

CHAPTER-III

A Profile of the Economy of Assam

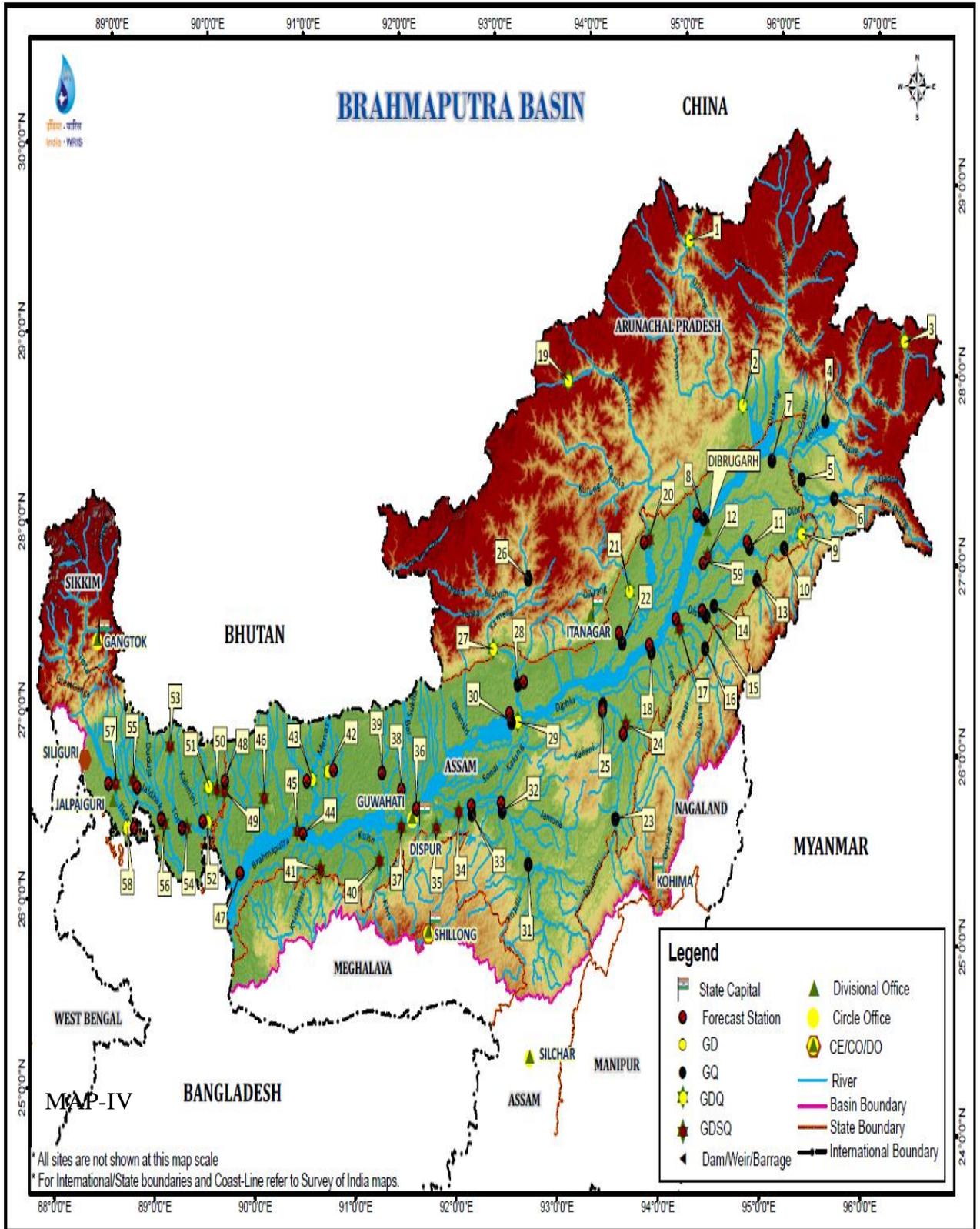
3.1: Geographical Situation of Assam

Assam is situated in the North East region of India. The state is located in between the longitude of 90⁰E to 96⁰E and latitude of 24⁰ N to 28⁰ N. The state has international territorial boundary with Bangladesh on south and west, Burma (Myanmar) on east and China (Tibet), Bhutan on the north side. Internally on the east, the state is bounded by Manipur, Nagaland and a part of Arunachal Pradesh and on the south, there are a number of states viz- Mizoram, Tripura, Meghalaya and on the west of Assam is West Bengal and a part of Meghalaya. The total area within the boundary of Assam is 78,438 sq. kms as against the total area of 32, 87,263 sq. kms. of India. In Assam 98.4 percent is rural area and constitutes 2.4 percent of the total area of the nation. The state is in a position of rank 14th in case of area of boundary among all the states and provides shelter to 2.6 percent of total population of the nation.

The state Assam has two natural regions: i) the Brahmaputra valley ii) the Barak valley. The Brahmaputra valley (MAP-III) occupies total area of 71,582 sq. kms. of Assam. The Brahmaputra is the main river of Assam flowing from north east to west and finally to Bay of Bengal like a backbone of Assam with its 35 tributaries. The eastern part of the valley covering Lakhimpur, Dibrugarh and Sibsagar district, the middle of the valley covering Darrang, Nagaon and Sonitpur district and the western part of the valley is covering Kamrup, Nalbari, Barpeta and Dhubri districts.

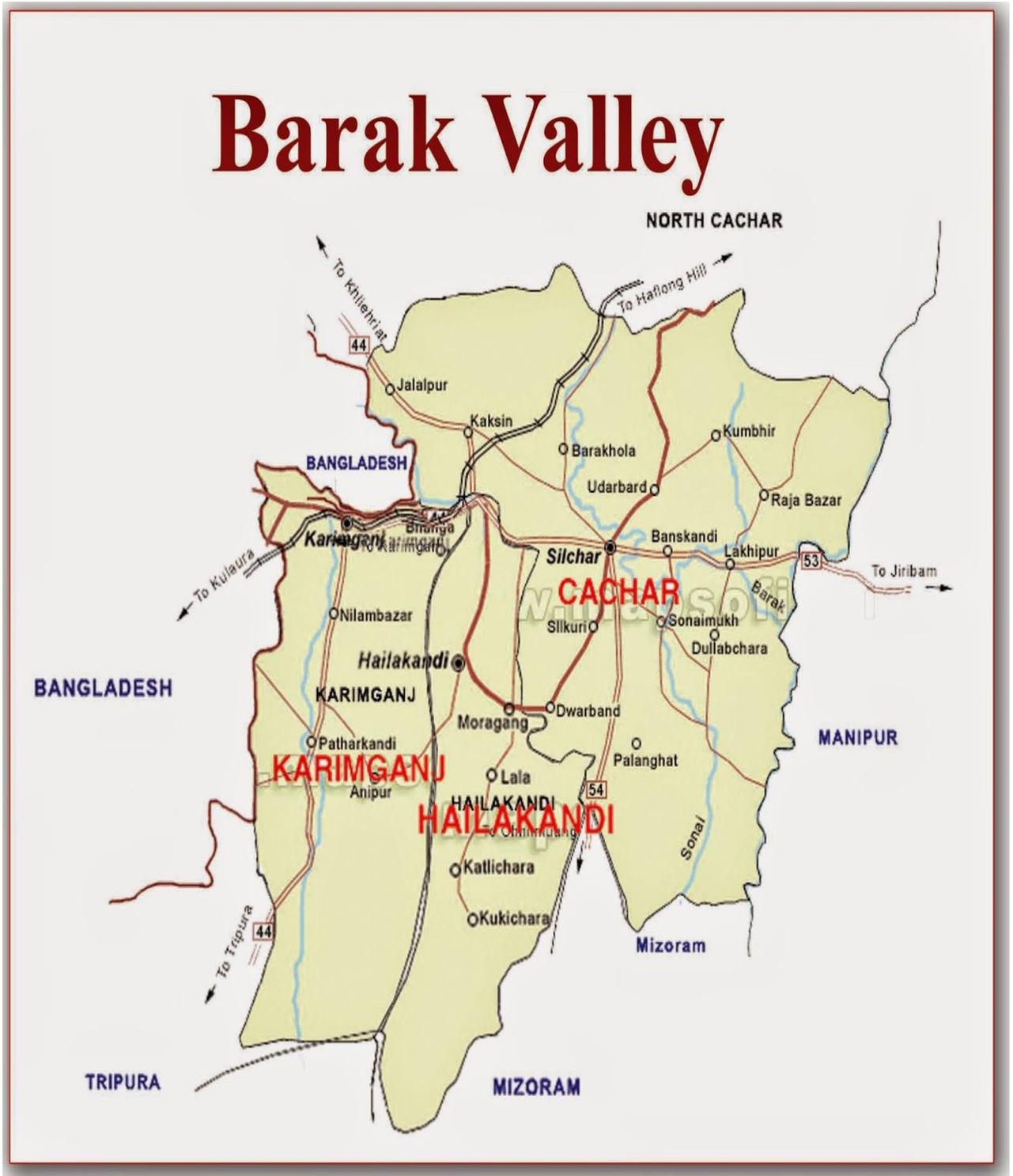
The Barak valley (MAP-IV) is situated in the southern part of Assam with an area of 6,941 sq. kms. The Barak River is flowing through the Cachar district with 9 tributaries. The valley is mainly covering three districts of Assam- namely Cachar, Karimganj and Hailakandi districts.

MAP-III



Source- Google Map

MAP-IV



Source- Google Map

The total hill area of Assam is covering 19.40 percent of the total area of Assam. The hilly area of Assam is less in comparison to all India level because it is 32.5 percent of the total geographical area of the country. The agriculture sector still remains backward in the hilly areas than the plain areas and the traditional shifting cultivation is still being practiced to a greater extent in the hilly areas of Assam.

The state has presently 33 districts including six newly created districts, namely-(Tinsukia, Dibrugarh, Jorhat, Sibsagar, Lakhimpur, Golaghat, Sonitpur, Karbi Anglong, Nagaon, Marigaon, Kamrup Metro, Darrang, Kamrup, Nalbari, Barpeta, Bongaigaon, Goalpara, Kokrajhar, Dhubri, Dima-Hasao, Cachar, Karimganj, Hailakandi, Chirang, Baksa, Udalguri, Dhemaji, Biswanath, Charaideo, South Salmara-Mankachar, West Karbi Anglong, Majuli, Hojai), 80 Sub-divisions, 219 C.D. Blocks, 26,395 villages and 214 total towns as per 2011 census report. There are three autonomous district councils in Assam with a view to providing more autonomy in case of administration of tribal people. These are Karbi Anglong Autonomous Council, North Cachar Hills Autonomous Council and Bodoland Territorial Autonomous Development Council comprising of four districts, namely-Kokrajhar, Chirang, Baksa and udalguri.¹

3.2: Demographic Structure of Assam

Human resource development is an essential part of economic development. The impact of growth rate of population on economic development of a nation may be positive or negative. The rapid growth rate of population is very much essential for an under populated developing country, but the same growth rate of population is a serious problem for an over populated developing country. The human resource development forms human capital and it is essentially needed for the development of an economy. Assam provides shelter to 2.6 percent of the total population of India. There is very high density of population in 27 districts of Brahmaputra valley and in 3 district of Barak valley. But the density in the three hill districts- Karbi Anglong, Dima Hasao and West Karbi Anglong is very low.

3.2.1: Growth of Population in Assam

Assam is facing a serious problem of high growth rate of population. According to census report 2011, the total population of Assam is 3, 12, 05,576 out of which 1, 59, 39,443 are males and 1, 52, 66,133 are females. The decadal growth rate of population is 17.1 percent during the decade 2001-2011 which is 17.7 percent in India as a whole.

The decadal growth rate and density of population of Assam as well as India from census 1901 to 2011 are shown in the following table-3.1.

Table-3.1: Population trend in Assam and India.

Year	Population (in lakh)		Percentage Decadal Variation		Density (person per sq.km.)	
	Assam	India	Assam	India	Assam	India
1901	33	2384	-	-	42	77
1911	38	2521	17.0	5.8	49	82
1921	46	2513	20.5	0.3	59	81
1931	56	2789	19.9	11.0	71	90
1941	67	3186	20.4	14.2	85	103
1951	80	3611	19.9	13.3	102	117
1961	108	4392	35.0	21.5	138	142
1971	146	5481	35.0	24.8	186	177
1981*	180	6833	23.4	24.7	230	230
1991	224	8463	24.2	23.9	286	267
2001	266	10270	18.9	21.5	340	325
2011	312	12106	17.1	17.7	398	368

Source: Census of India 2011.

Note: * Population figure of 1981 was projected estimates.

The table shows that population of Assam is increasing in every decade. It was increased from 33 lakhs in 1901 to 266 lakhs in 2001 and 312 lakhs in 2011. In India, it was increased from 2384 lakhs in 1901 to 12106 in 2011. Density of population in Assam is also increasing from 42 in 1901 to 398 in 2011. Likewise in India, it was 77 in 1901 to 368 in 2011. The growth rate of population in Assam is higher than the national level in all the decades, except in the decade 1991-2001 that Assam has experienced of lower growth rate of population than that of the national level.²

District wise decadal percentage growth of population and density of population as per census report of 2001 and 2011 are shown in the table-3.2

Table-3.2: District wise population in Assam, 2011

Sl.No.	District	Total Population				Population Density	
		2001	2011	% Share to total population, 2011	Decadal growth rate, 2001-11	2001	2011
01	Kokrajhar	843243	887142	2.84	5.21	266	269
02	Dhubri	1566396	1949258	6.25	24.44	941	896
03	Goalpara	822035	1008183	3.23	22.64	451	553
04	Barpeta	1394755	1693622	5.43	21.43	521	742
05	Morigaon	776256	957423	3.07	23.34	500	617
06	Nagaon	2314629	2823768	9.05	22.00	583	711
07	Sonitpur	1665125	1924110	6.17	15.55	315	370
08	Lakhimpur	889010	1042137	3.34	17.22	390	458
09	Dhemaji	571944	686133	2.20	19.97	177	212
10	Tinsukia	1150062	1327929	4.26	15.47	303	350
11	Dibrugarh	1185072	1326335	4.25	11.92	351	392
12	Sibsagar	1051736	1151050	3.69	9.44	394	431
13	Jorhat	999221	1092256	3.50	9.31	350	383
14	Golaghat	946279	1066888	3.42	12.75	270	305
15	Karbi Anglong	813311	956313	3.06	17.58	78	92
16	Dima Hasao	188079	214102	0.69	13.84	38	44
17	Cachar	1444921	1736617	5.56	20.19	382	459
18	Karimganj	1007976	1228686	3.94	21.90	557	679
19	Hailakandi	542872	659296	2.11	21.45	409	497
20	Bongaigaon	612665	738804	2.37	20.59	355	676
21	Chirang	433061	482162	1.54	11.34	219	251
22	Kamrup	1311698	1517542	4.86	15.69	377	489
23	Kamrup Metro	1059578	1253938	4.02	18.34	1689	1313
24	Nalbari	689053	771639	2.47	11.99	683	733
25	Baksa	857947	950075	3.04	10.74	427	387
26	Darrang	759858	928500	2.98	22.19	411	586
27	Udalguri	758746	831668	2.66	9.61	453	413
28	Biswanath						
29	Charaideo						
30	Hajai						
31	South Salmara-Mankachar						
32	West Karbi Anglong						
33	Majuli						
	Assam	26655528	31205576	100	17.07	340	398

Source : 1) Statistical Handbook, Assam, 2016.

2) Census of India, 2011.

Note: Last six districts of Assam are newly created by the Govt. of Assam.

Thus, the table reveals that the decadal growth rate of population has come down to 17.07 percent during the decade of 2001-2011. The growth rate of population is in a

lower level position in the districts of Kokrajhar (5.21 percent), Sibsagar (9.44 percent), Jorhat (9.31 percent), and Udalguri (9.61 percent). The districts of Dibrugarh, Golaghat, Chirang, Baksa and Nalbari have maintained a reasonable increase of population during the decade 2001-2011.³

3.2.2: Age Composition and Dependency Ratio

The total population of a state can mainly be divided into economically dependent and economically independent groups. Economically dependent group includes three groups of age composition, i.e., infant age of 0-4 years, 5-15 years of age known as school going age (of course, many child labour from poor family of this age group), and 60 plus years of age called old age or retired age group. The economically independent group comprises of working age group between 15-59 years of age. This group is the most important from the economic point of view because this working group needs to support all the other three groups of people for their maintenance. According to 2001 census, age composition of the state shows that the percentage of population of the age 0-14 (school going age) are 37.4 per cent, between 15-59 (working group) are 56.63 percent and 60 and above (retired group) are 5.96 per cent. This shows that the dependency burden of Assam is 43.36 percent.⁴

3.2.3: Birth Rate and Death Rate

Birth rate refers to the ratio of average number of children born per thousand of population and death rate is the average number of dead person per thousand of population. According to the Registrar General of India, 2014, the birth rates, death rates and Infant mortality rates of Assam have been 22.4, 7.2, and 49 per mile as against 21.0, 6.7 and 39 per mile respectively in India as a whole. Thus, the birth rate and death rate of population in Assam have been declining due to spread of education, eradication of some diseases, development of medical and public health facilities and effect of family planning programmes.⁵

3.2.4: Density of population

As per census, 2001, the density of population per sq. km. in Assam was 340 and in India, it was 325 people per sq. kms. It has been increasing to 398 in Assam and 368 in India as per the census 2011. The table 3.2 reveals that the density of population in 2011 is the highest in the district of Kamrup Metro (1313) and the lowest density of population is in the district of Dima Hasao (44).⁶

3.2.5: Sex Ratio

Sex ratio means the total number of females per thousand males. It is revealed in the census report of 2011 that out of total population of 312.05 lakh in Assam, 159.4 lakh were males and 152.6 lakh were females. Thus, the sex ratio in terms of females per 1000 males for Assam in 2011 was 958 as against 935 in 2001. It was 925 in 1991 and 896 in 1971.⁷

3.2.6: Literacy Rate

According to census 2011, the literacy rate of Assam has increased to 72.19 percent as against 72.99 percent of India as a whole. Male literacy rate was 77.85 percent and female literacy rate was 66.27 percent as per census 2011. The highest literacy rate at the district level is observed in Kamrup Metro (88.71 percent) and the lowest is in Dhubri (58.34 percent). The growth rate of literacy rate in Assam and India as a whole can be understood from the table-3.3.

Table-3.3: Literacy Rate: Assam and India

State	1991			2001			2011		
	Person	Male	Female	Person	Male	Female	Person	Male	Female
Assam	52.89	61.87	43.03	63.25	71.28	54.61	72.19	77.85	66.27
India	52.21	64.13	39.28	64.83	75.26	53.67	72.99	80.89	64.64

Note: The figure inside the table shows in percentage.

Source: Register General of India.

The table-3.3 shows that the literacy rate of Assam has increased from 52.89 percent in 1991 to 72.19 percent in 2011. Hence, the progress of literacy rate of Assam has indicated an encouraging sign.⁸

3.2.7: Rural-Urban Composition

Assam is pre-dominantly a rural state where majority of the total population are living in rural areas. According to census report of 2011, 85.9 percent of the total populations are living in rural areas (68.85 percent for all India level) and 14.1 percent are living in urban areas against 31.15 percent for all India.

As per census report 2001, the percentage of rural population was 87.1 percent as compared to 72.2 percent for all India and 12.9 percent lived in urban areas where as 27.8 percent for India .⁹

According to census report 1991, out of the total population of 224 lakh in Assam, 199 lakh (88.8 percent) people were living in rural areas and in urban areas were 25 lakh (11.2 percent). At the same time for India as a whole 74.3 percent were living in rural areas and 25.7 percent were living in urban areas.

The table-3.4 shows the rural-urban composition of population structure in Assam as well as in India during 1971-2011.

Table-3.4: Rural urban composition population in Assam and India.
(Percentage of Rural and Urban Population)

	1971		1991		2001		2011	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Assam	91.1	8.9	88.8	11.2	87.1	12.9	85.9	14.1
India	80.1	19.9	74.3	25.7	72.2	27.8	68.84	31.15

Source : Census reports of India, 1971, 1991, 2001, 2011.

(As reproduced in the Economy of Assam, 2016, p 49)

The district wise distribution of total population between rural and urban places are shown in the table-3.5.

Table-3.5: District wise distribution of population in rural and urban areas of Assam, 2011 Census

District	Rural Population				Urban Population			
	2001	2011	% 2011*	D.G.R 2001-11	2001	2011	% 2011**	D.G.R 2001-11
Kokrajhar	791742	832201	93.81	5.11	51501	54941	6.19	6.68
Dhubri	1373953	1745557	89.55	27.05	192443	203701	10.45	5.85
Goalpara	755133	870121	86.31	15.23	66902	138062	13.69	106.36
Barpeta	1267887	1546269	91.30	21.96	126868	147353	8.70	16.15
Morigaon	738268	884125	92.34	19.76	37988	73298	7.66	92.95
Nagaon	2036342	2454234	86.91	20.52	278287	369534	13.09	32.79
Sonitpur	1489331	1750265	90.96	17.52	175794	173845	9.04	-1.11
Lakhimpur	823857	950804	91.24	15.41	65153	91333	8.76	40.18
Dhemaji	533112	637848	92.96	19.65	38832	48285	7.04	24.34
Tinsukia	926105	1063186	80.06	14.80	223957	264743	19.94	18.21
Dibrugarh	956634	1082605	81.62	13.17	228438	243730	18.38	6.69
Sibsagar	954557	1040954	90.44	9.05	97179	110096	9.56	13.29
Jorhat	827901	871722	79.81	5.29	171320	220534	20.19	28.73
Golaghat	865141	969152	90.84	12.02	81138	97736	9.16	20.46
Karbi Anglong	721381	843347	88.19	16.91	91930	112966	11.81	22.88
Dima Hasao	128644	151613	70.81	17.85	59435	62489	29.19	5.14
Cachar	1243534	1421153	81.83	14.28	201387	315464	18.17	56.65
Karimganj	934126	1118986	91.07	19.79	73850	109700	8.93	48.54
Hailakandi	498787	611156	92.70	22.53	44085	48140	7.30	9.20
Bongaigaon	515451	628994	85.14	22.03	97214	109810	14.86	12.96
Chirang	408053	446825	92.67	9.50	25008	35337	7.33	41.30
Kamrup	1253617	1375148	90.62	9.69	58081	142394	9.38	145.16
Kamrup Metro	209442	216927	17.30	3.57	850136	1037011	82.70	21.98
Nalbari	661567	688909	89.28	4.13	27486	82730	10.72	200.99
Baksa	857947	937833	98.71	9.31	0	12242	1.29	-
Darrang	718155	873006	94.02	21.56	41703	55494	5.98	33.07
Udalguri	725621	794094	95.48	9.44	33125	37574	4.52	13.43
Assam	23216288	26807034	85.90	15.47	3439240	4398542	14.10	27.89

Note: * Percentage of Rural population. ** Percentage of urban population.
D.G.R.-Decadal Growth Rate. Source: Statistical Handbook Assam, 2016.

The table-3.5 reveals that the percentage of population in rural places is shown highest in the Udalguri district (95.48 percent) and lowest in the district of Kamrup Metro (17.30percent) and the highest numbers of urban population are living in the

Kamrup Metro district (82.70 percent) and lowest number is in the district of Baksa (1.29 percent) as per census report 2011.

3.2.8: Occupational Structure of Assam

The occupational distribution of working force of an economy gives the clear picture about the structure of its economy. Occupational structure represents the allocation of working population among the three main sectors, viz, (i) Primary Sector, (ii) Secondary Sector and (iii) Tertiary Sector. The primary sector includes agriculture, animal husbandry, forestry, fishery, etc. The economic activities like manufacturing, mining, quarrying, construction works and other industrial activities are attributed to the secondary sector. The tertiary sector comprises trade and commerce, transport, storage, communication and other services. In an underdeveloped economy, majority of working populations are engaged in the primary sector and a small part of working force is in the secondary and tertiary sector. With the development of an economy, the engagement of working population also changes from the primary sector to secondary and tertiary sectors.

As per census 1991, total number of working population in Assam was 82.6 lakhs and it was 36.9 percent of the total population of Assam. The working populations of Assam were distributed (in percentage terms) into various economic activities such as 50.9 percent as cultivators, 12.09 percent as agricultural labourers, 10.5 percent in live-stock ,forestry, hunting and plantation and allied activities, 0.49 percent in mining and quarrying, 4.0 percent in manufacturing, processing, servicing and repairing, 1.57 percent in construction, 6.8 percent in trade and commerce, 2.5 percent in transport communication and 11.1 percent in other services. According to 2001 census, total number of working force in Assam was 95.38 lakhs which constituted 35.8 percent of the total population of the state. The working force distribution (in percentage) in Assam were found as follows: 39.1 percent as cultivators, 13.2 percent as agricultural labourers, 10.5 percent in livestock, forestry, hunting and plantation and allied activities, 0.49 percent in mining and quarrying, 4.0 percent in manufacturing processing, servicing and repairing, 1.57 percent in construction, 6.8 percent in trade and commerce, 2.5 percent in transport communication and 21.8 percent in other services. Thus, there has been a little change

in the occupational structure of the state during the decade 1991-2001. The employment percentage of working population in the primary and secondary sectors has gradually declined and in the tertiary sector has increased to some extent. But still a very high percentage of working population of Assam is dependent on the primary sector for their livelihood and creates disguised unemployment and under-employment in the rural economy.¹⁰

3.3: Agricultural Scenario of Assam

Agricultural sector plays an important role in the development of the rural economy of Assam, as it is the main source of livelihood of large part of rural masses of the state. The major portions of the total population of Assam (85.9 percent) are living in the village area. Thus, top priority must be given to the development of rural areas which is integral, directly or indirectly, for the development of agricultural sector.

The economy of Assam is mainly agrarian where 70 percent or more people directly earn their livelihood from this sector. As per 2001 census, agriculture provides workplace to 57.4 percent of the total work force in Assam and contributes 28.7 percent to the total state domestic product (SDP). According to census 2011, 98.4 percent land mass is rural out of the total land mass of Assam. The total cultivated land area of the state is 28.11 lakh hectares which is about 87.38 percent of the total land area of the state. The total land holding under operation is 1.10 hectares only and there are 85 percent of small and marginal farmer families who are occupying average land holding only 0.63 hectare in a scattered manner.

The table 3.6 shows the trend of Growth of agricultural sector in the economy of Assam.

Table-3.6: Trend of Growth of Agricultural sector [GSDP at constant (2011-12) prices]

(Figure in percentage)

Years	Contribution to GSDP (figure in Rs. Lakh)	Annual Growth Rate over the Previous year.
2011-12	2061487	
2012-13	2496905	21.12
2013-14	2372688	-4.97
2014-15 (P)	2373106	0.02
2015-16(Q)	2474086	4.26

Note: (p)- provisional estimate

(Q) Quick estimate

Source: Directorate of Economics and Statistics, Assam.

The table-3.6 reveals that the contribution of agriculture sector to the economy of Assam has gradually increased [GSDP at constant (2011-12) prices] from 2061487 lakhs in 2011-12 to 2474086 in 2015-16. The annual growth rate has come down to -4.97 in the year 2013-14 but it is expected to recover to 4.26 as per 2015-16 (Quick estimates).

3.3.1: Cropping Pattern in Assam

The cropping pattern refers to the proportion of area under different crops at a particular period of time. The structure of cropping pattern may change with the changes in proportion of area under different crops. At first of the 20th century, the proportion of cultivable land of Assam under food crops was 90 percent and under non food or cash crops was 10 percent. In 1958-59, area under food crops diminished to 84 percent and the area under non food crops rose to 16 percent. This was because of the raising of the demand for non food grain crops.

The table-3.7 depicts the proportion of change in area under different crops in Assam.

Table-3.7: Change in Area under Different Crops in Assam since 1960-61(in 000 hectares)

Crops	1960-61	1980-81	1990-91	2013-14
1. Total Food grains	4,572(84.9)	2,521(84.2)	2,755(83.5)	2,714(78.6)
1.1. Rice	4,320(80.2)	2,275(75.9)	2,526(76.5)	2,503(72.5)
1.2. Wheat	9(0.16)	102(3.4)	84(2.5)	31(0.9)
1.3. other coarse Cereals	58	23	32	29(0.8)
1.4. Pulses	185(3.4)	113(3.8)	113(3.4)	150(4.3)
2. Total non food grains	813(15.1)	474(15.8)	545 (16.5)	738 (21.4)
2.1. Oil seeds	309(5.7)	233(7.8)	320 (9.7)	325 (9.4)
2.2. Jute	299(5.5)	112(3.7)	96 (2.9)	70 (2.0)
2.3.Cotton	32	4	2	1
2.4. Mesta	11	12	7	4
2.5. Sugarcane	62	48	36	29 (0.8)
2.6. Potatoes	76(1.4)	38 (1.2)	56 (1.6)	98 (2.8)
2.7 Others	24	26	25	211 (6.1)

Source: Compiled from Statistical Hand Book, Assam, 2014 and previous issues. Pp. 61-62 Note: Figures in Brackets shows percentage figures to total area under different crops.

The table 3.7 reveals that cropping pattern of Assam has gradually changed to some extent. The proportion of area under food grains production has declined from 84.9 percent in 1960-61 to 78.6 percent in 2013-14. The area under rice production declined from 80.2 percent in 1960-61 to 75.9 percent in 1980-81 and 72.5 percent in 2013-14. The wheat production area covered only 0.16 percent in 1960-61 which was declined to 0.9 percent in 2013-14. The area under the production of pulses out of the total cropped area of the state was 3.4 percent in 1960-61, 3.8 percent in 1980-81, again 3.4 percent in 1990-91 and 4.3 percent in 2013-14. The area under the production of cash crops (oil seeds, Jute, Cotton, Mesta, sugarcane, potatoes etc.) increased from 15.1 percent in 1960-61 to 15.8 percent in 1980-81, 16.5 percent in 1990-91 and 21.4 percent in 2013-14. Particularly, the area under the cultivation of oil seeds as percentage of the total cropped area increased from 5.7 percent in 1960-61 to 7.8 percent in 1980-81 and then to 9.7 percent in 1990-91 and 9.4 percent in 2013-14. Again the area under the cultivation of potatoes increased from 1.4 percent in 1960-61

to 2.8 percent in 2013-14. The area under the cultivation of Jute as percentage of total cultivation area was declined from 5.5percent in1960-61 to 2.0 percent in 2013-14 which become gradually unpopular in Assam.¹¹

3.3.2: Index of Agriculture Production

The growth rate of agricultural production in Assam is very slow. Index of agricultural production in Assam and India with a new base triennium ending 2007-08 has been calculated and in the following table 3.8 shows the details.

Table-3.8: Index of Agricultural Production in Assam and India
(Base: Triennium ending 2007-08=100)

Year	Assam			India		
	Food	Non-Food	All commodities	Food	Non-Food	All Commodities
2009-10	131.43	107.00	120.57	100.6	105.0	102.8
2010-11	149.34	106.43	130.25	114.3	128.1	121.1
2011-12	140.08	109.42	126.44	119.5	131.3	125.3
2012-13	152.29	115.11	135.70	119.4	129.1	124.2
2013-14	155.81	123.81	141.56	122.9	135.0	128.9
2014-15	157.43	130.24	145.32	123.1	135.4	129.2
2015-16	154.54	127.98	142.72	—	—	—

Note: Data for 2015-16 in Assam are based on provisional estimates.

Source: Economic Survey, Assam, 2016-17, p. 65.

The table 3.8 shows that the index of agricultural production (Base: triennium ending 2007-08=100) for all crops was increased from120.57 in 2009-10 to145.32 in 2013-14. Index of food crops production for Assam had been showing an upward trend. It was 131.43 in 2009-10, 149.34 in 2010-11, 140.08 in 2011-12 and 157.43 in 2014-15. The index of production of total crops for all India levels had revealed a rising trend from 102.8 in2009-10 to129.2 in 2014-15. In respect of food crops, the index of production for all India level was 100.6 in 2009-10 to 123.1 in 2014-15 and non food production index was 105.0 in 2009-10 to 135.4 in 2014-15.¹²

3.3.3: Agricultural Yield Rate

The yield rate of crops in Assam is very low in comparison with the average yield rate of India. In Assam, production technique in the field of agriculture is traditional and

the modern inputs like fertilizers, H.Y.V. seeds, irrigation and pesticides etc, are not practiced in an extensive manner. In Assam, the yield rate fluctuation occurs due to natural calamities, viz,-flood, draught, soil erosion etc. The table-3.9 shows the yield rate of crops in Assam-

Table-3.9: Yield Rate of Principal Agricultural Crops in Assam (kg/hect)

Year	Autumn Rice	Winter Rice	Summer Rice	Total pulses	Total oilseeds (excl. coconut)
2004-05	667	1598	1959	569	529
2005-06	1016	1543	1780	550	465
2006-07	899	1321	2017	547	491
2007-08	999	1380	2267	596	525
2008-09	1084	1641	2133	545	549
2009-10	982	1894	2180	558	529
2010-11	1155	1993	2577	572	580
2011-12	1242	1785	2744	560	563
2012-13	1317	1998	2965	597	610
2013-14	1340	2002	2981	695	611
2014-15	1454	2005	2940	749	670
2015-16(p)	1364	2003	2818	757	664

Source: Economic Survey, Assam, 2016-17, p.63.

The table 3.9 reveals the yield rate of autumn rice which was increased from 667 kg per hectare in 2004-05 to 1454 kg per hectare in 2014-15. However, the yield rate of autumn rice declined to 1364 kg per hectare in the year 2015-16. The yield rate of winter rice in Assam shows an increasing trend from 1598 kg per hectare in 2004-05 to 2005 kg per hectare in 2014-15, except in 2011-12 and 2015-16, the production rate declined due to insufficient rainfall in Assam. The production of summer rice revealed an increasing trend which was 1959 kg per hectare in 2004-05 to 2981 kg per hectare in 2013-14. But the production rate declined in 2014-15 to 2940 kg and in the year 2015-16 to 2818 kg per hectare. The productivity rate of pulses was 569 kg per hectare in 2004-05 and 757 kg per hectare in 2015-16. The yield rate of oil seeds rose from 529 kg per hectare in 2004-05 to 670 kg per hectare in 2014-15. However, it was declined to 664 kg per hectare in 2015-16.

3.3.4: Area under High Yielding Variety (H.Y.V)

The expansion of area under High Yielding Variety (H.Y.V.) of rice is one of the good characteristics of development of agriculture sector. The total area under H.Y.V. of rice is gradually increasing in Assam as shown in the following table-3.10

Table- 3.10: Area under High Yielding Variety (Area under lakh hectares)

Year	Autumn Rice	Winter Rice	Summer Rice	Total H.Y.V.Rice Area
2005-06	2.35	9.50	2.65	14.5 (59.9)
2006-07	2.15	8.63	2.67	13.45 (61.4)
2007-08	2.23	8.94	2.78	13.95 (60.0)
2008-09	2.24	9.75	3.14	15.13 (60.9)
2009-10	2.29	10.2	3.41	15.9 (62.8)
2010-11	2.13	11.34	3.54	17.01 (66.2)
2011-12	2.19	12.8	4.02	19.01 (74.0)
2012-13	1.60	11.70	3.61	16.91 (68.0)
2013-14	1.43	12.A22	2.24	15.89 (63.5)
2014-15	1.28	12.42	3.95	17.65 (70.7)

Figure in bracket shows the percentage to total rice area.

Source: Economic Survey, Assam, 2016-17, p.63.

Total area under rice (Autumn, Summer and Winter rice) was 17.65 lakh hectares in 2014-15 which was 14.5 lakh hectares during 2005-06. It was 70.7 percent under H.Y.V. of the total area of rice in Assam in 2014-15 as against 59.9 percent in the year 2005-06. However, the area under H.Y.V. Rice was declined to 68.0 percent and 63.5 percent in 2012-13 and 2013-14 respectively.¹³

3.3.5: Pattern of Land Utilization in Assam

Pattern of land utilization is different for different purposes. As per the pattern of utilization of land, total area of the state are divided into the following categories-

a) forest b) land not available for cultivation c) other uncultivated land excluding fallow land d) fallow land e) cropped land.¹⁴ In the land utilization statistics of Assam for the year 2014-15 (provisional), the total geographical areas of the state was 78.44 lakh hectares. Out of the total geographical areas, 28.27 lakh hectares or 36.04 percent are net sown areas in Assam. Total area under forest is 18.53 lakh hectares which constitutes 23.62 percent of the total geographical area of the state. The total land area covered by roads, rivers, lakes, railways, dwellings etc are termed as not available for cultivation which is 31.36 percent (24.60 lakh hectares) of the land area. Other uncultivated land which includes jungles of reeds, grazing land, useless trees and cultivable waste land, occupies 5.29 lakh hectares or 6.74 percent of the total reporting area of the state. Fallow land in Assam is 2.23 percent or 1.75 lakh hectares of the total reporting area. The total cropped land in the state was 40.83 lakh hectares in 2014-15 which was 41.00 lakh hectare in 2013-14. Social forestry occupied only 0.11 lakh hectare (0.14 percent) of the total area.¹⁵

3.3.6: Horticulture in Assam

Assam is rich in the production of horticultural crops which includes variety of crops like fruits, vegetables, spices, plantation crops, floriculture, medicinal and aromatic plants, mushrooms etc. Horticultural sector is recognized as an important sector for creation of employment opportunities, increased income through value addition, earning source of income and food security and to improve livelihood security.

The table-3.11 illustrates the area, production and average yield of horticultural crops produced in Assam.

Table-3.11: Area, Production and Average yield of some major Horticultural Crops of Assam

Name of Crops	2014-15			2015-16 (estimated)		
	Area in Hectare	Production in M.T.	Average Yield in Kg/Hect.	Area in Hectare	Production in M.T.	Average Yield in Kg/Hect.
1	2	3	4	5	6	7
Banana	51279	865669	16882	55100	957362	17375
Pineapple	16007	281271	17572	17399	306887	17537
Papaya	7418	148857	20067	9470	190046	20068
Orange	15761	202378	12865	17358	231642	13345
Guava	4227	84518	19995	5516	112223	20345
Assam Lemon	13073	104533	7995	15022	139404	9280
Litchi	5435	48725	8965	5774	55104	9543
Jackfruit	21945	195639	8915	24015	234746	9775
Mango	4587	45689	9960	5529	57861	10465
Other fruits	4440	34743	7825	4566	44354	9714
Total fruits	144172	2012022	13869	159749	2329629	14583
Potato	104521	783768	7498	104827	1037263	9895
Sweet potato	6213	32858	5289	10007	53807	5377
Tapioca	3301	30090	9116	4404	39628	8998
Total tuber crops	114035	846716	7425	119238	1130698	9483
Chillies	19605	17287	882	21412	19121	893
Turmeric	16244	15906	987	16891	16753	992
Onion	8283	32421	3915	16422	189920	11565
Ginger	16525	142093	8599	18548	163129	8795
Coriander	28853	28795	998	29420	55133	1874
Garlic	10177	50070	4920	10393	76953	7404
Black Pepper	3528	5898	1672	3870	7897	2040
Other spices	5025	5100	1015	5331	6256	1174
Total spices	108240	297570	2749	122287	535162	4376
Kharif.	85413	1508393	17660	87951	1616670	18381
Vegetables						
Rabi.	192537	3503210	18195	195399	3699175	18931
Vegetable	277950	5011603	18030	283350	5315845	18760
Total vegetable						

Source: i) Directorate of Horticulture & Food Processing, Assam, 2015.

(As reproduced in Statistical Handbook, Assam, 2016. P. 131)

The table 3.11 shows that banana is the highest produced fruit in Assam which is cultivated in 51,279 hectares of land in 2014-15 and 55100 hectares of land in 2015-16. Total production of banana was 957362 metric tones in 2015-16 as against 865669 metric tons in 2014-15. Average yield rate of banana per hectare land was 17375 kg in 2015-16. Jackfruit is cultivated in 24015 hectares of land and total production amount was 234746 metric tonnes in 2015-16. Average production of

jackfruit per hectare land was 9775 kg in 2015-16. Some important fruit produced in Assam are pineapple (281271 M.T.), papaya (148857M.T.), orange (202378 M.T.), guava (84518 M.T.), Assam lemon (104533 M.T.), litchi (48725M.T.), mango (45689 M.T.), etc in 2014-15. Production of total fruits in Assam was 2012022 M.T. in 2014-15. Total production of tuber crops in Assam was 846716 M.T. and total spices was 297570 M.T. in 2014-15. Assam produces total vegetables was 5011603 M.T. in 2014-15.¹⁶

3.4: Rainfall and flood in Assam

Availability of water is essential for promotion of production in agriculture sector. In Assam, irrigation facilities are not sufficient for the development of agriculture sector and hence, agricultural production is mainly depending upon rainfall in Assam. The state Assam is situated in the North Eastern part of India which is highly a rainfall zone. But the distribution of rainfall is not uniform over space and time. It has been observed that there is deficit rainfall during the peak season of cultivation and sometimes, owing to heavy rainfall, causes floods in Assam. The following table-3.12 shows the variation of rainfall and ununiformity in monthly wise during 2015.

Table-3.12: Month-wise Rainfall Pattern in Assam during 2015(in mm)

Name	Normal	Actual	Departure from normal (%)	Status
January	16.2	10.8	(-) 33	Deficient
February	32.0	14.3	(-) 55	Deficient
March	78.1	26.2	(-)66	Scanty
April	172.9	232.0	34	Excess
May	304.2	300.3	(-) 1	Normal
June	427.3	457.9	7	Normal
July	454.2	280.2	(-) 38	Deficient
August	356.7	461.0	29	Excess
September	285.7	205.1	(-) 28	Deficient
October	131.8	56.9	(-) 57	Deficient
November	24.9	15.5	(-)38	Deficient
December	11.8	17.6	49	Excess
Total	2295.8	2077.8	(-) 9	Normal

Source: Statistical Hand Book, Assam, 2016, p. 94

From the table 3.12, it is clear that the annual variation of rainfall during 2015 is very wide and uneven. It is apparent from table-3.11 that the state has experienced deficient rainfall in the month of January, February, July, September, October,

November, excess rainfall in the month of April, August, December and normal rainfall in the month of May, June, insufficient rainfall in the month of March in the year 2015. The pattern of overall rainfall during the year 2015 was normal.

As per report of the Directorate of Agriculture, Assam, 2015 that the level of rainfall in Assam was 2133 mm. during 2015-16 as against normal level of 2295.8 mm. rainfall. The rainfall during the kharif crop season was 1936.5 mm. as against a normal of 2001 mm. in 2015-16. According to the State Agriculture Department, during kharif season, the overall rainfall situation was normal [(-) 3.2 percent below normal] in Assam. During the Rabi season, the actual rainfall was only 196.5 mm. against normal level of 294.8 mm. {Deficient rainfall (-) 33.3 percent}. The overall status of rainfall throughout the state was normal during 2015-16.¹⁷ Assam is situated in flood prone zone. Flood and landslide are the two common nature made disasters in Assam which affect the socio-economic life of Assam. Assam is situated in the middle part of the river Brahmaputra and the Barak. The river Brahmaputra and the Barak and its tributaries are the main cause of flood in Assam. During monsoon period, the rivers cannot cope up with the vast volume of water owing to heavy rainfall within a very short period of time and devastating floods occur in the state. This is because of the upward shifting of river beds due to heavy soil erosion from both river banks and the huge collected amount of silt and debris during rainy season. According to the Rastriya Ban Ayog, the total flood affected area of the state is 31,500 sq. km. which constitutes 39.58 percent of the total land area of Assam and 9.40 percent of the country as a whole. The total flood affected area of Assam was 9.31 lakh hectares of land during 2015. The table-3.13 shows the various damages caused by flood in Assam.

Table-3.13: Statistics on affect of damages caused by flood in Assam

Item	2014	2015
1	2	3
Areas affected (in hectares)	–	–
No of villages affected	4,446	4,763
Crop area affected (in hectares)	3,72,178	3,29,303
Value of crop lost (Rs- in lakh)	–	–
Population affected	42,03,609	36,66,908
Value of Houses damaged (Rs-in lakh)	–	–
No of cattle lost	28	212
Houses damaged (fully)	54,088	1537
Houses damaged (partially)	82,095	1955
No of Human life lost	90	64

Source: Office of the chief Engineer, Water Resource Deptt. And State Disaster Management Authority Guwahati, Assam, 2016

(As reproduced in Statistical Handbook, Assam, 2016. P. 157)

It is evident from the table -3.13 that total numbers of flood affected villages are 4,763 in 2015 as against 4,446 villages in 2014. The total crop area affected by flood is 3, 29,303 hectares in 2015 and 3, 72,178 hectares in2014. Total flood affected population are 36, 66,908 during 2015. Total number of human life lost due to devastating flood in Assam is 64 in the year 2015.

3.5: Irrigation Facilities in Assam

Irrigation is an important infrastructure for improving the agriculture sector and development of agro-based economy of Assam. Modernization of agriculture is necessary to ascertain food security to all and to cope up with the increasing need of foodgrains on account of alarming growth rate of population. For this purpose adequate irrigation facility is certainly an important pre-requisite for the sustainable development of agriculture sector and to meet the increasing need of water for available crops production as irregular rainfall in Assam.. Irrigation is a technique of providing water artificially to the dry area as a substitution of rain water. Three types of irrigation schemes have been practiced in Assam. These are-

1) Surface flow Irrigation scheme: Diversion of flow of river water by constructing canal through which the surplus river water can be equally distributed. These schemes are under Major, Medium and Minor irrigation schemes.

2) Surface Lift Irrigation Scheme: Lifting of water by using pump from river, lake, pond, etc. and distribution of water through canal system.

3) Ground Water Lift Irrigation Schemes: Lifting of ground water by installing Deep Tube wells or Shallow Tube wells and distribution of water in the agricultural field through canal or through the over ground and underground pipes.

The programmes for development of irrigation facilities for practicing scientific method of production in Assam have been launched under two heads, viz, 1) Major & Medium irrigation 2) Minor irrigation. The major and medium irrigation include surface flow and surface lift and the Minor irrigation scheme includes only ground water lift by installing deep tube wells or shallow tube wells. The development of irrigation system in the state are presently taken care by three departments, namely, Irrigation Department, Agriculture Department and Panchayat & Rural Development Department. Among these three departments, the state Irrigation Department is the Nodal Department for the development of irrigation facilities in the state and look after all schemes of three categories of Major, Medium and Minor irrigation facilities and other two departments (Agriculture and Panchayat & Rural Development) are associated with the development activities of Minor

Irrigation facilities only. The total cropped area of the state is 40.76 lakh hectares of which 27 lakh hectares are irrigation potential area of the state and 66.24 percent of the gross cropped area are confined. The total irrigation potential of 9.32 lakh hectares are created by the State Irrigation Department alone of which 2.78 lakh hectares are under the schemes of both Major and Medium Irrigation project and remaining 6.53 lakh hectares are carried out by Minor Irrigation Schemes. Out of Minor Irrigation potential area of 6.53 hectares of which 5.04 lakh hectares are created potential through State Irrigation Department and the remaining part of 1.49 lakh hectares through the Assam State Minor Irrigation Development Corporation (ASMIDC) Limited. But the field works of ASMIDC Ltd. have been suspended since 1992-93 and it is merged with the State Irrigation Department.

The table-3.14 shows the year wise irrigation potential created through Govt. Schemes by Irrigation Department.

Table-3.14: Irrigation Potential Created Through Govt. Schemes Created by Irrigation Department (in hectare)

Year	Major & Medium Irrigation	Minor Irrigation	Total
2010-11	4426	16456	20882
2011-12	10678	15029	25707
2012-13	270	9485	9755
2013-14	8000	11713	19713
2014-15	16170	38774	54944
2015-16	-	24935	24935

Source: Chief Engineer, Irrigation Department, Assam.
(As reproduced in Economic Survey, Assam, 2016-17, p. 87)

The table-3.14 shows that total irrigation potential area is expanding in a continuous process from 20882 hectares in 2010-11 to 54944 hectares in 2014-15. However, potential irrigation area diminishes during 2015-16 due to Major and Medium Irrigation schemes are not active at all. District wise net areas irrigated in Assam are shown by the table-3.15.

Table-3.15: District wise net area irrigated in Assa (Area in hectare)

District	2014-15	2015-16 (p)
1	2	3
Kokrajhar	15985	13317
Dhubri	499	229
Goalpara	2747	1930
Barpeta	3845	9387
Morigaon	832	709
Nagaon	18430	24725
Sonitpur	12403	19322
Lakhimpur	2053	329
Dhemaji	1533	602
Tinsukia	843	396
Dibrugarh	924	986
Sibsagar	927	398
Jorhat	2146	1100
Golaghat	928	1242
Karbi Anglong	40760	20547
Dima Hasao	3840	3826
Cachar	6570	3656
Karimganj	2579	3844
Hailakandi	225	152
Bongaigaon	812	921
Chirang	13844	15199
Kamrup	3050	2356
Kamrup Metro	1139	2360
Nalbari	221	253
Baksa	12503	15631
Darrang	5386	4684
Udalguri	23988	43467
Assam	179012	191568

Note: p= provisional

Source: Chief Engineer, Irrigation Department, Assam

(As reproduced in Statistical Hand Book, Assam, 2016, p. 149)

The table 3.15 shows that the net irrigated area is achieved the highest position in the district of Udalguri (43467 hectares), second highest position in the district of Nagaon (24725 hectares) and the third position in Karbi Anglong district (20547 hectares) during 2015-16. The total net irrigated area in Assam is 191568 hectares in 2015-16.

3.6: Financial Infrastructure in Assam

Financial system of a nation plays an important role in the development of basic infrastructure and balanced growth of an economy by mobilizing deposits and credits in different region. Banking facilities in Assam was not available few years back. At present, banking branches are increasing at an alarming rate in Assam as in other regions of the country. With the development of trade and commerce during last

part of the 19th century and in the initial part of the 20th century, the importance of financial facilities was felt deeply in Assam. In the earlier stage of development, traders and Mahajans provided the services as suppliers of credit at high rate of interest. There were only 74 offices of scheduled commercial banks in 1969 covering 188 thousand persons against per bank in Assam and 65 thousand per banks in India in the same year. The table 3.16 shows the growth of scheduled commercial bank offices in Assam as well as in India and the trend of deposits and credit over a period of time.

Table-3.16: Growth of Scheduled Commercial Banks in Assam and India.

Year	Number of Offices		Deposits(Rs. In Crore)		Credit (Rs. In Crore)	
	Assam	India	Assam	India	Assam	India
2007	1262	70711	25757	2598823	11154	1949567
2008	1317	74326	31666	3228817	13057	2394566
2009	1369	79058	39427	3937336	15115	168977
2010	1434	83997	49545	4601926	18311	3345619
2011	1504	89110	59101	5426510	21053	4076868
2012	1574	96059	67455	6174147	25171	4821527
2013	1682	104647	77730	7051332	28576	5506496
2014	1861	115822	85069	8028220	31713	6264290
2015	2047	125863	97378	8922111	35911	6878472
2016	2177	132587	103794	9659968	42671	7520929

Source: Quarterly Statistics on Deposits and Credit of Scheduled Commercial Banks, March 2007 to March 2016 of RBI. (As reproduced in Economic Survey, Assam, 2016-17, p.189)

The table-3.16 shows that total number of Bank offices of all scheduled commercial banks in Assam were 2177 in the year of 2016 which was 1262 in 2007. In India, there were 132587 Bank offices of all scheduled commercial Banks in 2016 as against 70711 in 2007. The total bank deposits in the state have increased from 25757 crores to 103794 crores in 2016. The total credit facilities in the state have also been increased from 42671 crores in 2016 to 11154 crores in 2007.

3.7: Transport and Communication in Assam

Transport and Communications are the essential part of infrastructures for the development of an economy. Developed Transport and Communication facilities are important prerequisite for the increasing economic activities of a country. The development of agriculture and allied activities, industrial sector, financial and educational institution, marketing facilities, power and energy, etc depend on availability of good transport and communication facilities. The state Assam is known as the gateway to all the other states of North East India, the need for development of transport and communication system is of vital importance. Geographical isolation structure is one of the basic causes of backwardness of transport sector in Assam. The contribution of transport and communication to the economy of Assam is shown in the following table-3.17.

Table-3.17: Contribution of transport and communication sector to the State Gross Domestic Product at constant (2011-12) prices. (Figure in percentage)

Year	Contribution to GSDP
2011-12	5.66
2012-13	6.04
2013-14	11.00
2014-15 (P)	6.61
2015-16 (Q)	11.17

P: Provisional Q: Quick

Source: Economic Survey, Assam, 2016-17, p.171.

The table 3.17 shows that the contribution of transport and communication sector to the State Gross Domestic Product was 11.17 percent during 2015-16 (Q) at constant (2011-12) prices which was 5.66 percent in 2011-12. The present positions of the transport and communication systems in Assam are as follows-

3.7.1: Road Transport in Assam

Road Transport is the principal transport system of Assam and it undertakes main responsibilities of providing means of adequate transport facilities to the people of Assam. The cost of road construction and maintenance is very high due to geographical condition, excessive rainfall and floods, levelling of uneven surfaces and necessity of construction of large number of bridges and culverts. The following table 3.18 shows the length of road network constructed under Public Works Department (PWD) in Assam.

Table-3.18: Road Network in Assam (in kms)

Category	2011-12	2012-13	2013-14	2014-15	2015-16
Surfaced Road (excluding N. H.)	21200	22700	23747	23948	25546
Unsurfaced Road	24300	22800	21753	20914	19316
National Highway	2848	3069	3069	3834.68	3862.53
State Highway	3134	3134	3134	2530	2530
Major District Road	4413	4413	4413	4379	4379
Rural Road	36544	36544	36544	36544	36544
Urban Road	1409	1409	1409	1409	1409

Source: Economic Survey, Assam, 2016-17, p.172)

The total length of road transportation in Assam comprises of 58202 km out of which 3862.53 kms. National Highways, 2530 km. State Highways, 4379 km. Major District roads, 1409 km. Urban road, 36544 km. Rural roads and remaining are Panchayats and other non PWD roads. The surfaced road (excluding National Highways) is 57 percent of the total length road in the state.

In Assam, both private and public sector provide equally the transport service. The Assam State Transport Corporation (ASTC), governments of Assam undertaking and private sector road transport operators provide transport service for the movement of passenger traffics and goods in every corner of the state. Both the transport systems are mainly associated with the intra-state and inter-state movement of passenger traffics and goods throughout the state.¹⁸

3.7.2: Railway Transport in Assam

Railway is the most essential transport system for long journey and the highest used transport of the state. The first railway transport in Assam was introduced in 1881 with the formation of Assam Railways and Trading Company by the British under the leadership of Dr. John Barry White and the first railway line was constructed in the next year from Dibrugarh steamer ghat to Jaipur road. In 1885, two additional companies, namely, Jorhat Provincial Railway and Tezpur Balipara Railway were formed for giving an importance on the development of tea garden of Jorhat and Tezpur area. In 1892, Assam was connected with the other regions of India by the extension of railway transport with the formation of Assam Bengal Railway. After partition, the railway link between Assam and Calcutta was closed and the separate work of Assam railway link was started in 1948 which was completed in December, 1949. The North East Frontier Railway Zone (N.F.R.Zone) was established in 1958 with its headquarter at Maligaon (Guwahati). The total railway route length in Assam was 2442.57 kms in 1915-16 comprising of 2400.85 kms under Broad Gauge and 41.72 under Meter Gauge. The total Broad Gauge railway route length in Assam constitutes 98.29 percent and it is only 3.69 percent of the total Broad Gauge route length and 3.7 percent of the total railway route length of the country.

3.7.3: Water Transport in Assam

The early history of the development of the transport system in Assam, water transport system was closely associated with its trade and commerce with the neighbouring states. In the early part of the colonial rule in Assam, the British authorities gave more importance on water transport considering the difficulties of the development of roads and railways transport in Assam. The East India Company started a steamer service in 1847. Two private companies were soon formed for the purpose of navigating the Brahmaputra and at a later date, the Barak River. These two companies were the Indian General Navigation Company and the Rivers Steam Navigation Company. In 1864 a regular commercial steamer service to Assam was opened. But the service run by the steamer companies was not adequate and satisfactory. Afterwards, these two companies joined together to form the Jointed Steamer Companies and have continued to maintain the steamer service to Assam.

The steamer services helped the state in exporting bulky products like tea, jute, timber etc, and also importing other consumer goods at a very low transit cost.

Assam is a state of riverine area. The Brahmaputra and the Barak river and their tributaries provide sufficient navigable waterways for the state. The total navigable length of waterways of the river Brahmaputra is 891 km. and 121 km. of the Barak River. In 1988, the Brahmaputra has been recognized as a second national water ways of the country. Water transport is the cheapest mode and environment friendly transport system. In order to fulfil the growing need of water ways, the Government formed two public sector organization of Assam, namely, the State Directorate of Inland Water Transport (IWT) and the Central Inland Water Transport Corporation (CIWTC) and provided water transport services on the river Brahmaputra and the Barak on commercial basis for the movement of goods. At present, there are 85 ferry services and 54 nos. cargo cum passenger service for transportation of remote areas in Assam under the Directorate of Inland Water Transport. In 2015-16, total 9561285 nos. of passengers and 1095516 qtls of goods were carried and IWT department collected 5.5 crores revenue during the same period.¹⁹

3.7.4: Air Transport in Assam

Air transport is the fastest transport system for quick movement to any other places. Air transport services in Assam are provided by Indian Airlines and the Vayudoot. The Vayudoot air transport service was introduced in Assam from 26th January, 1981. Of course, the Vayudoot was merged with the Indian Airlines in May, 1993. The Indian Airlines provides its service through six civil airports of the state, viz., 1) Lokpriya Gopinath Bordoloi Airport (Guwahati) 2) Salonibari (Tezpur) 3) Rowrah (Jorhat) 4) Mohanbari (Dibrugarh) 5) Lilabari (Lakhimpur) 6) Kumbhiragram (Silchar). There is also another non functional civil airport in Dubri (Rupshi) district of Assam which is lying closed for long time. Lokpriya Gopinath Bordoloi Airport located at Guwahati is the only international airport in the North Eastern region of the country. Besides, the Indian Airlines, there are several other private commercial airlines services such as Sahara, Spice jet, Indigo, Go-air etc have been operating air transport services from Guwahati to Kolkata, Delhi and some other places of the North Eastern region of the country.

3.7.5: Postal Services in Assam

The postal service is an important means of communication in Assam. The Assam postal department was started in 1988 with its head office in Guwahati. The Assam postal circle has 9 postal Divisions and 2 RMS Divisions. There are 4011 post offices in Assam of which 3725 post offices are situated in rural areas and remaining 275 post offices are located in urban areas (as on March, 2016). The average areas and populations covered by each post office are 19.54 sq.km. and 22577 persons respectively. Assam has 3 night post office which are located at Guwahati GPO, Dibrugarh HO and Silchar HO. Total number of letter boxes of the state are 12300.

In order to serve better facilities to people, there were 353 modernized post offices and 674 computerized post offices in 2013-14. Beside, there were 4 National Speed post centres and 16 speed post centres in the state and postal Mail covers 4,428 railway kilometers.

3.7.6: Telecom Services in Assam

The Assam Telecom Circle was formed in 1987 which is known as Bharat Sanchar Nigam Limited (BSNL), a largest telecom operator in Assam. In 2016, there were 577 active telephone exchanges in Assam. The telephone density in the state measured, in terms of coverage per 100 population was found to be 53.95 in Assam as against 79.36 at national level in 2015. Total subscribers under BSNL in the state were 1503449 and subscriber of wire-line phones under private operators were 1440 in 2015. Total mobile connections were 1.72 crore in 2015. BSNL provided service to 8.6 percent of the total mobile connections and private operators provided about 1.58 crore in 2015.²⁰

Assam, the gateway of North East India, is the largest state of North East region. In Assam, most of the people are living in rural areas and maximum people are engaged in agricultural sector for their livelihood. Agricultural sector contributes a major share to GDP of Assam. Hence, top priority should be given to the development of agriculture sector in Assam for which pre-requisite condition is the development of infrastructure in an economy.

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