantifies human welfare namely material and non-material, it discarded income as the sole measure of welfare. Because, income has its own limitation in reflecting human life in its true sense.

Sen (1989) argues that human beings should be viewed as ends in them selves although they happen to be directly or indirectly the primary means of productions.

Human development Report (1990) challenged the conventional wisdom of “trickle- down effect” meaning economic growth will automatically solve the problem of poverty, misery, inequality and other aspects of development. Rather it stress on the notion of human development. Further, it made a distinction between human development and various other concepts of development such as human resource development, human capital basic needs approach, etc.

Anand and Sen et al. (1994) concentrated on the methodology and measurement of HDI. The authors have lent considerable statistical insight to the index.

Haq (1995) summarises the essence of human development, he made a distinction between economic growth and human development. According to him, the human development paradigm is a much better measure of development since it includes wider aspect of human life and wellbeing.

Haq (1995a) describes the momentum in search of new composite index and the method of constructing HDI. He also explains the rational for the choice of components and indicators of human development.

Ranis et al. (2000) attempted to examine the dual causation between human development and economic growth. For the rationale, they defined a loop connecting two-way relationships EG and HD with two chains - Chain A showing how EG have an effect on HD and Chain B showing how HD influence EG. They also attempted to identify the main component links making up each chain and their relative strengths.

Objectives of the Study:

The research paper attempts to widen the scope of HDI by keeping into the other dimensions of human life which are a reflection of their well beings too. Specific objectives of the study are

1. To analyze various indicators of human development
2. To quantify dimensional index of each indicator
3. To develop a composite index to explain the wider aspect of human development

Methodology:

The research paper is a descriptive one. It is a cross-sectional study covering all the eight states of NEI. The methodology is based on UNDP approach of human development in the construction of a composite index on the basis of chosen indicators of development.

Source of Information:

The study is entirely based on secondary sources of information pertaining to the variables considered for measuring human development in NEI. Data have been obtained compiled and used pertaining to eight indicators human development reflecting economic, health, education and social status from following sources:

- i. Statistical Abstract of India. 2001 & 2011 census reports. ii. Basic Statistics of NER. NEDFi- Data bank.
- iii. Economic Survey of India. Ministry of Economics & Statistics, GOI. iv. Registrar General of India. GOI.
- v. Central Statistical Organisation. GOI.

Selection of Indicators:

The following indicators have been selected for the purpose of highlighting each state's standing on human development.

1. Per Capita State Income (PSI)
2. Households in Pucca and Semi-Pucca Houses (HPSH)
3. Access to Electricity (AE)

4. Population above Poverty (PAP)
5. Literacy rate (LR)
6. Infant Mortality Rate (IMR)
7. Hospital beds per lakh population (PHB)
8. Access to Safe-Drinking Water (ASDF)

Per Capita State Income ((PSI) is the ratio of per capita state income of the year to total population of a state based on at 1999-2000 prices. The state of per capita income of the states of the region is highlighted in table-5.

Table-5: Per capita income of North Eastern states: As on March 2011

State	Per-capita Income (INR)
Arunachal Pradesh	51,644
Assam	30,413
Meghalaya	48,383
Mizoram	45,982
Manipur	29,684
Nagaland	21,434
sikkiam	48,937
Tripura	38,493
NE Average	39372
Highest Per Capita state-Goa	132,719
Lowest per capita state-Bihar	20,069
All India	54,527

Residences in Pucca and Semi-Pucca Houses (RPSH) are measured by the percentage of total households in pucca and semi-Pucca houses. The percentage distribution of household living in PUCCA & SEMI-PUCCA houses in the states of the region is highlighted in table-6.

Table-6: PERCENTAGE DISTRIBUTION OF HOUSEHOLDS LIVING IN PUCCA, SEMI PUCCA HOUSES in NE states.

	Household in NE India			Household in NE India		
	1991			2001		
	Pucca	Semi-pucca	Total (Pucca + semi-pucca)	Pucca	Semi-pucca	Total (Pucca + semi-pucca)
Arunachal Pradesh	14.94	11.72	26.66	20.68	18.16	38.84
Assam	14.62	15.16	29.78	19.47	31.23	50.70
Meghalaya	13.30	33.72	47.02	22.14	37.49	59.63
Mizoram	19.10	42.52	61.62	52.84	25.69	78.53
Manipur	5.40	40.65	46.05	8.39	55.13	63.52
Nagaland	12.62	36.47	49.09	16.19	50.50	66.69
Sikkim	26.95	39.11	66.06	37.87	46.26	84.13
Tripura	5.50	20.71	26.21	9.81	45.99	55.80
NE average						
Highest (Daman and Diu)	NA	NA	NA	NA	NA	98.34
Lowest (Arunachal Pradesh)	NA	NA	NA	NA	NA	38.84
All India	41.61	30.95	72.56	51.62	30.14	81.76

Source: Government of India – National Buildings Organisation, Ministry of Urban Affairs & Employment: Prominent Facts on Housing 1997.

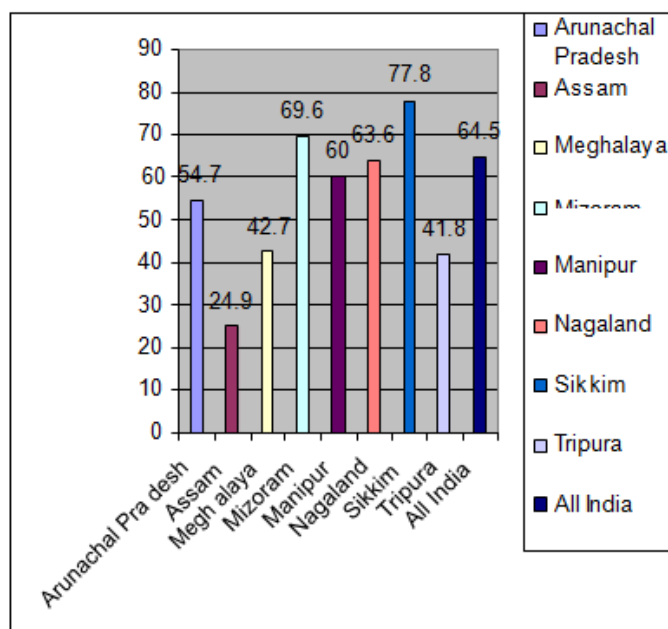
Access to Electricity reflects the percentage of total households having access to electricity. The power consumption in the states of the NEI is highlighted in the following table-7:

Table-7: Per capita consumption of electricity in NEI & India.

States	2005-06	2009-10
Arunachal Pradesh	297.66	470.00
Assam	170.65	204.80
Meghalaya	517.54	675.19
Mizoram	250.15	376.99
Manipur	215.21	240.22
Nagaland	179.34	218.03
Sikkim	429.81	850.00
Tripura	190.62	335.47
Average (NER)	201.44	257.98
Total(All India)	631.41	778.71

For the study, instead of considering the per capita consumption of electricity, the access to electricity has been considered which is highlighted in table-8

Table-8: Access to electricity in NE states, 2001



States	2001
Arunachal Pradesh	54.7
Assam	24.9
Meghalaya	42.7
Mizoram	69.6
Manipur	60.0
Nagaland	63.6
Sikkim	77.8
Tripura	41.8
Average (NER)	54.4
Highest (Chandigarh)	96.8
Lowest (Bihar)	10.3
Total(All India)	64.5

Source: 2001 census report.

Population above Poverty (PAP) indicates the proportion of total population above poverty line. The position of poverty in the region is highlighted in table-9.

Table-9: Population above poverty line in NER (%)

States	1973-74	1983-84	1993-94	2004-05
Arunachal Pradesh	48.07	59.12	60.65	66.53
Assam	48.79	59.53	59.14	63.91
Meghalaya	49.80	61.19	62.08	66.13
Mizoram	49.68	64.00	74.34	80.53
Manipur	50.04	62.98	66.22	71.46
Nagaland	49.19	60.75	62.08	67.33

Sikkim	49.14	60.29	58.57	63.45
Tripura	49.00	59.97	60.99	65.56
Highest	73.61	83.82	88.65	94.6
Lowest	33.82	34.71	45.04	53.60
All India	45.12	55.52	64.03	73.90

Source: Planning Commission, Government of India.

Literacy Rate (LR) is defined by proportion of total population in the age group of 7 and above in the state as per Census of India. The literacy rate of the states of the region is highlighted in table-10.

Table-10: Literacy Rate (%) of NER:

States	2001 Census			2010-11		
	Total	Male	Female	Total	Male	Female
Assam	54	64	44	67	74	60
Assam	63	71	55	73	79	67
Meghalaya	63	65	60	75	77	74
Mizoram	89	91	87	92	94	89
Manipur*	71	80	61	79	87	73
Nagaland	67	71	62	80	83	77
Sikkim	69	76	60	82	87	77
Tripura	73	81	65	87	92	83
NE average	68.625	74.875	61.75	79.4	84.2	75.0
Highest	90.92 (Kerala)	94.20	87.86	93.9 (Kerala)	96.0	92.0
Lowest	47.53 (Bihar)	60.32	33.57	63.8 (Bihar)	73.5	53.3
All India				74.04	82.14	65.46

* Source: Statistical Pocket Book India 2008 & Census report 2011.

Infant Mortality Rate (IMR) is the number of infants below one year age dying per 1000 live births. The Infant mortality rate in NE region since 1961 to 2009 is shown in following table-11.

Table-11: Infant Mortality rates in NE states:

State	1961	1981	2001	2008	2009
Arunachal Pradesh	126	91	44	32	32
Assam	NA	92	78	64	61
Meghalaya	79	80	52	58	59
Mizoram	69	53	23	37	36
Manipur	32	28	25	14	16
Nagaland	68	51	31	26	26
Sikkim	96	60	52	33	34
Tripura	111	82	49	34	31
NEI average	83	67	44	37	37
Highest in India (Orissa)					91
Lowest in India (A& N Island)					18
All India	115	77	71	53	31

Source: Registrar General of India; Planning Commission; GOI

Hospital beds per lakh population (PHB) reflect the health care facilities of a state. The position of the region in this regard is shown in table-12.

**Table-12. Number of government hospital beds available per lakh population
 As on March 2009.**

State	2009, March
Arunachal Pradesh	188
Assam	11
Meghalaya	106
Mizoram	129
Manipur	94
Nagaland	85
Sikkim	173
Tripura	66
NE Average	106.
Highest PSPHB	408
Lowest PSPHB (Bihar)	7
All India average	46.5

Access to Safe-Drinking Water (ASDF) is measured by percentage of household having access to safe-drinking water. The percentage of people accessed to safe drinking water in the region since 1991 to 2001 is highlighted in table-13.

Table-13:
Households Access to Safe Drinking Water in NE region(%)

States	1991	2001
Arunachal Pradesh	70.0	77.5
Assam	45.9	58.8
Meghalaya	36.2	39.0
Mizoram	16.2	36.0
Manipur	38.7	37.0
Nagaland	53.4	46.5
Sikkim	73.1	70.7
Tripura	37.2	52.5
NE Average	46.3	52.2
Highest (Chandigarh)	NA	99.8
Lowest (Kerela)	NA	23.4
All India	62.3	77.9

Source: Economic Survey, 2010-11; Office of the Registrar General, Ministry of Home Affairs

Except infant mortality rate higher value of each of the indicators indicates a higher level of development and vice versa. In case of infant mortality rate a lower value indicates a higher achievement and a higher value reflect lower achievement. To maintain uniformity in the quantification of HDI, reciprocal of both these indicators have been assessed and quantified in the calculation of composite HDI.

Construction of Human Development Index:

HDI can be formulated either in terms of region's deprivation / shortfall or in terms of region's attainment in each of the various dimensions/indicators. The study will use the technique in which HDI is expressed directly in terms of attainment.

$$HDI = 1/n \sum \text{Dimension Indices}$$

Before constructing the HDI, dimension index is formulated which reflects the contribution of any particular variable/indicator to the HDI of any country/state /region. Dimension

Index is a unit free measure for any indicator under the study. Performance in each indicator is expressed as a value ranging between 0 and 1 by using the following formula:

$$\text{Dimension Indices: } \frac{\text{Annual Value} - \text{Minimum value}}{\text{Maximum value} - \text{Minimum value}}$$

The HDI is calculated as a simple average of the dimension indices.

Where n = Number of Dimensional Indices. In this study, eight indicators have been taken into account and thus there will be eight dimensional indices.

The HDI which is also a unit free value ranges between 0 and 1. An HDI of less than 0.5 implies a low level of human development while $0.5 < \text{HDI} < 0.8$ implies medium level of development. $\text{HDI} > 0.8$ implies a high level of development.

Yardsticks for Indicators of Human Development:

Construction of the HDI starts with an attainment measure. For literacy rate, access to electricity, access to safe drinking water, and percentage of population above the poverty line, etc., the target is 100 percent which is the maximum value for these indicators. In case of per capita net state domestic product; percentage of households in pucca and semi-pucca houses; infant mortality rate; Hospital beds available per lakh population; the best and least achievers among the States and Union Territories of the country have been considered. Details for maximum and minimum value of any indicator for calculating Dimensional Index is shown in the Table-14.

Table 14: Maximum and Minimum Value of Respective Indicators

Indicators	Base year	Maximum value	Minimum value	Yardsticks
Per Capita State Income (PSI)	2011	132,719	20,069	Best achievement (maximum value) scored by Goa, and least achievement (minimum value) scored by Bihar.

Households in Pucca and Semi –Pucca Houses(HPSH)	2001	98.34%	38.84	Best achievement (maximum value) scored by Daman and Diu, and least achievement (minimum value) scored by Arunachal Pradesh).
Access To Electricity(AE)	2001	100%	0	The target is 100 percent
Population above poverty (PAP)	2005	100%	0	The target is 100 percent. Data relates to 2004-05
Literacy Rate(LR)	2011	100%	0	The target is 100 percent
Infant Mortality Rate	2009	91 per	1 8 per	Best achievement
Hospital beds	2009	408	7	Best achievement
Access to	2001	100%	0	The target is 100

Attainments of Human Development and North-east India:

The data pertaining to the eight selected variables for the respective states of NEI are displayed in Table 15.

Table15: Data relating to Human Development Indicators

States	PSI	HPSH	AE	PAP	LR	IMR	PHB	ASDW
Arunachal Pradesh	51,644	38.84	54.7	66.53	67	32	188	77.5
Assam	30,413	50.70	24.9	63.91	73	61	11	58.8
Meghalaya	48,383	59.63	42.7	66.13	75	59	106	39.0
Mizoram	45,982	78.53	69.6	80.53	92	36	129	36.0
Manipur	29,684	63.52	60.0	71.46	79	16	94	37.0
Nagaland	21,434	66.69	63.6	67.33	80	26	85	46.5
Sikkim	48,937	84.13	77.8	63.45	82	34	173	70.7
Tripura	38,493	55.80	41.8	65.56	87	31	66	52.5
Highest	132,719 (Goa)	98.34 (Daman & Diu)	96.8 (Chandigarh)	94.6 (J&K)	93.9 (Kerala)	91 (Orissa)	408 (Pondicherry)	99.8 (Chandigarh)
lowest	20,069 (Bihar)	38.84 (Arunachal Pradesh)	10.3 (Bihar)	53.60 (Orissa)	63.8 (Bihar)	18 (A&N)	7 (Bihar)	23.4 (Kerala)
All India	54,527	81.76	64.5	73.90	65.46	31	46.5	77.9

The table also depicts the highest and lowest value of a variable among the States and Union Territories of India along with all India Average.

In terms of various indicators of human development (Table 15), the region presents a mixed picture.

Per Capita State Income (PSI): As per the 2011 census, the Per capita state income of the all states of the region has remained below the national average (54527). Only states- Arunachal Pradesh, Meghalaya, Mizoram and Sikkim could record above Rs. 40000 per capita income while the states like-Assam, Nagaland, Manipur and Tripura have recorded poor position.

Households in pucca and semi-pucca houses (HPSH): As par households in pucca and semi-pucca houses are concerned, all the concerned states lag behind all India average 81.76 (2001 census). Among the states, 84.13 % households in Sikkim resides either in pucca or semi-pucca houses followed by Mizoram with 78.53 percent. Arunachal Pradesh recorded the lowest percentage viz, 38.84 percent means 61.16 percents of total households in Arunachal Pradesh dwell kuchcha or unclassified houses.

Access to electricity (AE): Access to electricity (2001 census) recorded among the states shows a mixed picture in relation to national average (64.5). Access to electricity is the highest in Sikkim (77.8 percent), Mizoram (69.6 percent) and Nagaland (63.6 percent) respectively. In Assam, only 24.9 percent households have accessed to electricity which is the lowest in NE region. Meghalaya and Tripura records much lower than all India average.

Population above poverty line (PAP)(2001 census): Mizoram records 80.53 percent of population living above poverty line. Rest of the states the region could not do better over national average (73.90 percent). In Manipur, 71.46 percent of the population lives above minimum level of living. Incidence of poverty in Assam is the highest in Assam which is mirrored with 63.91 percent of population living above poverty line in the state.

Literacy rates (LR) (2011 census): All the states of the region have recorded literacy rates which are higher than national average (65.46). Mizoram (92 percent) has the second best literate state in the country. Arunachal Pradesh (67 percent) has the least achievement in terms of literacy rate among states of the region.

Infant mortality rate (IMR) (2009): In regard to infant mortality rate (IMR), all the states of NEI baring Assam show better results as compared to the all India average (31 per 1000). IMR is the lowest

in Manipur (16) followed by Nagaland (26). Assam (61) is the least achieved state in respect of IMR followed by Meghalaya (59).

Hospital beds available per lakh population (PHB) (2009): In Assam (least achiever), 11 hospital bed are available for one lakh persons followed by Tripura (66). The best achiever in NE State is Arunachal Pradesh where 188 beds are available for one lakh population followed by Sikkim (173).

Access to safe-drinking (ASDW) (2001 census): 77.5 percent of the households in Arunachal Pradesh have access to safe-drinking water which is close to all India average (77.9 percent). More than 60 percent of households in the states Manipur, Meghalaya and Mizoram do not have access to safe-drinking water. In Nagaland, only 46.5 percent of households have access to safe-drinking water. In Assam and Tripura it is 58.8 percent and 52.5 respectively.

Estimation of HDI for States of North East India:

Data collected for the eight indicators have been used in determining value of human development indicators with the help of Dimension Index. Indicators measure and HDI value for the respective states so estimated is depicted in Table-16.

Table 16: Human Development Indicators and Human Development Index

States	Human Development Indicators								Human Development	
	PSI	HPSH	AE	PAP	LR	IMR	PHB	ASDW	HDI	Status
Arunachal Pradesh	0.280	0.000	0.513	0.315	0.106	0.191	0.451	0.708	0.321	LD
Assam	0.166	0.199	0.233	0.302	0.115	0.365	0.026	0.537	0.243	LD
Meghalaya	0.262	0.234	0.400	0.313	0.119	0.353	0.254	0.356	0.286	LD
Mizoram	0.249	0.308	0.653	0.381	0.145	0.215	0.309	0.328	0.323	LD
Manipur	0.161	0.249	0.563	0.338	0.125	0.095	0.225	0.338	0.262	LD
Nagaland	0.116	0.262	0.596	0.319	0.126	0.155	0.204	0.424	0.275	LD

Sikkim	0.265	0.330	0.730	0.300	0.130	0.203	0.415	0.645	0.377	MD
Tripura	0.208	0.219	0.392	0.310	0.138	0.185	0.158	0.479	0.262	LD
All India	0.295	0.321	0.605	0.350	0.103	0.185	0.111	0.712	0.335	LD

In Table 16, the HDI column shows that except Sikkim, all the states in NEI can be termed as least developed in human development attainment. None of the states of NEI could score HDI value equal to or above 0.5. Even all India HDI falls below 0.5 score. Sikkim has achieved moderate/medium level of human development and has topped the list among states in NEI. The HDI value for the states of Arunachal Pradesh, Assam, Meghalaya, Mizoram, Manipur, Nagaland and Tripura are 0.321, 0.243, 0.286, 0.323, 0.262, 0.275 and 0.262 respectively.

Arunachal Pradesh and Mizoram, are showing better position in the region than other states. Assam is the lowest ranked state with a HDI value of 0.243. Scoring a value 0.262 of Tripura is slightly better than Assam in human development.

LIMITATIONS OF THE STUDY

The study face difficulties in obtaining statistical data's in uniform manner. Due to non-availability of statistics, the HPSH, AE, ASDW were based on 2001 census report while the PSI was based on 2011 census report. IMR and PHB were based on 2009 based data's. PAP statistics was based on 2005. Average life expectancy, which is a good health indicator for the population has not been included in the selected list of indicators. This is because of non-availability of data relating to life expectancy for the states of NEI region except Assam for the year 2001 and or any surrounding year. Information regarding incidence of poverty in states of India for the year 2011 is not available. Hence population above poverty has been restricted to the year 2005. Data on number of hospital beds available in respective states. Therefore, the Hospital beds available per lakh people has been considered.

CONCLUSION

Low level of human development in north-eastern states of India only reflects the high human deprivation among its populace. Sikkim, of course is an exception with moderate development in human development. Two crucial factors responsible for a dismal performance are low per state capita income and paucity of medical facilities revealed through number of hospital beds per against lakh people as well as high IMR. The low level of economic activity and dependence on central sponsored economic welfare schemes are responsible for low level of human development in the region. There is tardiness in economic growth. Health care facilities are in a gloomy state. Along with these features, there remains the alarming problem of scarcity of water in the region. This is mostly due to the physical and climatic features of the region - being hilly and tropical in nature and at the same time, failure of government to make provisions for safe drinking water to the average citizens. Baring Arunachal Pradesh and Assam which has its many river tributaries and streams, availability of safe drinking water is in a meagre position with more than half of the population being deprived of this organic need of life. There is also the trace of high incidence of poverty which only speaks about the high volume of shortfalls in human development. However, the single area which shows considerable progress in the region is literacy rate. Therefore, it can be hoped that growth of literacy rates would bring positive changes to other indicators in the coming days.

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