Full Length Research Article

DIVERSIFICATION OF GROWTH OPPORTUNITIES IN 'SEVEN SISTER STATES'

*Dr. Sivaramakrishnan, L., Khatun, M. and Majumdar, S.

Jadavpur University, Kolkata700032

ARTICLE INFO	ABSTRACT
	The seven sister states are the contiguous states of Arunachal Pradesh, Assam, Meghalaya, Manipur, Mizoram, Nagaland and Tripura in North Eastern India. The sobriquet, land of seven sister (The seven sister states) coined by Jyoti Prasad Saikia, a journalist in Tripura in the course of a radio talk show at the time of inauguration of new states in January, 1972.India's north east region, the seven sister states is endowed with huge untapped natural resources. In spite of being endowed with vast natural resources in terms of forests, biological diversity, hydro-electricity, the region has remained largely underdeveloped. Proper utilisation and management of resources along with enhancement of human resources can help in the growth and development of these states. To see proper utilisation of human resources, population composition of an area should be followed. Hence this paper concentrates on the socio-economic indicators like the literacy rate, sex ratio, population density, health condition, and involvement of workers in different sectors, GDP of these states and its comparison with India. Side by side effort has been made to find out the constraints for the low level of development in these states.

INTRODUCTION

North-eastern states of India, flanked in the north by the Himalayas and in the south by the Bay of Bengal, constitute a characteristic narrow passageway that connects the Indian subcontinent to East Asia and Southeast Asia (Chakraborty *et al,* 2012). Seven sister states covers seven distinct states includes Arunachal Pradesh, Assam, Mizoram, Manipur, Meghalaya, Nagaland, and Tripura. The huge variety of the climatic, edaphic and altitudinal variations with the greenness of its landscape, favourable climatic condition, the range of communities and geographical and ecological diversity makes this part of India quite different from other parts of the subcontinent. Northeast India is therefore the geographical 'gateway' for much of India's flora and fauna, and as a consequence, the region is one of the richest areas of India in biological values. North East India is the homeland of a large number of ethnic groups who came from different directions at different historical times, belong to different racial stocks, speak different languages and have varied sociocultural traditions (Ali, A.N.M.I., *et.al* 2003). Thus, the potentialities of various resource oriented studies in North East should be given importance as it can provide lot of opportunities for the development.

*Corresponding author: Dr. Sivaramakrishnan, L.,
Jadavpur University, Kolkata 700032, India.

The focal objectives of the paper are as follows

- To assess the utilization of Human Resources through population composition and related attributes.
- To focus on the socio-economic conditions like the literacy rate, sex ratio, population density, health condition, and involvement of workers in different sectors, and GDP in comparison with India.
- To find out the constraints for the low level of development in these states.

The Study Area is the seven sister states, which stretches from the foothills of the Himalayas in the eastern range and is surrounded by Bangladesh, Bhutan, China, Nepal and Myanmar. These contiguous states of Arunachal Pradesh, Assam, Meghalaya, Manipur, Mizoram, Nagaland and Tripura in North Eastern India lies between $21^0\ 34^{'}$N to $29^0\ 50^{'}$N latitude and $87\ ^0 32^{'}$ E to $97\ ^0 52^{'}$E longitude and covers an area of 255511sq. km. It covers 7 per cent of India's total geographical area and it was the part of the northward migrating 'Deccan Peninsula'. This region is characterised by diverse physiography ranging from plain, plateaus and mountains with associated valleys. The region receives moderately rainfall ranging from 1650mm to 6320mm.It had a population of 44.98 million in 2011, which is about 3.7 per cent of India's total.
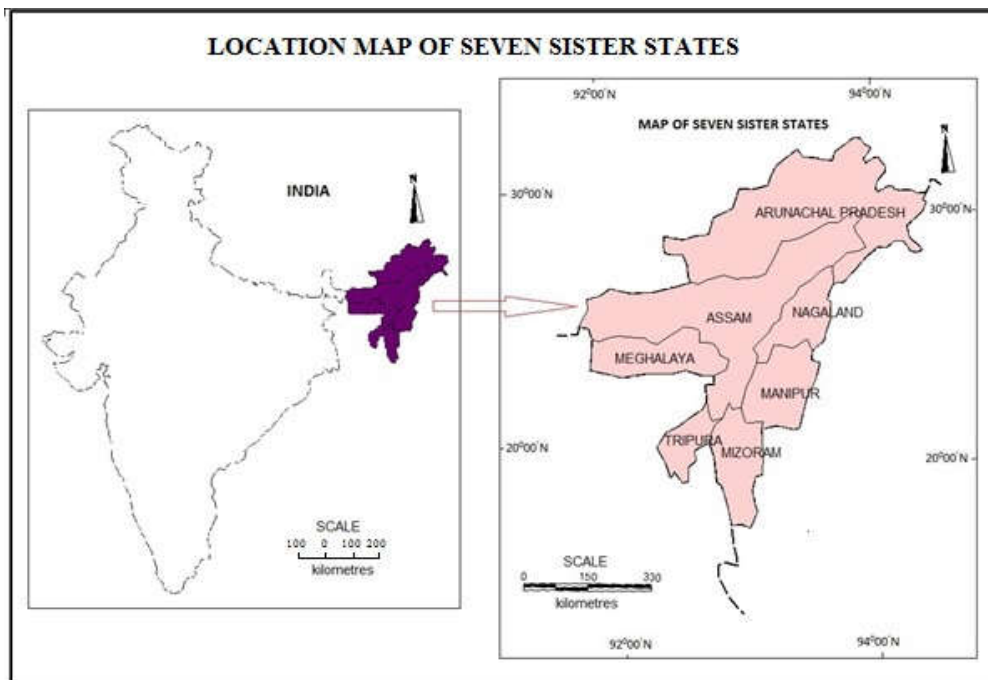
Figure 1. Location Map of 'Seven Sister States'

MATERIALS AND METHODS

The work begins with a review of works done so far by other scholars, related to the proposed research work. Data are collected from different sources like Census of India, Primary Census Abstract, Ministry of Development North East India, Human Development Report of North East States, National Sample Survey (NSS), archival documents etc. The data was then analysed on the basis of suitable statistical tools and techniques and also be presented with pictorial means. Computer based GIS technique was adopted for the mapping and detection of various phenomenon for analytical purposes.
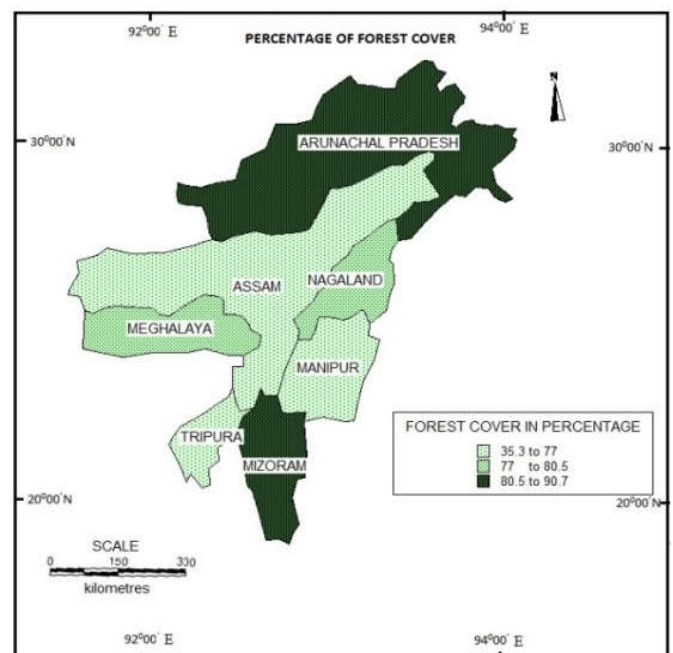
RESULTS

Natural Resources

India's seven sister states are gifted with huge unexploited natural resources and is acknowledged as the eastern gateway for the country's 'Look East Policy'. This region is rich in natural resources like timber based forest, biodiversity, petroleum etc. Side by side this region has some distinct advantages. It is strategically located with access to the traditional domestic market of eastern India, along with closeness to the major states in the east and adjacent countries like Bangladesh and Myanmar. The region is also a vantage entry point for the South-East Asian markets. The resource-rich north east with its stretches of fertile farmland and a huge talent pool could turn into one of India's most prosperous regions.

Power

Briefly it can be said that the region has a current installed capacity of 4029 MW in power, with abundant coal, oil and gas resources for thermal power generation.

As per NEEPCO (North Eastern Electric Power Corporation Limited), the region has 151.68 BCM (Billion Cubic Metres) reserve of natural gas and 945.03 MT of coal that would be sufficient to produce 3000 MW of power for 30 and 50 years respectively. Though the region has an estimated hydro potential of 58,971 MW, only about 7%has been tapped. It is estimated that only river of Arunachal Pradesh has the potential to generate 50,000 MW power. Forest This area has the richest reservoir of plant diversity in India and is one of the 'biodiversity hotspot' in the world supporting about 50% of India's biodiversity.
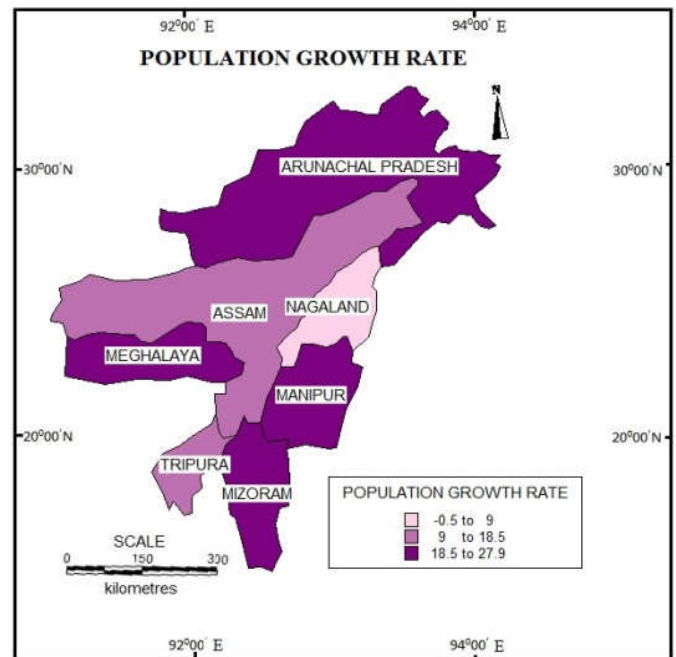

Source: Forest Survey of India, 2011

Figure 2. Forest cover of 'Seven Sister States'

All types right from the grassland, meadows, marshes, swamps, scrub forests, temperate and alpine vegetation are found here. The varied forest types found in the region are home of numerous plants and animals. Specially, the region exhibits the richest diversity in orchids, zingibers, yams, rhododendrons, bamboos, canes, and wild relatives of cultivated plants. (Mao et al., 2008). According to the satellite images of 'Forest Survey of India' these regions has 163,799 km^2 of forest which is about 25 percentage of total forest of India. The major constraints of this forest resource region may be due to the indiscriminate falling of trees for the supply of raw materials in different industries, surviving on production of paper, pulp, plywood and specially match sticks.

Utilization of Human Resources

If such huge natural resource can be utilize and managed along with the development of human resource. It can help in the growth and development of these states. Human resource is the set of individuals who make up the workforce of an organization, business sector, or economy. To see of human resources utilization scenario of the area, population composition along with literacy scenario, work participation and economic perspective have been analysed.

Source: census of India, 2011

Figure 3. Population Growth Rate

Table 1. State wise Area, Population, Growth Rate, Density, Sex Ratio, Literacy Rate, Scheduled Caste and Scheduled Tribe in Seven Sister States according to census 2011

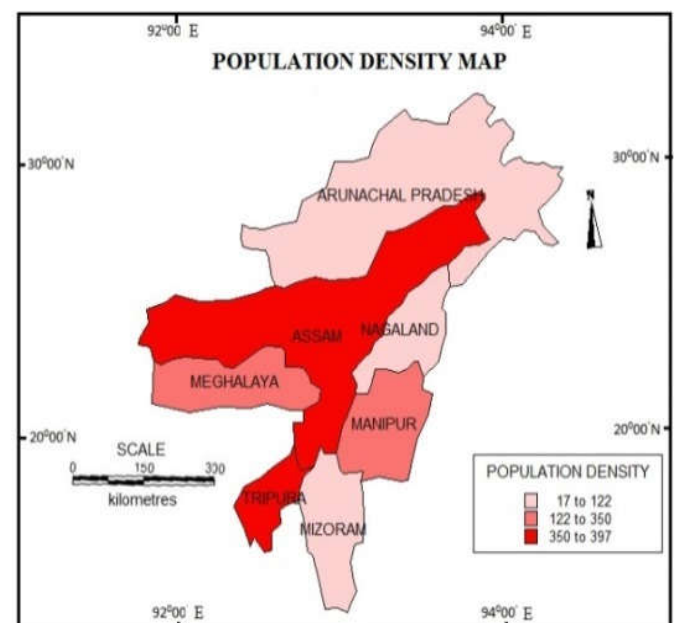| State	Area in Sq. Km.	Population (Person)	Growth Rate (%)	Density per sq. km.	Sex Ratio (females '000 males)	Literacy (%)	Schedule Caste	Schedule Tribe
Arunachal Pradesh	83743	1383727	26.03	17	938	65.38	-	161975
Assam	78438	31205576	17.07	398	958	72.19	2231321	218966
Manipur	22327	2570390	12.05	115	992	79.21	97042	111614
Meghalaya	22429	2966889	27.95	132	989	74.43	17355	418970
Mizoram	21081	1097206	23.48	52	976	91.33	1218	528648
Nagaland	16579	1978502	-0.58	119	931	79.55	-	404135
Tripura	10486	3673917	14.84	350	960	87.22	654918	49247
All India	3287240	1210193422	17.64	382	940	74.04		

Source: Census of India, 2011

Population Composition

Among seven sister states population growth rate is more or less near to the national average population growth rate except Nagaland, where it shows negative (-0.58%) from the census year 2001 to 2011. Figure-4 shows, among the seven sister states, Assam and Tripura shows highest density of population. It is high in Assam may be due to the rich riverine plain of Brahmaputra and in Tripura may be due to illegal migration. Population distributions is mainly concentrated in rural area and are almost same in the seven sister states except Mizoram which accounts more than 50% of its population in urban area in 2011census (Table-2). High level of urbanization in Mizoram may be due to natural growth in urban areas particularly Aizwal the capital and largest towns in Mizoram which accounts for 76% of Mizoram. Low level of urbanization in all these states is also major drawbacks and hindrance to development.

Trend of Birth Rate and Death Rate

Demographic transition situation can be detected by birth rate and death rate trend.

Source: census of India, 2011

Figure 4. Population Density Map
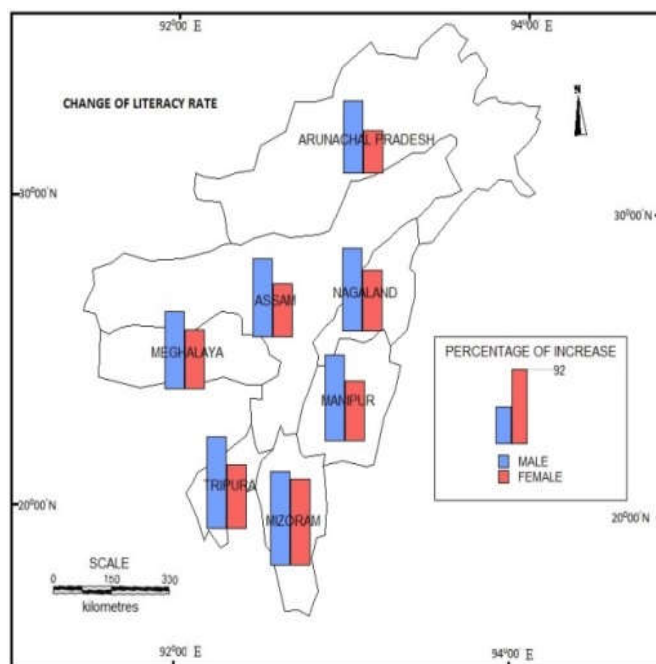
Table 2. State wise Distribution of Population

States	Rural (%)	Urban (%)
Arunachal Pradesh	77	23
Assam	86	14
Manipur	68	32
Meghalaya	80	20
Mizoram	48	52
Nagaland	71	29
Tripura	74	26
Total NER	82	18

Source: Census of India, 2011

All the Seven Sister States are showing decreasing trend of the both birth rate and death rate. They also accounts less than national average, except Assam and Meghalaya, where both birth rate and death rate are more than the national average (Table 3).

Literacy Scenario

With an average literacy rate of 79% and strong communication skills as English is widely spoken in the region.

Source: Census of India, 2011

Figure 5. Male Female change of literacy rate from 2001 to 2011

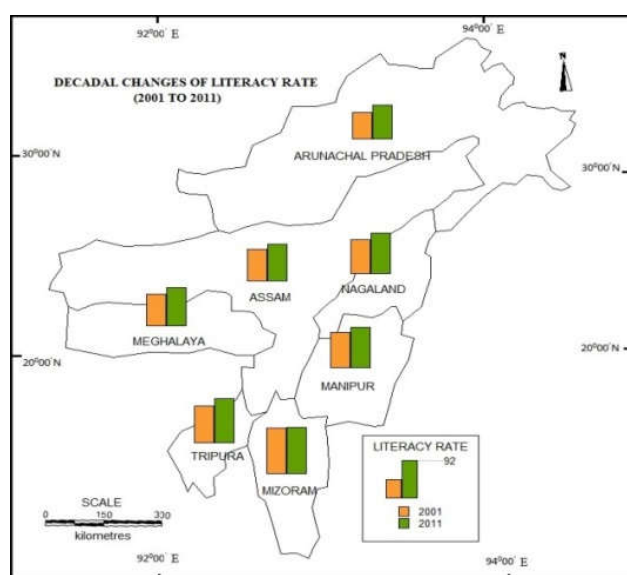**Table 3. Shifting of Birth Rate and Death Rate in Some Years**

States	Birth Rate				Death Rate			
	2004	2009	2011	2012	2004	2009	2011	2012
1. Arunachal Pradesh	21.2	21.1	19.8	19.4	4.7	6.1	5.8	5.8
2. Assam	25.1	23.6	22.8	22.5	8.8	8.4	8.0	7.9
3. Manipur	13.9	15.4	14.4	14.6	4.3	4.7	4.1	4.0
4. Mizoram	19.1	17.6	16.6	16.3	5.2	4.5	4.4	4.4
5. Meghalaya	25.2	24.4	24.1	24.1	7.3	8.1	7.8	7.6
6. Nagaland	13.9	17.2	16.1	15.6	3.7	3.6	3.3	3.2
7. Tripura	15.0	14.8	14.3	13.9	5.5	5.1	5.0	4.8
All India	24.1	22.5	21.8	21.6	7.5	7.3	7.1	7.0

Source: Ministry of Development North-Eastern Region

It offers opportunities to develop a hub of IT industries along with employment opportunity for the local skilled people in the region. Here the Figure-5 is showing the change of literacy rate (in percentage) from 2001 to 2011 of both male and female.

Though Literacy scenario in 'Seven sister states' are not similar in all states, but overall data showing increase of literacy rate, Mean years of education is higher than the national average in three states in Manipur, Mizoram and Nagaland (Table 4).

Apart from literacy change, literacy rate of male female and Mean Years of Education Drop-out rate is very important to visualise the literacy scenario. In 'Seven sister states', all the states are counting more dropout than the national average in primary stage and in elementary stage except Nagaland, where elementary stage showing lower dropout rate than national average (Table 5).

Source: Census of India, 2011

Figure 6. Decadal Change of Literacy Rate

Table 4. Mean Years of Education, 1993-94 & 2004-05

States	1993-94			2004-05		
	Male	Female	Total	Male	Female	Total
Arunachal Pradesh	2.9	1.5	2.3	4.9	3.3	4.2
Assam	4.9	3.1	4.1	5.4	3.7	4.6
Manipur	7.0	4.3	5.6	7.4	5.2	6.3
Meghalaya	3.9	2.8	3.4	4.9	4.3	4.6
Mizoram	6.4	5.2	5.8	7.3	6.3	6.8
Nagaland	7.4	5.1	6.4	7.9	6.3	7.1
Tripura	5.0	3.3	4.2	5.3	3.8	4.6
All India	4.6	2.5	3.6	5.7	3.6	4.7

Source: "Gendering Human Development Indices" Ministry of Women and Child Development (2009)

Though literacy rate is high the school dropout level being high reflects that the level of education is low.

As per the 2011 census, the annual per capita income of the region is 6,625 INR against the rest of India average of 10,254 INR. Following figure-7 shows per capita income of both 2001 and 2011 census. The region is nearly 34.28% of the population is below poverty line as compared to the national average of 26.1%.

The region will generate 2.6 million jobs, but the manpower supply will be 16.8 million persons. So there is a need for a twin approach for developing skills for both local employment and for those who seek to migrate. The region remains primarily agrarian with weak industrial sectors and inflated service sectors. As seen in the Figure-8, the composition of GSDP of the region has undergone minimal transformation since 2004-05 to 2009-10, with share of primary sector reducing from 30% to 27% and that of the tertiary sector increasing from 44% to 50%.

Table 5. Drop Out Rates for the Year 2004-05

States	Classes l-V (Primary) (Age group 6 to 11 years)			Classes I-VIII (Elementary) (Age group 6 to 14 years)		
	Boys	Girls	Total	Boys	Girls	Total
Arunachal Pradesh	45.86	48.01	46.85	63.23	61.90	62.63
Assam	51.58	48.34	50.07	72.41	74.60	73.38
Manipur	29.71	32.74	31.15	34.47	30.91	32.90
Meghalaya	51.77	48.15	49.97	65.99	62.43	64.21
Mizoram	50.84	48.71	49.84	68.99	64.34	66.84
Nagaland	41.79	43.66	42.67	41.09	43.93	42.49
Tripura	43.76	42.58	43.20	62.05	66.02	64.15
All India	31.81	25.42	29.00	50.49	51.28	50.84

Source: Selected Educational Statistics 2004-05, Ministry of Human Resource Development

Majority drop out are at primary and elementary level so persons with high level education is low in North Eastern States. Betterment of education will be helpful for the development of the area. For that purpose there is anurgent need to adopt a holistic planning of education and vocational skills in the regions to provide enough opportunities for gainful employment to the youth of the Region. An inclusive growth strategy by accelerating and sustaining the growth process in this region is inextricably intertwined with promoting trade, strengthening market institutions through good governance, human capital and infrastructure development. The region stands way below in comparison with the rest of India in socio-economic indicators.
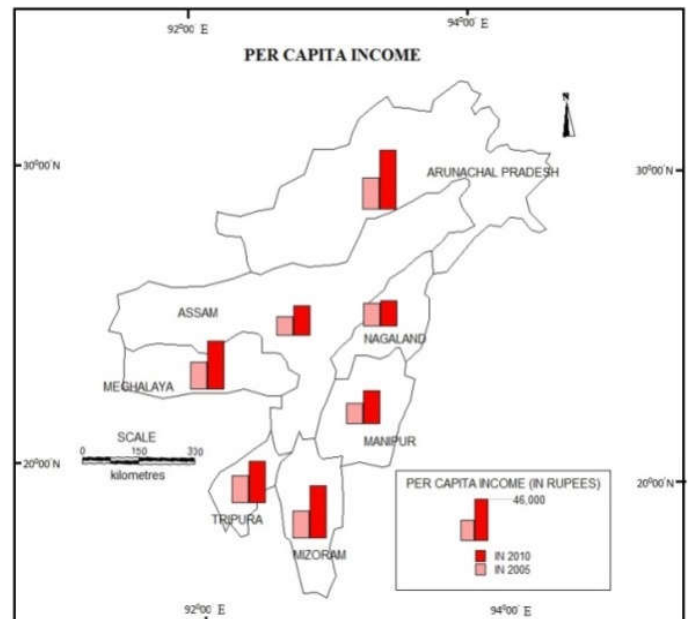
Work Participation

Though Work participation rate is more or less similar to national average (Table-6) but their per capita income is much lower than the national average. It may be because of their low wage.

Table 6. Percentage of Worker

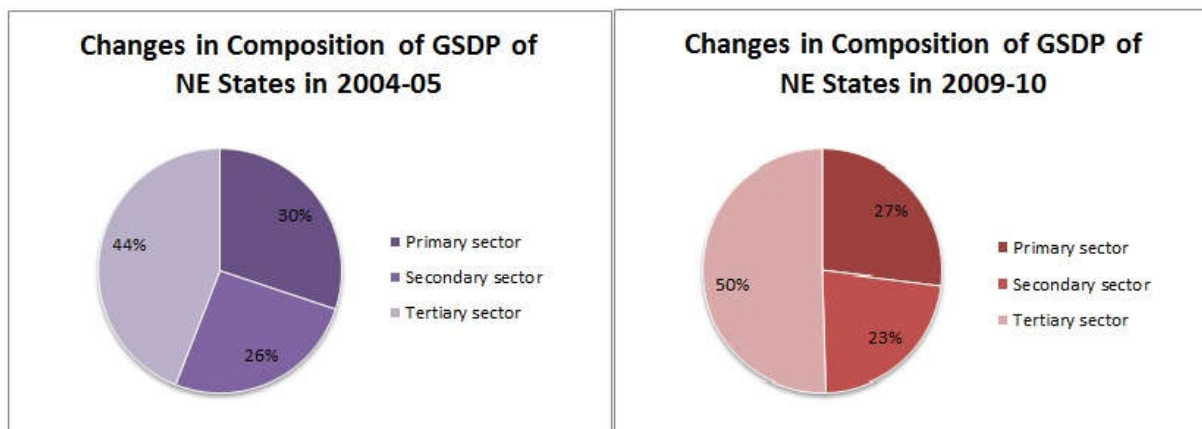| State	Main worker (%)	Marginal worker (%)
Arunachal Pradesh	81	19
Assam	73	27
Nagaland	76	24
Manipur	74	26
Mizoram	85	15
Meghalaya	78	22
Tripura	73	27
All India	75.2	24.8

Source: Census of India 2011

Source: Census of India 2011

Figure 7. Per capita Income of Seven sister States

The share of the industry sector reduced from 26% to 23%. Collectively however, the agricultural sector of the region employs almost 65% of its population. Industry is mainly developed around tea, oil and timber in Assam and mining, saw mills and plywood factories in the other parts of the region.
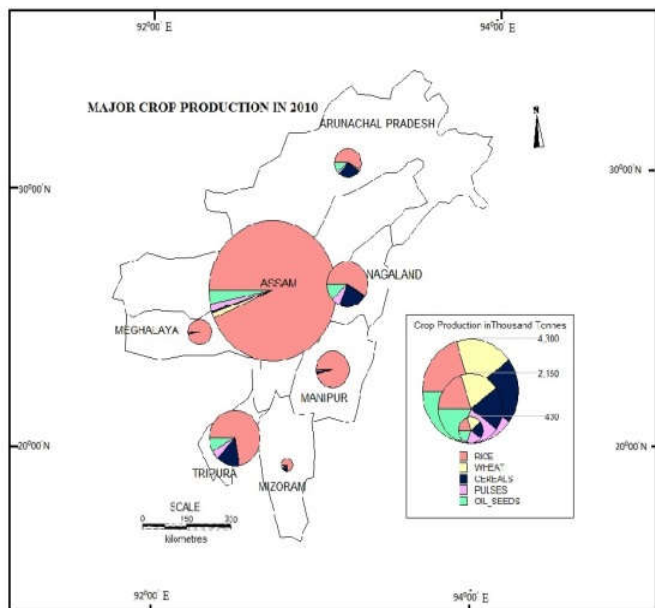
Source: CSO, State Domestic Product (State Series), Ministry of Statistics & Programme Implementation CSO

Figure 8. Changes in Composition of Gross State Domestic Product

Crop Production

If we see the crop production rate of the area, it shows a food crop centric agricultural activity rather than cash crop (Figure-9). Rice is the major food crop cultivated here, followed by other cereals like Jower, Bajra, Maize, Ragi, Barley, Millets and Pulses. Among commercial crops only tea is important in some of the North Eastern States like Assam. The region is endowed with a varied topography and agro-climactic conditions which offer vast potential for agriculture and horticulture. The region has failed to attract investors or to produce skilled labour and entrepreneurial resources, and failed to transform the primitive agricultural practices into modern commercial agriculture. Fragmented land holdings by small and marginal farmers which dominate the landholding pattern in the north east are uneconomical. The region has low proportion of irrigated area and investment in building irrigation capacity has been insufficient and ineffective. The use of agricultural inputs in the north east is also low compared to the rest of the country.

Source: Agricultural Statistics at a Glance, Ministry of Agriculture, Government of India

Figure 9. Major Crop Production in 'Seven Sister States'

The region, which is heavily dependent on the agriculture sector, needs a green revolution to eradicate poverty and boost its economy. Such a green revolution must be adequately backed by financial institutions, marketing functionaries and Research & Development. However, the region is lagging in agricultural development contrary to the national ethos.

Constrains for Development

In spite of being endowed with vast natural resources, the region has remained largely underdeveloped. Some of the constraints are discussed below.

Major constrains is the physical constrain.

• The land resources of North East India can be categorised as mountainous (63%), plateau (8%) and plains (29%). Because of high percentage of mountainous terrain development of infrastructure becomes difficult. Poor infrastructure (i.e. roads, communications, and electricity) crafts limited connectivity overall the region (Table-7). Because it has about 6% of the national road length and about 13% of National Highways out of the total country.

• Its triangle-shaped land locked territory sandwiched between Nepal, Bhutan, China, Burma and Bangladesh and connected to the rest of the country via a thin strip of land known as the 'Chicken's Neck'.
• Porous Border is another constrain for the development of the area. 'It is true that the north eastern region shares certain common problems like ethnic unrests, insurgency, immigration, drug trafficking, communication gap etc.' (Haokip, 2011). 'Northeast itself is problematic as the region represents varied cultural mosaic and has never considered itself to be one compact unit' (Misra, 2000).

Other constraints are:

• Long distance from markets
• High levels of poverty
• Local demand
• Limited collaborated work between public and private sector interest.

- Lack of planning from grass root level.
- Lack of proper implementation of planning.
- Lack of facilities as well as security for the foreign tourists.

Though the region is rich enough as tourist spots in term of community based, cultural based and scenic beauty based, and tourist arrival is much lower (Table-8). Seven sister states shares only 0.83% of the total domestic tourist inflow and 0.29% of the total foreign tourist inflow of India.

- Satisfactory Tourism system should be developed by developing infrastructure as well as home based tourism.

- **Social development**: Empowering rural communities, creating sustainable institutions so that they manage common activities around microfinance and livelihoods and Natural Resource Management (NRM).

Table 7. State-wise density of railways routes in north eastern region of India

States	National highways	State Highway	Road density per 1000 sq Km	Road density per 1000 population	Route kilometres per 1000 Sq km of area
Arunachal Pradesh	1992	-	196.96	13.77	0.02
Assam	2836	3134	2936.51	7.83	29.11
Manipur	959	668	739.11	6.98	0.06
Meghalaya	810	1134	438.67	3.89	0
Mizoram	927	259	292.11	6.35	0.07
Nagaland	494	404	1345.32	10.27	0.78
Tripura	400	689	3026.23	9.09	14.43
India			965.73	2.77	19.47

Source: Ministry of Road Transport & Highways, CMIE States of India

Table 8. Domestic and International Tourist Arrival in 'Seven Sister States' (2011)

States	Domestic Tourist Arrivals	International Tourist Arrivals
Arunachal Pradesh	227857	3395
Assam	4050924	15157
Manipur	114062	389
Meghalaya	652756	4177
Mizoram	57292	731
Nagaland	21094	1132
Tripura	342273	5212

Source: Department of Tourism Government of India Tourism Statistics

In addition, the lack of infrastructure has repeatedly been recognised as a bottleneck to overall development in the region. This region has about 6% of the national road length and about 13% of National Highways. With the exception of Assam, railways are almost non-existent in the other parts of the region due to difficult terrain.

Conclusion

Exploitation of the large hydro potential in the region could be used for exporting to the power deficit northern and western regions of the country. The spill-over benefits for the region will be the development of infrastructure such as roads, communications, and electricity supply to remote hilly areas, resulting in better quality of life. India's north eastern states has suffered from a dearth of investment because of its remote, mountainous location, long distance from markets, high levels of poverty and local demand, and limited private sector interest.

The framework for future development of this resourceful region may be mainly based upon four vital components.

- **Economic development**: The objective of this component should ideally to be developing the capacity of rural communities to plan and manage funds for various economic initiatives and common activities for the public.

- Increase of use of local resources
- Various agro based industries should be developed. Examples Tea in Assam, Pineapple in Tripura.

- Schools, hospitals should be developed both in rural and urban areas.
- To reduce political instability, communal bond should be strong. It can be strengthen by various local fairs, festivals, other programs.

- **Partnership development:** Partner with various service providers among different resource institutions and public and private sector organisations to bring resources such as finance, technology, and marketing into different major and minor project so that the community groups are able to improve their livelihoods.
- Local entrepreneurs should be engaged for different developmental projects because they know better than other.
- Public sectors should collaborate with private sectors for project development, money investment.

- **Project supervision**: to facilitate various governance, implementation, co-ordination, learning and quality enhancement efforts in the project.

- Skilled workers should be engaged for the supervision.
- Projects should be examined on regular basis as if it is going on properly or not.

'Seven Sister States' states have different developmental prospects and resources to support their efforts in contributing to the regional as well as national economy. A critical

evaluation of the key economic indicators along with a complete sketch of the individual strengths of the seven states is necessary to achieve a holistic framework to target growth in the region.

This paper was presented in 36th Congress of The Institute of Indian Geographers (IIG) International Seminar

REFERENCES

Ali, A.N.M.I. and Das, I. 2003. Tribal Situation in North East India, Stud. Tribes Tribals, 1 (2), pp. 141-148.

Chakraborty, R., et al. 2012. North-East India an Ethnic Storehouse of unexplored Medicinal Plants, *Journal of Natural Product and Plant Resource,* 2(1) pp.143-152.

Haopik, T. 2001. Conceptualising Northeast India: A Discursive Analysis on Diversity. Bangladeshe Journal of Sociology, 8 (2), pp. 109-120. Availableat http://www.bangladeshsociology.org/BEJS%208.2%20Co nceptualising%20Northeast%20India.pdf accessed on 12th December 2014.

Mao, A.A., Hynniewta, T.M. and Sanjappa, M. 2008. Plant wealth of Northeast India with reference to ethnobotany, *Indian Journal of Traditional Knowledge,* 8(1), January, 2009, pp.96-103.

Misra, P.K. 2012. J.H. Hutton and Colonial Ethnography of North-East India, in Subba, T.B. (2012 ed.) North-East India: A Handbook of Anthropology, Noida, Orient Blackswan.

****