

# **ECONOMIC SURVEY**

## **ASSAM, 2016-17**

**DIRECTORATE OF ECONOMICS AND STATISTICS, ASSAM  
PLANNING AND DEVELOPMENT DEPARTMENT  
GOVERNMENT OF ASSAM**

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## FOREWORD

*The Directorate of Economics and Statistics, Assam has been publishing the “Economic Survey, Assam” annually with a view to focus the trends of performance based development of the economy of State of Assam.*

*In the current issue of the report efforts have been made to depict and analyze the latest economic situation, sectoral performance of the economy of the State and the achievements of various measures/programmes undertaken by the State Government for all-round socio-economic development through collated data made available by different Government Departments, Organisations, Institutions and Agencies. I gratefully acknowledge the co-operation extended by the Government Departments and Organisations on their respective sectors.*

*The Report is greatly benefited from the inputs provided by the officers and staff of different Divisions of the Directorate. I do gratefully acknowledge their co-ordination.*

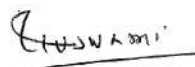
*Apart from the above, I do specifically acknowledge the team work of the officers and staff of ‘Economic Studies Division’ and ‘Statistical Data Division’ of the Directorate associated in compiling, composing and designing the “Economic Survey, Assam, 2016-17” whose sincere and incessant efforts make it possible in bringing out the report.*

*The chapter “Sustainable Development Goals” has been prepared by the Centre for SDGs, Assam along with Directorate of Economics and Statistics, Assam under the guidance of Dr. Shiladitya Chatterjee, IAS (Rtd.), Adviser to the centre. I sincerely acknowledge the efforts put in by them in preparing the chapter of SDGs.*

*I hope this edition would be of immense help to the administrators, researchers, planners, academicians, students etc.*

*Comments and suggestions for improvement of the future issues of this publication are most welcome.*

February, 2017.



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## ASSAM AT A GLANCE

## 1. AREA, ADMINISTRATIVE UNIT AND POPULATION

Sl. No.	I T E M	Particulars
A.	AREA	
(a)	Geographical area (in sq. Km.) as per 2011 Census	78438
B.	ADMINISTRATIVE UNITS	
(a)	District (2016)	33
(b)	Sub-Division (2016)	80
(c)	Revenue Circle (as per 2011 Census)	184
(d)	C.D. Blocks (2016)	219
(e)	Gaon Panchayats (2016)	2202
(f)	Villages (Census, 2011)	26395
(g)	Total Towns (2011 Census)	214
	(i) Statutory Towns	88
	(ii) Census Towns	126
(h)	Police Station (2016) [Excluding Spl. P.S.]	299
(i)	Police Out Post (2016)	197
C.	POPULATION as per 2011 Census	
(a)	(i) Total Population	31205576
	(ii) Male	15939443
	(iii) Female	15266133
	(iv) Percentage of Rural Population	86
	(v) Percentage of Urban Population	14
	(vi) Sex-Ratio (Female per thousand male)	958
	(vii) Density of Population (per/ Km <sup>2</sup> .)	398
	(viii) Decadal percentage variation (2001-2011)	17.07
(b)	Population of age group (0-6 years)	
	(i) Male	2363485
	(ii) Female	2274645
	(iii) Total	4638130
	(iv) Sex-Ratio	962
(c)	Literacy Rate	
	(i) Male	77.85
	(ii) Female	66.27
	(iii) Total	72.19
(d)	Vital Statistics: (2014)	
	(i) Birth rate (per thousand)	22.4
	(ii) Death rate (per thousand)	7.2
	(iii) Infant mortality rate (per thousand)	49
	(iv) M.M.R. (2010-2012) (death per lakh live birth) 2010-12	328
(e)	BPL Population (2011-12) using Tendulkar methodology (in percentage)	
	(i) Rural	33.89
	(ii) Urban	20.49
	(iii) Total	31.98

## 2. SECTORAL STATISTICS

Sl. No.		ITEM	Ref. Year	Unit	Particulars
I		AGRICULTURE			
	A.	Land Utilisation			
	(a)	Net area sown	2014-15	000 Hectare	2827
	(b)	Area sown more than once	"	"	1255
	(c)	Total cropped area	"	"	4083
	(d)	Percentage of Net Area sown to total	"	Percent	36.00
		Geographical Area			
	(e)	Percentage of Area Sown more than once to Net Area sown	"	"	44.00
	B.	Area under important crops			
	(a)	Autumn Rice	2015-16 (P)	000 Hectare	191
	(b)	Winter Rice	"	"	1889
	(c)	Summer Rice	"	"	405
	(d)	Total Rice	"	"	2485
	(e)	Wheat	"	"	21
	(f)	Total Pulses	"	"	142
	(g)	Other cereals & small millets	"	"	7
	(h)	Maize	"	"	28
	(i)	Total food grains	"	"	2683
	(j)	Sugarcane	"	"	29
	(k)	Jute	"	"	72
	(l)	Total oil Seeds	"	"	330
	C.	Production of important crops			
	(a)	Autumn Rice	2015-16 (P)	000 tonnes	257
	(b)	Winter Rice	"	"	3727
	(c)	Summer Rice	"	"	1141
	(d)	Total Rice	"	"	5125
	(e)	Wheat	"	"	34
	(f)	Total Pulses	"	"	108
	(g)	Maize	"	"	87
	(h)	Other cereals & small millets	"	"	4
	(i)	Total food grains	"	"	5359
	(j)	Total Oil seeds (excluding Coconut)	"	"	215
	(k)	Sugarcane (in cane)	"	"	1038
	(l)	Jute (000 bales of each 180 kgs)	"	-	866
	D.	Yield rate			
	(a)	Autumn Rice	2015-16 (P)	Kg/Hectare	1364
	(b)	Winter Rice	"	"	2003
	(c)	Summer Rice	"	"	2818
	(d)	Total Rice	"	"	2089
	(e)	Wheat	"	"	1633

SI. No.	ITEM	Ref. Year	Unit	Particulars
	(f) Maize	2015-16 (P)	Kg/Hectare	3067
	(g) Total Pulses	..	..	757
	(h) Total Food grains	..	..	1997
	(i) Total Oilseed	..	..	664
	(j) Sugarcane (cane)	..	..	35246
	(k) Jute (Dry fibres)	..	..	2161
E.	Index of Agricultural Production (All commodities) (Base Triennium ending 2007-08=100)	2015-16(P)	-	131.52
F.	Per capita Food Grain Production	2012-13	Kg.	199
	AGRICULTURE CENSUS			
G.	Number of operational holdings			
	(a) Size Marginal (below 1 hectare)	2010-11	000 Nos.	1831
	(b) Size Small (1.0 to 2.0 hectare)	..	..	497
	(c) Size Semi Medium (2.0 to 4.0 hectare)	..	..	303
	(d) Size Medium (4.0 to 10.0 hectare)	..	..	85
	(e) Size Large (above 10 hectare)	..	..	4
	(f) All size	..	..	2720
H.	Area under operational holdings			
	(a) Size Marginal (below 1 hectare)	2010-11	000 Hectare	775
	(b) Size Small (1.0 to 2.0 hectare)	..	..	687
	(c) Size Semi Medium (2.0 to 4.0 hectare)	..	..	818
	(d) Size Medium (4.0 to 10.0 hectare)	..	..	437
	(e) Size Large (above 10 hectare)	..	..	282
	(f) All size	..	..	2999
I.	Average size of operational holdings	..	Hectare	1.10
II.	LIVESTOCK AND VETERINARY			
	Livestock and Poultry Population (Sample Survey)			
A.	Livestock:			
	(i) Crossed Breed Cattle	2015-16	000 Nos.	520
	(ii) Indigenous Cattle	..	..	10490
	(iii) Buffaloes	..	..	431
	(iv) Goat	..	..	5190
B.	Poultry:			
	(i) Fowls	..	..	11258
	(ii) Ducks	..	..	4931
C.	Hospitals and Dispensaries	..	..	359
D.	(a) Production of Milk	..	Million Ltrs.	888
	(b) Production of Egg	..	Million Nos.	474
	(c) Production of Meat	..	000 Tonnes	44.81

Sl. No.	ITEM	Ref. Year	Unit	Particulars
III.	FOREST			
	(a) Area under Reserved Forest	31-03-2016	000 Hectare	1397
	(b) Area under proposed Reserved Forest	..	..	176
	(c) Total Forest excluding unclassified State Forest	..	..	1935
	(d) Number of National Parks	..	Nos.	5
	(e) Number of Wildlife Sanctuaries	..	..	18
	(f) Total Forest revenue	2016	Rs. in lakh	5497.35
IV.	FISHERY			
	(a) Beel Fisheries (Registered and Unregistered)	2015-16	Number	1197
	(b) Area under Beel Fisheries	..	Hectare	100815
	(c) Ponds and Tanks	..	Number	373801
	(d) Area under Ponds and Tanks	..	Hectare	61430
	(e) Total Area under Fisheries	..	..	286259
	(f) Production of Fish Seed	..	Million Nos.	5678
	(g) Production of Fish	"	000 Tonnes	294
V.	SERICULTURE			
	A. Sericulture Villages	2015-16	Nos.	11281
	B. Families engaged in Sericulture			
	(a) Eri	..	..	425382
	(b) Muga	..	..	32632
	(c) Mulberry	..	..	38887
	C. Total area under Silk worm's food plants			
	(a) Eri	..	Hectare	5510
	(b) Muga	..	..	4383
	(c) Mulberry	..	..	1541
	D. Cocoons Reeled			
	(a) Eri	2015-16	(000 kg)	3317
	(b) Muga	..	Lakh Nos.	6865
	(c) Mulberry	..	(1000 kg)	328
	E. Production of Silk Yarn			
	(a) Eri Raw Silk	2015-16	M.T	2555
	(b) Muga Raw Silk	..	..	127
	(c) Mulberry Raw Silk	..	..	31.00
	F. Number of Spinning/ Reeling Machines	2014-15	Nos.	53736



Sl. No.	ITEM	Ref. Year	Unit	Particulars
VI.	POWER			
	(a) Total Installed Capacity	2015-16	M.W	379.7
	(b) Total Unit Generation	..	MU	1851.1
	(c) Availability	..	..	7571.0
	(d) Total unit Billed to ultimate consumers	..	..	6352
	(e) Energy Requirement	..	..	7857.00
	(f) Total villages electrified	..	Nos.	23294
VII.	INDUSTRY AND MINERALS			
	A. Production of some Selected Industries			
	(a) Petroleum (Crude)	2015-16	000 Tonne	4513
	(b) Coal	..	..	397
	(c) Jute	..	..	27
	(d) Fertilizer	..	..	506
	(e) Cement	..	..	1169
	(f) Wheat Flour	..	..	1041
	(g) Lime Stone	..	..	442
	(h) Natural Gas (Utilized)	..	MCM	2903
	B. Registered Factories	2015	Nos.	5799
	C. Workers in Registered Factories	..	Nos.	219903
	D. (i) Index of Industrial Production (Base 2004-2005=100)	2015-16	-	134.09
	(ii) Index of Mineral Production (Base 2004-2005=100)	2015-16	-	98.96
VIII.	TEA , COFFEE & RUBBER INDUSTRY			
	(i) Small Tea Growers	2016	Nos.	84577
	(ii) Area under Tea Cultivation	2015	000 Hectare	304
	(iii) Production of Tea	2015	'000 Kg.	631220
	(iv) Area under coffee cultivation	2015-16	Hectare	1119.00
	(v) Production of coffee	..	M.T	41.50
	(vii) Area under Rubber Cultivation	..	Hectare	55989.70
	(viii) Production of Rubber	..	M. T	16399.63
IX.	TRANSPORT & COMMUNICATION			
	A. Vehicle			
	(i) Total Vehicles Registered	2015-16	Nos.	290874
	(ii) Total Vehicles on Road	..	Nos.	2666589
	(iii) Total Revenue earned during the year	2015-16	Rs. in Crore	453.93

Sl. No.	ITEM	Ref. Year	Unit	Particulars
B.	ROAD			
	Total P.W.D. Road Length (including N.H.)	2015-16	Km.	48724.54
	(a) Surfaced (Black topped)	"	"	25546
	(b) Un-Surfaced	"	"	19316
	(c) National Highway	"	"	3862.54
	(d) State Highway	"	"	2530
	Railway route Length (Total)	2015-16	Km.	2442.57
	(a) Broad Gauge	"	"	2400.85
	(b) Meter Gauge	"	"	41.72
C.	Air Transport			
	(a) Air Traffic Movement	2014-15	Nos.	30363
	(b) Passenger Handled	"	"	2552861
	(c) Freight(Loaded + Unloaded)	"	Tonne	10796
	(d) Average flight per day	"	Nos.	83
	(e) Average Passenger Handled per day	"	Nos.	6994
	(f) Average Cargo Handled per day	"	Tonne	29.57
D.	Inland Water Transport			
	(i) Total No. of Ferry Services	2015-16	Nos.	85
	(ii) Passengers Transported	"	('000 Nos.)	9561.285
	(iii) Goods Transported	"	(in Qtl.)	1095.516
E.	POSTAL			
	(a) Post Office	2015-16	Nos.	4011
	(b) Letter Boxes	"	"	12300
F.	TELEPHONE			
	(a) No. of Telephone Exchanges	2015-16	Nos.	577
	(b) Direct Exchange lines (Fixed+WLL+MTS)	"	"	1503449
	(c) Villages covered by Public Telephones (VPTs)	"	"	24663
	(d) Wire line phones (Fixed DELs)	"	"	158772
	(e) Wireless Phones (GSM+CDMA)	"	"	1344677
	(f) Public Call offices	"	"	8909
	(g) Tele density per 100 population (overall)	"	percent	4.63
X.	TOURISM			
	(a) Number of Tourists using Tourist lodges			
	(i) Indian Tourist	2015-16	Nos.	42988
	(ii) Foreign Tourist	"	"	1077
	(b) Number of Tourist using other accommodation like Hotel etc.			
	(i) Indian Tourist	2015-16	"	5599962
	(ii) Foreign Tourist	"	"	25243
	(c) Revenue earned from Tourist lodges	"	Rs. in Lakh	1057.24

Sl. No.	ITEM	Ref. Year	Unit	Particulars
XI.	EMPLOYMENT			
	(a) Total No. of Employment Exchanges	2015	Nos.	81
	(b) Employment in Organised Sector	"	"	1166156
	(i) Employment in Public Sector	"	"	492447
	(ii) Employment in Private Sector	"	"	673709
	(c) Educated Applicants in Live Register	"	"	1523531
	(d) Total nos. of unemployed in Live Register	"	"	1915886
XII.	HEALTH			
	(a) Government Hospitals	2015-16	Nos.	25
	(b) Primary Health Centres	"	"	1014
	(c) Sub-divisional Civil Hospitals	"	"	13
	(d) Sub- Centres	"	"	4621
	(e) Community Health centre	"	"	151
	(f) MBBS Doctors(Govt. + NHM)	"	"	2872
	(g) Specialist Doctors (Govt.+ NHM)	"	"	1087
XIII.	EDUCATION			
	A. Institution			
	(a) No. of Primary School (Govt. Prov)	2015-16	Nos.	40480
	(b) No. of Middle School	"	"	11591
	(c) No. of High School	"	"	5940
	B. Enrolment			
	(a) Primary School	2015-16	000 Nos.	2925
	(b) Middle School	"	"	1452
	(c) High School	"	"	909
XIV.	BANKING			
	(i) Scheduled Commercial Banks (Reporting offices)	March/2016	Nos.	2177
	(ii) Total deposit	"	Rs. in crore	103795
	(iii) Total credit	"	"	43671
	(iv) Credit-Deposit Ratio	"	Percent	41.10
	(v) Population served per Bank	"	000 Nos.	15
	(vi) Regional Rural Bank	"	Nos.	465
	(vii) Deposit of Regional Rural Banks	"	Rs. in crore	7932
	(viii) Credit of Regional Rural Banks	"	"	4446
XV.	A. PANCHAYAT AND RURAL DEVELOPMENT PROGRAMME			
	SHGs			
	(a) Physical Achievement			
	(i) Total No. Village Organisations formed	2015-16	Nos.	865
	(ii) Women SHGs formed	"	"	13682
	(b) Financial Performance			
	(i) No. of SHGs provided with Revolving Fund	2015-16	Rs. in lakh	13298
	(ii) No. Village Organisations provided with Community Investment Fund	"	"	8620

Sl. No.	ITEM	Ref. Year	Unit	Particulars
	B.			IAY
	(a)	2015-16	Nos.	123193
	(b)	"	"	3909
	(c)	"	Percent	3.17
	C.			MGNREGA
	(i)	2015-16	Rs. in lakh	65150.56
	(ii)	"	"	59288.00
	(iii)	"	Lakh Mandays	486.43
XVI.				STATE INCOME
	A.			Net State Domestic Product
	(i)	2015-16(Q)	Rs. in crore	201758
	(ii)	"	"	160724
	B.			Per Capita Net State Domestic Product
	(i)	2015-16(Q)	In Rupees	60952
	(ii)	"	"	48556
XVII.				STATE GOVT. RECEIPTS AND EXPENDITURE
	A.	2016-17 (BE)	Rs. in lakh	6617988
	(i)	"	"	1893828
	(ii)	"	"	1563430
	(iii)	"	"	584652
	(iv)	"	"	2576078
	B.	2016-17(BE)	Rs. in lakh	6245904
	(i)	"	"	2011592
	(ii)	"	"	2907793
	(iii)	"	"	1257074
	(iv)	"	"	69445
XVIII				STATE PLAN
	(i)	2012-17	Rs. in crore	10231709
	(ii)	2015-16	Rs. in crore	24544
	(iii)	2014-15	Rs. in crore	18590
	(iv)	2015-16	Rs. in crore	26030
	(v)	2016-17	Rs. in crore	4191
				Actual Expenditure
	(i)	2013-14	Rs. in crore	8096.82
	(ii)	2014-15	Rs. in crore	13560.98
	(iii)	2015-16	Rs. in crore	11832.52

P : Provisional; E : Estimated; Q : Quick; BE: Budget Estimate.

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## COMPARATIVE STATEMENT OF KEY INDICATORS OF ASSAM AND INDIA

Sl. No.	Item	Year	Unit	India	Assam
<b>DEMOGRAPHIC AND HUMAN DEVELOPMENT INDICATORS</b>					
1	Decadal Growth Rate	2001-2011	Percent	17.7	17.07
2	Density of Population	Census 2011	Per. Sq. K.m.	382	398
3	Sex Ratio	..	Per '000 male	943	958
4	Child sex ratio (0-6)	..	..	919	962
5	Percentage of Urban Population	..	Percent	31.2	14.1
6	Literacy Rate (Person)	..	..	72.99	72.19
7	Per Capita Income GDP/GSDP (At current prices)	2015-16	In Rupees	93293	60952
8.a.	Per Capita NNI/NSDP Income (At constant 2011-12 prices)	2015-16	..	77435	48556
8.b.	Growth over previous year	2015-16	In Percent		
	(i) At Current Price			7.38	11.60
	(ii) At Constant Price			6.24	6.26
9	Population Below Poverty line				
9.1	Total	2011-12	Percent	21.92	31.98
9.2	Rural	2011-12	..	25.70	33.89
9.3	Urban	2011-12	..	13.70	20.49
Source : Planning Commission, Gol.					
<b>VITAL STATISTICS</b>					
10	Birth Rate	2014	Per '000	21.0	22.4
11	Death Rate	2014	..	6.7	7.2
12	<b>INFANT MORTALITY RATE</b>				
12.a.	Male	2014	Per '000	37	49
12.b.	Female	2014	..	40	49
12.c.	Total	2014	..	39	49
13	Maternal Mortality Rate	2011-13	Per lakh live birth	167	300
14	Total Fertility Rate	2013		2.4	2.3
15	Under 5 Mortality Rate	2014		49	66
16	<b>GOVT. HOSPITALS</b>				
16.a.	Average population served per Govt. Hospitals	As on 1.1.2013		34163	30556
16.b.	Average population per bed in Hospital	As on 1.1.2013		879	3062
16.c.	No. of Govt. Doctors	2014	Per lakh population	–	12.00
16.d.	Percent of live births where the mothers received medical attention at delivery at Govt. or Private Hospitals	2011		66.6	61.8
17	<b>DRINKING WATER FACILITY</b>				
17.a.	Drinking water within premises.				
	Rural Households	Census, 2011	Percent	35	50
	Urban Households			71	79
17.b.	Drinking Water near premises.		Percent		
	Rural Households			43	29
	Urban Households			21	13

Sl. No.	Item	Year	Unit	India	Assam
18	Households having toilets facility within premises				
	Rural	2011	Percent	30.7	59.6
	Urban			81.4	93.7
19	EDUCATION				
A.	Gross Enrolment Ration Classes I-V (6-10 years)				
	Boys	2014-15	Percent	98.9	113.4
	Girls			101.4	116.6
	Total			100.1	115.0
B.	Gross Enrolment Ration Classes I-VIII (6-13 years)				
	Boys	2014-15	Percent	94.8	105.3
	Girls			99.2	111.5
	Total			96.9	108.3
C.	Drop Out Ratio (Primary Level)				
	Total	2014-15	Percent	4.13	15.36
D.	Drop Out Ratio (Upper Primary Level)				
	Total	2014-15	Percent	4.03	10.51
E.	Elementary Level (Class I to VIII)				
	Total	2014-15	Percent	4.10	13.87
Source : DISE, 2015-16					
AGRICULTURE					
20	Area of food grains under irrigation	2014-15	Percent	51.20	4.60
21	Av. Yield of Total food grains	2013-14	Kg/hectare	2070	1704
22	Av. Yield of Total oil seeds	2013-14	„	1037	557
23	Cost of Production of paddy	2010-11	Rs./quintal	N.A.	824.34
Source : Agriculture Statistics at a Glance, 2014-15					
24	Cropping Intensity	2014-15	Percent	138.92	145.8
25	Growth rate of GVS/GSDP in Agriculture and Allied sector	2015-16 over 2014-15	Constant (2011-12) Prices	1.20	3.88
			Current Prices	4.9	12.66
MISCELLANEOUS					
26	Road Length (in Km.)	2015-16	Per lakh population	446.28	156.17
27	Railway route length (In. Km.)	2014-15	Per '000 Sq. Km.	20.08	50.90
28	Scheduled Commercial Banks	2016	Nos.	132587	2177
29	Credit Deposit Ratio	2016	In percent	77.9	41.1

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## CHAPTER – I

## ASSAM ECONOMY – AN OVERVIEW

## AREA AND POPULATION:

Assam is situated in the North-East region of India – bordering seven States viz. Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and West Bengal and two countries viz. Bangladesh and Bhutan. The geographical area of the State is 78,438 sq. km of which 98.4 percent area is rural. Assam shares about 2.4 percent of the country's total geographical area and provides shelter to 2.6 percent population of the Country.

Assam is a state of heterogeneous population with socio-cultural and ethnic diversity. According to the Census of India, 2011 the population of Assam stands at 312.05 lakh of which 159.39 lakh are male and 152.66 lakh are female. The decadal growth of the State's population works out at 17.07 percent during the decade 2001-2011 as against 17.68 percent for the country as a whole. Out of the total 312.06 lakh population, 86 percent population live in rural areas and 14 percent population live in urban areas of the State. While the percentage of rural population of the State stands much higher compared to All-India average (69 percent), the proportion of urban population in the State has increased from 12.9 percent in 2001 to 14 percent in 2011.

The density of the population of Assam has increased to 398 persons in 2011 from 340 persons in 2001 Census or on an average, 58 more people inhabit every square kilometer in the State as compared to a decade ago.

The sex ratio of Assam has increased to 958 female per 1000 male in 2011 from 935 in 2001. Compared to overall sex ratio of the State, the Child sex ratio (age-group 0-6 years) has gradually declined from 975 in 1991 to 967 in 2001 and further to 962 in 2011. On the other hand, sex ratio at birth (0-1 year) in Assam as per 2011 Census was calculated at 957 female per 1000 male.

## STATE DOMESTIC PRODUCT:

Analysis of sectoral contribution to GSDP at constant (2011-12) prices from 2011-12 to 2015-16 reveal that other than Service sector, the percentage contribution of Agriculture and Allied activities (Agriculture, Forestry, Fishing) and Industry sector is more or less static. The contribution of Agriculture and allied activities is expected to marginally decrease from the level of 19.89 percent in 2011-12 to 18.66 percent level in 2015-16. The "Agriculture sector" i.e. Agriculture crops is the major contributor of Agriculture and Allied activities and the percentage contribution of this sector towards the State economy has been showing slight improvement at the level of 13.78 percent in 2015-16 from 14.40 percent in 2011-12. The percentage contribution of the Industry Sector to the State economy is also showing a slightly declining trend and expected to fall from 30.63 percent in 2011-12 to 28.82 percent in 2015-16 but would show slight recovery over the previous year. The "Mining & Quarrying" Sector's contribution (being the most potential sector within the 'Industry Sector' of the State) towards state economy has also recorded decline from 10.23 percent in 2011-12 to 7.21 percent in 2015-16. The contribution of "Mining and Quarrying" towards Industry Sector has also declined from 33.40 percent in 2011-12 to 25.00 percent in 2015-16. On the other hand, the percentage contribution of Service sector towards the State economy is expected to increase from 43.97 percent in 2011-12 to 46.71 percent in 2015-16.

The 'Industry' sector which comprises Mining & Quarrying, Manufacturing, Electricity, Gas, Water Supply & Other Utility Services and Construction sectors is achieved at 9.41

per cent growth in 2015-16 as against 5.33 per cent in the previous year (2014-15). The “Electricity, Gas and Water Supply and utility Services” has the highest contribution in the growth of “Industry Sector” which is 17.23 per cent in 2015-16 as against 12.93 per cent in the previous year 2014-15. On the other hand, the estimated growth of “Manufacturing sector” is 10.78 per cent in 2015-16 as against estimated growth of 3.12 per cent in 2014-15.

The state of economy in terms of Rupee value of the GSDP at constant (2011-12) prices for the year 2015-16 (Quick Estimates) is estimated at Rs. 179594.73 crore as against Rs. 166708.85 crore for 2014-15 (Provisional Estimates) reflecting a growth of 7.73 per cent which is slightly lower than the estimated growth of 7.88 per cent in 2014-15 (Provisional Estimates). The expectation of growth of 7.73 per cent in GSDP of the State for 2015-16 comprises of the estimated growth of 3.88 per cent in Agriculture, Forestry & Fishing sector, 9.41 per cent in Industry sector and 8.21 per cent in Services sector.

During the financial year 2015-16, the growth of ‘Forestry’ sector displayed a growth of 0.48 percent as against growth of 0.53 per cent growth experienced in 2014-15. The growth of ‘Agriculture’ i.e. Agriculture Crops is estimated to increase with 4.26 percent during 2015-16 over 0.02 percent in 2014-15. The ‘Fishing’ sector, on the other hand, is expected to grow with 4.68 percent in 2015-16 against 2.17 percent growth in the previous year.

The overall performance of the ‘Industry’ sector is encouraging in 2015-16 compared 2014-15. The growth of Industry Sector is expected to be achieved at 9.41 per cent in 2015-16 as against 5.33 per cent growth estimated for the previous year 2014-15 and this is due to higher performance of Manufacturing Sector and Electricity, Gas, Water Supply and other utility services during 2015-16 compared to 2014-15. The growth of “Construction” sector alone is estimated to be achieved at 12.75 percent in 2015-16 as against 10.55 per cent in 2014-15. Amongst the sub-sectors of Industry sector, the estimated growth rate of Mining and Quarrying, Manufacturing (Registered), Electricity, Gas & Water Supply is encouraging in 2015-16 as compared to the growth over the previous year.

The Services sector comprises of Trade, Repair, Hotels & Restaurants, Transport, Storage, Communication & Services related to Broadcasting, Financial Services, Real Estate, Ownership of Dwelling & Professional Services, Public Administration and Other Services and growth of the sector is 8.21 per cent during 2015-16 as compared to 12.46 per cent in 2014-15. The highest contributor in the Services Sector i.e. “Communication & services related to broadcast” has recorded a growth of 16.13 per cent during 2015-16 as against 10.78 per cent growth in 2014-15. Comparatively lower performance is observed in the sub sector “Real Estate, Ownership of Dwelling & Professional Services” of the services sector. The growth of which is 0.80 per cent in the year 2015-16 over the previous year 2014-15.

The Net State Domestic Product (NSDP), also known as State Income, at 2011-12 prices is expected to be shown higher growth with 7.64 percent in 2015-16 (Quick Estimate) compared to the estimated growth of 7.63 percent during 2014-15. Measured on the basis of Net State Domestic Product, the Per Capita Income of the State will attain the level of Rs.48556.00 at constant (2011-12) prices and Rs.60952.00 at current prices as per quick estimates for 2015-16 as against Rs.45692.00 and Rs.54618.00 at constant (2011-12) prices and current prices in the previous year 2014-15 respectively. In terms of growth rate, the per capita income at constant (2011-12) prices is likely to grow at 6.27 percent in 2015-16 over 6.26 in 2014-15.



**STATE FINANCE:**

The Assam Government Budget, 2016-17 was presented with an expected fiscal deficit of Rs.6674.87 crore and a revenue surplus of Rs.3720.84 crore and a primary deficit of Rs.3465.54 crore. The fiscal reform measures adopted by the State started yielding favourable results since 2005-06. During the year 2015-16, the State had a revenue surplus of Rs.5446.28 crore and a fiscal surplus of Rs.3005.47 crore which is 1.34 percent of GSDP below the 3 percent limit recommended by the Thirteenth Finance Commission. The debt-GSDP ratio during 2015-16 in the State was 15.92 percent well below the fiscal target of 28.4 percent prescribed by the Thirteenth Finance Commission. The total own tax revenues of the State during 2015-16 have shown a growth of 6.95 percent over 2014-15 against an increase of 5.06 percent during 2014-15 over the previous year. The gross VAT collection increased by 2.23 percent in 2015-16 against an increase of 9.08 percent in 2014-15 over the previous year. The contribution of VAT to the total own tax revenue is 69 percent in 2015-16 against a contribution of 73 percent in 2014-15.

In the State Budget, 2016-17, the share of total plan expenditure is 37.54 percent of which share of Social and Community Services is the highest with 19.05 percent followed by Economic Services (16.42%), General Services (1.15%), Grants-in-Aid & Contribution (State) (0.69%) and Loans and Advances (0.23%).

**CLIMATE AND RAINFALL:**

The climate of Assam is humid, with a sub-tropical nature, having warm humid summers and cool dry winters. Due to its unique geographical location, along with the presence of varied physiography, Assam has an array of climatic conditions. Assam is situated in the high rainfall zone with annual average rainfall of 2297.4 mm. The state normally receives 2 percent of rainfall in Winter Season (January-February), 25 percent in Summer Season (March-May), 65 percent in Mansoon Season (June-September) and 7 percent in Post-Mansoon Season (October-December). However, Assam is prone to floods and sometimes there is also the presence of drought like situations with the lack of rains. Thus, though the State has enough natural potentialities for growing food grains in abundance, it at times faces losses impacting on its contribution and share to the national granary, due to the presence of erratic and unpredictable weather conditions, as experienced specially during the last few years. The State had experienced 2133 mm rainfall during 2015-16, against normal rainfall of 2295.8 mm. During the kharif crop season, 1936.5 mm of rainfall occurred in the state (against a normal of 2001 mm). Thus, according to the State Agriculture Department, the pattern of overall rainfall in the State was Normal, during the kharif season, both in total rainfall and its spread being [(-)3.2] percent below normal. However, the State has experienced "Deficient" rainfall during the Rabi Season with only 196.5 mm of actual rainfall against a normal of 294.8 mm recording a deviation of (-) 33.3 percent.

Although the occurrence of rainfall was 'normal' during Kharif Season and 'Deficient' during Rabi Season in 2015 and the overall rainfall pattern throughout the state was 'Normal' during 2015-16, though the spread and pattern of rainfall varies from district to district, during the period.

**AGRICULTURE AND FOOD GRAINS PRODUCTION:**

The Production of all agricultural crops including food grains is directly related to area coverage of various crops produced and cultivated. In Assam, the soil, topography, rainfall and climate in general are very conducive for agricultural activity, mainly for the cultivation of paddy. Therefore, concentration of area under paddy production and

cultivation is high both from the side of farmers as well as the Agriculture Department. As per final estimates, the total area under paddy cultivation during the year 2015-16 was 24.85 lakh hectares or 92.96 percent of the total area under food grains in the state.

Total area under paddy showed a decline in the state, due to decline in area covered under Autumn Rice and Summer Rice. This is also due to choice of farmers to switch over to Winter Rice. The final forecast estimates show (Table-5.7) that the area under Autumn Rice has declined from 4.36 lakh hectares in 2004-05 to 1.96 lakh hectares in 2014-15 and further declined to 1.91 lakh hectares in 2015-16. The area under Summer Rice has declined from 4.16 lakh hectares in 2014-15 to 4.05 lakh hectares in 2015-16, both of which led to the decline of total rice area to 24.85 lakh hectares from 24.95 lakh hectares in its previous year of rice area cultivation in the state. However, the area under Winter Rice, the principal kharif crop of the State, has slightly increased from 18.83 lakh hectares in 2014-15 to 18.89 lakh hectares in 2015-16. The area under Wheat and Pulses has both declined in the year 2015-16 from its previous year figures, while that of Oilseeds has increased from 3.07 lakh hectares in 2014-15 to 3.11 lakh hectares in 2015-16.

As per final estimates, total food grains production in the State had increased from 5418 '000 tonnes in 2013-14 to 5459 '000 tonnes in 2014-15 and the production foodgrains in the State was highest in 2014-15. However, there is a decline from this figure to 5359 '000 in 2015-16. The production of Rice in the State has declined from 5223 '000 tonnes in 2014-15 to 5125 '000 tonnes in 2015-16. While, the production of both Wheat and Oilseeds has increased, Wheat has increased from 29 '000 tonnes in 2014-15 to 34 '000 tonnes in 2015-16, whereas Oilseeds has increased from 206 '000 tonnes in 2014-15 to 215 '000 tonnes in 2015-16. However, production of total Pulses has declined from 111 '000 tonnes in 2014-15 to 108 '000 tonnes in 2015-16.

#### IRRIGATION:

Irrigation is essential for sustainable development in agriculture and agriculture plays an important role in the economy of Assam. Assam is predominantly rural in nature and the economy of Assam is also primarily based on rural life with 70% of its population directly dependent on agriculture as a source of livelihood. Out of the total geographical area of 78.44 lakh hectare the gross cropped area of the State is 40.76 lakh hectare [2012-13] and the net area sown is 28.08 lakh hectare. The area sown more than once is 12.67 lakh hectare.

The development programmes for improvement of irrigation facility in Assam taken up under two broad heads, viz., Minor Irrigation and Major & Medium Irrigation. While the Irrigation Schemes are classified as Major, Medium and Minor, they are categorized as Surface Flow, Surface Lift (for Major / Medium and Minor) and Ground Water Lift (for Minor only). Three Departments, viz. Irrigation, Agriculture and Panchayat and Rural Development are associated with development of irrigation facilities in the State. The State Irrigation Department, being the Nodal Department for development of irrigation in the State, executes and maintains Major, Medium and Minor Irrigation Schemes, the irrigation works of the other two departments are confined to minor irrigation schemes like Shallow Tube Wells, Low Lift Points and Temporary Minor Irrigation Schemes only. The state Agriculture Department and Panchayat & Rural Development Department execute the Minor Irrigation schemes (shallow Tube wells, Low Lift Points and Temporary small diversions), the Irrigation Department alone executes and maintains Major, Medium and Minor Irrigation Schemes both on surface water and ground water sources.

As per Agriculture Census 2010-11, there is about 1.61 lakh hectare net irrigated area (including private sources) in the State of which 0.33 lakh hectare area irrigated from 'canal', 0.048 lakh hectare from 'tanks', 0.02 lakh from 'wells', 0.27 lakh hectare from 'tubewells' and 0.94 lakh hectare receives irrigation from 'other sources'.

#### FISHERY:

The contribution of Fishery sector to State Domestic Product is very nominal and it is estimated at around 3.0 percent. Despite existence of vast water resources suitable for pisciculture in the State covering an area of 4.77 lakh hectares (including River Fisheries) the fish production is showing a sluggish growth. Fish production in the State has reached the level of 2.94 lakh MT in 2015-16 which is about 4.0 percent more than the previous year. However, the current requirement of fish is 3.36 lakh MT. The gap between present production and requirement is partially met by importing fish from other states. The present per capita availability of fish is about 9 Kg which is far below the minimum percapita nutritional requirement of 11 kg.

With a view to increase per capita availability of fish and to narrow down the production-requirement gap, State Fisheries Department has adopted a number of positive interventions and has given special emphasis for scientific fish farming in beels and community tanks through awareness, training, government support and subsequent bank linkage. Strategies have also been formulated for sustainable development of the fisheries sector.

#### MILK AND MEAT PRODUCTION:

The volume of total milk production of the State for the year 2015-16 estimated at 888 million liters as against 873 million liters in the previous year. The growth of milk production, thus, increased by 1.7 percent over the previous year. Despite increase in milk production in the State over the years, the estimated per capita/per day milk availability remained more or less at the same level due to increase in population. The estimated per capita/per day milk availability of milk was 78 ml during the year 2015-16 which was at the same level when compared with the per capita/per day availability of milk during the previous year of the total volume of milk production indigenous cattle milk is observed to have constituted 53 percent of the total milk production of the State while the contribution of crossbreed cattle milk is 30 percent and thus the cattle milk together contributes 83 percent to the total milk. Buffalo and goat milk contributes 14 percent and 3 percent respectively to the total milk production.

Total egg production in the State during 2015-16 was estimated at 4740 lakh numbers compared to estimated 5730 lakh numbers during the previous year. Annual average yield rate of Fowl egg was 101 and 171 numbers per layer/ year for local and improved fowl respectively during the year 2015-16.

The total meat production during 2015-16 was estimated at 45 thousand tons as against estimated 42 thousand tons meat production in 2014-15 showing about 7.14 percent increase in meat production over the previous year.

#### INDUSTRY AND INDUSTRIAL GROWTH:

During the last four years (2012-16), the Industry sector grew at an annual average growth of 4.39 percent calculated as per the new base 2011-12. The period started with a negative growth of 5.22 percent during 2012-13 followed by high growth of 8.06 percent during 2013-14 mainly contributed by a high growth of 17.32 in the manufacturing sector and 14.20 percent in the construction sector and again slowed down in 2014-15 to an annual average growth of 5.33 percent. The growth during 2015-16 was 9.41 percent contributed by an annual growth of 17.23 in the electricity, gas and

water supply followed by 12.75 percent growth in the construction sector and 10.78 percent growth in the manufacturing sector. During the last four years (2012-2016), the mining and quarrying sector showed an average annual growth of (-)2.94 percent. This sub-sector starting with a negative growth of 7.92 percent during 2012-13 at Constant (2011-12) prices turned to a positive growth during 2014-15. The growth during 2015-16 was 2.08 percent.

During the year 2015-16, production of Coal, Limestone and Sulphur decreased substantially by 50.19 percent, 35.10 percent and 25.41 percent respectively over the previous year. However, during the year 2015-16 production of Crude Oil and Natural Gas increased by 1.48 percent and 6.49 percent respectively.

Creation of environment for industrialization by setting up Industrial infrastructure in the perspective of industrial development and attract investment through proper planning is the prime objective of the State Government. To achieve the goal the department is creating a good numbers of infrastructural facilities as well as upgrading the existing ones located in different districts of the state. Infrastructural facilities in the form of Export Processing Industrial Park (EPIP), Industrial Infrastructure Development Centre (IIDC), Growth Centers, Food Processing Industrial Park, Industrial Estates, Industrial Areas, and Commercial Estates etc are spreading throughout the State.

At present, there are 20 Industrial Estates, 8 Mini Industrial Estates, 17 Industrial Areas and 12 Growth Centres in the State where 722 numbers of Industrial units are functioning. One Export Promotion Industrial Park (EPIP) has also been established with world class infrastructure at Amingaon in Kamrup district where 47 numbers of industrial units are producing some export quality product of various kinds. In addition, 11 nos. of Industrial Infrastructure Development (IID) Centre in 11 different districts and 3 numbers of Industrial Growth Centre, one Food Park at Chaygaon in Kamrup District and one North East Mega Food Park at Nalbari District have been established.

There are 43332 SSI/MSME units in Assam and provided employment to 2.49 lakh persons till the end of March 2016. The Table-11.4 shows some annual statistics in respect of setting up of SSI/MSME units upto 31-03-2016. It is evident from the table that average employment per unit of manufacturing enterprises in Assam is around 7(seven) person during the period 2005-06 to 2015-16 and average investment per unit is Rs.13.49 lakh. The table also depicts that the average investment per unit was on an increasing trend up to 2011-12 reaching Rs.21.58 lakh and thereafter went on a decreasing trend falling to Rs.13.49 lakh in 2015-16.

#### TEA –THE PLANTATION CROP:

The Tea industry occupies an important place in Assam and plays a very special role in the State economy. The first Indian tea produced in Assam was sent to United Kingdom for public sale in the year 1838. Although the tea cultivation was extended to other parts of the country between 50's and 60's of the last century, as of today, Assam Tea has maintained its international reputation and commands significant share in the World Tea Market. The total area under tea cultivation in Assam is accounting for more than half of the country's total area under tea. In addition to existing big & large tea gardens owned by reputed both Indian and multinational Companies, the profession of tea plantation in the State has been taken up by common people as business venture at present, especially by unemployed youths. The tea industry in Assam also provides average daily employment to more than 6.86 lakh persons in the State, which is around 50 percent of the total average daily number of labour employed [on an average 11.1 lakh labour employed per day] in the country.

**RUBBER PLANTATION:**

The rubber cultivation has gained its popularity in Assam due to congenial agro-climatic condition as well as its eco-friendly environment. The Rubber Board has identified Assam as a "Potential State" from the "productivity" point of view as the State too has ample scope of rubber plantation. Considering the said conditions, the Rubber Board has planned to enhance rubber plantation area to 2 lakh hectares at the end of Twelfth Five Year Plan from the 28102 hectare at present to cope with the growing demand of rubber in the country which is expected to touch 1.78 lakh MT at the end of 2025. The area under rubber cultivation has grown from 16.5 thousand hectares in 2006-07 to 55.99 thousand hectares in 2015-16. The tapping area as well as production of rubber has also been increased considerably during the same period.

**HANDLOOM AND SERICULTURE:**

The State of Assam is proud of traditionally producing Muga, Eri and Mulberry and lastly the Oak tassar in the hills districts. The State accounts for highest production of non-mulberry silk, muga and eri in the country. Assam has the monopoly in the world in the production of Muga, the "Golden Silk", as more than 97 percent of Muga Silk is produced in Assam. Assam has also achieved the right of 'Geographical Indication' for Muga thread. The State is also a Major producer of Eri Silk (about 65 percent).

This industry has undergone a number of changes with the changes in loom, fabric, design, technology etc. Non-mulberry silk in general and Muga silk in particular has been closely associated with the rituals and traditions of Assam and thus, silk production and its usage has been an important household activity in the State over the years. Muga Silk and Eri Silk have good demand in the national and international market. Rearing of Eri, Muga and Mulberry silkworm are playing an important role in the economic development of a large section of rural population of the State. It is practiced in 11281 villages at present and provides employment to 6.5 lakh families of the State.

In Assam, Handloom Weaving is inexorably linked with Assamese Culture and Heritage. Handloom Industry of Assam provides maximum number of employment after agriculture is known for its rich glorious tradition of making handloom and handicraft products. Handloom is a precious part of generational legacy and has been kept alive by the skilled weavers engaged in the age old tradition of weaving since antiquity in Assam. Contrary to use of modern technology and tools in the textile sector in present days, the handloom sector continued to play very important role in terms of employment generation and the socio-economic development of Assam. Handloom sector in Assam has gradually grown to the expected level for commercial production.

During 2015-16, there were 19.49 lakh weavers in the State out of which 15.30 lakh were part time weavers and 4.19 lakh whole time weavers. Number of Handloom demonstration circle were 221 and 14273 numbers of villages were covered under the activity. During the year, under Centrally Sponsored Scheme, 60935 numbers of weavers were covered under the Health Insurance and 4034 weavers were given Weavers Credit Card.

**FOREST:**

The forest cover in the state, as per India State Forest Report 2015 is 27623 km<sup>2</sup> which constitute 35.26 percent of the total geographical area of the State. The total forest cover of the state has declined by 48 km<sup>2</sup> in 2015 against the Published figure in the State Forest Report of 2013. [According to the State Forest Report 2013, the forest cover of Assam was 27,671 km<sup>2</sup> of the State's geographical area]. This declined in the

forest cover of the State is due to encroachment in forest land, biotic pressure and large scale shifting cultivation in hilly areas.

In terms of forest canopy density classes, the State has 1,441 km<sup>2</sup> of Very Dense Forest, 11,268 km<sup>2</sup> of moderately dense forest and 14,914 km<sup>2</sup> of open forest. There is depletion of 77 km<sup>2</sup> of moderately dense forest cover in the State and an addition of 32 km<sup>2</sup> of open forest during the assessment period 2013 and 2015. Besides forest cover, there is 1613 km<sup>2</sup> of tree cover in the state as per report and thus total of forest cover and tree cover is calculated at 37.27 percent of the total geographical area of the State and 3.68 percent of the total forest and tree cover of the country. The per capita forest and tree cover in the state is 0.094 hectare. Total forest and tree cover constitute 37.27 percent of the state's geographical areas against the all India's forest and tree cover of 3.68 percent.

#### POWER:

Growth in the consumption of energy is linked to the growth of the economy, modernisation, urbanisation and improvement of quality of life of the people living in a State or a Country. The Central Electricity Authority (CEA) data shows that the Northeast of India has hydro power potential of 63,257 MW or 43 percent of the total assessed hydro power of the Country. Among the north-eastern states, Assam has a capacity to produce 680 MW hydro power. The 18th Electric Power Survey of India was undertaken by Central Electricity Authority (CEA) to forecast electric Energy Requirement and Electric Load and Power Station Bus Bars (Utilities only) for the Twelfth Five Plan (2012-13 to 2016-17) for all States/Union Territories of India. AS per the Survey report by the end of 12<sup>th</sup> Plan period, the projected energy requirement for Assam is 8947 MU and Peak Electric Load is 1817 MW.

The population census of India, 2011 report reveal that 37.0 percent households of Assam are using electricity as a source of lighting compared to 67.0 percent households of all India. The rural-urban differential of use of electricity as a source is very high in Assam. Only 28.0 percent rural households use electricity for lighting purpose in comparison to 84.1 percent urban households in Assam. According to the Assam Power Distribution Company Limited the total number of consumers in the State during the year 2015-16 were 3673253 of which 3468173 were domestic consumers and 205080 commercial consumers. The number of consumers in the State has increased by 101.6 percent during the period from 2010-11 to 2015-16. The growth of domestic consumers during the same period was 109.5 percent.

The status of power generation in the state is not satisfactory from the point of power requirement of consumers is concerned. The installed capacity of generating plants at present in the State is 379.7 MW which include Coal, Hydel and Gas plants of the State. There has always been a shortage of power supply in the State, due to less generation of power in comparison to requirements of consumers. However, gross power generation in the State during the year 2015-16 was 1851.1 MU as against 1894.6 MU in 2014-15 and 1845.2 MU in 2013-14.

The energy requirement in the State has been worked out at 7857 Million Units (MU) during the year 2015-16 against 9104 Million Unit (MU) in the previous year but the availability of energy during the periods was 7571 MU and 7165 MU respectively. However, the power generation was 1851.1 MU and 1894.6 MU during the years 2015-16 and 2014-15 respectively. The peak electricity demand in the State during the period 2010-11 to 2015-16 has increased by 43 percent. The shortage of power has reduced from 229 MW in 2014-15 to 76 MW in 2015-16. However, for better improvement of the

power supply position in the State, various projects have been undertaken and are in progress.

Energy loss during transmission and distribution is a matter of concern for an energy deficit State like Assam. The aggregate transmission and commercial losses in the State is gradually come down from 29 percent in 2012-13 to 22 percent during 2015-16. The situation has been gradually improving with the adoption of some precautionary measures.

#### EMPLOYMENT SCENARIO:

The Census of India defines all persons engaged in 'work' as participation in any economically productive activity with or without compensation, wages or profits are workers. The year preceding the date of enumeration is taken as the reference period for determining a person as worker or non-worker. The Census of India collects information on economic activity of an individual and classifies workers into two groups namely, Main workers who had worked for the major part of the reference period i.e. 6 months or more and Marginal workers who had worked less than six months.

The Ministry of Labour and Employment, Govt. of India has entrusted the task of conducting Employment and Unemployment surveys on regular basis to the Labour Bureau, Govt. of India. The Fifth annual Employment and Unemployment survey was conducted throughout the country during the period April, 2015 to December, 2015.

The Unemployment Rate is estimated to be 4.0 percent in the State under the usual principal and subsidiary status or about 4 percent of the persons aged 15 years and above who were available for work could not get work during the reference period. In rural areas the unemployment rate is 3.3 percent whereas in urban areas the unemployment rate is 8.5 percent under the same approach. The unemployment rate at all India level under the same approach is 3.7 percent in both rural and urban, 3.4 percent in rural areas and 4.4 percent in urban areas. In the State, the female unemployment rate is 8.4 percent which is almost 6 percent higher than the male rate of 2.6 percent.

#### RURAL DEVELOPMENT:

Poverty alleviation and economic upliftment of rural poor is the basic objective of the Panchayat and Rural Development Department of Assam for which various national and State level flagship schemes have been implementing by the this department. For eradication of poverty the Panchayat wing has been implementing various National and State level flagship schemes viz. Indira Gandhi National Old Age Pension Scheme, National Family Benefit Scheme, Annapurna, Chief Minister's Assam Bikash Yojona, Backward Region Grant Fund, etc. The Rural Development, on the other hand, is also implementing programmes like IAY, MGNREGA etc for upliftment life and generate and employment of the rural poor of the State.

During 2014-15, 72364 numbers of IAY houses were constructed against the annual target of 183171 numbers of houses. The Department has completed 58139 numbers of IAY houses against the annual target of 138698 during 2013-14. As far as financial achievement is concerned an amount of Rs.937.45 crore has been received and utilised by the Department during 2014-15 as compared to the utilization of Rs.985.91 crore in during 2013-14. For the year 2015-16 department has received Rs. 1104.13 crore and sanctioned about 123713 nos. of houses.

Under the MGNREGA, the flagship programme for employment generation, an amount of Rs.621.02 crore have been utilised in 2015-16 as compared to the utilisation of Rs.500.00 crore in the previous year. During the year, 2015-16 more than 486 lakh

mandays have been generated as against generation of 210.95 lakhs mandays during 2014-15 and 299.16 lakh mandays in 2013-14. Till the end of March, 2016 more than 45.88 lakh (cumulative) nos. of rural households have been provided job cards as compared to 42.02 lakh during 2014-15. During the year 2015-16, 16.34 lakhs mandays have been generated by women out of the total mandays.

#### BANKING:

According to the Reserve Bank of India, the number of reporting Bank Offices of all Scheduled Commercial Banks in Assam has been increased to 2177 as on March 2016 from 1262 as on March 2007. With the increase in the bank networking, the dependence per bank offices in Assam has been considerably decreased over the years and reduced from 62.15 Sq.km as on March 2007 to 36.03 Sq.km as on March 2016. However, average population covered per bank branch office in Assam was calculated at 14.33 thousand (based on Population Census 2011) as on March, 2016 compared to All India average of 9.1 thousand during the same period.

The expansion of banking facilities in the State has augmented not only in respect of volume of deposits but also in respect of disbursement of credit. The aggregate deposit with Scheduled Commercial Banks in Assam, which was Rs.97378 crore in March 2015, has increased to Rs.103795 crore in March 2016. The total volume of credit disbursed by the banks has been increased to Rs.42671 crore in March 2016 from Rs.35911 crore in March 2015. During 2015-16, the growth deposits and credit in the State has recorded 6.59 percent and 18.82 percent respectively compared to the previous year.

The Credit-Deposit ratio of all Scheduled Commercial Banks in Assam is showing an increased growth of 41.1 percent in 2015-16 (ending March 2016) compared to 36.9 percent during the year 2014-15.

#### ROADS AND TRANSPORT:

Road infrastructure is a bare necessity for speedy development of a State. The road network in Assam comprises of total 58202 Km. of roads consisting of 3862.54 Km. National Highways, 2530 Km. State Highways, 4379 Km. Major District roads, 1409 Km. Urban roads, 36544 Km. Rural Roads and the rest are Panchayats & Other Non PWD Roads. At present 48724.59 Km. road network including 3862.54 Km. National Highways [of which 480.69 Km. under construction and 856.88 Km. newly declared NH Way] is maintained by the State PWD. Excluding the National Highways, 25546 Km. Out of the total 44862 Km. road length maintained by the PWD is blacktopped. As against availability of large road network in the State, the existence of large number of semi-permanent timber bridges hamper all weather road communication in many areas within the State territory. The effort of the State PWD helps to bring down the number of semi-permanent timber bridges from 5450 in 2001 to 1037 in 2015. In addition construction of the number of RCC bridges has been increased from 309 in 2001 to 4370 in 2015.

With the improvement of road connectivity and road conditions the rapid increase of the number of motor vehicles on road in Assam has been observed over the past few years. The on road vehicle population in the State has reached 2666589 as on March 2016 compared to 2384576 as on March 2015. An additional of 282013 or 11.8 percent on road motor vehicles was added during the year 2015-16 over 2014-15. The density of motor vehicles in Assam was 34.9 per Sq. Km during the year 2015-16 as against 30.4 vehicles per Sq. Km during the year 2014-15.



**TELECOMMUNICATION:**

The status of telecom facilities in Assam has shown considerable improvement over the years. It is evident from the status of telecom facilities in Assam that the overall tele-density (Telephone per 100 of population) of the State as on March 2015 was 53.95 as against the national average 79.36. The overall tele-density of Assam as on March 2015 was 53.95 as against the national average of 79.36 while the urban tele-density of Assam stood at 132.26 as on March, 2015 compared to 129.05 as on March, 2014, the rural tele-density was only 39.18 as on March, 2015 and seems to be slightly higher over the previous year 37.41. However, in respect of overall tele-density as well as urban tele density the position of Assam stood far below the national average [overall 79.36 and urban 149.04 as on March, 2015. In respect of rural segments also tele-density of Assam was considerably below the national average (rural-48.04) during the same period.

According to the Annual Report 2015-16 of the Department of Telecommunications, Govt. of India, there were 17318325 telephones in Assam out of which 2.79 percent were in rural areas., the total telephones in Assam as on March, 2015 share only 1.79 percent of total telephones in the Country.

In respect of wireless phone [mobile segment] connections, there were 1.72 crore mobile subscribers in Assam as on March 2015. BSNL alone provides around 8.6 percent of the total mobile connections in the State till March 2015. The private mobile service operators, on the other hand, provided about 1.58 crore mobile connections as on March 2015. The share of mobile connections provided by the private operators has marginally decreased from 92.2 percent as on March 2014 to 91.7 percent as on March 2015.

**PRICE AND PRICE SITUATION:**

The All India WPI for all commodities (Base: 2004-05) during 2015-16 was 176.7, showing a decrease of 2.5 percent over 181.2 in 2014-15 against an increase of 2.0 percent in 2014-15 over 2013-14. The WPI for food articles was 262.1 percent in 2015-16, an increase of 3.4 percent over 253.4 in 2014-15 as against an increase of 6.1 percent in 2014-15 over the previous year.

The Directorate of Economics and Statistics, Assam compiles the Wholesale Price Index of Agricultural Commodities with base 1993-94=100 in Assam. The WPI of agricultural commodities during 2015-16 was 373 as compared to 391 in 2014-15 showing a decrease of 4.6 percent against an increase of 16.4 percent in 2014-15 over the previous year. The table 16.2 depicts the Index from 2005-06 to 2015-16 and the percentage change of prices over the previous year.

CPI-IW is mainly used for the determination of Dearness Allowance (DA) and Variable Dearness Allowance (VDA) being paid to millions of public sector employees besides fixation and revision of minimum wages in scheduled private sector employees respectively. The CPI-IW is calculated based on the retail prices of essential commodities and services in industrially developed 78 selected centres in the country. In Assam, the Consumer Price Index for Industrial Workers with Base 2001=100 is constructed and compiled by taking weighted average of the indices for the five centres, namely Guwahati, Doomdooma (Tinsukia), Labac (Silchar), Morioni (Jorhat) and Rangapara (Tezpur).

The All-India Consumer Price Index (IW) with base: 2001 during 2015 is 268 compared to 247 in 2014 and 232 in 2013. The graph below depicts point to point rate of inflation in CPI-IW (Base: 2001=100) at all-India level.

**EDUCATION:**

The role of education for socio-economic development of the society is well recognized. With the help of target oriented interventions, the number of educational institutions has increased over the years. Literacy Rate of Assam is 72.19 with male literacy rate 77.85, which is behind the National rate of 72.99 and male literacy rate of 80.89 respectively. The female literacy rate with 66.27 stood above the National rate of 64.64.

The Gross Enrolment Ratio (GER) at Primary Level during 2014-15 and 2015-16 in Assam is 114.96 and 106.11 against 100.08 and 99.21 respectively for all States. The GER at Upper Primary Level during 2014-15 and 2015-16 in Assam was 95.86 and 93.05 compared to 91.24 and 92.81 for all States respectively as per U-DISE 2015-16.

The Pupil-Teacher Ratio in the Primary and Upper Primary Levels of the State during the year 2015-16 was 21 and 13 respectively as against the all States ratio of 23 and 17 respectively.

The average annual drop-out rate at Primary level in the State during 2015-16 as per DISE, was 15.36 while it is 10.51 at Upper Primary and 13.87 at Elementary level (Class-I to Class-VIII). On the other hand at National level the drop-out rate at Primary level is 4.13, 4.03 at Upper primary level and 4.10 at Elementary level (Class-I to Class-VIII).

**HEALTH AND FAMILY WELFARE:**

The status of Health infrastructure in the State is improving over the years. At present there are 25 Civil Hospitals, 13 Sub-Divisional Civil Hospitals, 1014 PHCs, 62 FRUs, 151 CHCs and 4621 Sub Centres with 18356 numbers of total beds in the State at the end of 2015. The number of available Medical and Paramedical staff in the State is 5004 including Ayurvedic and Homeopathic doctors in 2015.

Government of Assam has taken various steps for improvement of maternal health and reduction of infant mortality as a measure of human and social development. The Maternal Mortality Ratio of the State during 2011-2013 has shown a little improvement over the period of 2010-12. MMR of the State during 2010-12 was 328 against 300 during 2011-13. Likewise at the National level it was 178 during 2010-12 which came down to 167 during 2011-13 due to improvement in the field of Medical Science and various Social Security measures adopted.

Infant Mortality Rate in Assam is 49 against 39 in India during 2014 which is still very high as compared to national level. Similarly in Rural area it is 52 while in urban area it is 27 at State level. At the national level, IMR at Rural is 43 and 26 in Urban area during 2014.

\* \* \* \*

## CHAPTER – II

### POPULATION

#### IMPORTANT FEATURES:

Assam is situated in the North-East region of India. It borders seven States namely Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and West Bengal and two countries namely Bangladesh and Bhutan. The geographical area of the State is 78,438 sq. km of which 98.4 percent is rural. Assam shares about 2.4 percent of the total geographical area of the country and provides shelter to 2.6 percent population of the Country. Most of the State's population lives in the lush and verdant valleys of its two major river systems in the twenty seven districts of the Brahmaputra valley and the three districts of the Barak valley. Less densely populated three hill districts - Karbi-Anglong, Dima Hasao and West Karbi Anglong, separated the two valleys. For administration and revenue purposes, the State has presently 33 districts, including six newly created districts namely Biswanath, Charaideo, Hojai, South Salmara-Mankachar, West Karbi Anglong and Majuli.

#### DECADAL GROWTH OF POPULATION IN INDIA AND ASSAM IN PERCENTAGES:

As per Census of India, 2011 the total population of Assam is 3,12,05,576 of which 1,59,39,443 males and 1,52,66,133 females. The decadal growth rate of the State's population for the decade 2001-2011 has been worked out as 17.07 percent as against 17.68 percent for India as a whole.

#### DENSITY OF POPULATION (TOTAL PERSONS PER SQ. KM.) OF ASSAM AND INDIA:

The density of population in Assam has increased from 340 persons in 2001 to 398 persons in 2011 census. Thus, on an average 58 more people inhabit every square kilometer in the state compared to a decade ago. The population density of India has gone up to 368 persons in 2011 census per square kilometer from 325 persons in 2001.

#### STATE POPULATION POLICY:

Population control remains one of the most challenging tasks before the state today. Population of Assam has increased to 3.12 crores (Census 2011) from 2.66 crores (Census 2001) with Decadal Growth Rate of 17.07 percent. Population density of the State has also increased from 340 persons (Census 2001) to 398 persons (Census 2011). Present status of Total Fertility Rate (TFR) of 2.3 (SRS, 2013) shows that the State is yet to achieve the target for replacement level fertility i.e 2.1. With limited natural resources at its disposal, Assam cannot afford the continuation of its rapid population growth, since it is not difficult to visualize the quantum jump in the demand for foodgrains, water and other basic infrastructure to just sustain this level of human population. Unemployment issues cannot be solved without solving the population stabilization issues. Having realized the impact of such huge population to provide quality of life of the people of the state, it was felt that a comprehensive policy and action plan are necessary to achieve the replacement level fertility.

In this backdrop, a new State Population Policy is being developed to sort out the issue of population stabilization by focusing on the comprehensive reproductive and child health care issues. The endeavour is to create an atmosphere of positive discrimination- with proper incentives and disincentives. Although there will be no compulsion or coercion at any stage, the effort will be to create an enabling mechanism to encourage people to adopt small family norms, for example, preference in government jobs, reservation of seats in higher & technical education segments for small families etc.

Source: Budget Speech of Finance Minister, 2016-17, 26<sup>th</sup> July, 2016.

The population density of Assam and India from Census 1901 to 2011 are show in the Table - 2.1.

TABLE-2.1  
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

\*Interpolated.

Source: Census of India 2011

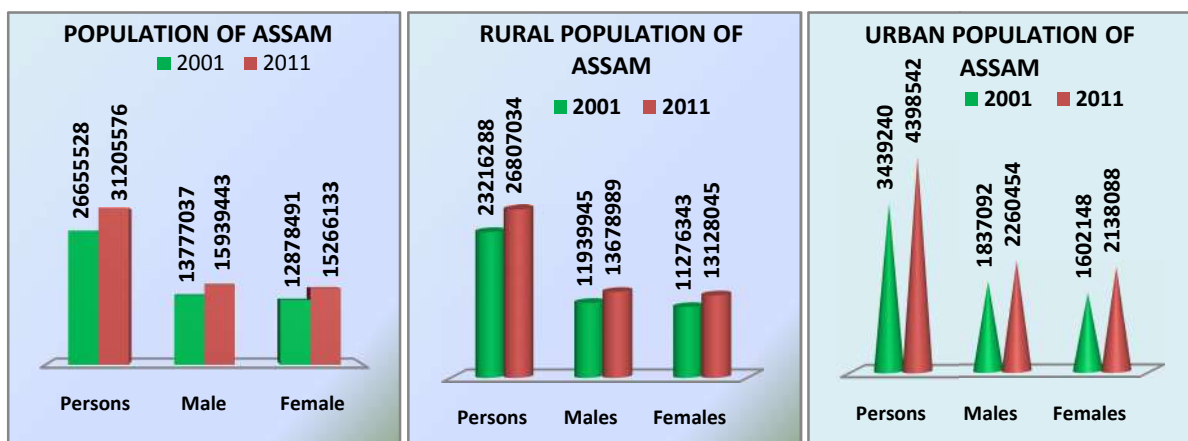
Some important features of population of Assam as per Census 2001 and 2011 are shown in the following Table.

TABLE – 2.2  
POPULATION FEATURES AT A GLANCE OF ASSAM

Particulars	Unit	2001 Census	2011 Census
Population	Lakh	267	312
Decadal Growth	Percent	18.92	17.1
Change in percentage of decadal growth	Percent	(-) 5.32	(-)1.8
Density	Per Sq. Km.	340	398
Sex-Ratio	Females per 1000 males	935	958
Literacy	Percent	63.25	72.19
(a) Male	Percent	71.28	77.85
(b) Female	Percent	54.61	66.27
Urban Population	Percent	12.90	14.09
(a) Male	Percent	53.41	51.39
(b) Female	Percent	46.58	48.61
Rural Population	Percent	87.10	85.90
(a) Male	Percent	51.43	51.03
(b) Female	Percent	48.57	48.97
S.C. Population	Percent	7.40	7.15
S.T. Population	Percent	12.83	12.45

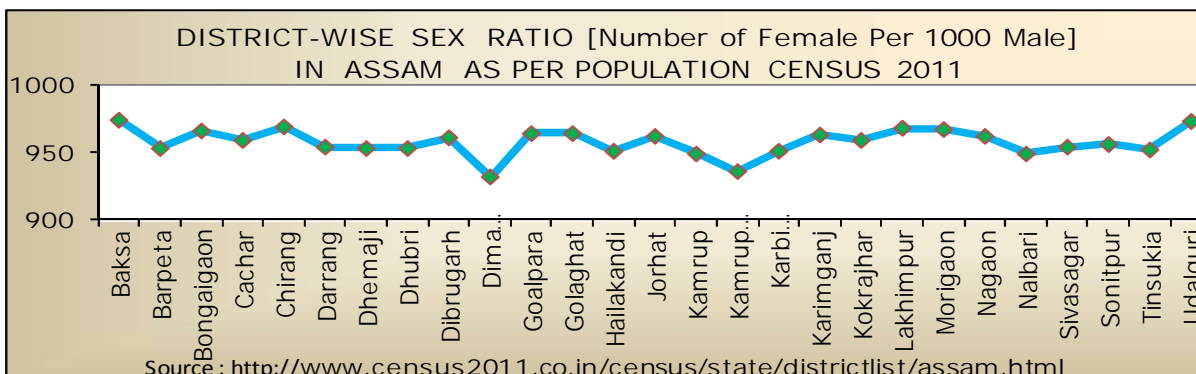
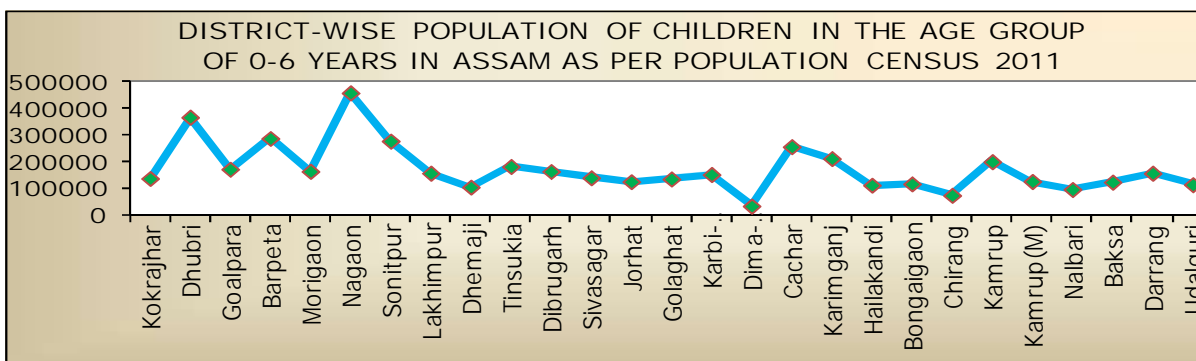
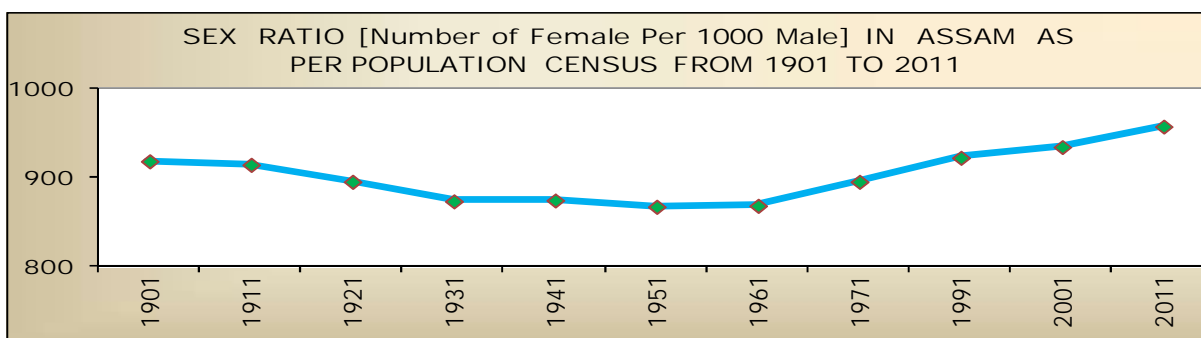
#### POPULATION: RURAL AND URBAN

As per Population Census, 2011, the rural population of the State was 86.0 percent of the total population. This percentage was much higher than that for All-India (69.0 percent). The proportion of rural population in the State decreased from 87 percent in 2001 to 86 percent in 2011. Out of the total rural population 51.03 percent were male and 48.97 were female. As per the Population Census, 2011, around 14 percent of the total population of the State was living in urban areas. The proportion of urban population in the State increased from 12.9 percent in 2001 to 14 percent in 2011.



### SEX RATIO

The sex-ratio in the State shows some an improvement from 935 in 2001 to 958 in 2011. The sex ratio for all ages for rural area was calculated at 960 and for urban area were 948. The sex ratio in the age-group 0-6 years is the vital indicator of future sex composition in the population in the State. Child sex ratio in the State was 962 female per 1000 male child as per Census, 2011. The corresponding sex ratio in the State for the age-group 0-6 years was 967 in 2001 and 975 in 1991.



Source : <http://www.census2011.co.in/census/state/districtlist/assam.html>

On the other hand, sex ratio at birth (0-1 year) in Assam as per 2011 Census was calculated at 957 female per 1000 male. The sex ratio at birth for rural area was 958 and for Urban were 948. District wise analysis of sex ratio at birth shows that Dima Hasao district recorded highest sex ratio of 985 and the lowest is recorded in Dhemaji District with 922.

The sex ratio of Scheduled Castes and Scheduled Tribes population in Assam were 948 and 985 respectively in 2011. In respect of rural and urban divide, the sex ratio for Scheduled Castes population is 945 and 963 respectively and for Scheduled Tribes population the figures are 984 and 996 respectively.

**LITERACY RATE:**

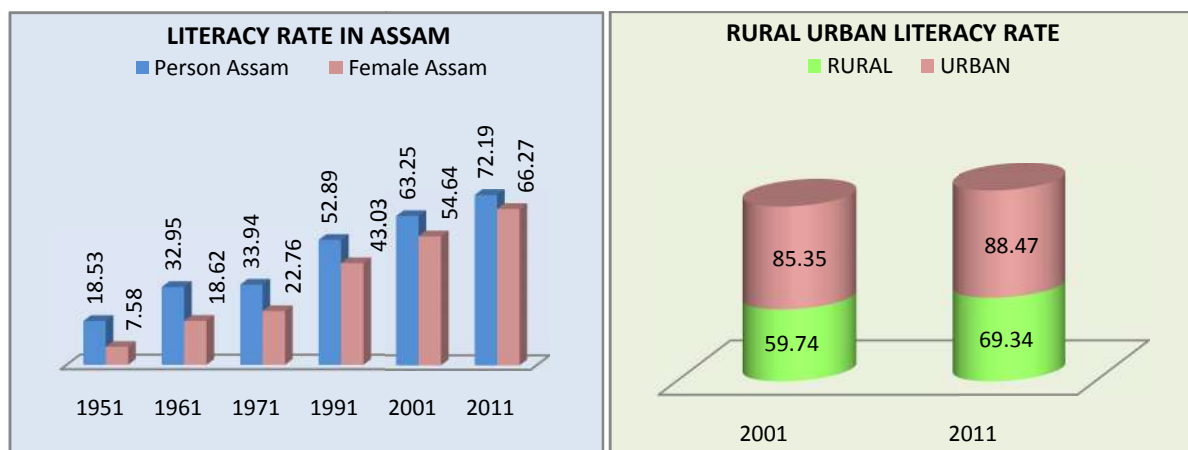
The growth of literacy in Assam has shown an encouraging sign. The literacy rate for Assam as per Census 2011 increased to 72.19 percent with 77.85 percent for males and 66.27 percent for females. The literacy rates for rural and urban areas were calculated at 69.34 percent and 88.47 percent respectively. The literacy rate for country as a whole, on the other hand, increased to 73 percent from 65 percent with male and female differentials of 80.09 percent and 64.64 percent respectively. The progress of literacy rate in Assam and all India may be evident from the table 2.3.

TABLE – 2.3  
LITERACY RATE: ASSAM AND INDIA

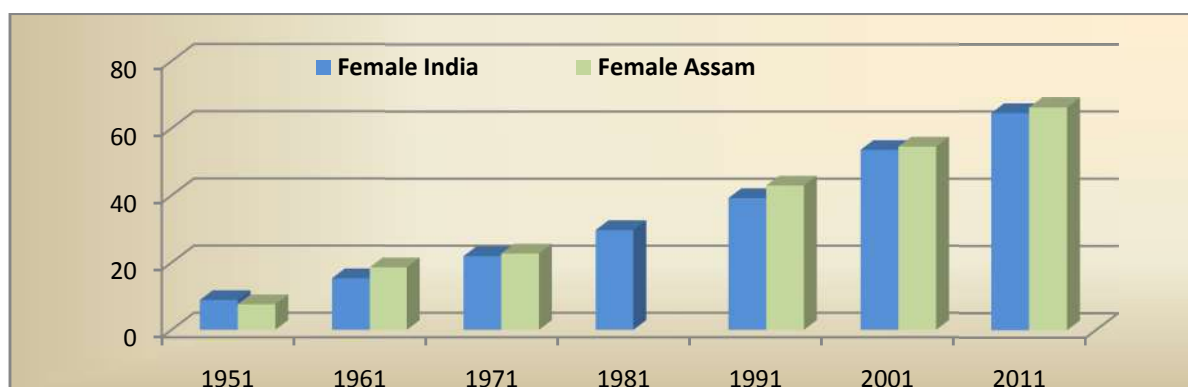
(Figure in %)

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

Source: Registrar General of India



FEMALE LITERACY IN ASSAM AND INDIA



## STATE HIGH LIGHTS – 2011 CENSUS:

The Census Directorate of Assam highlighted the following observation after completion of the Population Census, 2011.

- Growth of population in the state during 1971-2011 is 113.12 percent against the national growth rate of 120.77 percent during this period.
- Assam ranks 14<sup>th</sup> in size of population among the states of India.
- Assam ranks 15<sup>th</sup> in density among the states of India.
- Assam ranks 15<sup>th</sup> in sex-ratio among the states of India.
- Assam ranks 26<sup>th</sup> in literacy among the states of India.

Some State highlights in 2011 census, such as highest and lowest population, percentage of growth, literacy rate, sex ratio and density among the districts of Assam may be seen in the following.

Item		Highest	Lowest
Total Population		Nagaon (826,006)	Dima Hasao (213,529)
Total Rural Population		Nagaon (2,457,906)	Dima Hasao (152,302)
Total Urban Population		Kamrup Metro (1,044,832)	Baksa (12,173)
Percentage of Population Growth	Total	Dhubri (24.40)	Kokrajhar (5.19)
	Rural	Dhubri (27.13)	Kamrup Metro (2.93)
	Urban	Nalbari (200.34)	Sonitpur (-2.65)
Literacy Rate	Total	Kamrup Metro (88.66)	Dhubri (59.36)
	Rural	Jorhat (81.36)	Dhubri (56.49)
	Urban	Hailakandi (94.67)	Darrang (66.86)
Sex-ratio	Total	Morigaon (974)	Kamrup Metro (922)
	Rural	Morigaon (975)	Darrang (923)
	Urban	Hailakandi (992)	Dima Hasao (880)
Density		Kamrup Metro (2,010)	Dima Hasao (44)

## POPULATION BY ECONOMIC ACTIVITY

Classification of population by economic activity according to the result of Population Census, 2011 reveal that out of the total population of 31205576 in the State, 11969690 (38 percent) were total workers. Out of the total workers 8687123(72 percent) were main workers and 3282567 (27 percent) were marginal workers. Among the total male workers 82 percent were main workers, 18 percent were marginal workers and among females workers 48 percent were main workers and 52 percent were marginal workers. Out of the total 11969690 workers in Assam, 3138554(26 percent) were Cultivators, 903294(8.0 percent) were Agricultural labourers, 242071(2.0 percent) were engaged in Household Industries and 4403204(37.0 percent) were Other Workers.

Among the total marginal workers (3282567), 923073(28.0 percent) were Cultivators, 942052 (29.0 percent) were Agricultural labourers and 249250 (7.6 percent) were Household Industry workers.

TABLE – 2.4  
DISTRIBUTION OF WORKERS AND NON WORKERS IN ASSAM

Workers	Person	Male	Female
Total workers	11969690	8541560	3428130
Main workers	8687123	7034642	1652451
Marginal workers	3282567	1506918	1775649
Cultivators	3138554	2698384	440170
Agricultural labourers	903294	705306	197988
Household Industries workers	242071	146566	95505
Other workers	4403204	3484386	918818
Non workers	19235886	7397883	11838003

*Source: State Primary Census Abstract*

**BIRTH AND DEATH RATES:**

The data published in the Sample Registration Bulletins by the Registrar General of India depicts the trend of birth and death rates, natural growth rate and infant mortality rate in the State and it is evident that although there has been a trend of gradual declination, the birth rates, death rates and infant mortality rates in the State were found to be higher than that of the country as a whole. As per available information received from the Registrar General of India, during the year 2014, the birth rates, death rates and infant mortality rates of Assam have been 22.4, 7.2 and 49 per mille as against 21.0, 6.7 and 39 per mille respectively at all-India level. The Table - 2.5 shows the birth, death, natural growth and infant mortality rates of Assam and India from 2001 to 2014.

**TABLE-2.5**  
**BIRTH RATE, DEATH RATE, NATURAL GROWTH RATE AND**  
**INFANT MORTALITY RATE OF ASSAM AND INDIA (PER MILLE)**

YEAR	Birth Rate		Death Rate		Natural Growth Rate		Infant Mortality Rate	
	ASSAM	INDIA	ASSAM	INDIA	ASSAM	INDIA	ASSAM	INDIA
2001	27.0	25.4	9.6	8.4	17.4	17.0	74	66
2002	26.6	25.0	9.2	8.1	17.4	16.9	70	63
2003	26.3	24.8	9.1	8.0	17.2	16.8	67	60
2004	25.1	24.1	8.8	7.5	16.3	16.6	66	58
2005	25.0	23.8	8.7	7.6	16.3	16.3	68	58
2006	24.6	23.5	8.7	7.5	15.9	16.0	67	57
2007	24.3	23.1	8.6	7.4	15.7	15.7	66	55
2008	23.9	22.8	8.6	7.4	15.4	15.4	64	53
2009	23.6	22.5	8.4	7.3	15.2	15.2	61	50
2010	23.2	22.1	8.2	7.2	14.9	14.9	58	47
2011	22.8	22.1	8.0	7.2	14.8	14.7	55	47
2012	22.5	21.6	7.9	7.0	14.6	14.5	55	42
2013	22.4	21.4	7.8	7.0	14.5	14.4	54	40
2014	22.4	21.0	7.2	6.7	15.2	14.3	49	39

Source: Sample Registration Bulletin, R.G.I., New Delhi

**SLUM POPULATION:**

As per Census, 2011, thirty one (31) towns in Assam were reporting slums against 2613 towns reporting slums in India as a whole. According to the Census of India, 2011, the Slum population stands at 197,266 of which 101,424 are males and 95,842 females. The Slum population accounts for 0.63 percent of the total population of the State. The child population (0-6years) in Slum population is 22,229 out of which 11,378 are males and 10,851 are females. The corresponding child population (0-6 years) in all India level is 8,082,743 of which male & females are 4,204,451 and 3,878,292 respectively. The Slum population to the urban population of the State is 4.5 percent. The all India figure for Slum population as per Census, 2011 is 65,494,604 of which 33,968,203 are males and 31,526,401 are females.

**LITERACY RATE OF SLUM POPULATION:**

The Literacy rate for Slum population is 72 percent with 76 percent for male and 68 percent for female population, according to Census 2011. The corresponding figure for literacy in all India level is 68 percent with 73 percent and 62 percent for male and female literacy respectively.



## APPENDIX X-2.1

## DISTRICT-WISE DEMOGRAPHIC PROFILE OF ASSAM, 2011 CENSUS

Sl. No.	District	Area in Sq. Km.	Population	Rural Population	Urban Population	Population Density per Sq. Km.
1	Dhubri	2176	1949258	1745557	203701	896
2	Bongaigaon	1093	738804	628994	109810	676
3	Kokrajhar	3296	887142	832201	54941	269
4	Chirang	1923	482162	446825	35337	251
5	Baksa	2457	950075	937833	12242	387
6	Goalpara	1824	1008183	870121	138062	553
7	Barpeta	2282	1693622	1546269	147353	742
8	Nalbari	1052	771639	688909	82730	733
9	Kamrup (M)	955	1253938	216927	1037011	1313
10	Kamrup (R)	3105	1517542	1375148	142394	489
11	Darrang	1585	928500	873006	55494	586
12	Udalguri	2012	831668	794094	37574	413
13	Sonitpur	5204	1924110	1750265	173845	370
14	Lakhimpur	2277	1042137	950804	91333	458
15	Dhemaji	3237	686133	637848	48285	212
16	Morigaon	1551	957423	884125	73298	617
17	Nagaon	3973	2823768	2454234	369534	711
18	Golaghat	3502	1066888	969152	97736	305
19	Jorhat	2851	1092256	871722	220534	383
20	Sivasagar	2668	1151050	1040954	110096	431
21	Dibrugarh	3381	1326335	1082605	243730	392
22	Tinsukia	3790	1327929	1063186	264743	350
23	Karbi-Anglong	10434	956313	843347	112966	92
24	Dima Hasao	4888	214102	151613	62489	44
25	Karimganj	1809	1228686	1118986	109700	679
26	Hailakandi	1327	659296	611156	48140	497
27	Cachar	3786	1736617	1421153	315464	459
	ASSAM	78438	31205576	26807034	4398542	398

Source : Census of India, 2011.

## APPENDIX – 2.2

## DECADAL PERCENTAGE VARIATION IN POPULATION OF ASSAM

District	1901-1911	1941-1951	1951-1961	1961-1971	1971-1991	1991-2001	2001-2011
Dhubri*	28.73	12.74	43.74	43.26	45.65	22.97	24.44
Bongaigaon*	28.69	12.88	36.27	35.81	38.77	22.09	20.59
Kokrajhar*	28.73	17.11	55.41	54.89	61.96	14.49	5.21
Chirang*	5.02	18.18	40.32	57.37	103.33	(-) 0.08	11.34
Baksa*	18.36	33.68	60.52	66.67	73.65	12.51	10.74
Goalpara	29.97	9.25	37.10	45.88	54.12	23.03	22.64
Barpeta*	18.65	16.62	34.39	33.91	40.97	19.62	21.43
Nalbari*	15.24	35.15	33.56	31.79	75.78	14.21	11.99
Kamrup(M)*	6.59	2.39	13.30	19.99	20.77	45.91	18.34
Kamrup *	10.01	17.01	45.12	44.48	81.53	14.97	15.69
Darrang*	22.72	18.58	40.94	36.05	89.77	22.18	22.19
Udalguri *	45.60	29.13	54.04	37.85	43.03	10.02	9.61
Sonitpur*	23.67	22.02	41.99	33.17	68.08	18.11	15.55
Lakhimpur	26.29	17.94	50.46	43.39	56.29	18.30	17.22
Dhemaji	26.29	17.94	75.21	103.42	107.50	19.45	19.97
Morigaon	15.84	36.63	37.89	37.51	50.90	21.35	23.34
Nagaon	15.84	36.65	35.91	38.99	51.26	22.26	22.00
Golaghat	16.55	19.76	26.04	30.85	58.12	14.27	12.75
Jorhat	16.90	14.87	24.17	17.47	33.10	14.69	9.31
Sivasagar	13.41	15.98	23.36	19.47	38.76	15.83	9.44
Dibrugarh	26.29	17.94	30.64	22.93	37.78	13.68	11.92
Tinsukia	26.29	17.94	35.92	31.02	47.03	19.51	15.47
Karbi Anglong	-	30.96	79.21	68.28	74.72	22.72	17.58
Dima Hasao	(-) 33.12	6.16	36.95	40.00	98.30	24.72	13.84
Karimganj	12.94	29.87	22.96	25.13	42.08	21.87	21.90
Hailakandi	16.09	17.48	27.23	23.61	45.94	20.89	21.45
Cachar	12.33	23.92	22.60	23.96	47.59	18.89	20.19
ASSAM	16.99	19.93	34.98	34.95	53.26	18.92	17.07

\*Due to creation of 4 new Districts the rates for 2001 have been affected in 12 Districts.

## APPENDIX-2.3

DISTRICTWISE POPULATION OF SCHEDULED CASTES  
AND SCHEDULED TRIBES IN ASSAM

Sl. No.	District	Scheduled Castes			Scheduled Tribes		
		Total	Male	Female	Total	Male	Female
1	Kokrajhar	29570	15386	14184	278665	139579	139086
2	Dhubri	70395	36359	34036	6332	3198	3134
3	Goalpara	45094	22999	22095	231570	116013	115557
4	Barpeta	95320	49165	46155	27344	13530	13814
5	Morigaon	117841	60194	57647	136777	68382	68395
6	Nagaon	266350	136473	129877	115153	57759	57394
7	Sonitpur	109130	55817	53313	232207	117685	114522
8	Lakhimpur	81840	41689	40151	249426	126716	122710
9	Dhemaji	4225	23006	21219	325560	165449	160111
10	Tinsukia	37688	19443	18245	82066	41769	40297
11	Dibrugarh	58876	30517	28359	102871	51835	51036
12	Sivasagar	42347	21568	20779	49039	24989	24050
13	Jorhat	88665	45194	43471	139971	70795	69176
14	Golaghat	62298	31807	30491	111765	56420	55345
15	Karbi Anglong	44961	23436	21525	538738	272460	266278
16	Dima-Hasao	4337	2340	1997	151843	76520	75323
17	Cachar	264897	136051	128846	17569	8736	8833
18	Karimganj	157890	81384	76506	1940	994	946
19	Hailakandi	70659	36369	34290	691	354	337
20	Bongalgaon	82784	42513	40271	18835	9377	9458
21	Chirang	35135	18105	17030	178688	89273	89415
22	Kamrup	107827	55237	52590	182038	92094	89944
23	Kamrup(M)	101789	52106	49683	75121	37902	37219
24	Nalbari	60216	30654	29562	23364	11692	11672
25	Baksa	73083	37534	35549	331007	165634	165373
26	Darrang	40260	20566	19694	8419	4300	4119
27	Udalguri	37844	19402	18442	267372	133550	133822
	ASSAM	2231321	1145314	1086007	3884371	1957005	1927366

APPENDIX X-2.4  
POPULATION OF CHILDREN IN THE AGE GROUP OF 0-6 YEARS IN ASSAM  
(2011 Census)

District	Male	Female	Rural	Urban	Total
Kokrajhar	70085	66839	131397	5527	136924
Dhubri	187092	181170	345279	22983	368262
Goalpara	87457	84200	152141	19516	171657
Barpeta	146777	141052	273296	14533	287829
Morigaon	83746	80073	155116	8703	163819
Nagaon	234203	225737	420813	39127	459940
Sonitpur	141353	136509	260964	16898	277862
Lakhimpur	80016	76723	146289	10450	156739
Dhemaji	53457	50790	98352	5895	104247
Tinsukia	92777	89049	155228	26598	181826
Dibrugarh	83168	80042	140283	22927	163210
Sivasagar	71102	68278	128289	11091	139380
Jorhat	63428	61166	103394	21200	124594
Golaghat	68662	66131	125120	9673	134793
Karbi-Anglong	77428	74253	138407	13274	151681
Dima-Hasao	16480	15934	25067	7347	32414
Cachar	131417	125357	222673	34101	256774
Karimganj	107638	104322	200334	11626	211960
Hailakandi	56936	54342	106617	4661	111278
Bongaigaon	59099	57293	105251	11141	116392
Chirang	37201	36014	69176	4039	73215
Kamrup	101716	98345	186844	13217	200061
Kamrup(M)	64444	60942	27333	98053	125386
Nalbari	48458	46875	87759	7574	95333
Baksa	62498	60374	121332	1540	122872
Darrang	79437	76971	150916	5492	156408
Udalguri	57410	55864	109653	3621	113274
Assam	2363485	2274645	4187323	450807	4638130

## APPENDIX X-2.5

## COMPARATIVE DISTRIBUTION OF CHILD POPULATION (0-6 YEARS) IN ASSAM

Sl. No.	District	2001	2011	Percentage to total Population		Sex Ratio	
				2001	2011	2001	2011
1	Kokrajhar	151366	136924	17.95	15.43	955	959
2	Dhubri	326754	368262	20.86	18.89	964	953
3	Goalpara	159133	171657	19.36	17.03	974	964
4	Barpeta	265146	287829	19.01	16.99	961	953
5	Morigaon	148758	163819	19.16	17.11	966	967
6	Nagaon	426280	459940	18.42	16.29	975	962
7	Sonitpur	270419	277862	16.24	14.44	974	956
8	Lakhimpur	150312	156739	16.91	15.04	967	968
9	Dhemaji	99545	104247	17.40	15.19	970	953
10	Tinsukia	184845	181826	16.07	13.69	958	952
11	Dibrugarh	172631	163210	14.57	12.31	962	961
12	Sivasagar	149098	139380	14.18	12.11	968	954
13	Jorhat	133888	124594	13.40	11.41	967	962
14	Golaghat	142970	134793	15.11	12.63	963	964
15	Karbi-Anglong	150230	151681	18.47	15.86	974	951
16	Dima-Hasao	30807	32414	16.38	15.14	955	932
17	Cachar	229219	256774	15.86	11.79	961	959
18	Karimganj	177431	211960	17.60	17.25	965	963
19	Hailakandi	100976	111278	18.60	16.88	927	951
20	Bongaigaon	110835	116392	18.09	15.75	972	966
21	Chirang	79037	73215	18.25	15.18	958	969
22	Kamrup	204757	200061	15.61	13.18	963	949
23	Kamrup(M)	125033	125386	11.80	10.00	943	936
24	Nalbari	97847	95333	14.20	12.35	961	949
25	Baksa	138906	122872	16.19	12.93	961	974
26	Darrang	146808	156408	19.32	16.85	977	954
27	Udalguri	125044	113274	16.48	13.62	975	973
	ASSAM	4498075	4638130	16.87	14.86	965	958

APPENDIX X-2.6  
POPULATION OF CHILDREN IN THE AGE GROUP OF 0-6 YEARS IN INDIA  
(2011 Census)

State	Total	Male	Rural	Urban	Total
Jammu & Kashmir	1084355	2018905	1593008	425897	2018905
Himachal Pradesh	407459	777898	712822	65076	777898
Punjab	1665994	3076219	1945502	1130717	3076219
Chandigarh	63536	119434	4270	115164	119434
Uttarakhand	717199	1355814	990776	365038	1355814
Haryana	1843109	3380721	2285112	1095609	3380721
NCT of Delhi	1075440	2012454	56716	1955738	2012454
Rajasthan	5639176	10649504	8414883	2234621	10649504
Uttar Pradesh	16185581	30791331	25040583	5750748	30791331
Bihar	9887239	19133964	17383701	1750263	19133964
Sikkim	32761	64111	49218	14893	64111
Arunachal Pradesh	107624	212188	172289	39899	212188
Nagaland	149785	291071	217482	73589	291071
Manipur	174700	338254	236843	101411	338254
Mizoram	85561	168531	93384	75147	168531
Tripura	234008	458014	365309	92705	458014
Meghalaya	288646	568536	490592	77944	568536
Assam	2363485	4638130	4187323	450807	4638130
West Bengal	5410396	10581466	7820710	2760756	10581466
Jharkhand	2767147	5389495	4367507	1021988	5389495
Orissa	2716497	5273194	4525870	747324	5273194
Chattisgarh	1859935	3661689	2924941	736748	3661689
Madhya Pradesh	5636172	10809395	8325731	2483664	10809395
Gujarat	4115384	7777262	4824903	2952359	7777262
Daman & Diu	14144	26934	7438	19496	26934
Dadra & Nagar Haveli	26431	50895	28504	22391	50895
Maharashtra	7035391	13326517	7688954	5637563	13326517
Andhra Pradesh	4714950	9142802	6152022	2990780	9142802
Karnataka	3675291	7161033	4517645	2643388	7161033
Goa	74460	144611	54014	90597	144611
Lakshwadeep	3797	7255	1815	5440	7255
Kerala	1768244	3472955	1823664	1649291	3472955
Tamil Nadu	3820276	7423832	3911302	3512530	7423832
Puducherry	67527	132858	44514	88344	132858
Andaman & Nicobar Islands	20770	40878	26415	14463	40878
INDIA	85732470	164478150	121285762	43192388	164478150

## APPENDIX – 2.7

STATEWISE POPULATION, SEX RATIO, POPULATION DENSITY,  
LITERACY RATE AND PERCENTAGE DECADAL GROWTH IN INDIA

Sl. No.	India, States, Union Territories	Population 2011	Sex Ratio 2011	Population Density per sq. km. 2011	Literacy rate 2011	Percentage decadal growth	
						1991-2001	2001-2011
	India	1210854977	943	368	72.99	21.54	17.68
1.	Jammu & Kashmir	12541302	889	56	67.16	29.43	23.64
2.	Himachal Pradesh	6864602	972	123	82.80	17.54	12.94
3.	Punjab	27743338	895	551	75.84	20.10	13.89
4.	Chandigarh	1055450	818	9258	86.05	40.28	17.19
5.	Uttarakhand	10086292	963	189	78.82	20.41	18.81
6.	Haryana	25351462	879	573	75.55	28.43	19.90
7.	Delhi	16787941	868	11320	86.21	47.02	21.21
8.	Rajasthan	68548437	928	200	66.11	28.41	21.31
9.	Uttar Pradesh	199812341	912	829	67.68	25.85	20.23
10.	Bihar	104099452	918	1106	61.80	28.62	25.42
11.	Sikkim	610577	890	86	81.42	33.06	12.89
12.	Arunachal Pradesh	1383727	938	17	65.38	27.00	26.03
13.	Nagaland	1978502	931	119	79.55	64.53	-0.58
14.	Manipur	2855794	992	115	79.21	24.86	12.05
15.	Mizoram	1097206	976	52	91.33	28.82	23.48
16.	Tripura	3673917	960	350	87.22	16.03	14.84
17.	Meghalaya	2966889	989	132	74.43	30.65	27.95
18.	Assam	31205576	958	398	72.19	18.92	17.07
19.	West Bengal	91276115	950	1028	76.26	17.77	13.84
20.	Jharkhand	32988134	948	414	66.41	23.36	22.42
21.	Orissa	41974218	979	270	72.87	16.25	14.05
22.	Chhatisgarh	25545198	991	189	70.28	18.27	22.61
23.	Madhya Pradesh	72626809	931	236	69.32	24.26	20.35
24.	Gujarat	60439692	919	308	78.03	22.66	19.28
25.	Daman & Diu	243247	618	2191	87.10	55.73	53.76
26.	Dadra & Nagar Haveli	343709	774	700	76.24	59.22	55.88
27.	Maharashtra	112374333	929	365	82.34	22.73	15.99
28.	Andhra Pradesh	84580777	993	308	67.02	14.59	10.98
29.	Karnataka	61095297	973	319	75.36	17.51	15.60
30.	Goa	1458545	973	394	88.70	15.21	8.23
31.	Lakshadweep	64473	946	2149	91.85	17.30	6.30
32.	Kerala	33406061	1084	860	94.00	9.43	4.91
33.	Tamil Nadu	72147030	996	555	80.09	11.72	15.61
34.	Puducherry	1247953	1037	2547	85.85	20.62	28.08
35.	Andaman & Nicobar Islands	380581	876	46	86.63	26.90	6.86

Source : Census of India, 2011.

## APPENDIX – 2.8

## BIRTH AND DEATH RATES IN ASSAM

YEAR	BIRTH RATE			DEATH RATE		
	Combined	Rural	Urban	Combined	Rural	Urban
1991	30.9	31.7	21.3	11.5	11.8	6.9
1995	29.3	30.2	21.8	9.6	10.0	6.7
1996	27.6	28.9	20.7	9.6	10.2	5.8
1997	28.2	29.0	20.7	9.9	10.3	5.9
1998	27.9	28.7	20.2	10.0	10.5	6.0
1999	27.0	28.0	18.9	9.7	10.1	6.2
2000	26.9	27.9	18.6	9.6	10.0	6.1
2001	26.8	27.8	15.5	9.5	9.8	6.6
2002	26.6	27.5	18.3	9.2	9.6	6.0
2003	26.3	27.2	18.0	9.1	9.5	5.9
2004	25.1	27.0	14.3	8.8	9.3	5.5
2005	25.0	26.6	15.3	8.7	9.2	5.6
2006	24.6	26.1	15.4	8.7	9.2	5.8
2007	24.3	25.7	15.5	8.6	9.1	5.7
2008	23.9	25.3	15.7	8.6	9.0	5.6
2009	23.6	24.9	15.9	8.4	8.8	5.9
2010	23.2	24.4	15.8	8.2	8.6	5.8
2011	22.8	24.0	15.5	8.0	8.4	5.6
2012	22.5	23.7	15.6	7.9	8.3	5.6
2013	22.4	23.5	15.4	7.8	8.2	5.6
2014	22.4	23.6	15.5	7.2	7.6	5.3

Source : Registrar General of India.



## APPENDIX – 2.9

## INFANT MORTALITY RATE IN ASSAM AND INDIA

SECTOR	ASSAM/ INDIA	YEARS												
		2001	2002	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Rural	Assam	77	73	69	71	70	68	66	64	60	58	58	56	52
	India	72	69	64	64	62	61	58	55	51	48	46	44	43
Urban	Assam	34	38	38	39	42	41	39	37	36	34	33	32	27
	India	42	40	40	40	39	37	36	34	31	29	28	27	26
Total	Assam	74	70	66	68	67	66	64	61	58	55	55	54	49
	India	66	64	58	58	57	55	53	50	47	44	42	40	39

Source : Registrar General of India.

## APPENDIX – 2.10

## INFANT MORTALITY RATE BY SEX IN ASSAM AND INDIA

SECTOR	ASSAM/ INDIA	YEARS												
		2001	2002	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Male	Assam	69	70	76	68	67	64	62	58	56	55	54	53	49
	India	64	62	58	58	56	55	52	49	46	43	41	39	37
Female	Assam	80	71	55	69	68	67	65	64	60	56	57	55	49
	India	68	65	58	61	59	56	55	52	49	46	44	42	40
Total	Assam	74	70	66	68	67	66	64	61	58	55	55	54	49
	India	66	63	58	58	57	55	53	50	47	44	42	40	39

Source : Registrar General of India.

## APPENDIX – 2.11

## DISTRICT-WISE NUMBER OF VILLAGES, GAON PANCHAYAT, COMMUNITY DEVELOPMENT BLOCK, ANCHALI K PANCHAYAT AND ZILA PARI SHADS IN ASSAM

Sl No.	District	Number of Villages (As per 2011 Census)	Number of Gaon Panchayat (as on 2011)	Number of Community Development Block (as on 2011)	Number of Anchalik Panchayat (as on 2011)	Number of Zila Parishad (as on 2011)
1.	Dhubri	1091	168	15	15	1
2.	Kokrajhar	1068	-	4	-	-
3.	Bongaigaon	563	65	5	5	1
4.	Goalpara	829	81	8	8	1
5.	Barpeta	835	129	11	11	1
6.	Nalbari	456	65	7	7	1
7.	Kamrup	1068	146	16	16	1
8.	Darrang	561	76	6	6	1
9.	Sonitpur	1876	158	14	14	1
10.	Lakhimpur	1184	81	9	9	1
11.	Dhemaji	1319	65	5	5	1
12.	Morigaon	632	85	5	7	1
13.	Nagaon	1412	239	18	20	1
14.	Golaghat	1125	102	8	8	1
15.	Jorhat	848	110	8	8	1
16.	Sivasagar	875	118	9	9	1
17.	Dibrugarh	1348	93	7	7	1
18.	Tinsukia	1168	86	7	7	1
19.	Karbi Anglong	2921	-	11	-	-
20.	Dima Hasao	695	-	5	-	-
21.	Karimganj	936	96	7	7	1
22.	Hailakandi	331	62	5	5	1
23.	Cachar	1040	163	15	15	1
24.	Chirang	508	-	2	-	-
25.	Baksa	690	-	7	-	-
26.	Kamrup (M)	216	14	-	-	-
27.	Udalguri	800	-	5	-	-
	Assam	26395	2202	219	189	20

## APPENDIX – 2.12

## COMPARATIVE STATEMENT ON PERCENTAGE OF POPULATION BELOW POVERTY LINE

Sl. No.	State	Using TENDULKAR Methodology (Poverty Headcount Ratio)								
		2004-05			2009-10			2011-12		
		Rural	Urban	Combined	Rural	Urban	Combined	Rural	Urban	Combined
1	Andhra Pradesh	32.30	23.40	29.90	22.8	17.7	21.1	10.96	5.81	9.20
2	Arunachal Pradesh	33.60	23.50	31.10	26.2	24.9	25.9	38.93	20.33	34.67
3	Assam	36.40	21.80	34.40	39.9	26.1	37.9	33.89	20.49	31.98
4	Bihar	55.70	43.70	54.40	55.3	39.4	53.5	34.06	31.23	33.74
5	Chhattisgarh	55.10	28.40	49.40	56.1	23.8	48.7	44.61	24.75	39.93
6	Delhi	15.60	12.90	13.10	7.7	14.4	14.2	12.92	9.84	9.91
7	Goa	28.10	22.20	25.00	11.5	6.9	8.7	6.81	4.09	5.09
8	Gujarat	39.10	20.10	31.80	26.7	17.9	23.0	21.54	10.14	16.63
9	Haryana	24.80	22.40	24.10	18.6	23.0	20.1	11.64	10.28	11.16
10	Himachal Pradesh	25.00	4.60	22.90	9.01	12.6	9.5	8.48	4.33	8.06
11	Jammu & Kashmir	14.10	10.40	13.20	8.1	12.8	9.4	11.54	7.20	10.35
12	Jharkhand	51.60	23.80	45.30	41.6	31.1	39.1	40.84	24.83	36.96
13	Karnataka	37.50	25.90	33.40	26.1	19.6	23.6	24.53	15.25	20.91
14	Kerala	20.70	18.40	19.70	12.0	12.1	12.0	9.14	4.97	7.05
15	Madhya Pradesh	53.60	35.10	48.60	42.0	22.9	36.7	35.74	21.00	31.65
16	Maharashtra	47.90	25.60	38.10	29.5	18.3	24.5	24.22	9.12	17.35
17	Manipur	39.30	34.50	38.00	47.4	46.4	47.1	38.80	32.59	36.89
18	Meghalaya	14.00	24.70	16.10	15.3	24.1	17.1	12.53	9.26	11.87
19	Mizoram	23.00	7.90	15.30	31.1	11.5	21.1	35.43	6.36	20.40
20	Nagaland	10.00	4.30	9.00	19.3	25.0	20.9	19.93	16.48	18.88
21	Odisha	60.80	37.60	57.20	39.2	25.9	37.0	35.69	17.29	32.59
22	Puducherry	22.90	9.90	14.10	0.2	1.6	1.2	17.06	6.30	9.69
23	Punjab	22.10	18.70	20.90	14.6	18.1	15.9	7.66	9.24	8.26
24	Rajasthan	35.80	29.70	34.40	26.4	19.9	24.8	16.05	10.69	14.71
25	Sikkim	31.80	2.90	31.10	15.5	5.0	13.1	9.85	3.66	8.19
26	Tamil Nadu	37.50	19.70	28.90	21.2	12.8	17.1	15.83	6.54	11.28
27	Tripura	44.50	22.50	40.60	19.8	10.0	17.4	16.53	7.42	14.05
28	Uttar Pradesh	42.70	34.10	40.90	39.4	31.7	37.7	30.40	26.06	29.43
29	Uttarakhand	35.10	26.20	32.70	14.9	25.2	18.0	11.62	10.48	11.26
30	West Bengal	38.20	24.40	34.30	28.8	22.0	26.7	22.52	14.66	19.98
31	Andaman & Nicobar							1.57	0.00	1.00
32	Chandigarh							1.64	22.31	21.81
33	Dadra & Nagar Haveli							62.59	15.38	39.31
34	Daman & Diu							0.00	12.62	9.86
35	Lakshadweep							0.00	3.44	2.77
	All India	42	25.5	37.2	33.8	20.9	29.8	25.70	13.70	21.92

Source: Planning Commission, Govt. of India.

## APPENDIX-2.13

## STATE- WISE INFORMATION ON SLUM POPULATION IN INDIA-CENSUS 2011

Sl	Area Name	Towns reporting Slums	Total No. of House-holds	Slum Population			% of total slum popn. to urban popn.	Slum Population ( 0-6yrs)		
				Persons	Male	Female		Persons	Male	Female
	INDIA	2613	13920191	65494604	33968203	31526401	17.4	8082743	4204451	3878292
1	Andhra Pradesh	125	2431474	10186934	5103377	5083557	36.1	1149779	593145	556634
2	Arunachal Pr.	5	3479	15562	8029	7533	4.9	2226	1102	1124
3	Assam	31	42533	197266	101424	95842	4.5	22229	11378	10851
4	Bihar	88	216496	1237682	649475	588207	10.5	208383	107994	100389
5	Chhattisgarh	94	413831	1898931	966623	932308	32.0	254080	130178	123902
6	Delhi	22	367893	1785390	974329	811061	10.9	229029	119508	109521
7	Goa	3	5497	26247	13826	12421	2.9	3240	1691	1549
8	Gujarat	103	345998	1680095	912571	767524	6.5	240589	126331	114258
9	Haryana	75	332697	1662305	887947	774358	18.8	225889	122124	103765
10	Himachal Pradesh	22	14385	61312	32555	28757	8.9	6509	3493	3016
11	Jammu & Kashmir	40	103633	662062	342422	319640	19.3	94204	50649	43555
12	Jharkhand	31	72544	372999	192908	180091	4.7	53465	27703	25762
13	Karnataka	206	707662	3291434	1650724	1640710	13.9	418295	212928	205367
14	Kerala	19	45417	202048	97429	104619	1.3	20327	10271	10056
15	Madhya Pradesh	303	1117764	5688993	2957524	2731469	28.3	771999	403360	368639
16	Maharashtra	189	2499948	11848423	6328217	5520206	23.3	1428850	743603	685247
17	Meghalaya	6	10518	57418	28737	28681	9.6	8241	4162	4079
18	Mizoram	1	15987	78561	38861	39700	13.7	10430	5292	5138
19	Nagaland	11	17152	82324	42651	39673	14.4	11114	5569	5545
20	Odisha	76	350032	1560303	800963	759340	22.3	188962	97551	91411
21	Punjab	73	293928	1460518	776388	684130	14.0	176257	94781	81476
22	Rajasthan	107	394391	2068000	1078991	989009	12.1	307035	161872	145163
23	Sikkim	7	7203	31378	16216	15162	20.4	3229	1621	1608
24	Tamil Nadu	507	1463689	5798459	2886993	2911466	16.6	614969	314363	300606
25	Tripura	15	34143	139780	70143	69637	14.5	14755	7467	7288
26	Uttar Pradesh	293	1066363	6239965	3298339	2941626	14.0	863392	457036	406356
27	Uttarakhand	31	93911	487741	257624	230117	16.0	66176	35131	31045
28	West Bengal	122	1391756	6418594	3321700	3096894	22.1	656780	337441	319339
29	A. N. Islands	1	3324	14172	7386	6786	9.9	1588	788	800
30	Chandigarh	1	21704	95135	53340	41795	9.3	14720	7697	7023
31	Puducherry	6	34839	144573	70491	74082	17.0	16002	8222	7780

\* \* \* \* \*

## CHAPTER – III

### STATE INCOME

The State Domestic Product and its related aggregates are the main components of Planning and Policy making which is also considered as important indicators of development process of the State. The estimates of State Domestic Product reveal the extent and direction of changes in the levels of economic development of the State over a period of time. The fiscal reform measures adopted by the State of Assam started yielding favourable results since 2005-06 and have been recognized to be a key factor for attaining higher economic growth eventually leads to improvement to the well-being of people.

The annual average growth rate of first three years of Twelve Five Year Plan Period (2012-17) of the State of Assam is estimated at 6.37 percent in terms of GSDP at constant (2011-12) prices which indicates a favourable status of the State Economy. Though Agriculture and allied sector has declined at the rate of -1.33 during the first three years of the Twelve Five Year Plan, but in the subsequent period 2014-15 (Q) this sector shown a recovery trend. The annual average growth rate of Industry sector, on the other hand, comparatively shown a higher growth rate of 6.68 per cent during this period. The higher growth of the Industry sector in the State was the result of improved law and order and various initiatives taken by the government. The growth of Service sector is encouraging with the rapid diversification of communication sector, growing services of Banking & Insurance, steady growth of real estate, ownership dwelling and business services in the State. The annual average growth of Service sector during this period was 9.22 per cent against 8.53 per cent experienced by the Assam economy during the 11<sup>th</sup> Plan period.

In the new series (base-2011-12) estimates, the annual average growth rate of the GSDP at current prices for the years 2011-12 to 2015-16 (Q) is 11.97 per cent and the rate of NSDP at the current prices for the same period is estimated at 11.82 per cent. In terms of the constant (2011-12) prices the annual average growth rate for the period 2011-12 to 2015-16 (Q) is estimated at 5.94 per cent for GSDP and 5.69 per cent for NSDP.

#### ESTIMATES OF GROSS STATE DOMESTIC PRODUCT (GSDP) AND NET STATE DOMESTIC PRODUCT (NSDP) FOR THE YEAR 2015-16:

The GSDP at constant (2011-12) prices for the year 2015-16 (Quick Estimates) is estimated at Rs. 179594.73 crore as against Rs.166708.85 crore for 2014-15 (Provisional Estimates) reflecting a growth of 7.73 per cent which is lower than the estimated growth of 7.88 per cent in 2014-15(Quick Estimates).The expectation of growth of 7.73 per cent in GSDP of the State for 2015-16 comprises of the estimated growth of 3.88 per cent in Agriculture, Forestry & Fishing sector, 9.41 per cent in Industry sector and 8.21 per cent in Services sector including net of taxes and subsidies of 8.55 per cent.

The 'Industry' sector which comprises Mining & Quarrying, Manufacturing, Electricity, Gas, Water Supply & Other Utility Services and Construction sectors is estimated to achieve at 9.41 per cent growth in 2015-16 as against 5.33 per cent in the previous year (2014-15). The share of growth of the sub sectors to the Industry Sector are manufacturing (10.78 pc), Electricity, Gas, Water Supply and Other Utility Services (17.23 pc) and Construction (12.75 pc) respectively. However, the contribution of the sub sectors to Industry Sector during the previous year 2014-15 was estimated as

manufacturing (3.12 pc), Electricity, Gas, Water Supply and Other Utility Services (12.93 pc) and Construction (10.55 pc) respectively.

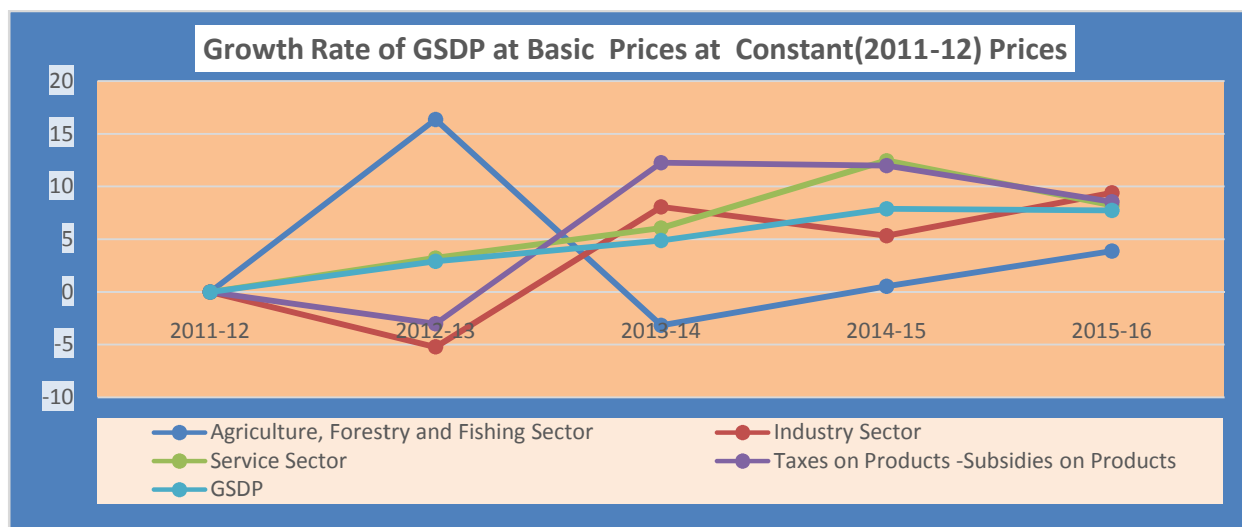


TABLE – 3.1

**ESTIMATES OF STATE DOMESTIC PRODUCT OF ASSAM AND GROSS DOMESTIC PRODUCT OF INDIA FOR THE YEAR 2015-16 (Quick Estimates)**

(' in crore)

State	GSDP/GDP		NSDP/NNP		Per Capita NSDP/NNP (in Rs.)	
	At Constant (2011-12) Prices	At Current Prices	At Constant (2011-12) Prices	At Current Prices	At Constant (2011-12) Prices	At Current Prices
Assam	1795947.30 (7.73)	2224233.98 (13.19)	160724.06 (7.64)	201757.86 (13.04)	48556 (6.27)	60952 (11.60)
India*	11350249 (7.56)	13576086 (8.71)	10071784 (7.61)	12126769 (8.71)	77435 (6.24)	93293 (7.38)

\* Figures in brackets are growth in percentage.

Source: 1. Directorate of Economics and Statistics, Assam.  
2. Central Statistical Office, Government of India

The Services sector comprises of Trade, Repair, Hotels & Restaurants, Transport, Storage, Communication & Services related to Broadcasting, Financial Services, Real Estate, Ownership of Dwelling & Professional Services, Public Administration and Other Services and growth of the sector is 8.21 per cent during 2015-16 as compared to 12.46 per cent in 2014-15. In the Services Sector, the highest contribution of Other Services is observed which is 11.44 per cent during 2015-16 as against 13.38 per cent growth in 2014-15. Comparatively lower performance is observed in the sub sector "Real Estate, Ownership of Dwelling & Professional Services" of the services sector. The growth of which is 0.80 per cent in the year 2015-16 over the previous year 2014-15.

In respect of "Agriculture, Forestry & Fishing" sector, the growth is estimated at 3.88 per cent for the year 2015-16 as against 0.54 per cent in the year 2014-15 in terms of the GSDP at constant (2011-12) prices. The Livestock and Forestry sector shows a declining trend over the year 2014-15 to 2015-16. The estimated growth in the quick estimates for

**TABLE – 3.2**

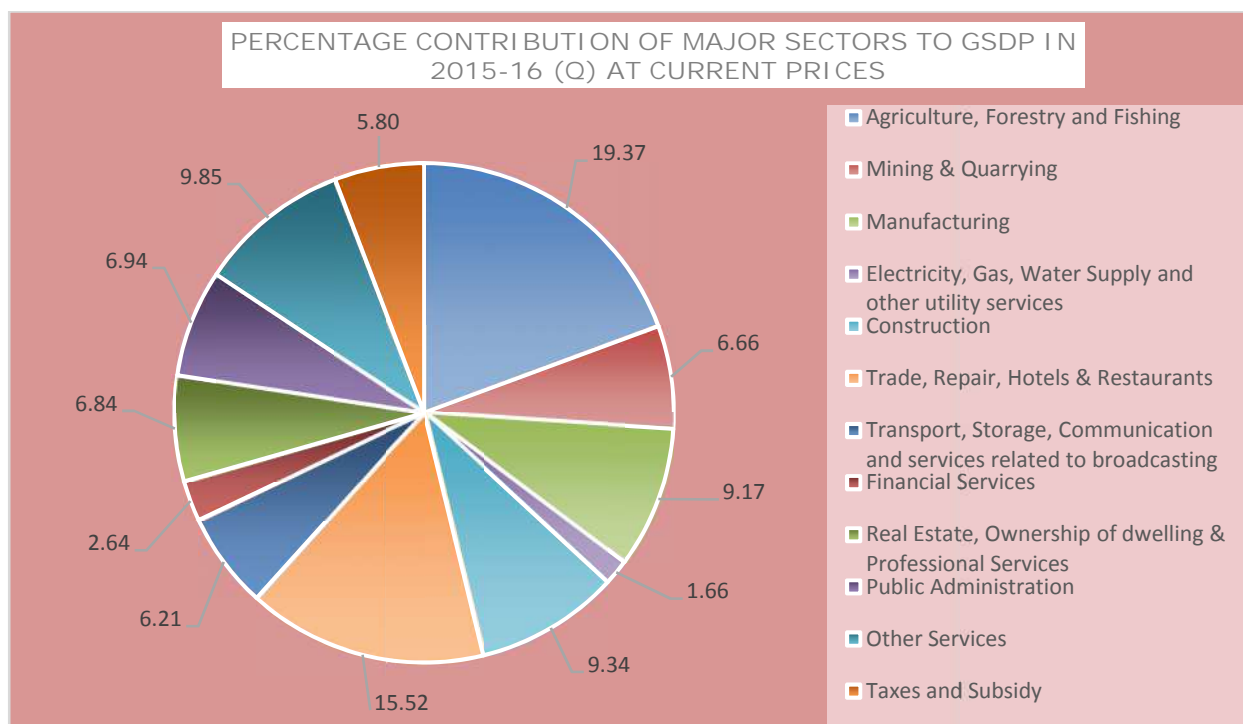
**SECTORAL GROWTH OF SDP FOR ASSAM, 2015-16 (Quick Estimates)**

Sector	Growth of GSDP at 2011-12 prices (in %)
Agriculture, Forestry and Fishing	3.88
Industry	9.41
Services	8.21

the year 2015-16 of the 'Fishing and Aquaculture' sector is 4.68 per cent as against 2.17 per cent in the previous year 2014-15.

The estimated growth of Net State Domestic Product (NSDP), also known as State Income, at 2011-12 prices is 7.64 per cent in the year 2015-16 which was 7.63 per cent in the previous year 2014-15.

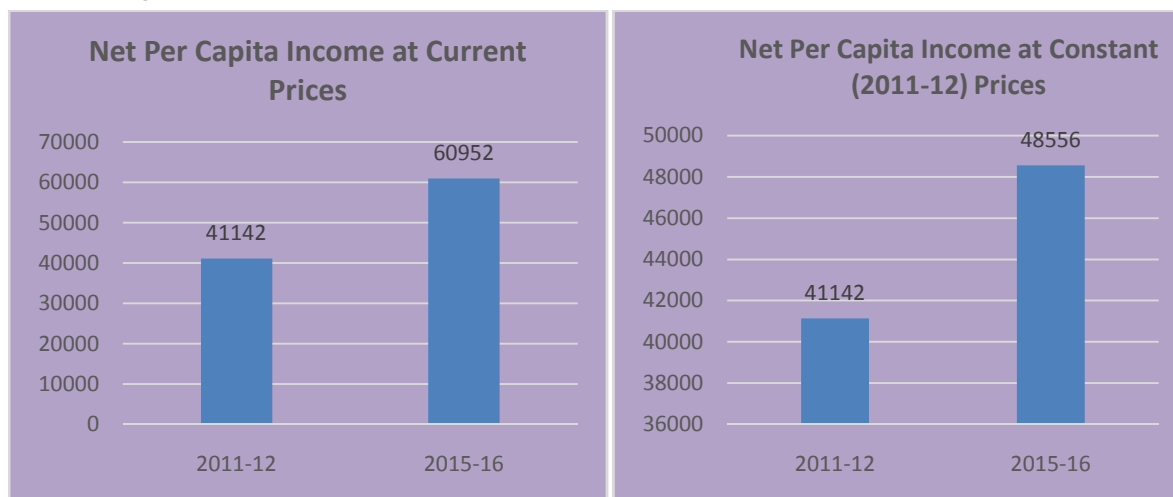
**SECTORAL CONTRIBUTION TO GROSS STATE DOMESTIC PRODUCT IN 2015-16  
(Quick Estimates) AT CURRENT PRICES**



Source: Directorate of Economics and Statistics, Assam.

**ESTIMATES OF PER CAPITA INCOME FOR THE YEAR 2015-16 (QUICK ESTIMATES):**

The per capita income of the State in terms of NSDP at constant (2011-12) prices is estimated at Rs. 48556.00 in quick estimates for the year 2015-16 and the same was Rs.41142.00 in the year 2011-12. The average annual growth observed in the period 2011-12 to 2015-16 is 3.60 per cent. The per capita NSDP at current prices for the year 2015-16 and 2011-12 are Rs. 60952.00 and Rs. 41142.00 respectively. The average growth rate during this period is 9.63 per cent.



## GROSS STATE DOMESTIC PRODUCT (GSDP) FOR 2014-15(P):

The Gross State Domestic Product (GSDP) of the State of Assam, during 2014-15, at current prices was Rs. 198098.01 crore which is 11.45 percent higher than that of Rs.177745.22 crore in 2013-14 which is navigated by the high growth of 4.40 per cent in Agriculture, Forestry & Fishing Sector, 7.46 per cent in Industry Sector and 16.78 per cent in Service Sector.

The Gross State Domestic Product at constant (2011-12) prices during 2014-15 was Rs.166708.85 crore as against Rs. 154525.40 crore in 2013-14 showing an increase 7.88 per cent growth over the previous year. As per Provisional Estimates for the year 2014-15, the Agriculture and Allied Activities showed a nominal growth of 0.54 per cent compared to the growth of -3.17 per cent in previous year 2013-14. The Service sector has contributed a higher growth of 12.46 per cent during 2014-15 compared to 6.07 per cent in 2013-14. The Industry Sector has experienced a growth of 5.33 per cent in 2014-15 as compared to 8.06 per cent growth in the previous year.

TABLE – 3.3  
SECTORAL GROWTH RATES OF GSDP AT CONSTANT (2011-12) PRICES

(Fig. Rs. in Lakh)

Sector	Base Year	Quick Estimates	Annual Average Growth
	2011-12	2015-16	
Agriculture, Forestry & Fishing	2848113	3351716	3.54
Mining & Quarrying	1464989	1294087	-2.33
Manufacturing	1540255	1912063	4.83
Electricity, Gas, Water Supply & Other Utility Services	191883	285753	9.78
Construction	1188747	1684278	8.34
Industry	4385874	5176182	3.6
Trade, Repair, Hotels & Restaurants	2045676	2838308	7.75
Transport, Storage, Communication & Services related to Broadcasting	810091	1141350	8.18
Financial Services	427077	523022	4.49
Real Estates, Ownership of Dwelling and Professional Services	1112543	1132014	0.35
Public Administration	821723	1174578	8.59
Other Services	1077923	1578773	9.29
Services	6295033	8388046	6.65
Total Gross State Value Added at Basic Prices	13529020	16915943	5.01
Gross State Domestic Product (GSDP)	14317491	17959473	5.09
Per capita Net State Domestic Product (in Rs.)	41142	48556	3.60

Source: Directorate of Economics & Statistics, Assam.

## NET STATE DOMESTIC PRODUCT 2015-16 (QUICK ESTIMATES):

The State Income i.e, Net State Domestic Product (NSDP) at current prices is estimated at Rs. 201757.86 crore in 2015-16 (quick estimates) which is higher by 13.04 per cent than that of Rs. 178479.11 crore in 2014-15. At current prices 'Agriculture, Forestry & Fishing' registered an increase of 12.59 per cent while 'Industry' and 'Service' sector registered a growth of 8.95 per cent and 15.50 per cent respectively.

The quick estimates of State Income at constant (2011-12) prices is estimated at Rs. 160724.06 crore in 2015-16 showing increase of 7.64 per cent than that of Rs. 149312.69 crore in 2014-15. Though the 'Construction' under Industry sector (12.26 per cent), 'Transport, Storage, Communication & Services related to Broadcasting' (6.97 per cent) and 'Other Services' (11.33 per cent) under Service Sector has achieved a



significant growth, but due to negative impact of 'Real Estate, Ownership of Dwelling & Professional services the overall growth of the state Income at constant (2011-12) prices has affected.

#### PER CAPITA STATE INCOME:

As per Quick Estimates for 2015-16 the Per Capita Income at constant (2011-12) prices is estimated at Rs. 48556.00 as against Rs. 45692.00 in 2014-15 and showing a growth rate of 6.27 per cent and 6.26 per cent respectively.

At current prices Per Capita Net State Income is worked out at Rs. 60952.00 during 2015-16 as against Rs. 54618.00 in 2014-15 registering a growth of 11.60 per cent and 9.82 per cent respectively.

A comparative table in respect of Per capita Income of the State and the country is given at Table-3.4.

TABLE – 3.4  
PER CAPITA INCOME OF ASSAM AND INDIA

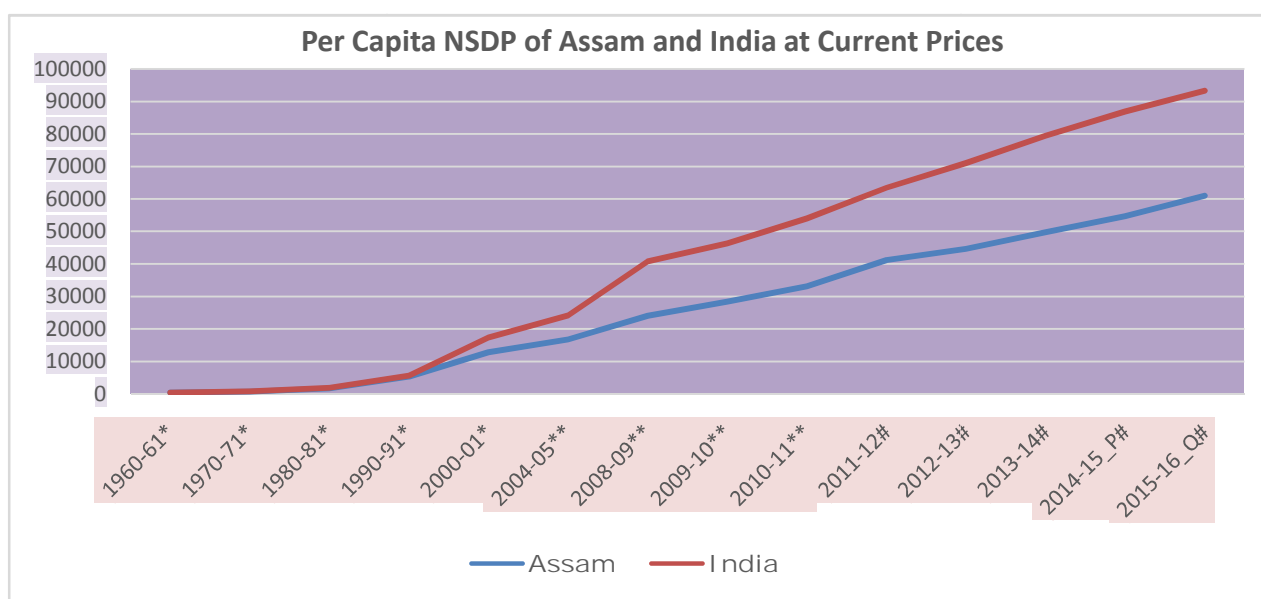
Year	Per Capita Income (In Rs.)			
	Assam		India	
	At Current Prices	At Constant Prices	At Current Prices	At Constant Prices
1960-61*	433	8769	373	8889
1970-71*	743	9351	763	10016
1980-81*	1673	9334	1852	10712
1990-91*	5315	10915	5621	14330
2000-01*	12803	12447	17295	20362
2004-05**	16782	16782	24143	24143
2008-09**	24099	18922	40775	31754
2009-10**	28383	20406	46249	33901
2010-11**	33087	21146	54021	36342
2011-12#	41142	41142	63460	63460
2012-13#	44599	41609	71050	65664
2013-14#	49734	43002	79412	68867
2014-15 (P)#	54618	45692	86879	72889
2015-16 (Q)#	60952	48556	93293	77435

\* For 1960-61 to 2000-01 the base is 1999-2000.

\*\* For the year 2004-05 to 2010-11 the base period is 2004-05

# For 2011-12 to 2015-16 the base year period is 2011-12

Source : Directorate of Economics & Statistics, Assam & Central Statistical Office (MOSPI), Govt. of India.

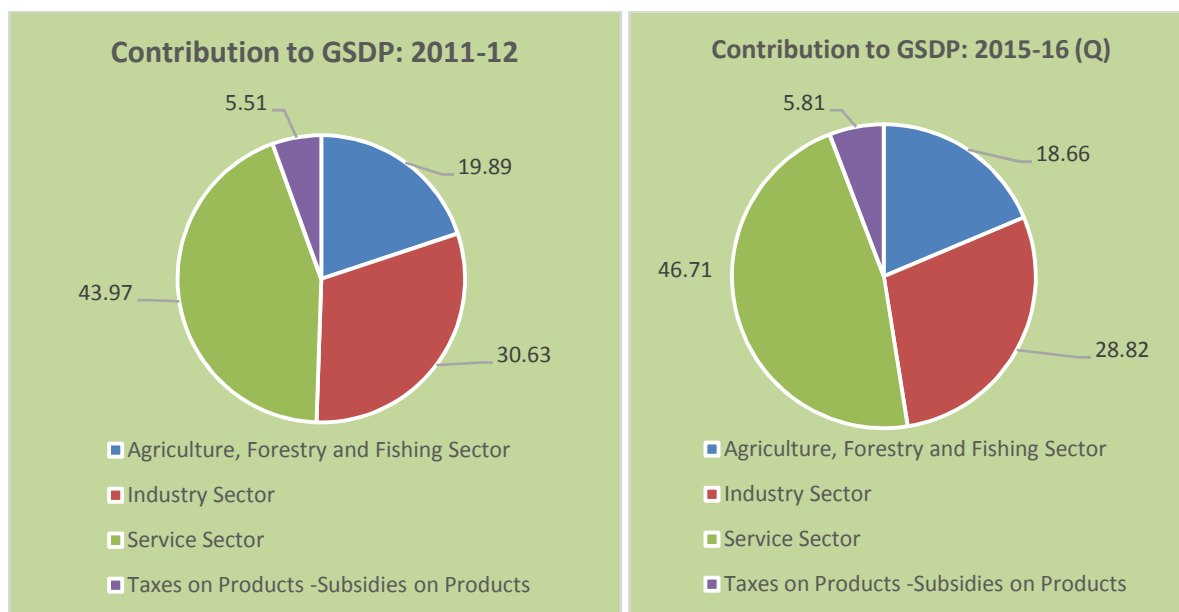


### SECTORAL COMPOSITION OF GROSS STATE DOMESTIC PRODUCT (GSDP):

The sectoral composition of GDP depicts the contribution of different sectors in percentage in the economy over a period of time which not only indicates the real structural changes taking place in the economy but also facilitates formulation of various plans and programmes for overall economic development of the State. It reveals from the table that the share of 'Agriculture, Forestry & Fishing' sector in the GSDP has nominal declined from 19.89 per cent in 2011-12 (Base Year Estimates) to 18.66 per cent in 2015-16 (Quick Estimates). Similar trend has been noticed in case of the share of Industry sector also which was 30.63 per cent in 2011-12 and 28.82 per cent in 2015-16. But Service Sector's contribution to GSDP is showing a positive trend from the year 2011-12 to 2015-16 which has increased from 43.97 percent in 2011-12 to 46.71 percent in the year 2015-16. Moreover, the contribution of Taxes and Subsidies to GSDP of the state during this period has shown a trend of marginal increase from 5.51 per cent in 2011-12 to 5.81 per cent during 2015-16.

It is important to mention here that the contribution of Agriculture, Forestry and Fishing sector and Industry sector to GSDP has remained more or less at the same level since last few years. The State Economy however experienced a picturesque change over the periods as the primary sector witnessed a shift to service sector and the service sector has flourished very rapidly in the State's economy.

#### SECTORAL CONTRIBUTION TO GROSS STATE DOMESTIC PRODUCT (GSDP) AT CONSTANT (2011-12) PRICES



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APPENDIX – 3.1  
GROSS STATE DOMESTIC PRODUCTS AT CURRENT PRICES IN ASSAM

(Fig. Rs. In Lakh)

Sl. No.	INDUSTRY	At Current Prices				
		2011-12	2012-13	2013-14	2014-15 (P)	2015-16 (Q)
1	2	3	4	5	6	7
1	Agriculture, Forestry and Fishing	2848113	3391548	3692959	3855549	4343564
1.1	Crops	2061487	2496905	2720261	2890544	3310990
1.2	Livestock	159289	179160	155267	173478	175526
1.3	Forestry & Logging	231388	246368	311458	261987	278521
1.4	Fishing and aquaculture	395949	469115	505973	529539	578527
2	Mining & Quarrying	1464989	1448306	1423477	1471149	1493456
	Primary	4313102	4839854	5116436	5326698	5837020
3	Manufacturing	1540255	1531538	1904299	2002936	2055341
4	Electricity, Gas, Water Supply and other utility services	191883	210901	257083	296587	372236
4.1	Electricity, Gas and other utility services	142999	149922	168824	185291	229127
4.2	Water Supply	48884	60979	88259	111296	143109
5	Construction	1188747	1270304	1537481	1733568	2093594
	Secondary	2920885	3012743	3698863	4033091	4521172
6	Trade, Repair, Hotels & Restaurants	2045676	2284041	2573962	2987155	3480621
6.1	Trade and repair services	1961211	2191727	2473790	2876251	3353852
6.2	Hotel and restaurants	84465	92314	100172	110904	126769
7	Transport, Storage, Communication and services related to broadcasting	810091	929196	1086729	1194568	1392832
7.1	Railways	158334	186316	215234	252509	294682
7.2	Transport by means other than Railways	436288	510169	546285	574132	651308
7.2.1	Road Transport	356262	422930	474743	507668	579295
7.2.2	Water Transport	43626	47129	25033	4502	5023
7.2.3	Air Transport	0	255	9711	26223	29260
7.2.4	Services Incidental to Transport	36400	39855	36798	35739	37732
7.3	Storage	6594	7277	8377	10308	12070
7.4	Communication & Services related to Broadcasting	208875	225434	316833	357619	434772
8	Financial Services	427077	457213	515905	543651	591575
9	Real Estate, Ownership of dwelling & Professional Services	1112543	1225917	1316472	1412466	1534435
10	Public Administration	821723	929477	982734	1373611	1556575
11	Other Services	1077923	1182533	1493924	1795658	2209442
	Tertiary	6295033	7008377	7969726	9307109	10765481
12	Total GSVA at Basic Prices	13529020	14860974	16785025	18666898	21123672
13	Taxes on Products	1203476	1346785	1519305	1725309	1945496
14	Subsidies on Products	415005	521335	529808	582406	645770
15	Gross State Domestic Product	14317491	15686424	17774522	19809801	22423398
16	Population (in '00 )	314410	318480	322600	326780	331010
17	Per Capita (in Rs.)	45538	49254	55098	60621	67742

Source: Directorate of Economics and Statistics, Assam.

**APPENDIX – 3.2**  
**GROSS STATE DOMESTIC PRODUCT AT CONSTANT (2011-12) PRICES IN ASSAM**  
**(Fig. Rs. In Lakh)**

Sl. No.	INDUSTRY	At Constant (2011-12) Prices				
		2011-12	2012-13	2013-14	2014-15 (P)	2015-16 (Q)
1	2	3	4	5	6	7
1	Agriculture, Forestry and Fishing	2848113	3314074	3209159	3226644	3351716
1.1	Crops	2061487	2496905	2372688	2373106	2474086
1.2	Livestock	159289	172234	162088	168351	170209
1.3	Forestry & Logging	231388	231855	232953	234186	235302
1.4	Fishing and aquaculture	395949	413080	441430	451000	472119
2	Mining & Quarrying	1464989	1349018	1251079	1267685	1294087
	Primary	4313102	4663092	4460238	4494329	4645803
3	Manufacturing	1540255	1426544	1673668	1725925	1912063
4	Electricity, Gas, Water Supply and other utility services	191883	198124	215835	243753	285753
4.1	Electricity, Gas and other utility services	142999	142537	151823	155946	182149
4.2	Water Supply #	48884	55587	64012	87807	103604
5	Construction	1188747	1183219	1351276	1493811	1684278
	Secondary	2920885	2807887	3240779	3463489	3882095
6	Trade, Repair, Hotels & Restaurants	2045676	2127460	2262227	2574025	2838308
6.1	Trade and repair services	1961211	2041474	2174187	2478459	2734765
6.2	Hotel and restaurants	84465	85986	88040	95566	103543
7	Transport, Storage, Communication and services related to broadcasting	810091	867559	963007	1026705	1141350
7.1	Railways *	158334	177728	199736	215650	239371
7.2	Transport by means other than Railways	436288	473213	474536	490459	530170
7.2.1	Road Transport	356262	392293	412390	433682	466821
7.2.2	Water Transport	43626	43715	21745	3846	4290
7.2.3	Air Transport	0	237	8436	22401	24995
7.2.4	Services Incidental to Transport	36400	36968	31965	30530	34066
7.3	Storage	6594	6750	7276	8806	9731
7.4	Communication & Services related to Broadcasting *	208875	209868	281459	311790	362078
8	Financial Services #	427077	448132	472252	497116	523022
9	Real Estate, Ownership of dwelling & Professional Services	1112543	1119995	1105795	1123047	1132014
10	Public Administration #	821723	857488	840311	1114171	1174578
11	Other Services	1077923	1077970	1249518	1416693	1578773
	Tertiary	6295033	6498604	6893110	7751757	8388046
12	Total GSVA at Basic Prices	13529020	13969583	14594127	15709575	16915943
13	Taxes on Products	1203476	1247593	1318035	1451179	1539995
14	Subsidies on Products	415005	482938	459622	489869	496465
15	Gross State Domestic Product	14317491	14734238	15452540	16670885	17959473
16	Population (in '00 )	314410	318480	322600	326780	331010
17	Per Capita (in Rs.)	45538	46264	47900	51016	54257

Source: Directorate of Economics and Statistics, Assam.

**APPENDIX – 3.3**  
**NET STATE DOMESTIC PRODUCT AT CURRENT PRICES IN ASSAM**

(Fig. Rs. In Lakh)

Sl. No.	INDUSTRY	At current Prices				
		2011-12	2012-13	2013-14	2014-15 (P)	2015-16 (Q)
1	2	3	4	5	6	7
1	Agriculture, Forestry and Fishing	2620851	3131489	3394131	3527952	3972014
1.1	Crops	1888760	2298656	2485157	2626035	3005238
1.2	Livestock	153834	172787	148379	166188	167557
1.3	Forestry & Logging	228850	243579	307943	258955	275075
1.4	Fishing and aquaculture	349407	416467	452652	476773	524144
2	Mining & Quarrying	1288077	1272547	1218973	1240300	1234780
	Primary	3908928	4404036	4613104	4768252	5206794
3	Manufacturing	1274688	1304587	1659125	1752168	1799654
4	Electricity, Gas, Water Supply and other utility services	130994	136995	170118	192008	246065
4.1	Electricity, Gas and other utility services	97622	97385	111715	116615	150708
4.2	Water Supply	33372	39610	58403	75393	95357
5	Construction	1131858	1203628	1444115	1629182	1964071
	Secondary	2537540	2645210	3273358	3573358	4009791
6	Trade, Repair, Hotels & Restaurants	2002198	2231416	2510971	2915183	3395382
6.1	Trade and repair services	1919528	2141229	2415462	2809402	3276019
6.2	Hotel and restaurants	82670	90187	95509	105781	119363
7	Transport, Storage, Communication and services related to broadcasting	654962	752139	843946	916977	1041035
7.1	Railways	102300	122431	126937	151591	170323
7.2	Transport by means other than Railways	376730	442585	470879	510185	587111
7.2.1	Road Transport	307628	366903	420388	454894	526298
7.2.2	Water Transport	37671	40886	13913	2852	3415
7.2.3	Air Transport	0	221	4744	20991	23749
7.2.4	Services Incidental to Transport	31431	34575	31834	31448	33651
7.3	Storage	5654	6315	7086	8621	9999
7.4	Communication & Services related to Broadcasting	170278	180808	239044	246580	273602
8	Financial Services	420333	449114	507287	533742	580604
9	Real Estate, Ownership of dwelling & Professional Services	942080	1026126	1086805	1155626	1239908
10	Public Administration	634052	722921	768977	1098051	1254904
11	Other Services	1046848	1147534	1450208	1743819	2147642
	Tertiary	5700473	6329250	7168194	8363398	9659476
12	Total NSVA at Basic Prices	12146941	13378496	15054656	16705008	18876060
13	Taxes on Products	1203476	1346785	1519305	1725309	1945496
14	Subsidies on Products	415005	521335	529808	582406	645770
15	Net State Domestic Product	12935412	14203946	16044153	17847911	20175786
16	Population (in '00 )	314410	318480	322600	326780	331010
17	Per Capita (in Rs.)	41142	44599	49734	54618	60952

Source: Directorate of Economics and Statistics, Assam.

**APPENDIX – 3.4**  
**NET STATE DOMESTIC PRODUCT AT CONSTANT (2011-12) PRICES IN ASSAM**  
 (Fig Rs. in lakh)

Sl. No.	INDUSTRY	At Constant (2011-12) Prices				
		2011-12	2012-13	2013-14	2014-15 (P)	2015-16 (Q)
1	2	3	4	5	6	7
1	Agriculture, Forestry and Fishing	2620851	3054015	2952105	2959575	3075095
1.1	Crops	1888760	2298656	2171636	2159142	2249504
1.2	Livestock	153834	165861	155983	162073	163862
1.3	Forestry & Logging	228850	229066	229840	231585	232653
1.4	Fishing and aquaculture	349407	360432	394646	406774	429076
2	Mining & Quarrying	1288077	1173259	1063789	1063550	1079637
	Primary	3908928	4227274	4015894	4023125	4154732
3	Manufacturing	1274688	1199593	1444523	1496222	1688069
4	Electricity, Gas, Water Supply and other utility services	130994	124218	134264	147598	176155
4.1	Electricity, Gas and other utility services	97622	89367	94444	88308	105055
4.2	Water Supply #	33372	34851	39820	59290	71100
5	Construction	1131858	1116543	1263421	1398606	1570061
	Secondary	2537540	2440354	2842208	3042426	3434286
6	Trade, Repair, Hotels & Restaurants	2002198	2074835	2204895	2510304	2767119
6.1	Trade and repair services	1919528	1990976	2121132	2419302	2670051
6.2	Hotel and restaurants	82670	83859	83763	91002	97068
7	Transport, Storage, Communication and services related to broadcasting	654962	690502	735336	770806	824567
7.1	Railways *	102300	113843	119148	125440	132863
7.2	Transport by means other than Railways	376730	405629	404613	432085	472690
7.2.1	Road Transport	307628	336266	362090	385545	419347
7.2.2	Water Transport	37671	37472	11411	2335	2885
7.2.3	Air Transport	0	203	3821	17607	20015
7.2.4	Services Incidental to Transport	31431	31688	27291	26598	30445
7.3	Storage	5654	5788	6103	7323	7997
7.4	Communication & Services related to Broadcasting *	170278	165242	205472	205958	211017
8	Financial Services #	420333	440033	464052	487925	513195
9	Real Estate, Ownership of dwelling & Professional Services	942080	920204	901777	902333	897641
10	Public Administration #	634052	650932	640941	863123	912230
11	Other Services	1046848	1042971	1208960	1369917	1525106
	Tertiary	5700473	5819477	6155961	6904408	7439859
12	Total NSVA at Basic Prices	12146941	12487105	13014063	13969959	15028876
13	Taxes on Products	1203476	1247593	1318035	1451179	1539995
14	Subsidies on Products	415005	482938	459622	489869	496465
15	Net State Domestic Product	12935412	13251760	13872476	14931269	16072406
16	Population (in '00 )	314410	318480	322600	326780	331010
17	Per Capita (in Rs.)	41142	41609	43002	45692	48556

Source: Directorate of Economics and Statistics, Assam.

## APPENDIX – 3.5

MOVEMENT OF GROSS STATE DOMESTIC PRODUCT (GSDP)  
OF ASSAM AT CURRENT AND CONSTANT (2011-12) PRICES

YEAR	Gross State Domestic Product (Rupees in lakh)		Per capita Gross State Domestic Product ( in Rupees)	
	At current Prices	At constant (2011-12) Prices	At current Prices	At constant (2011-12) Prices
2004-05*	5339771	5339771	18993	18993
2010-11*	11268796	7344442	37053	24149
2011-12	14317491	14317491	45538	45538
2012-13	15686424	14734238	49254	46264
2013-14	17774522	15452540	55098	47900
2014-15 (P)	19809801	16670885	60621	51016
2015-16 (Q)	22423398	17959473	67742	54257

\* Figures for the year 2004-05 and 2010-11 are of the base year 2004-05  
Source: Directorate of Economics and Statistics.

## APPENDIX – 3.6

MOVEMENT OF NET STATE DOMESTIC PRODUCT (NSDP) OF  
ASSAM AT CURRENT AND CONSTANT (2011-12) PRICES

YEAR	Net State Domestic Product (Rupees in Lakh)		Per capita Net State Domestic Product ( in Rupees)	
	At current Prices	At constant (2011-12) Prices	At current Prices	At constant (2011-12) Prices
2004-05*	4718074	4718074	16782	16782
2010-11*	10062671	6430998	33087	21146
2011-12	12935412	12935412	41142	41142
2012-13	14203946	13251760	44599	41609
2013-14	16044153	13872476	49734	43002
2014-15 (P)	17847911	14931269	54618	45692
2015-16 (Q)	20175786	16072406	60952	48556

\* Figures for the year 2004-05 and 2010-11 are of the base year 2004-05  
(P) Provisional; (Q) Quick Estimate  
Source: Directorate of Economics and Statistics.

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## CHAPTER – IV

## STATE FINANCE

The Assam Government Budget, 2016-17 was presented with an expected fiscal deficit of Rs.6674.87 crore and a revenue surplus of Rs.3720.84 crore and a primary deficit of Rs.3465.54 crore. The fiscal reform measures adopted by the State started yielding favourable results since 2005-06. During the year 2015-16, the State had a revenue surplus of Rs.5446.28 crore and a fiscal surplus of Rs.3005.47 crore which is 1.34 percent of GSDP below the 3 percent limit recommended by the Thirteenth Finance Commission. The debt-GSDP ratio during 2015-16 in the State was 15.92 percent well below the fiscal target of 28.4 percent prescribed by the Thirteenth Finance Commission. The total own tax revenues of the State during 2015-16 have shown a growth of 6.95 percent over 2014-15 against an increase of 5.06 percent during 2014-15 over the previous year. The gross VAT collection increased by 2.23 percent in 2015-16 against an increase of 9.08 percent in 2014-15 over the previous year. The contribution of VAT to the total own tax revenue is 69 percent in 2015-16 against a contribution of 73 percent in 2014-15.

## BUDGET 2016-17:

The Assam Government Budget 2016-17 was presented with expected consolidated fund of Rs.77422.71 crore comprising of expected Revenue receipts of Rs.66179.88 crore and Rs.11242.83 crore under Capital Account. Taking into account the consolidated fund and the estimated receipt of Rs.177077.16 crore under Public Accounts and Rs.100.00 crore under Contingency Fund, the total receipts amount is expected to be Rs.254599.87 crore. The total expenditure from the consolidated fund of the State in 2016-17 is estimated at Rs.78253.37 crore, of which Rs.62459.04 crore is on Revenue Account and Rs.15794.33 crore is on Capital Account. Out of the total estimated expenditure of Rs.247974.51 crore for the year 2016-17, Rs.169621.14 crore will be spent from Public Account and Rs.100.00 crore under Contingency Fund. Thus, during the year 2016-17, it is expected to have a surplus of Rs.6625.36 crore which together with the opening deficit of Rs.9506.27 crore for the year 2016-17 will lead to an estimated closing deficit of Rs.2880.91 crore.

TABLE – 4.1  
BUDGET AT A GLANCE

Item	(Rupees in crore)	
	2015-16(R.E.)	2016-17
A. Total Receipts		
I. Consolidated Fund	52918.34	77422.71
Revenue Account	44263.13	66179.88
Capital Account	8655.21	11242.83
II. Contingency Fund Accounts	100.00	100.00
III. Public Accounts	187269.84	177077.16
B. Expenditure		
I. Consolidated Fund	74818.50	78253.37
Revenue Account	58274.88	62459.04
Capital Account	16543.62	15794.33
II. Contingency Fund Accounts	100.00	100.00
III. Public Accounts	173223.36	169621.14
C. Transactions during the year (A-B)		
Surplus (+)		6625.36
Deficit (-)	7853.68	
D. Opening balance		
Surplus (+)		
Deficit (-)	1652.59	9506.27
E. Closing balance (C+D)		
Surplus (+)		
Deficit (-)	9506.27	2880.91

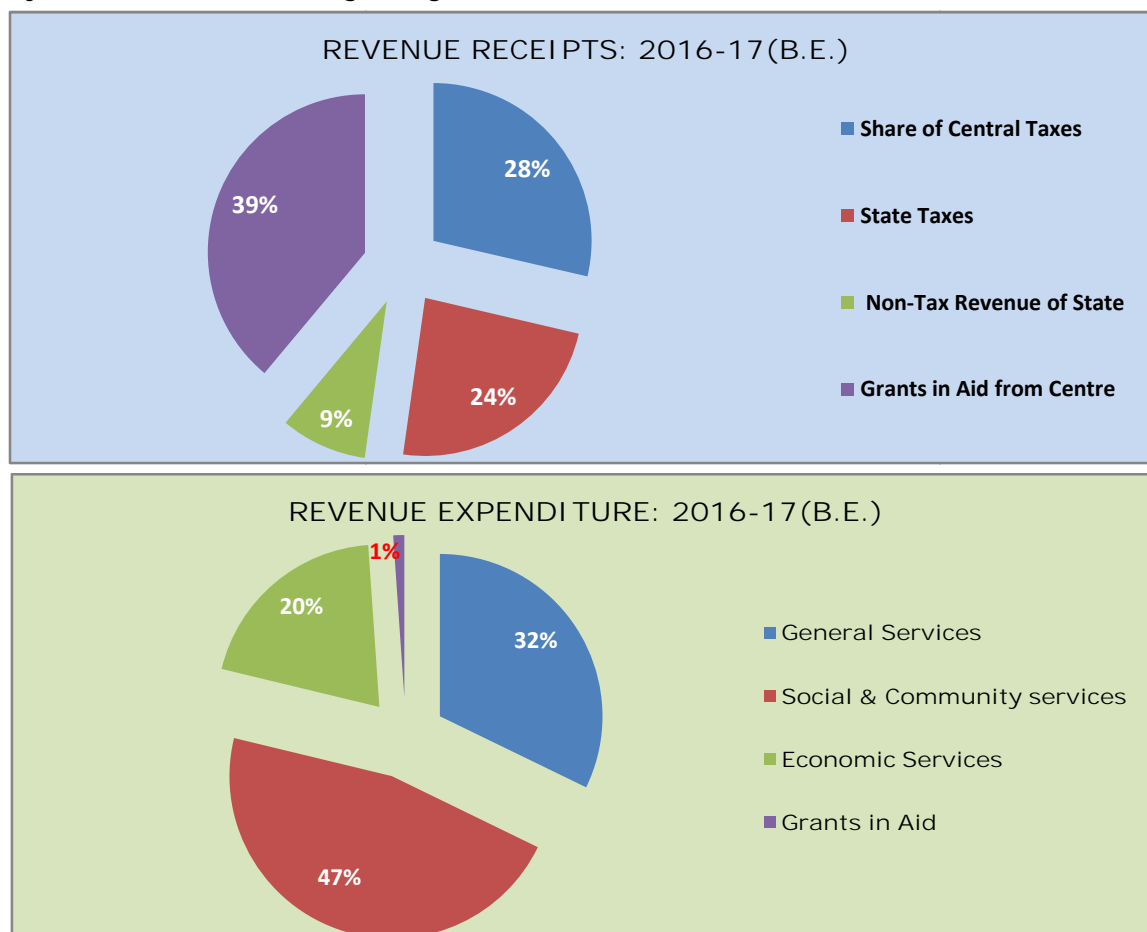
R.E. = Revised Estimate, B.E. = Budget Estimate.

Source: Assam Budget in Brief, 2016-17, Directorate of Economics and Statistics, Assam.



### THE REVENUE BUDGET 2016-17 :

The Government of Assam expects to receive Rs.66179.88 crore under Revenue account against the total outlay of Rs.62459.04 crore. The percentage share of major components of the Revenue account and Revenue expenditure in the Budget 2016-17 may be evident from the figures given below.



It is expected that the total revenue receipts will increase by 56 percent during 2016-17 over the actual of the previous year. During 2016-17, an amount of Rs.21480.83 is expected from the State's Own Resources with expected contribution of Rs.15634.31 crore as Tax Revenues and Rs.5846.52 crore as Non-Tax revenue. The expected transfer from the Centre is Rs.44699.05 crore which include Rs.18938.27 crore as Share in Central Taxes, Rs.22233.43 crore as Plan Grants and Rs.3527.35 crore as Non-Plan Grants from the Centre. The Revenue Expenditure is segregated into plan and non-plan expenditure. The expected Plan expenditure in the Budget 2016-17 is Rs.19148.92 crore and the estimated Non-Plan expenditure is Rs.43310.11 crore of which expected interest payment component is Rs.3209.32 crore and under Pension the expenditure is expected to be Rs.7680.19 crore. Budget estimate of 2016-17 shows revenue surplus of Rs.3720.84 crore and fiscal deficit is pegged at 2.97 percent of GSDP.

### THE CAPITAL BUDGET 2016-17:

The Budget estimates anticipate total capital receipts including Small savings and State Provident Fund, etc. of Rs.12670.49 crore of which Internal Debt by the State Government is expected to be Rs.10423.26 crore. As regards to the allocation of funds under the important components of Capital expenditure, the Budget 2016-17 provides

Rs.10394.40 crore for Capital Outlay and Rs.570.78 crore for disbursement of Loans and Advances.

#### SHARE OF PLAN EXPENDITURE IN THE BUDGET 2016-17:

The table 4.2 shows the relative share of the Plan Schemes under different heads in the budget provision for 2016-17.

TABLE-4.2  
SHARE OF PLAN EXPENDITURE UNDER DIFFERENT HEADS

(Rs. in crore)

Heads	Total Budget Provision			Budget for Plan Schemes			Plan expenditure to total budget provision(%)
	Revenue	Capital	Total	Revenue	Capital	Total	
General Service	20115.92	489.83	20605.75	640.39	263.30	903.67	1.15
Social & community service	29077.93	2344.26	31422.19	12605.74	2298.37	14904.11	19.05
Economic	12570.74	7560.31	20131.05	5363.00	7489.25	12852.25	16.42
A) Grants-in-Aid & Contribution (State)	694.45	-	694.45	539.79	-	539.79	0.69
B) Autonomous Councils	-	-	-	-	-	-	-
Loans and Advances	-	570.78	570.78	-	180.51	180.51	0.23
Public Debt including Inter State Settlement & Appropriation to Contingency Fund	-	4829.15	4829.15	-	-	-	-
Total	62459.04	15794.33	78253.37	19148.92	10231.43	29380.35	37.54

Source: Assam Budget in Brief, 2015-16, Assam.

It reveals from the table that out of the total budget provision for the year 2016-17, the share of total plan expenditure is 37.54 percent of which share of Social and Community Services is the highest with 19.05 percent followed by Economic Services (16.42%), General Services (1.15%), Grants-in-Aid & Contribution (State) (0.69%) and Loans and Advances (0.23%).

#### FISCAL SCENARIO OF THE STATE:

The fiscal scenario in the State took a positive turn in 2005-06 due to the fiscal reform measures adopted by the State in 2004-05 and continued up to 2008-09. After a heavy downslide in 2009-10, the revenue deficit turned into surplus till 2013-14 followed by a revenue deficit of Rs.896.68 crore in 2014-15. The year 2015-16 showed revenue surplus of Rs.5446.28 crore, fiscal surplus of Rs.3005.47 crore and primary surplus of Rs.5623.91 crore. The Budget estimate of 2016-17 expects a revenue surplus of Rs.3720.84 crore and is expected to have a fiscal deficit of Rs.6674.87 crore. During, 2015-16, the State showed a fiscal surplus of 1.49 percent of GSDP and it is expected

that the fiscal deficit to remain at 2.97 percent of GSDP. It is seen that the fiscal deficit during the last decade except 2009-10 remained below 3 percent of GSDP.

The table-4.3 shows the trend of fiscal parameters of the State from 2006-07 to 2016-17 (BE). The figures of GSDP at current prices from 2011-12 is taken as per new series of national accounts.

TABLE – 4.3  
FISCAL PARAMETERS

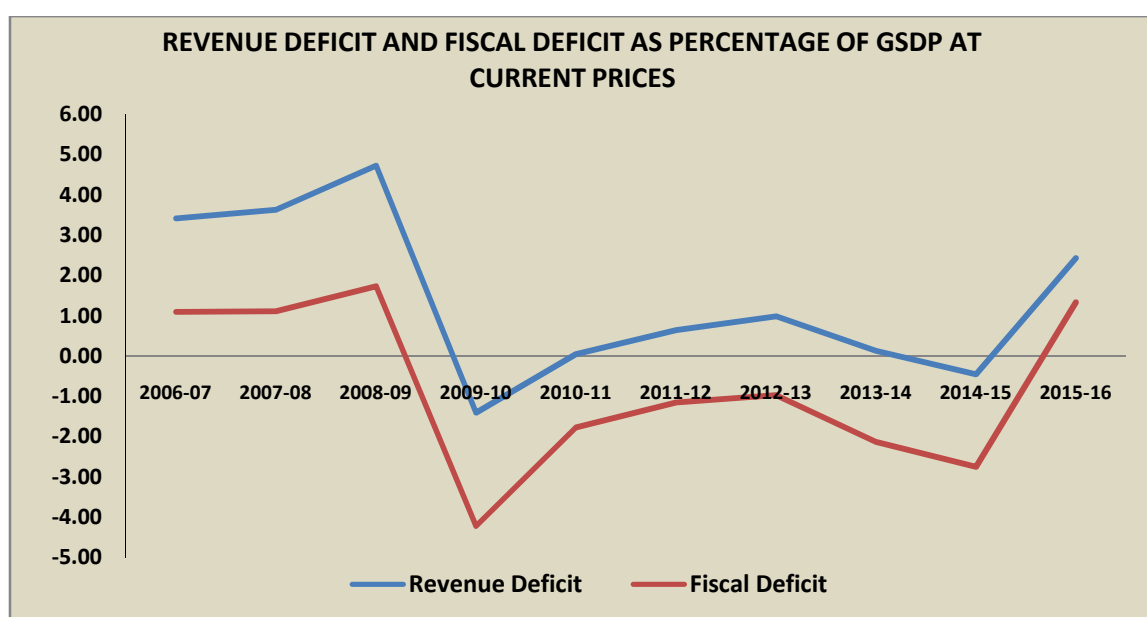
(Rs. in crore)

Year	Overall Revenue Deficit	Fiscal Deficit	Primary Deficit	Fiscal Deficit as percentage of GSDP	GSDP at Current prices
2006-07	(-)2210.42	(-)711.39	(-)2227.06	(-)1.10	64692
2007-08	(-)2580.76	(-)790.39	(-)2302.33	(-)1.11	71076
2008-09	(-)3833.71	(-)1406.79	(-)3000.12	(-)1.74	81074
2009-10	(+)1347.71	(+)4043.42	(+)2210.84	(+)4.21	95975
2010-11	(-)53.12	(+)1990.57	(+)78.44	(+)1.77	112688
2011-12	(-)926.85	(+)1646.05	(-)428.44	(+)1.15	143175
2012-13	(-)1554.07	(+)1516.49	(-)598.42	(+)0.97	156864
2013-14	(-)222.91	(+)3782.30	(+)1583.85	(+)2.13	177745
2014-15	(+)896.68	(+)5429.54	(+)3095.80	(+)2.74	198098
2015-16	(-)5446.28	(-)3005.47	(-)5623.91	(-)1.34	224234
2016-17(BE)	(-)3720.84	(+)6674.87	(+)3465.54	(+)2.72	245287

N.B. (-)ve sign indicates surplus.

Source: Department of Finance (Economic Affairs), Government of Assam.

The figure below shows the trend of revenue deficit and fiscal deficit as percentage of GSDP at current prices during the last ten years.



## REVENUE RECEIPTS:

Revenue Receipts comprises of two major components – State's Own Resources and Transfer from the Centre. The trend of actual Revenue receipts for the last nine years from 2006-07 to 2015-16 and the Budget Estimate for 2016-17 is indicated in the table-4.4 below.

TABLE – 4.4  
TOTAL REVENUE RECEIPTS

(Rs. in crore)

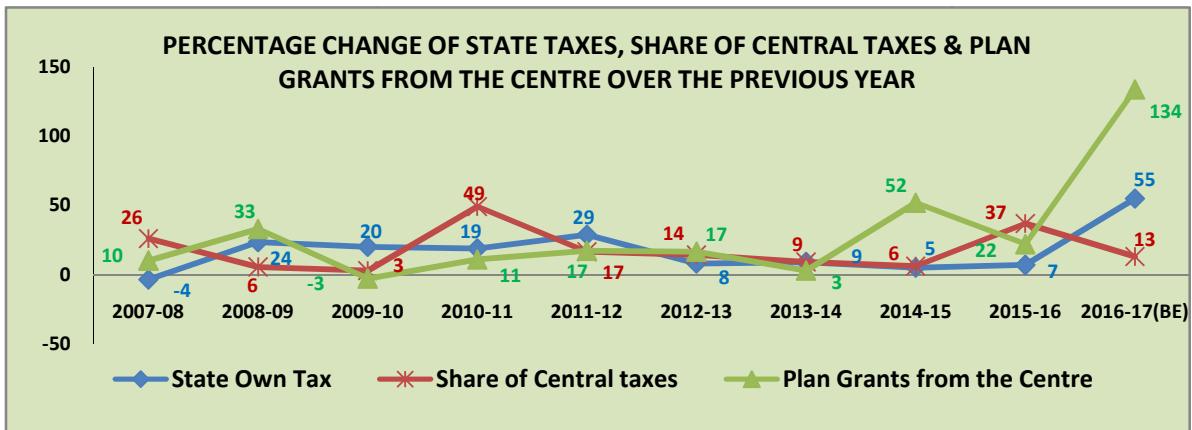
Year	State's Own Resources			Transfer from the Centre				Total Revenue Receipts (4+8)
	Tax Revenues	Non-Tax Revenues	Total (2+3)	Share in Central Taxes	Plan Grants	Non Plan Grants	Total (5+6+7)	
1	2	3	4	5	6	7	8	9
2006-07	3483.32	1859.27	5342.59	3898.99	3716.67	708.70	8324.36	13666.95
2007-08	3359.50	2134.59	5494.09	4918.21	4093.65	818.98	9830.84	15324.93
2008-09	4150.21	2271.90	6422.11	5189.90	5444.10	1020.93	11654.93	18077.04
2009-10	4986.71	2752.94	7739.65	5339.53	5285.94	1519.37	12144.84	19884.49
2010-11	5929.84	2373.32	8303.16	7968.61	5864.94	868.22	14701.77	23004.93
2011-12	7638.24	2866.76	10505.00	9283.53	6876.55	790.32	16950.40	27455.40
2012-13	8250.21	2473.59	10723.80	10601.26	8017.88	1348.04	19967.18	30690.98
2013-14	8994.92	2705.03	11699.95	11574.52	8257.40	680.92	20512.84	32212.79
2014-15	9449.81	2412.89	11862.70	12283.71	12544.13	1490.95	26318.79	38181.49
2015-16	10106.50	2741.57	12848.07	16784.88	9494.27	3330.48	29609.63	42457.70
2016-17(BE)	15634.31	5846.52	21480.83	18938.27	22233.43	3527.35	44699.05	66179.88

Source: Department of Finance (Economic Affairs), Government of Assam.

The above table shows that during (2006-2016), the total revenue receipts of the State Government increased at a rate of 13 percent per annum. The percentage increase of State taxes in 2015-16 over 2014-15 was 7 percent against 5 percent increase in 2014-15 over the previous year. The State taxes are expected to increase by 55 percent during 2016-17. The increase of share in Central taxes in 2015-16 was 37 percent than that of 6 percent increase in 2014-15 over the previous year. During 2015-16, the total Revenue receipts was Rs.42494.34 crore of which the share of State Taxes was 24 percent, non-tax revenue was 6 percent, the share of Central Taxes was 40 percent and Plan Grants from the Centre was 22 percent and Non-Plan Grants from the Centre was 8 percent.

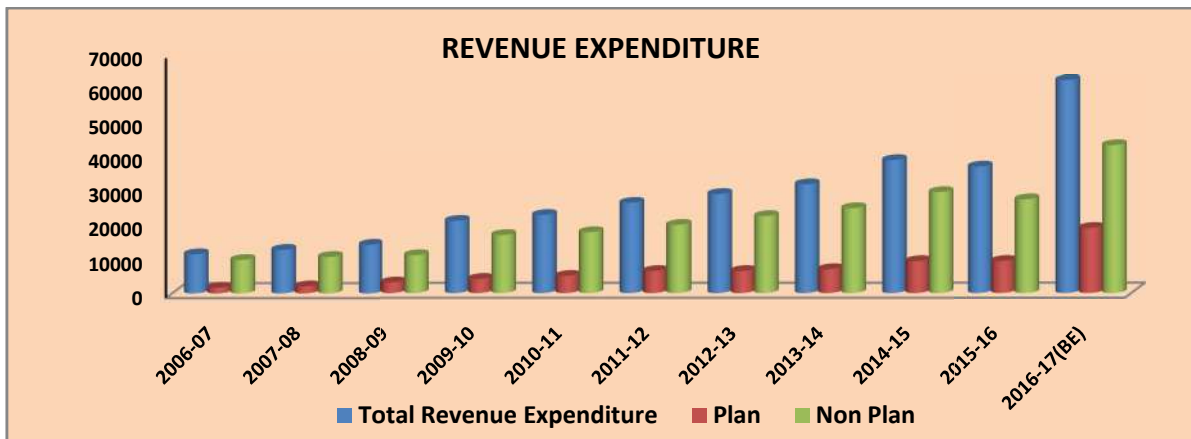
The Budget estimates for the year 2016-17 shows that the State's Own Resources is expected to increase by 67 percent of which, State Own Tax Revenues is expected to increase by 55 percent and Non-Tax Revenues by 113 percent. During the budget year, transfer from the Centre is expected to increase by 51 percent of which share in Central Taxes is expected to increase by 13 percent, Plan grants by 134 percent and Non-Plan Grants by 6 percent. The graph given below shows the percentage change of some

components of revenue receipts from 2006-07 to 2015-16 and expected during the year 2016-17.



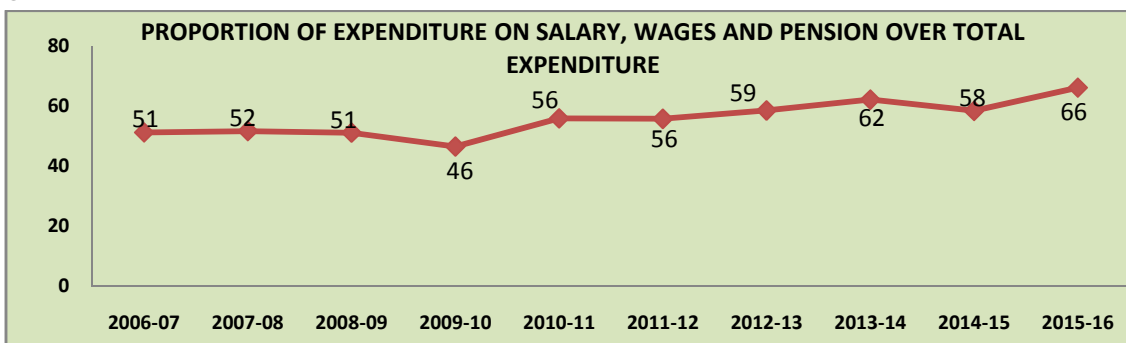
**REVENUE EXPENDITURE:**

Revenue expenditure is segregated into plan and non-plan expenditure. The volume of total Revenue Expenditure, Plan Expenditure and Non-plan Expenditure from 2006-07 to 2015-16 and budget estimate for 2016-17 is presented through the graph given below.



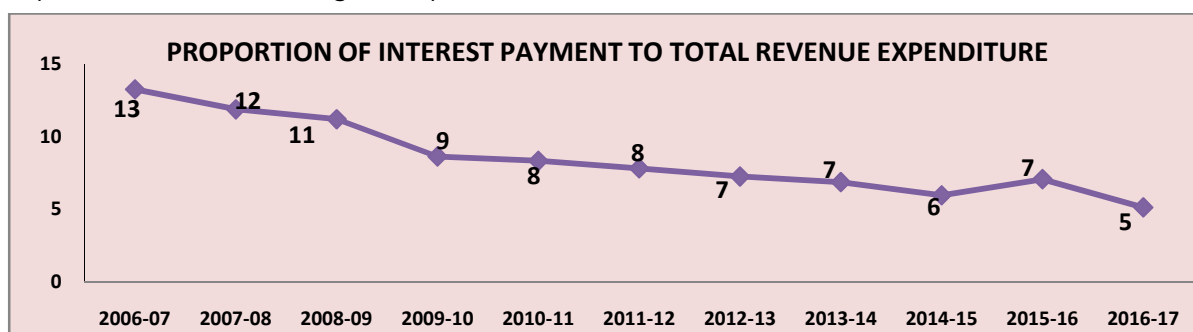
The steady increase in Plan expenditure shows inclination of the Government to stimulate developmental activities. The volume of Plan expenditure to total expenditure was 15 percent during 2006-07 and 16 percent in 2007-08. The percentage share of plan expenditure to total expenditure remained above 20 percent during the next seven years (2008-2015) with maximum of 24 percent in 2011-12 and 2014-15. The plan expenditure during 2015-16 was above 25 percent and is expected to increase by 31 percent during 2016-17.

Since 2006-07, it is seen that the volume of expenditure on salary, wages and pension is on an increasing trend. The graph below shows proportion of expenditure on salary, wages and pension over total expenditure.



The proportion of expenditure on salary, wages and pension was as high as 51 percent during 2006-07 and remained more or less same up to 2008-09. It declined to 46 percent during 2009-10 and again soared to 56 percent during 2010-11 due to implementation of the Sixth Pay Commission and remained at the same level during 2011-12. During 2012-13, 2013-14 and 2014-15 expenditure on Salary, Wages and pension increased to 59 percent, 62 percent and 58 percent of the total Revenue Expenditure respectively. This expenditure increased to 66 percent of the total revenue expenditure in 2015-16.

Another component of revenue expenditure is interest payment. The trend since 2006-07 shows that the proportion of expenditure on interest payment to the total expenditure is decreasing as depicted below.



The table-4.5 shows the trend of actual expenditure of Government of Assam from 2006-07 to 2015-16 and the Budget Estimate for 2016-17. The trend shows that the expenditure on salary under the Plan head was below 10 percent during 2006-07 to 2010-11 and during the subsequent three years, the expenditure was above 10 percent followed by under 10 percent in 2014-15 and again soared by 14.54 percent during 2015-16.

Under Non-Plan Head, the expenditure on salary and pension remained under 70 percent during the period 2006-07 to 2010-11 but increased above 70 percent during the subsequent years and reached as high as 83.73 percent of the total Non-Plan expenditure in 2015-16.

TABLE – 4.5  
REVENUE EXPENDITURE

(Rs. in crore)

Year	Plan Expenditure		Non-Plan Expenditure			Total Revenue Expenditure	
	Total	Salary	Total	Interest Payment	Salary		Pension
2006-07	1662.50	200.21	9794.03	1515.67	4484.19	1177.86	11456.53
2007-08	2067.38	172.62	10676.78	1512.24	5068.58	1340.68	12744.16
2008-09	3110.65	256.68	11132.68	1593.33	5583.70	1437.37	14243.33
2009-10	4168.91	297.59	17063.29	1832.58	7804.80	1769.28	21232.20
2010-11	5055.96	413.18	17895.86	1912.12	10030.59	2384.53	22951.82
2011-12	6487.76	668.89	20040.79	2074.40	10978.54	3136.07	26528.55
2012-13	6495.09	818.12	22641.83	2114.91	12452.21	3778.87	29136.92
2013-14	7027.65	773.01	24962.23	2198.45	14841.44	4264.13	31989.88
2014-15	9390.82	877.83	29687.35	2333.74	16702.00	5237.02	39078.17
2015-16	9435.57	1381.55	27575.85	2618.44	17102.92	5985.23	37011.42
2016-17(BE)	19148.92	-	43310.11	3209.32	-	7680.19	62459.03

Source: Department of Finance (Economic Affairs), Government of Assam.

**NON-DEBT CAPITAL EXPENDITURE:**

Non-debt capital Expenditure consists of capital outlay and lending. This excludes loan repayment. The trend of actual capital expenditure during the period from 2006-07 to 2015-16 and budget estimate for 2016-17 is indicated in the table given below.

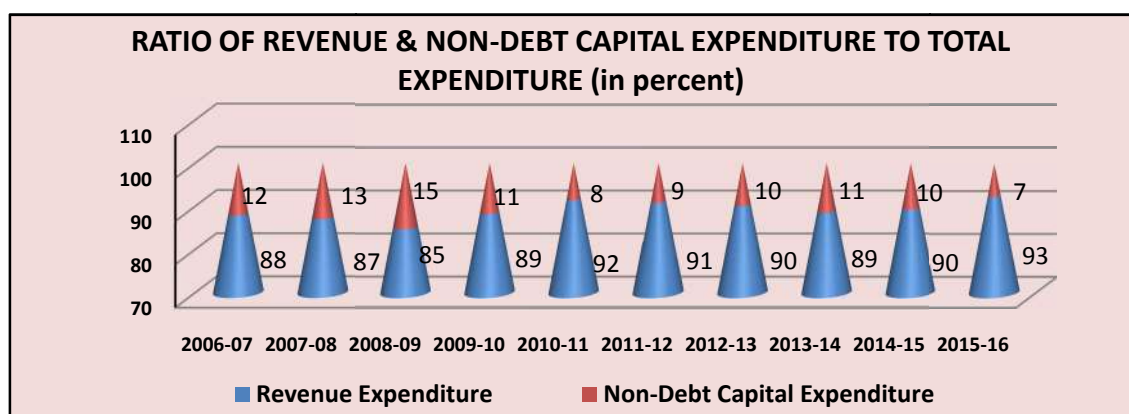
**TABLE – 4.6**  
**NON-DEBT CAPITAL EXPENDITURE**

(Rs. in crore)

Year	Capital Outlay			Lending			Total Non-Debt Capital Expenditure (Col.4+ Col.7)	Total Revenue Expenditure	Total Expenditure (Col 8+ Col 9)
	Plan	Non-Plan	Total	Plan	Non-Plan	Total			
1	2	3	4	5	6	7	8	9	10
2006-07	1403.11	49.86	1452.97	76.85	3.78	80.63	1533.60	11456.53	12990.13
2007-08	1470.83	217.28	1688.11	139.80	3.09	142.89	1831.00	12744.16	14575.16
2008-09	2286.15	86.86	2373.01	75.09	13.65	88.74	2461.75	14243.33	16705.08
2009-10	2548.98	80.37	2629.35	96.99	2.24	99.23	2728.58	21232.20	23960.78
2010-11	1929.97	70.92	2000.89	70.78	0.10	70.88	2071.77	22951.82	25023.59
2011-12	2431.34	74.67	2506.01	81.81	6.47	88.28	2594.29	26528.55	29122.84
2012-13	2544.96	72.32	2617.28	71.34	389.31	460.65	3077.93	29136.92	32214.85
2013-14	3088.59	100.65	3189.24	316.01	506.03	822.04	4011.28	31989.88	36001.16
2014-15	3827.13	85.14	3912.27	306.67	324.04	630.71	4542.98	39078.17	43621.15
2015-16	2704.05	(-)13.14	2690.91	108.30	151.79	260.09	2951.00	37011.42	39962.42
2016-17(BE)	10050.92	343.48	10394.40	180.51	390.27	570.78	10965.18	62459.03	73424.21

Source: Department of Finance (Economic Affairs), Government of Assam.

The graph given below shows the volume of revenue and non-debt capital expenditure to total expenditure from 2006-07 to 2015-16.



The break-up of total expenditure into Revenue Expenditure (Development, Non-Development & Grants-in-Aid & Contributions) is given in the table-4.7. The table 4.7 below shows that of the two constituents of development expenditure, expenditure on social services shows a slight increase during 2010-11 and again slightly dropped down during 2011-12 and 2012-13. Thereafter expenditure on social services increased to more than 42 percent of total revenue and capital expenditure during the next three years. During 2016-17, it is expected to spend 40 percent of the total revenue and capital expenditure on social services. The other component of development expenditure

is economic services which show an increasing trend during the last seven years (2009-2016) and is expected to reach 17 percent of the total expenditure during 2016-17. The table shows a decreasing trend of non-development expenditure i.e. less amount is spent on general services thus contributing to the development head under the revenue and capital expenditure except showing a slight increase during 2015-16. Expenditure on non-development activities is expected to come down to 28 percent during 2016-17. It also reflects that grants-in-aid and contributions under revenue expenditure is on a decreasing trend since 2009-10. However, revenue expenditure still continues to remain above 85 percent of total expenditure during the period from 2009-10 to 2015-16.

TABLE – 4.7  
TREND OF REVENUE EXPENDITURE

(Rs. in crore)

Year	Revenue Expenditure				Total
	Development Expenditure		Non-Development Expenditure	Grants-in-Aid & Contributions	
	Social Services	Economic Services	General Services		
2009-10	8543.21 (35.8)	3759.52 (15.8)	8379.58 (35.1)	549.89 (2.3)	21232.30 (89.0)
2010-11	10158.97 (40.7)	4668.86 (18.7)	7766.42 (31.1)	357.57 (1.4)	22951.82 (92.0)
2011-12	11465.79 (39.5)	4663.27 (16.1)	9743.67 (33.6)	655.83 (2.3)	26528.56 (91.0)
2012-13	12617.46 (39.7)	5209.38 (16.4)	10570.29 (33.3)	739.79 (2.3)	29136.92 (91.8)
2013-14	14850.09 (42.2)	5835.53 (16.6)	10928.50 (31.1)	375.76 (1.1)	31989.88 (90.9)
2014-15	18087.75 (42.1)	7075.32 (16.5)	12921.60 (30.1)	993.50 (2.3)	39078.17 (90.9)
2015-16	17740.36 (44.7)	6239.87 (15.7)	12656.03 (31.9)	375.16 (1.0)	37011.42 (93.2)
2016-17 (BE)	29077.93 (39.9)	12570.74 (17.3)	20115.92 (27.6)	694.45 (1.0)	62459.04 (85.7)

Source: Department of Finance (Economic Affairs), Government of Assam.

N.B. Figures in bracket indicates percentage share of the item to total revenue expenditure & capital outlay.

#### CAPITAL RECEIPTS AND CAPITAL OUTLAY:

Capital Receipts decreased by 0.91 percent during 2015-16 over the previous year mainly due to decrease in internal debt during the year compared to the previous year. During 2014-15, capital receipts showed a steep increase of 193 percent over 2013-14, the year which showed a decrease of 3.92 percent over the previous year. During the year 2016-17, it is expected to increase by 64 percent of which internal debt is expected to contribute by 82 percent.

Capital expenditure, which was 1.81 percent and 1.96 percent of GSDP respectively in 2011-12 and 2012-13 increased to 2.25 percent in 2013-14 and 2.29 percent of GSDP during 2014-15. The ratio of capital expenditure to GSDP came down to 1.32 percent in 2015-16.

The table 4.8 below shows total capital receipts and capital expenditure from 2011-12 to 2015-16 and budget estimate for the year 2016-17.



TABLE – 4.8  
TREND OF CAPITAL RECEIPTS AND CAPITAL OUTLAY

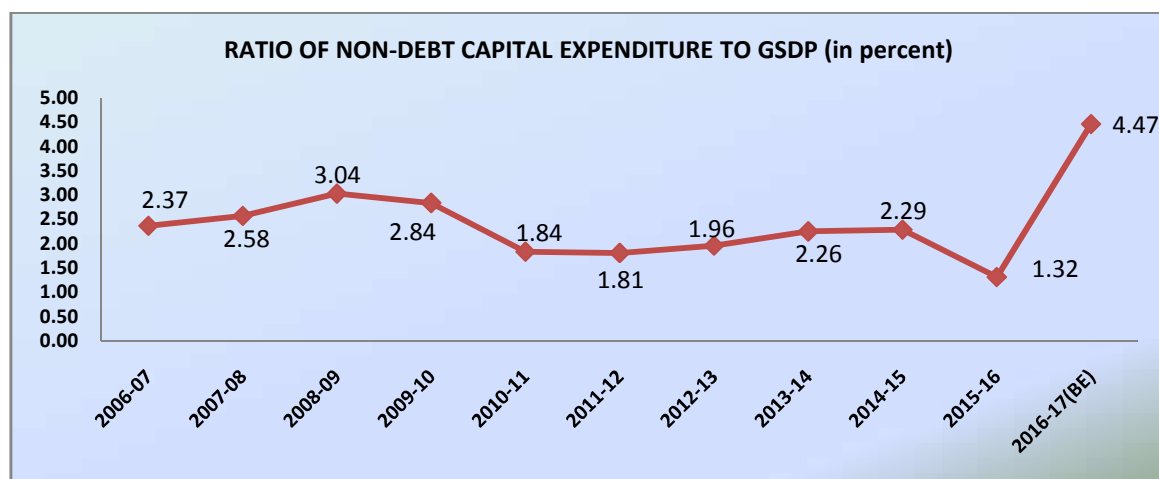
(Rs. in crore)

Year	Receipts		Expenditure			Ratio of Capital Expenditure to GSDP (in %)
	Total	Of which internal Debt	Total	Of which		
				Capital Outlay	Disbursement of Loans and Advances	
2011-12	2135.85	922.26	2594.28	2506.01	88.27	1.81
2012-13	2765.13	1348.70	3077.93	2617.28	460.65	1.96
2013-14	2656.84	1147.46	4011.27	3189.24	822.03	2.25
2014-15	7786.92	6095.80	4542.99	3912.28	630.71	2.29
2015-16	7715.99	5447.50	2951.00	2690.91	260.09	1.32
2016-17(BE)	12670.49	10423.26	10965.18	10394.40	470.78	4.47

Source: Department of Finance (Economic Affairs), Government of Assam.

#### SHARE OF CAPITAL EXPENDITURE TO TOTAL EXPENDITURE:

Size of capital expenditure actually determines the level of investment made for development purposes, which acts as a catalyst for accelerating the economic development. Zero revenue deficit or revenue surpluses help the State for full utilisation of borrowed funds for generating capital assets for revenue earnings. Thus, contracting revenue expenditure to an extent possible helps to generate funds for capital investment. The graph below shows the trend of share Non-Debt capital expenditure as percentage of GSDP since 2006-07.



#### BORROWINGS AND REPAYMENT:

Sources of borrowings of the State Government are loans from the market, loans from financial institutions/banks, NSSF loans, loans from the Centre against EAPs and State Provident Fund & GIS. State Government usually resorts to borrowings to meet the fiscal deficit. The prudent level of borrowings is the 3 percent fiscal deficit of GSDP. The Table below shows the position of actual borrowings and repayment of loans for the last nine years from 2006-07 to 2015-16 and Budget Estimate for 2016-17.

TABLE – 4.9  
BORROWINGS AND REPAYMENT

(Rs. in crore)

Year	Borrowings	Repayment of loans	Net borrowings	Net Borrowing Ceiling fixed by Govt. of India
2006-07	1681.70	711.33	970.37	2180.00
2007-08	1852.00	970.89	881.11	2223.31
2008-09	3505.40	1018.46	2486.94	2540.00
2009-10	2945.08	1272.82	1672.26	3223.00
2010-11	2998.50	1336.15	1662.35	2951.00
2011-12	2114.47	1673.26	441.21	3447.00
2012-13	2757.75	2094.62	663.13	3115.00
2013-14	2650.77	1794.77	856.00	4304.00
2014-15	7776.79	3931.43	3845.36	5355.00
2015-16	7205.80	2816.57	4389.23	
2016-17(B.E.)	12101.02	5796.30	6304.72	

Source: Department of Finance (Economic Affairs), Government of Assam.

The above table shows that year-wise State's net borrowings are far below the ceiling fixed by the Government of India (GOI) and this gradual decline is on account of revenue surpluses.

#### DEBT POSITION:

The standard criteria for determining the debt sustainability of the States has been to arrive at the acceptable level of the debt-GSDP ratio and the ratio of interest payment to total revenue receipts. The outstanding debt position of the State has come down within the limit of 28 percent of GSDP recommended by the Twelfth Finance Commission. Moreover, in 2013-14 the debt stock of Govt. of Assam has declined to 16.88 percent of GSDP as against the limit of 28.4 percent of GSDP prescribed in the ASFRBM (Amendment) Act 2011 as stipulated by the Thirteenth Finance Commission. The Table below summarizes the debt position of the State from 2006-07 to 2015-16 and for 2016-17(BE).

TABLE – 4.10  
DEBT POSITION OF ASSAM

(Rs. in crore)

Year	Year end total outstanding debt	GSDP at Current prices	Debt-GSDP Ratio (%)
2006-07	18792.62	64692	29.05
2007-08	19673.73	71076	27.68
2008-09	22160.67	81074	27.33
2009-10	23832.94	95975	24.83
2010-11	25495.28	112688	22.62
2011-12	25936.49	143175	18.12
2012-13	26599.61	156864	16.96
2013-14	27455.62	177745	15.45
2014-15	31300.99	198098	15.80
2015-16	35690.22	224234	15.92
2016-17(BE)	42160.22	245287	17.19

Source: Department of Finance (Economic Affairs), Government of Assam.

It appears from the above table that outstanding debt position of the State has started improving since 2006-07. The debt-GSDP ratio has gradually come down from 29.05 percent in 2006-07 to 15.92 percent in 2015-16.

The reduction of debt stock has been possible by the State because of the adoption of the Government of India's debt swap policy in 2002-03 and relentless effort to bring down the revenue and fiscal deficits, as envisaged in the Fiscal Reform Facility of 11<sup>th</sup> Finance Commission and FRBM Act, 2005 of 12<sup>th</sup> and 13<sup>th</sup> Finance Commissions.

#### DEBT STOCK AND INTERSET PAYMENTS:

The total debt stock and position of interest payment to total revenue receipts in terms of percentage is indicated below:

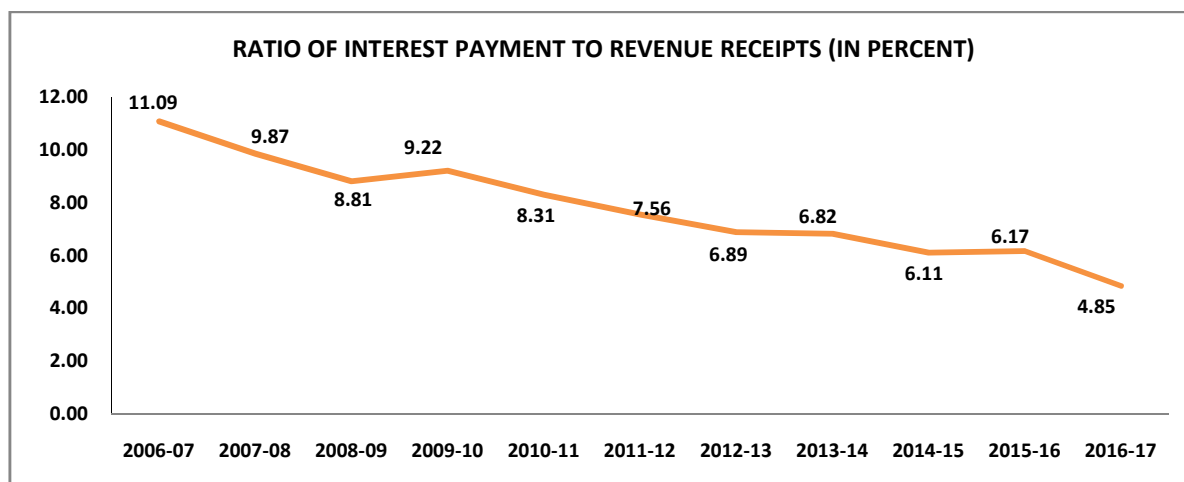
TABLE – 4.11  
INTEREST PAYMENT TO REVENUE RECEIPTS

(Rs. in crore)

Year	Total Revenue Receipts	Debt Stock	Interest Payment	Ratio of Interest Payment to Revenue Receipts (in percent)
2006-07	13666.95	18792.62	1515.67	11.09
2007-08	15324.93	19673.73	1512.24	9.87
2008-09	18077.04	22160.67	1593.33	8.81
2009-10	19884.49	23832.94	1832.58	9.22
2010-11	23004.93	25495.28	1912.12	8.31
2011-12	27455.40	25936.49	2074.40	7.56
2012-13	30690.98	26599.61	2114.91	6.89
2013-14	32212.79	27455.62	2198.45	6.82
2014-15	38181.49	31300.99	2333.74	6.11
2015-16	42457.70	35690.22	2618.44	6.17
2016-17(BE)	66179.88	42160.22	3209.32	4.85

Source: Department of Finance (Economic Affairs), Government of Assam.

It revealed from the above Table that the ratio of interest payment to revenue receipts has been falling persistently and has come down to 6.17 percent in 2015-16 from 11.09 percent in 2006-07. During 2016-17, it is expected to fall further to 4.85 percent. The ratio of interest payment to revenue receipts remains well below the benchmark of 15 percent prescribed by the Twelfth Finance Commission.



## ACHIEVEMENT OF TAXATION DEPARTMENT DURING 2015-16:

The Finance (Taxation) Department is responsible for collection of major share of tax revenue of the State. It contributes more than 80 percent of the State's Own Tax Revenue. During the year 2015-16, the Department collected Rs.8504.57 crore as against Rs.8177.16 crore in 2014-15 thereby achieving a growth of 4 percent during 2015-16. The State Government has fixed a target of Rs.12921.64 crore for the year 2016-17. The provisional collection of the Department upto August, 2016 is Rs.3585.96 crore as against Rs.3442.95 crore during the same period of last year showing a positive growth of 4 percent. The Department administered ten different Taxation acts during 2015-16 and collection under different Taxation Acts during the years from 2007-08 to 2015-16 is presented in Table-4.12.

TABLE – 4.12  
COLLECTION OF TAXES UNDER DIFFERENT TAXATION ACTS IN ASSAM

(Rs. in crore)

TAXATION ACT	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
The Assam Value Added Tax, 2003	2694.77	3229.44	3952.20	5181.44	5689.88	6288.54	6859.24	7013.93
The Central Sales Tax Act, 1956	415.81	305.82	366.41	512.51	533.25	559.47	492.01	474.05
Assam Health Infrastructure and Services Development Fund Act, 2009 (w.e.f 01-07-2015)	-	-	-	-	-	-	-	5.74
The Assam Entry Tax Act, 2008	268.84	526.64	461.67	518.75	364.14	404.69	382.88	580.93
The Assam Professions, Trades Calling & Employment Tax Act, 1947	137.61	150.06	160.58	164.27	168.31	186.36	191.38	183.05
The Assam Electricity Duty Act, 1964	22.36	27.07	41.58	36.67	41.82	40.54	44.00	48.68
The Assam Amusement and Betting Tax Act, 1939	2.41	3.50	4.51	5.87	63.07	38.93	44.37	64.87
The Assam Taxation on Luxuries (Hotels & Lodging Houses) Act, 1989	5.75	5.17	5.42	5.89	8.04	8.67	10.55	9.74
The Assam Taxation (on Specified Land) Act, 1990	80.00	78.87	92.02	95.64	99.72	102.43	101.66	91.14
The Assam Agricultural Income Tax Act, 1939	18.18	78.34	101.20	83.27	82.33	89.99	51.07	32.45
Total	3645.73	4404.91	5185.59	6604.31	7050.56	7719.62	8177.16	8504.57
Growth Rate (in percent)	25.81	21.00	17.7	27.4	6.76	9.5	5.9	4.0

Source: Commissionerate of Taxes, Assam.

Collection under the Central Sales Tax Act during 2015-16 was Rs.474.05 crore as against Rs.492.01 crore in 2014-15 showing a negative growth of 4 percent. The reason for negative growth was mainly due to ban on coal mining in Meghalaya resulting in fall of CST sale of coal from Assam.

There is a negative growth in the Assam Professions, Trades Callings and Employments Taxation Act, 1947 due to change in Tax slabs with effect from 15<sup>th</sup> October, 2014.

There is a fall in revenue in Assam in Assam Taxation on Luxuries (Hotels and Lodging Houses) Act, 1989 due to increase in exemption limit up to Rs.2000.00.

Collection of taxes under Assam Taxation (on Specified Land) Act, 1990 has decreased by Rs.10.52 crore as compared to previous year due to less production of green tea leaf.

Collection under the Assam Value Added Tax Act, 2003 grew only by 2 percent during 2015-16 due to fall in prices of Petroleum products, less collection of VAT on Tobacco products and IMFL.

\* \* \* \* \*

## CHAPTER – V

## AGRICULTURE

Agriculture and allied activities plays a very important role in the socio—economic development of Assam, as its economy is largely both rural and agrarian. It is the backbone of the State's economy and holds the key to the overall development of the State. Agriculture significantly contributes to the state's economy, provides as a main source of occupation and livelihood to a large proportion of its rural population. As per (Census 2011), out of the total land mass, 98.4 percent is rural, where agriculture and allied activities is the major occupation of its people. The net cultivable area of the state is 28.11 hectares, which is about 87.38 percent of the total land mass available for agricultural cultivation in the state. The operational holding on an average is 1.10 hectares only and more than 85 percent of farmer families are either small or marginal farmers, with average land holding of only 0.63 hectare, but in a small size and scattered manner. However, agriculture as a sector still continues to support more than 75 percent of its population, either directly or indirectly, providing employment and support to more than 50 percent of its total workforce. Government of Assam has declared 2015-16, as the "Year of Agriculture". A "Task Force on Agricultural Development" was constituted by the State Government.

The base year for GDP estimation has changed from 2004-05 to 2011-12. With it, the macro picture of the Indian economy, along with the State has acquired a new look, with the introduction of substantive, changes. Now, for the valuation of commodities and services, factor cost is replaced by 'Basic Prices', entailing wider scope and coverage of sectoral components. Besides, some other methodological improvements have also been introduced. Assam, followed the changed approach in GDP estimation in preparing GSDP estimation of the State from 2011-12 onwards.

The contribution of Agriculture Sector towards the State Economy has registered a gradual rise [GSDP at constant (2011-12) prices] for the years 2014-15 (Provisional estimates) and 2015-16 (Quick estimates). Though the annual growth rate has come down from - 4.97 as per 2013-14 to 0.02 as per 2014-15 (Provisional estimates). The growth rate is expected some recovery to 4.26 as per 2015-16 (Quick estimates)

AGRICULTURE:

ROAD TO PROSPERITY:

Farmers in the state feed the entire population. But their contribution to the socio-economic upliftment is yet to be recognized. Recognizing the services of farmers, our Government will issue I-Cards to the farmers. These Identity Cards will bring a sense of recognition to their contribution to the state's economy besides being used as a unique identity to develop the database of each of the farmers in the Government's initiatives for development of agriculture.

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

Source: Directorate of Economics and Statistics, Assam.

It was announced in the Budget speech of Finance Ministers, 2016-17 dt. 26<sup>th</sup> July, 2016 that –

“Government gives highest priority to Agriculture and allotted an amount of Rs. 104179.81 lakhs in this plan budget. Farm production and productivity is greatly dependant on irrigation. Government has proposed an ambitious programme for installation of 61,000 shallow tube-wells and for the purpose an amount of Rs. 5792 lakhs is allotted in budget during 2016-17. Government has also encouraging more of organic farming in the state under the Parampara Krishi Vikash Yojana. In the procurement of various items, government has decided to start e-tendering process in the department and the modalities have already been finalised which will bring in transparency and confidence of the farmers in the procurement system. It was also proposed in the budget, 2016-17 to continue the existing 3% interest Subvention Scheme on crop loan to the farmers during the Financial Year 2016-17. Under the scheme, 3% subsidy is given by the State Govt. on interest payable by the farmers on loans upto Rs.35,000/-. For the purpose an amount of Rs. 310 lakhs for the year 2016-17.”

Budget Speech of Finance Minister, 2016-17, Dated 26<sup>th</sup> July, 2016

Assam has a rich and diverse soil conditions, very conducive for agriculture and agricultural productivity. But, due to unpredictable weather conditions, along with erratic rainfall and the presence of various impediments like floods, soil erosion etc., agricultural productivity has been suffering at times. Yet, the State Agriculture Department, has been able to give thrust to increase the production of food grains by the implementation of double cropping patterns for the provision of food security and nutrition to its ever growing population, by the adoption of strategies for the increase and enhancement of food productivity and cropping

Year	Total Rice	Wheat	Total Pulses	Total Food grains	Total oilseeds [excl. Coconut]
2001-02	3854	85	66	4023	156
2002-03	3738	78	60	3894	149
2003-04	3880	73	63	4034	157
2004-05	3470	68	61	3617	146
2005-06	3552	54	56	3680	114
2006-07	2916	67	59	3060	134
2007-08	3319	71	61	3468	139
2008-09	4009	55	62	4142	141
2009-10	4409	65	66	4557	147
2010-11	5033	56	72	5178	159
2011-12	4716	49	73	4857	156
2012-13	5128	44	84	5279	187
2013-14	5193	40	104	5418	186
2014-15	5223	29	111	5459	206
2015-16(p)	5125	34	108	5359	215

Source: Directorate of Economics and Statistics, Assam.

intensity. The State Agriculture Department, has also prioritized the optimum and efficient use of available resources for increasing production and productivity of agricultural and horticultural crops, through use of best technologies as available and wherever feasible.

Various steps have been taken for increasing production and productivity like the formulation of State and District specific plans depending on prevailing agro-climatic conditions, growth potentials and specific requirements of districts have been given

attention on namely use of quality and HYV seeds, adoption of multi cropping productivity patterns, provision of assured irrigation facilities, use of improved farm mechanization procedures, special use of bio-fertilizers and bio-pesticides, practices of organic farming, development of marketing infrastructure for encouraging the farming community and see to the creation of maximum potentials for income and employment opportunities.

The development of agriculture sector in hill districts of the State, namely East Karbi-Anglong, West Karbi-Anglong and Dima Hasao, are suffering due to presence of various weakness, and prevalent conditions, namely low infrastructural facilities, low productivity due to practice of extensive Jhum cultivation and non-availability of markets etc. The need is of changing the pattern of cultivation in these hilly districts, which is posing as a great challenge before the State Government. It is a priority for the future to see the development of Agriculture, in these districts by introduction of new schemes for the production of cash crops, horticultural crops and practice of settled agriculture in terrace lands. Development of Agriculture in these hilly areas needs attention for infrastructural development and access to markets. Areas of concern to be looked into for the exploitation of horticultural potentialities, introduction of cultivation suitable for fruits like citrus, spices, their value addition, which will bring in substantial contribution to the economy of these hill districts of the state.

#### REQUIREMENT OF FOOD GRAINS DURING THE TWELFTH FIVE YEAR PLAN PERIOD:

The Food grains requirements, during the Twelfth Five Year Plan period in Assam has been estimated on the basis of growth of population (Projected) of Census 2001, as presented in Table-5.3. To fulfil the needs of food requirements, the State Agriculture Department has given thrust in the areas like making availability of quality seeds and various inputs to farmers, enhancement of areas under assured irrigation, enhancement of areas under farm power, emphasis on Seed replacement Rate, increase in coverage of areas under HYV/Hybrid paddy, increase areas under pulses, Oilseeds, institutional support of credit, crop insurance to farmers, marketing reforms introduced by establishment of markets on PPP modes and procurement of paddy at GP level etc.

TABLE– 5.3

#### FOOD REQUIREMENT DURING THE TWELFTH FIVE YEAR PLAN PERIOD IN ASSAM

Year	Projected Population (in lakh)	Adult Population (in lakh)	Food requirement (in lakh MT)				Total Food grains (in lakh MT)
			Rice	Wheat	Pulses	Oilseeds	
2012-13	316.97	253.58	41.65	5.55	2.78	3.70	50.91
2013-14	322.34	257.87	42.35	5.65	2.82	3.76	51.77
2014-15	327.79	262.23	43.07	5.74	2.87	3.83	52.64
2015-16	333.34	266.67	43.80	5.84	2.92	3.89	53.53
2016-17	338.40	270.72	44.46	5.92	2.96	3.95	54.35

# Figure rounded off to nearest Zero.

Source: Draft Annual Plan 2014-15, Planning and Development Department, Assam.



## AGRICULTURE SCENARIO (2015-16):

## WEATHER AND RAINFALL:

The climate of Assam is humid, with a sub-tropical nature, having warm humid summers and cool dry winters. Due to its unique geographical location, along with the presence of varied physiography, Assam has an array of climatic conditions. Assam is situated in the high rainfall zone with annual average rainfall of 2297.4 mm. The state normally receives 2 percent of rainfall in Winter Season (January-February), 25 percent in Summer Season (March-May), 65 percent in Mansoon Season (June-September) and 7 percent in Post-Mansoon Season (October-December). However, Assam is prone to floods and sometimes there is also the presence of drought like situations with the lack of rains. Thus, though the State has enough natural potentialities for growing food grains in abundance, it at times faces losses impacting on its contribution and share to the national granary, due to the presence of erratic and unpredictable weather conditions, as experienced specially during the last few years.

It has been observed that the impact of climate change has affected and led to erratic rainfall and unpredictable mansoon behaviour patterns in the state. This has in turn affected the agricultural productions to a great extent in the state. The experience of crop season wise pattern of average rainfall is evident from Table-5.4

TABLE- 5.4  
CROP SEASON WISE AVERAGE RAINFALL IN ASSAM

(Figure in mm)

Year	Kharif season				Rabi season				All Season			
	Actual	Normal	Deviation from normal (%)	Pattern	Actual	Normal	Deviation from normal (%)	Pattern	Actual	Normal	Deviation from normal (%)	Pattern
2007	1816.6	2118.2	(-)14.2	Normal	259.7	313.6	(-)1.7	Normal	2076.3	2431.9	(-)14.6	Normal
2008	1773.0	2038.1	(-)13.0	Normal	275.1	314.8	(-)12.6	Normal	2048.1	2352.9	(-)13.5	Normal
2009	1512.4	1953.6	(-)22.6	Deficient	187.8	302.2	(-)37.9	Deficient	1700.2	2255.8	(-)25.0	Deficient
2010	2066.3	1976.0	(+)4.6	Normal	189.0	306.2	(-)38.3	Deficient	2255.3	2282.2	(-)1.2	Normal
2011	1411.1	2001.0	(-)29.5	Deficient	155.5	295.3	(-)47.3	Deficient	1566.6	2296.3	(-)29.5	Deficient
2012	1953.2	2001.0	(-)2.0	Normal	198.6	294.8	(-)32.6	Deficient	2151.8	2295.8	(-)6.3	Normal
2013	1529.5	2016.3	(-)24.0	Deficient	177.3	294.8	(-)40.0	Deficient	1706.8	2311.1	(-)26.1	Deficient
2014	1774.6	2001.0	(-)11.0	Normal	79.8	294.8	(-)73.0	Scanty	1854.4	2295.8	(-)62.0	Deficient
2015	1936.5	2001.0	(-) 3.2	Normal	196.5	294.8	(-) 33.3	Deficient	2133.0	2295.8	(-)7.1	Normal

Source: Directorate of Agriculture, Assam

## RAINFALL DURING 2015-16:

It is evident from the Table 5.4, that the State had experienced 2133 mm rainfall during 2015-16, against normal rainfall of 2295.8 mm. During the kharif crop season, 1936.5 mm of rainfall occurred in the state (against a normal of 2001 mm). Thus, according to the State Agriculture Department, the pattern of overall rainfall in the State was Normal, during the kharif season, both in total rainfall and its spread being [(-)3.2] percent below normal. However, the State has experienced "Deficient" rainfall during the Rabi Season with only 196.5 mm of actual rainfall against a normal of 294.8 mm recording a deviation of (-) 33.3 percent.

Although the occurrence of rainfall was 'normal' during Kharif Season and 'Deficient' during Rabi Season in 2015 and the overall rainfall pattern throughout the state was 'Normal' during 2015-16, though the spread and pattern of rainfall varies from district to district, during the period. To know about the details of rainfall experienced by the districts in Assam, during the year 2015-16, is evident from Table-5.5 below:

TABLE- 5.5

## MONTHWISE RAINFALL IN ASSAM DURING KHARIF AND RABI SEASON, 2015-16

Months	Rainfall during Kharif 2015-16			
	Actual (mm)	Normal (mm)	Deviation from Normal	Pattern
April, 2015	232	172.9	34	Excessive
May, 2015	300.3	304.2	-1	Normal
June, 2015	457.9	427.3	7	Normal
July, 2015	280.2	454.2	-38	Deficient
August, 2015	461	356.7	29	Excessive
September, 2015	205.1	285.7	-28	Deficient
Total During Kharif, 2015-16	1936.5	2001	-3	Normal
Rainfall during Rabi 2015-16				
Months	Actual (mm)	Normal (mm)	Deviation from Normal	Pattern
October, 2015	56.9	131.8	-57	Deficient
November, 2015	15.5	24.9	-38	Deficient
December, 2015	17.6	11.8	49	Excess
January, 2016	18.6	16.2	15	Normal
February, 2016	20.8	32	-35	Deficient
March, 2016	67.1	78.1	-14	Normal
Total during Rabi, 2015-16	196.5	294.8	-33	Deficient

Source: Directorate of Agriculture, Assam.

TABLE: 5.6

## PATTERN OF RAINFALL IN ASSAM DURING KHARIF AND RABI 2015-16

(in mm)

Month/ Year	Pattern of Rainfall during Kharif 2015-16					
	Normal	Deficient	Scanty	Excess	No Rain	N.A.
April, 2015	9 (Dist)	1 (Dist)	-	16 (Dist)	-	1 (Dist)
May, 2015	13 (Dist)	7 (Dist)	-	6 (Dist)	-	1 (Dist)
June, 2015	9 (Dist)	8 (Dist)	-	9 (Dist)	-	1 (Dist)
July, 2015	4 (Dist)	20 (Dist)	2 (Dist)	-	-	1 (Dist)
August, 2015	8 (Dist)	2 (Dist)	-	16 (Dist)	-	1 (Dist)
September, 2015	7 (Dist)	16 (Dist)	1 (Dist)	2 (Dist)	-	1 (Dist)
Month/ Year	Pattern of Rainfall during Rabi 2015-16					
Month/ Year	Normal	Deficient	Scanty	Excess	No Rain	N.A.
October, 2015	1 (Dist)	9 (Dist)	14 (Dist)	1 (Dist)	-	2 (Dist)
November, 2015	4 (Dist)	8 (Dist)	7 (Dist)	5 (Dist)	2 (Dist)	1 (Dist)
December, 2015	4 (Dist)	4 (Dist)	2 (Dist)	16 (Dist)	-	1 (Dist)
January, 2016	4 (Dist)	7 (Dist)	3 (Dist)	12 (Dist)	-	1 (Dist)
February, 2016	2 (Dist)	5 (Dist)	11 (Dist)	4 (Dist)	3 (Dist)	2 (Dist)
March, 2016	7 (Dist)	11 (Dist)	1 (Dist)	7 (Dist)	-	1 (Dist)

Note: Figure refers to number of districts  
Source: Directorate of Agriculture, Assam.

## AREA UNDER CROPS:

The Production of all agricultural crops including food grains is directly related to area coverage of various crops produced and cultivated. In Assam, the soil, topography, rainfall and climate in general are very conducive for agricultural activity, mainly for the cultivation of paddy. Therefore, concentration of area under paddy production and cultivation is high both from the side of farmers as well as the Agriculture Department. As per final estimates, the total area under paddy cultivation during the year 2015-16 was 24.85 lakh hectares or 92.96 percent of the total area under food grains in the state.

Total area under paddy showed a decline in the state, due to decline in area covered under Autumn Rice and Summer Rice. This is also due to choice of farmers to switch over to Winter Rice. The final forecast estimates show (Table-5.7) that the area under Autumn Rice has declined from 4.36 lakh hectares in 2004-05 to 1.96 lakh hectares in 2014-15 and further declined to 1.91 lakh hectares in 2015-16. The area under Summer Rice has declined from 4.16 lakh hectares in 2014-15 to 4.05 lakh hectares in 2015-16, both of which led to the decline of total rice area to 24.85 lakh hectares from 24.95 lakh hectares in its previous year of rice area cultivation in the state. However, the area under Winter Rice, the principal kharif crop of the State, has slightly increased from 18.83 lakh hectares in 2014-15 to 18.89 lakh hectares in 2015-16.

The area under Wheat and Pulses has both declined in the year 2015-16 from its previous year figures, while that of Oilseeds has increased from 3.07 lakh hectares in 2014-15 to 3.11 lakh hectares in 2015-16. The trend of crop-wise land utilisation in Assam during the last twelve years is evident from table 5.7 below:

TABLE- 5.7  
AREA UNDER CROPS IN ASSAM DURING THE PERIOD 2004-05 to 2015-16  
(In lakh hectares)

Year	Autumn Rice	Winter Rice	Summer Rice	Total Rice*	Wheat	Total Pulses	Total Food grains	Total Oilseeds (excl. Coconut)
2004-05	4.36	16.36	3.11	23.83	0.64	1.08	25.82	2.77
2005-06	3.98	17.07	3.15	24.20	0.50	1.00	25.97	2.42
2006-07	3.79	14.98	3.12	21.89	0.60	1.07	23.82	2.70
2007-08	3.54	16.47	3.23	23.24	0.56	1.13	25.18	2.66
2008-09	3.51	17.73	3.60	24.84	0.50	1.14	26.70	2.53
2009-10	3.46	17.89	3.94	25.29	0.60	1.19	27.33	2.77
2010-11	3.13	18.59	3.99	25.71	0.45	1.26	27.67	2.72
2011-12	2.76	18.76	3.94	25.46	0.40	1.32	27.43	2.76
2012-13	2.38	18.57	3.93	24.88	0.34	1.42	26.92	3.05
2013-14	2.23	18.81	3.99	25.03	0.31	1.50	27.13	3.05
2014-15	1.96	18.83	4.16	24.95	0.24	1.48	27.00	3.07
2015-16	1.91	18.89	4.05	24.85	0.21	1.42	26.73	3.11

\*Total may not be equal due to rounding off.

Source: Directorate of Economics and Statistics, Assam.

## PRODUCTION:

As per final estimates, [reference Table-5.2] total food grains production in the State had increased from 5418 '000 tonnes in 2013-14 to 5459 '000 tonnes in 2014-15. The Table-5.2, also reveals that the total foodgrains production in the State was the highest in 2014-15. However, there is a decline from this figure to 5359 '000 in 2015-16.

The total production of Rice in the State has declined from 5223 '000 tonnes in 2014-15 to 5125 '000 tonnes in 2015-16.

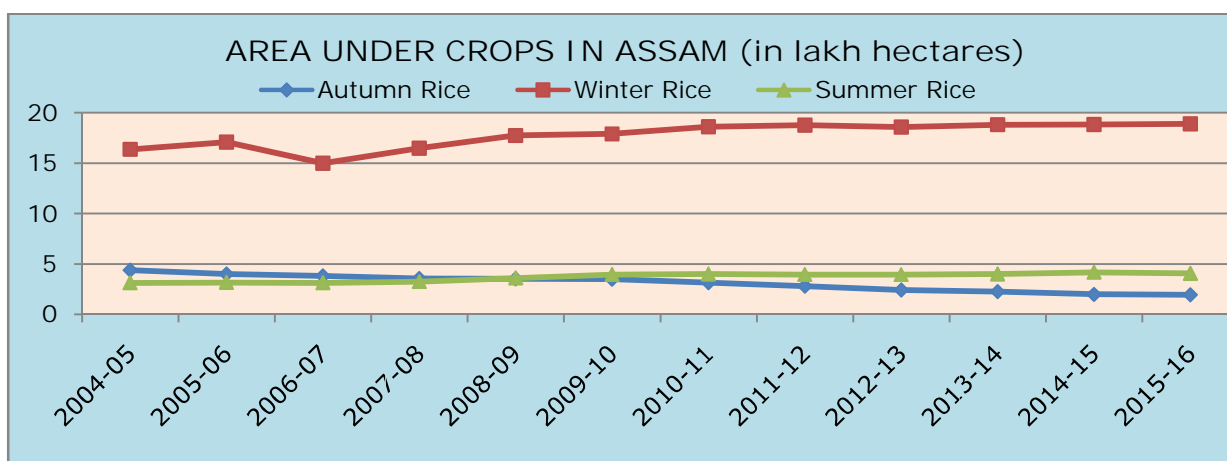
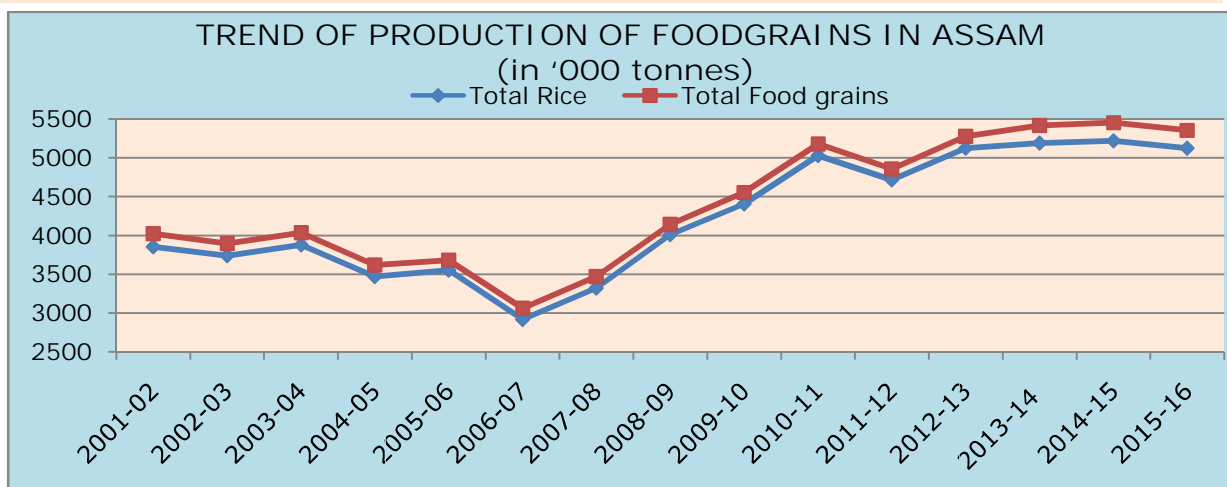
The total production of both Wheat and Oilseeds has increased, Wheat has increased from 29 '000 tonnes in 2014-15 to 34 '000 tonnes in 2015-16, whereas Oilseeds has increased from 206 '000 tonnes in 2014-15 to 215 '000 tonnes in 2015-16. However, production of total Pulses has declined from 111 '000 tonnes in 2014-15 to 108 '000 tonnes in 2015-16.

Against the negative growth rate of agriculture in Assam during 2000-01, a growth rate of 4.5 percent was achieved during 2013-14. During the last fourteen years from 2000-01, Government has achieved 40% increase in the contribution of agriculture to GDP. The State has achieved all time high production of 51.93 lakh MT during 2013-14 with surplus by 6.00 lakh MT. In order to build on these successes, there is a strive with renewed vigour to support farmers. During 2015-16, it has been proposed to develop rainfed and waste land along with reclamation of unproductive cultivable land in order to improve total cultivable agricultural lands.

(Budget Speech of Finance Minister 2015-16. Dated 10<sup>th</sup> March, 2015)

Government of Assam, has been able to increase Rice production from 39.98 lakh metric tonnes in 2000-01 to 52.23 lakh metric tonnes in 2014-15. Similarly, Horticulture production has also increase from 43.4 lakh metric tonnes to 77 lakh metric tonnes in 2015. This one more step towards increase food production has led to a better livelihood.

(The Assam Tribune, dated 8<sup>th</sup> February, 2016)



## YIELD RATE:

It is evident from Table-5.8, that the trend of yield rate of Autumn Rice, was erratic during the period 2004-05 to 2009-10. However, since 2010-11, it is maintaining a continuous increasing trend up to 2014-15, and it reached the level of 1454 kg/hectares. However, in the year 2015-16, it declined to 1364 kg/hectares.

The productivity of winter rice, maintained an increasing trend since the 2008-09 to 2014-15, except in the year 2011-12, due to 'deficient rainfall' in the State during kharif season in that year.

However, Winter Rice productivity, declined from 2005 kg/hectares in 2014-15 to 2003 kg/hectares in 2015-16.

The productivity of Summer Rice also continued to maintain an increasing trend during the period 2004-05 to 2013-14, except in the years 2005-06 and 2008-09. It declined in the year 2014-15 to 2940 kg/hectares and further declined to 2818 kg/hectares in the year 2015-16.

The productivity of both Pulses and Oilseeds though erratic from 2004-05 to 2009-10 has, gradually increased from 2012-13 to 2015-16. However, the productivity of Oilseeds has declined in 2015-16, from its previous year figure.

## AREA UNDER HIGH YIELDING VARIETY (HYV):

Total area under HYV of Autumn Rice, Summer Rice and Winter rice was 17.65 lakh hectares during 2014-15 (Table-5.9). The area coverage under HYV Rice was 70.7 percent of the total area under rice, during the year.

From the above table, it is evident that the area coverage under HYV Rice during the period 2006-07 to 2014-15, remained 60 percent or more. However the area coverage under HYV Rice was 6.3 percent less during 2013-14 in comparison to its previous year 2012-13.

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: Directorate of Economics and Statistics. Assam.

Year	Autumn Rice	Winter Rice	Summer Rice	Total HYV 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	12.22	2.24	15.89(63.5)
2014-15	1.28	12.42	3.95	17.65(70.7)

Total figure may not be equal due to rounding off to nearest zero;  
Figure in bracket shows the percentage to Total Rice Area.  
Source: Directorate of Agriculture. Assam.

According to the Agriculture Department, increasing concentration of area under HYV Rice was possible due to bumper production of rice in the state, as an outcome of additional impetus for enhancing productivity and farm income thereby. Moreover, the production of HYV Summer Rice is more than that of both Winter Rice and Autumn Rice, due to various practices taken up during summer season, being free of any risk factor. Considering the productivity, cultivators prefer the seed of HYV Rice, namely, Mala, IR-36, Lachit, Masuri, Joya, Ranjit, Ratna, China Bora, Biplov, Bahadur, Kaveri, Krishna etc.

#### HYBRID RICE:

The State Agriculture Department has put special efforts for increasing the cultivation of hybrid variety of rice on experiment basis in the State since 2009-10 considering the productivity of hybrid rice more than double in comparison to HYV rice and also to enhance farm income [Table 5.10]. The area coverage of hybrid rice has increased to 234.0 thousand hectares or 9.1 percent of the total area under rice in the State during the year 2013-14, in comparison to 97.2 thousand hectares or 3.9 percent of the total area under rice in the State during the year 2012-13.

Year	Kharif Rice (Autumn + Winter)	Rabi Rice (Summer Rice)	Total*
2009-10	32.9	14.1	47.0 (1.9)
2010-11	37.7	25.0	62.7 (2.4)
2011-12	2.5	21.7	24.2 (1.0)
2012-13	12.4	84.8	97.2 (3.9)
2013-14	28.0	206.0	234.0(9.1)
2014-15	N.A.	N.A.	167.0
2015-16	N.A.	N.A.	140.3

N.A. – Not Available  
\*Total figure may not be equal due to rounding off to nearest zero.  
Figure in bracket shows the percentage to Total Rice Area.  
Source: Directorate of Agriculture, Assam.

The total area coverage of hybrid rice has declined to 167.0 in 2014-15 and further declined to 140.3 in the year 2015-16, as per records given by Directorate of Agriculture, Assam.

#### INDEX OF AGRICULTURAL PRODUCTION:

The Index of Agricultural Production for all crops (Base triennium ending 2007-08=100) for the State stands at 145.32 in 2014-15 in comparison to 141.56 in 2013-14 and 135.70 in 2012-13. In respect of food crops, the Index of Agricultural Production for the State was 157.43 in 2014-15, in comparison to 155.81 in 2013-14 and 152.29 in 2012-13. The All-India Agricultural Production Index for all major crops, stands at 129.2 [Base Triennium ending 2007-08=100] in 2014-15 in comparison to 128.9 in 2013-14. In respect of food crops, the Index of Agricultural production for India as a whole was 123.1 in 2014-15. In the year 2015-16, the index of agricultural production shows a decline in food, non-food crops and in the total of all commodities as reflected in Table 5.11. The Table-5.11, shows the trend of Index of Agricultural Production in the State for the last seven years.

TABLE- 5.11

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(P)	154.54	127.98	142.72	-	-	-

- N. B.: 1. The Agricultural indices for Assam are constructed on the basis of crops covered by Crop Forecast.  
2. Figure rounded to nearest zero.  
3. Data for 2015-16 in Assam are based on Provisional Estimates.

Source: Directorate of Economics and Statistics, Assam.

#### LAND UTILIZATION STATISTICS:

As per the Land Utilization Statistics for the year 2014-15(Provisional), the total reporting area of the State was 78.44 lakh hectares. Out of the total reporting area, net sown area constitutes 28.27 lakh hectares or 36.04 percent, 18.53 lakh hectares or 23.62 percent was under forest, 24.60 lakh hectares or 31.36 percent was 'land not available for cultivation' and 5.29 lakh hectares or 6.74 percent was other uncultivable area. While Fallow land constitutes 2.23 percent of the total reporting area with around 1.75 lakh hectares, land under still water and water logged area together constitutes 2.15 lakh hectares or 2.74 percent. The area under Social forestry was only 0.11 lakh hectare or 0.14 percent of the total reporting area.

The Gross Cropped Area in the State was 40.83 lakh hectare in 2014-15 compared to 41.00 lakh hectare in 2013-14 showing a decline of 0.17 lakh hectare in 2014-15.

The area sown more than once has decreased from 12.80 lakh hectare in 2013-14 to 12.55 lakh hectare in 2014-15 while net cropped area increased from 28.20 lakh hectare in 2013-14 to 28.27 lakh hectare in 2014-15. Thus the ratio of area sown more than once to the net area sown was 44 percent during 2014-15 compared to 45 percent during 2013-14. The ratio of net sown area to gross cropped area, on the other hand, was calculated at 39 percent during the year 2014-15 compared to 68 percent during the year 2013-14.

#### AGRICULTURAL HOLDING:

It reveals from the Agricultural Census, 2010-11 that there were 27.2 lakh operational holdings in Assam covering an operated area of 29.99 lakh hectares as against 27.5 lakh operational holdings covering an operated area of 30.49 lakh hectares in 2005-06 and 27.1 lakh operational holdings covering an operated area of 31.1 lakh hectares in 2000-01. Thus, the agricultural operated area shows decreasing in the State by 3.69 percent in 2010-11 over 2000-01 which is largely affected by soil erosion of ever widening Brahmaputra River, increasing urbanization, industrialization, expansion of roadways and other infrastructural development activities, conversion of agricultural land for setting up of industries as well as to homestead land to accommodate ever increasing

population etc. The Table 5.12 depicts the trend of number of holding and area between the Agricultural censuses, 2000-01, 2005-06 and 2010-11.

TABLE- 5.12  
AGRICULTURAL CENSUSES 2000-01, 2005-06 AND 2010-11

Size class (In hectare)	Number of holding			Area operated (in hectare)		
	2000-01	2005-06	2010-11	2000-01	2005-06	2010-11
Marginal (Below 1.0)	1699107	1752989	1831115	662780	760145	774796
Small (1.0-2.0)	561039	591431	496574	730513	718383	687156
Semi-medium (2.0-4.0)	351521	317859	303528	957959	846006	817982
Medium (4.0-10.0)	95500	82933	84869	498797	425403	437372
Large (10.0 & above)	4970	4902	4137	263529	298606	271763
Total	2712137	2750114	2720223	3113578	3048543	2999070

Total figure may not be equal due to rounding off to nearest zero

Source: Directorate of Economics and Statistics, Assam.

The disaggregated data also shows that the marginal holdings with less than one hectare of land accounted for 67.3 percent of the total holdings and 25.8 percent of the total operated area of the State in 2010-11 compared to 63.7 percent of the total holdings and 24.9 percent of the total operated area of the State in 2005-06. It also reveals from the Table 5.13 that the small holding with size class between 1-2 hectares, shared 18.25 percent of the total holdings and 22.91 percent of the total operational area and the large holdings (10 hectares and above) constituted only 0.15 percent of the total number of holdings and 9.1 percent of the total operated area in the State in 2010-11.

The Table 5.13 shows the trend of agricultural holdings and operated area in the State from 1970-71 to 2010-11.

TABLE- 5.13  
AGRICULTURAL HOLDINGS AND OPERATED AREA IN ASSAM  
(AS PER AGRICULTURAL CENSUSES)

Agricultural Census Year	Number of Holdings(in'000)	Total operated area (in thousand hect.)	Average size of Holdings (in hect.)
1970-71	1964.38	2882	1.47
1976-77	2254.65	3079	1.37
1980-81	2298.59	3121	1.36
1985-86	2419.16	3161	1.31
1990-91	2523.38	3205	1.27
1995-96	2683.00	3138	1.17
2000-01	2712.14	3114	1.15
2005-06	2750.11	3049	1.11
2010-11	2720.22	2999	1.10

Total may not be equal due to rounding off to nearest zero.

Source: Directorate of Economics and Statistics, Assam.

#### HORTICULTURE :

Assam is traditionally very rich in horticultural production, as it has a diverse and unique agro climatic conditions, which is very conducive for growing a wide variety and range of



various horticultural crops like various types of fruits, vegetables, flowers, spices, nut crops, tuber crops, medicinal and aromatic plants and mushrooms etc, and their value addition, has made it possible and a viable option for farmers and entrepreneurs to increase their income. Assam being encompassed as one under 14 global bio-diversity hotspots. The State has enough options for farming as well as making investments in horticulture sector. Moreover, the sector has become a means for nutritional security for both urban and rural masses, is making rapid progress towards commercialization to be sustained for economic development of the rural farming community and has the capacity of opening up enough opportunities for employment generation of unemployed youths in the state.

Two factors that makes horticulture in Assam, a very important sector are:

- (1) Firstly, Inherent capacity for employment generation and
- (2) Secondly, Income generation at farmers level.

No other sector can claim to be in a better position, in this regard for a state like Assam.

Horticulture crops occupies about 15 percent of the gross cultivable area of the state, with an annual production of more than 67 lakh metric tonnes of various horticultural produces, thereby significantly contributing towards food and nutritional security of the state. Horticulture as a sector in Assam also has a commitment which no other sector may come up or be parallel to, judging in terms of its importance and contribution in achieving nutritional security and being a most viable component of an environment friendly industrial base. Horticulture produce is gaining importance day by day in Assam, being a sunrise area for diverse nature of its products, higher bio-mass production per unit area, and thereby more income, scope for improvement with minimum investment, massive employment generation capacity, unveiling of new horizons for value addition and the science itself being intellectually satisfying with aesthetic outlook having universal appeal both for developed and developing nations.

To keep in view of the requirements against projected population growth of Assam, by the year 2020 and to give top most priority for commercialization of this sector, crop specific strategies are being formulated, which includes a gist of targets of various major areas of horticulture to be covered and included.

After 2000-01, Assam has been able to make inroads towards commercialization of horticulture sector for gaining sustainable economic development of the rural farming community. To make the horticulture sector more viable and sustainable, due emphasis have also been given on raising the productivity of various commercially potential crops through use of better technology, management and planting materials being provided to the farmers. Similarly due importance has also been given on various aspects of provisions of facilities namely, pre-harvest treatment, proper harvest techniques, setting up of collection centres with grading facilities, transport facilities, and marketing facilities etc.

According to the Directorate of Horticulture and Food Processing, Assam the growth rate of area, production and productivity of horticulture sector has been assessed at 50.32 percent, 90 percent and 20.31 percent respectively. The Horticulture Directorate has also taken up positive steps towards self-employment opportunities under horticulture sector by helping about 15,000 rural farm women for engaging themselves by the setting up of 350 nos. of small and 4 nos. of Medium Fruit Processing Units. The details of the performance of the horticulture sector, with the increase in the area, production and productivity of horticultural crops is evident from Table - 5.14.

TABLE– 5.14  
AREA, PRODUCTION & PRODUCTIVITY OF HORTICULTURAL CROPS

Year	Fruits			Spices			Vegetables		
	Area (lakh hect.)	Pro-Duction (lakh MT)	Producti- vity (Kg./ hectare)	Area (lakh hect.)	Pro- Duction (lakh MT)	Producti- vity (Kg./ hectare)	Area (lakh hect.)	Pro- Duction (lakh MT)	Producti- vity (Kg./ hectare)
2000-01	1.09	12.41	11384	0.81	1.52	1879	1.95	24.71	12672
2005-06	1.13	13.52	12005	0.86	2.12	2475	2.32	18.18	16485
2006-07	1.14	13.72	12139	0.86	2.14	2476	2.36	38.87	16469
2007-08	1.16	14.08	14142	0.88	2.18	2478	2.38	39.18	16462
2008-09	1.34	16.61	12425	0.93	2.80	3023	2.46	44.20	17923
2009-10	1.27	15.65	12370	0.94	2.35	2505	2.51	42.55	16952
2010-11	1.37	16.56	12485	1.01	2.30	2277	2.57	44.33	17231
2011-12	1.38	17.75	12885	1.04	2.56	2464	3.66	52.51	24325
2012-13	1.51	20.74	13760	1.10	3.28	2970	3.86	60.34	27536
2013-14	1.42	20.25	14219	1.04	2.67	2578	3.65	53.30	24797
2014-15 (Final)	1.44	20.12	13869	1.08	2.97	2749	3.91	134.78	25455
2015-16 (Estimated)	1.59	23.29	14583	1.22	5.35	4376	4.02	64.45	28243

Total may not be equal due to rounding off to nearest zero.

Source: Directorate of Horticulture & FP, Assam, Khanapara

#### INTEGRATED NUTRIENT MANAGEMENT (INM):

##### FERTILIZER AND MANURE:

Fertilizer is a very important input of agriculture, and it plays a dominant role in augmenting the productivity of crops. Therefore, thrust has been given on "Integrated Nutrient Management" (INM) to make a major breakthrough in the direction of the following objectives:

- i) Less use and dependence and use on inputs from outside source and encourage farmers to utilize on farm resources.
- ii) Economize the production cost by using optimum dose of fertilizer.

The trend in the use of bio-fertilizer, compost and green manures and organic farming practices have been increasing gradually, as the application of chemical fertilizer is posing a major threat in depletion soil nutrients.

The State Government is also giving much stress on timely availability of fertilizers at the door step of farmers during peak period of cultivation. AAIDC, NAFED, GPSS, and organizations like IFFCO, BVFCL, Green Chemicals Ltd, Teesta Agro Industries Ltd. have been playing a pivotal role in distribution of fertilizer through their respective branches located at various corners of the State. At present, there are 416 nos. of whole sale points and 6855 nos. of fertilizer sale points in Assam.

##### CONSUMPTION OF FERTILISER:

To augment the productivity of crops thrust has been given to increase the consumption of chemical fertilizers under the banner of "Integrated Nutrient Management" as consumption of nutrients (NPK) per hectare in the state is much lower than the National average. The consumption of fertilizer in Assam is low because of low consumption during kharif season. Farmers are reluctant to invest on fertilizer due to fear of loss for heavy rainfall and flood. Consumption of fertilizers during summer and rabi season is low due to non-availability. According to the State Agriculture Department, the consumption of fertiliser in the State was 68.6 kgs per hectare during the year 2014-15 compared to 65.4 kgs per hectare during 2013-14. In the year 2015-16, the consumption of fertilizers

in the state was 62.6 kgs per hectare. The details of consumption of fertilizers in Assam is presented in the Table 5.15 below:

TABLE- 5.15  
CONSUMPTION OF (CHEMICAL) FERTILISERS  
(Fig in '000 MT)

Fertilizer	Year								
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Nitrogen	109.0	114.0	135.6	129.3	155.0	135.3	151.3	155.9	169.2
Phosphorus	57.7	52.5	56.1	47.2	60.0	36.0	41.7	50.2	33.5
Potash	57.6	59.1	71.9	71.4	75.0	44.8	80.1	80.3	39.9
Total	224.3	225.7	263.6	248.0	290.0	216.1	273.0	286.4	242.6
Consumption (kg/Ha)	56.2	57.8	63.2	67.1	74.6	58.5	65.4	68.6	62.6

Total may not be equal due to rounding off to nearest zero.

Source: Draft Annual Plan 2014-15, Planning and Development Department and Directorate of Agriculture.

#### SOIL HEALTH MANAGEMENT:

The State Agriculture Department has taken up initiatives to preserve depletion of soil nutrients and sustain the Crop Production System. Use of Bio-fertilizers has given tremendous results in crop production, increase in productivity and maintenance of soil health by narrowing the gap between nutrient removals and supply along with additional applications of Micronutrient, lime, green manuring and vermi compost including FYM. Lately, the trend in the use of Bio-fertilizer has increased significantly due to motivation through extension machinery and initiation of demonstration programmes by the State Agriculture Department. Special thrust has been given for the use of Bio-fertilizer by initiating Programme 'Input support to the agriculturist having KCC' under State Priority Scheme, which has been implemented since 2006-07, with an aim to attract the farming communities to go for credit support in cultivating crops. The consumption of Bio-fertilizers in Assam can be known from Table-5.16 below:

TABLE – 5.16  
CONSUMPTION OF BIO-FERTILISER

ITEM	YEAR						
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Bio-Fertilizer (MT)	227	175	350	365	380	N.A.	N.A.
Micronutrient (MT)	101	142	500	548	697	N.A.	N.A.
Lime(Lakh MT)	0.3	1.4	0.05	0.2	0.3	N.A.	N.A.
Organic Manure (including FYM) (Lakh MT)	81.92	82.67	85.00	88.00	97.00	N.A.	N.A.

Note: N.A. - Not Available  
Source: Directorate of Agriculture, Assam.

The season-wise consumption of fertilizers in terms of nutrients for the last three years is shown in Table-5.17 below:

TABLE-5.17  
CONSUMPTION OF FERTILIZERS IN TERMS OF NUTRIENTS  
(In MT)

Nutrient	2013-14			2014-15			2015-16		
	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
N	68406	82845	151251	72466	83449	155915	75783.62	93433.53	169217.15
P	18464	23237	41701	22984	27200	50184	16464.46	17065.35	33530.01
K	33319	46759	80078	39878	40457	80335	19300.62	20583.76	39884.40
Total	120189	152841	273030	135328	151106	286434	111548.70	131082.86	242631.56

Source : Directorate of Agriculture, Assam.

In addition, there are 11 nos.(eleven) State owned Soil Testing Laboratories functioning in the State, of which 7 nos. are Static and 4 nos. are Mobile. One Soil Testing Laboratory is also functioning under Private Sector. All these Soil Testing Laboratories have total annual analyzing capacity of 90,000 soil samples.

TABLE- 5.18  
SOIL SAMPLE ANALYSED AND SOIL HEALTH CARD ISSUED (NOS)

Soil Testing Labs	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 (Up to 9.9.16)
State Owned	59296	60147	61608	61608	60229	67226	92872
Private	776	400	321	N.A.	N.A.	N.A.	N.A.
Total	60072	60547	61929	N.A.	N.A.	67226	92872

Note: N.A. – Not Available

Source: Draft Annual Plan, 2014-15, Planning and Development Department and Directorate of Agriculture.

#### INTEGRATED PEST MANAGEMENT (IPM):

For sustainable agricultural production the key component is Integrated Pest Management (IPM). Assam has a diverse eco-system and sub-tropical climate, the crop production is associated with loss of biotic stress problem which share 20-30 percent of the yield loss. Excessive and injudicious use of chemical pesticides in the field as well as horticultural crops result into development of pest resistance, pest resurgence, pest replacement and pesticides residue problem.

Intensification of agriculture with the introduction of HYV, Hybrid, STW, Mechanization and other advance inputs also enhance the pest population dynamics and pest status.

In order to facilitate the availability of the Bio-Control Agent (BCA) in the biological pest management intensive IPM (BIPM), the thrust has been given to increase production of the already established BCA and the newly introduced BCA in the State Bio-Control Laboratory (SBCL).

The State Agriculture Department is trying to popularize the use of bio-pesticides and other methods of IPM by organizing training demonstrations. As a result, the consumption of bio-pesticide is increasing in the State.

The trend of consumption of both chemical and bio-pesticides during the last nine years is evident from Table - 5.19.

TABLE– 5.19  
CONSUMPTION OF PESTICIDES

(Figure in MT)

Pesticide Consumption	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Chemical Pesticide	158.0	150.0	143.0	150.0	160.0	183.0	205.0	180.0	185.0
Bio-pesticide	6.7	18.0	19.0	24.0	87.0	143.0	180.0	135.0	150.0

Source: Directorate of Agriculture, Assam.

## SEED: DEVELOPMENT OF SEED SECTOR:

The most vital component for increasing production & productivity of crops is seed. Quality seed is the primary input for crop production. Certified Seed production is a process through which seeds are produced in conformity with the standard variety, characters by taking specific measure as required for seed production. In Assam, production of certified seed has been taken up in the Field Trial Stations (FTSs), in some of the State Govt. Seed Farms and Assam Seed Corporation's seed farms. But, there is a dearth of quality seeds in the State and so the Seed Replacement Rate (SRR) stands at a very low level. Moreover, the State has to depend on outside sources for quality seeds of some crops every year to meet the demand immediately after every natural calamity. To meet the growing demand and increase quality seed production, the Agricultural Department has taken the following steps:

- Expansion of Seed Village Programme;
- Production of certified seeds of Paddy, Pulse & Oilseeds in Seed Village in large scale;
- To focus on capacity building of Registered Seed Growers;
- Strengthen Seed Farms to facilitate production, processing & storage of seeds.

## SEED REPLACEMENT RATE (SRR):

Seed and its provision, is the most basic key input for any crop productivity and without which the impact of overall other inputs applied in crop production cannot be expected. The State Agriculture Department has continuously made efforts towards it, through its popularisation of HYV, SRR has been increased and is carried on to a great extent. Achievements of SRR of some of the important crops for last eight years are shown in Table-5.20 below:

TABLE– 5.20  
SEED REPLACEMENT RATE (SRR) IN ASSAM

(Figure in %)

Crops	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Paddy	23.0	33.0	50.0	46.8	47.9	31.1	32.77	34.53
Blackgram	7.0	64.4	48.0	79.7	25.8	40.5	44.66	64.1
Greengram	6.0	33.0	38.0	100.0	37.5	45.2	76.00	60.0
Lentil	7.0	50.6	34.0	26.2	100.0	54.1	30.11	30.0
Pea	37.0	88.0	37.0	40.5	59.7	46.7	-	-
Rape & Mustard	24.0	60.0	16.0	26.2	46.8	38.1	45.24	38.04
Sesamum	20.0	30.7	4.0	0.9	0.0	0.0	-	-
Jute	52.0	22.5	42.0	51.1	10.2	19.2	63.22	65.26

Source: Directorate of Agriculture, Assam

## SEED CERTIFICATION:

Assam State Seed Certification Agency (ASSCA) is the Nodal Agency, who has been entrusted with the important responsibility of Seeds Certification of namely Paddy, Mustard and Pulses as per feasibility in the State. For planting crops namely Coconuts, Litchi, and Guava etc are under consideration for the purpose of certification. Under ASSCA, there are 3 (three) nos. of notified Seed Testing Laboratories located at Guwahati, Jorhat and Silchar. The total annual testing capacity of these three notified laboratories is about 20,000 samples. Seed testing and certification guidelines are to be strictly followed for proper quality control and certification as per set norms. Table 5.21 below shows the performance of seed certification taken up in Assam, during the last eight years.

TABLE- 5.21  
STATUS OF SEED CERTIFICATION  
(Figure in Quintal)

Crop(Seeds)	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Paddy	20500	19750	18960	28686	18555	18555	15848	22454
Mustered	8470	3840	3840	7450	9210	11324	8456	Certification is going on
Blackgram	Nil	1250	1250	2800	700	1840	2098.5	1688
Potato	-	-	-	3412	11300	23350	9000	-

Source: Draft Annual Plan 2014-15, Planning and Development Department and Directorate of Agriculture.

## SYSTEM OF RICE INTENSIFICATION (SRI):

The annual growth of production of major crops mainly rice and food grains in the State is significantly increasing due to adoption of SRI system of Rice intensification and the use of Hybrid seeds. As compared to normal practices, adoption of SRI system enhances the productivity of Rice significantly and also facilitates use of low volume of seeds, fertilizers, water, low cost of production and further also shortens the crop duration period and thereby opens up and increases the scope of double cropping as added benefits. The status of Rice Intensification for the last seven years is shown below in Table - 5.22.

TABLE- 5.22  
STATUS OF SYSTEM OF RICE INTENSIFICATION

Year	Area under SRI (in Ha)	Average Yield under Normal Practice (Ton/Ha)	Average Yield under SRI (Ton/Ha)	Percentage of increase over normal practice
2008-09	882.20	2.65	5.08	219
2009-10	43836.00	5.80	5.85	209
2010-11	50438.00	2.65	5.65	217
2011-12	57900.00	2.88	5.70	205
2012-13	65150.00	2.90	6.14	212
2013-14	-	-	-	-
2014-15	79456.00 (RKUY) 11070.00 (BGRIE) 4080.00	3.28	6.58	100.00

**CROP DEVELOPMENT (MISSION DOUBLE CROPPING):**

Under double/multiple cropping, the net cropped area is about 48 percent or 13.49 lakh hectares. To attract farmers towards the practice of taking up double/multiple cropping, the State Government has taken up initiatives to drive massive cultivation of Summer Paddy, Rabi Pulses and Oilseeds, as per feasibility/potentiality under Mission Double Cropping with additional coverage of 1.00 lakh hectares, and areas under mono cropping with an allocation of Rs. 6200.00 lakh. Additional area of 3.0 lakhs hectares is proposed to be covered under double cropping to increase cropping intensity to 160.0 percent.

**FARM MECHANIZATION AND IRRIGATION:**

Farm mechanization though is a very important input for timely agricultural operation, is slow in Assam. The main problems in this regard which are also major constraints are highly fragmented and small land holdings, which stands as an hindrance in bringing the entire farming community under high volume of mechanization. Moreover, low Farm Power provision in the State also hampers the achievement of coveted schemes of double or multiple cropping. However, an effort to boost up farm mechanization is carried on in a systematic and schematic manner. The State Agriculture Department, has taken up initiatives to procure farm equipment like Tractors, Power Tillers and other farm machineries under various Externally Aided, Centrally Sponsored and State Plan Schemes for the benefit of farmers mainly for Small and Marginal farmers. According to the State Agriculture Department, the Farm power created in the State till the end of 2014-15 is 1.78 HP per hectare which was 1.52 HP per hectare till the end of 2012-13 and 1.02 HP per hectare till the end of 11<sup>TH</sup> Five Year Plan period in comparison to 2.05 HP per hectare at national level.

Various farm machineries and equipments during the period 2006-07 to 2014-15 is evident from the Table 5.23.

TABLE- 5.23  
STATUS OF FARM MECHANISATION

(Figure in Nos.)

Year	Tractors	Power Tillers	Power Pumps	Small Implements	Rotovators	Farm power available [HP per hectare]
2006-07	338	2112	3994	958	-	0.54
2007-08	855	4232	9960	850	-	0.60
2008-09	1719	861	18163	1527	158	0.60
2009-10	511	3782	30634	92492	59	0.69
2010-11	962	3136	85506	0	65	0.90
2011-12	824	5138	12852	-	335	1.02
2012-13	588	3339	24337	N.A.	93	1.52
2013-14	0	73	15000	N.A.	N.A.	N.A.
2014-15	460	1559	60656	N.A.	430	1.78

N.A. =Not Available

Source: Directorate of Agriculture, Assam.

**IRRIGATION:**

For the achievement of more agricultural growth in the State there is considerable potential by increasing cropping intensity, raising crop yield and diversifying into pulses and oilseeds through better irrigation facilities and looking into its provisions. Considering the uncertainties faced in the production of Kharif crops due to floods and high rainfall, the State Agriculture Department is giving more emphasis on Rabi crops by assigning top priority to develop assured irrigation facilities through installation of Pump

Sets (Shallow Tube Well & Low Lift Pump). Irrigation by way of Shallow Tube Well and Low Lift Pumps is considered to be the efficient method of water utilization for crop growth.

TABLE- 5.24  
IRRIGATION INFRASTRUCTURE CREATED BY THE  
AGRICULTURE DEPARTMENT

Component of irrigation	Nos. installed								
	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Shallow Tube Wells(Nos)	2812	8190	30080	53208	141452	25704	43938	30000	55590
Low Lift Pumps (Nos)	5176	11730	6246	8060	29560	0	4736	0	5066

Source: Directorate of Agriculture, Assam.

IRRIGATION POTENTIAL CREATED BY AGRICULTURE DEPARTMENT & UTILIZABLE IRRIGATION (As on 31<sup>st</sup> March, 2015)

Irrigation Potential Created	11.27 lakh hectares (40% of net cropped Area)
Area under utilizable assured irrigation	7.33 lakh hectare (26% of net Cropped Area)

At present, only 11.27 lakh hectares has been covered by Irrigation Potential created by the Agriculture Department i.e.; 40% percent of net cropped area has been covered. The area under utilizable assured irrigation is 7.33 lakh hectares i.e.; 26 percent of net cropped area.

To increase the irrigation command of additional assured irrigation area by 2.0 lakh hectares and to regain the loss of area coverage by deplorable condition of STWs installed prior to 2000, the scope/popularity towards use of assured irrigation in the field of Agriculture is felt one of the most prime needs of the department. Therefore, the department proposed to install 1.00 lakh STWs under RIDF Scheme of NABARD.

#### CROP INSURANCE

The state of Assam has been experiencing floods almost every year and about 4.75 lakh hectares of area in the State is chronically flood prone and about 0.94 lakh hectares area is draught prone. Therefore, the Crop Insurance is a very important area to look into to help farmers at the time when there is crop loss/crop damage due to recurring natural calamities, severe pest infestations and diseases in notified crops.

The Government of India has launched a Crop Insurance programme under the nomenclature "National Agricultural Insurance Scheme" (NAIS). All farmers who avail loans from financial institutions are covered under the scheme and it is optional for non-loanee farmers. Here 50 percent of the premium amount is contributed as subsidy to small and marginal farmers which will be shared equally by Government of India and State Government. This scheme is expected to be a critical instrument for development in the field of crop production by providing financial support to the farmers in the event of crop failure and help in maintaining flow of agricultural credit. This programme covers 8 (Eight) crops i.e. 3 crops in Kharif Season and 5 crops in Rabi season.

The Crops are:

Kharif Season : Autumn / Ahu Paddy, winter / Sali Paddy and Jute.

Rabi Season : Rape & Mustard, Wheat, Potato, Sugarcane and summer/Boro Paddy.



This scheme, under the Area Approach, not only facilitate insurance coverage to each of the notified crop damage within the defined area for widespread calamities but also on an individual basis for localized calamities such as hailstorm, landslide, cyclone and flood .

National Agriculture Insurance Scheme, unfortunately, has not been able to provide the desired solution to the risk in the agriculture sector in the State. Various reasons for the same are lack of awareness, low subsidy premiums (10 percent) for small and marginal farmers, delayed claim settlement, slow response of banks in issuance of Kissan Credit Cards etc., has in turn affected large number of farmers of the State from getting benefit from the NAIS. Moreover, some important horticulture crops like ginger etc. are not covered under the Scheme.

TABLE-5.25  
AGRICULTURE CREDIT  
YEARWISE KISAN CREDIT CARDS (KCC) ISSUED & FINANCING

Year	No. of KCCs issued	Credit limit Sanctioned (Rs. In Crore)
2001-02	8,041	8.98
2002-03	43,977	49.11
2003-04	51,815	40.02
2004-05	88,732	88.02
2005-06	63,853	79.05
2006-07	50,130	60.75
2007-08	44,621	69.19
2008-09	26,881	51.89
2009-10	1,49,822	42.98
2010-11	1,21,584	197.59
2011-12	3,78,101	131.54
2012-13	2,65,797	932.20
2013-14	3,08,306	15.06
2014-15	2,81,889	1331.36
2015-16 (up to December, 2015)	1,31,907	2663.00
2015-16 (Up to December, 2016)	2,17,460	1084.096
Total :	2222916	6786.746

Source : Directorate of Agriculture

#### NATIONAL AGRICULTURAL INSURANCE SCHEME (NAIS):

- National Agricultural Scheme (NAIS) has been implemented in the State since Rabi 1999-2000
- Cropped covered : Autumn Rice, Winter Rice, Summer (Boro) Rice, Wheat, Jute, Rape & Mustard, Potato and Sugarcane
- Calculation of claim under NAIS :

$$\text{Claim} = \frac{\text{Shortfall in yield}}{\text{Threshold yield}} \times \text{Sum Insured for the farmers in the concerned notified area}$$

- i) Shortfall in Yield = Threshold yield – Actual yield for the Defined Area: Threshold yield = 3 years of Average yield for paddy and 5 years of Average yield for other crops.
- ii) As per Scheme, the Agriculture Insurance Co. of India Ltd. (AICL) pays 100% amount of premium collected towards claim if any, and the remaining portion of the claim is equally shared by Govt. of India and Govt. of Assam.
- iii) The scheme provides 10% subsidy to small & marginal farmers. Total premium subsidy is also shared equally between Govt. of India and Govt. of Assam.

TABLE- 5.26

## CROP SEASON-WISE PERFORMANCE OF NATIONAL AGRICULTURAL INSURANCE SCHEME (NAIS) IN ASSAM

Season & Year	Area covered (Ha)	Sum Insured (Rs in Crore)	Premium Received (Rs. In crore)	Total Claims (Rs. In crore)	Farmers covered (No.)	Farmers benefited (No.)
Kharif 2006	8304.30	10.838	0.173	0.919	8800	3882
Rabi 2006-07	4757.90	9.115	0.246	0.077	5818	491
Kharif 2007	7541.80	11.721	0.205	0.067	8938	2181
Rabi 2007-08	5854.91	13.598	0.504	0.045	10780	853
Kharif 2008	7332.90	8.265	0.172	0.054	7458	198
Rabi 2008-09	20126.26	41.715	1.244	0.669	28359	3592
Kharif 2009	24099.81	48.018	0.978	0.687	24619	3727
Rabi 2009-10	19003.26	57.200	1.755	3.292	27288	7512
Kharif 2010	17277.05	4.655	0.987	0.597	21433	2598
Rabi 2010-11	10464.97	31.033	1.293	0.163	14675	533
Kharif 2011	18281.07	62.040	1.551	2.022	23770	5457
Rabi 2011-12	20317.33	73.911	2.734	1.450	32547	15405
Kharif 2013	24195.66	89.454	2.237	0.137	32053	1654
Rabi 2012-13	13925.24	63.917	2.088	0.983	24012	1954
Kharif 2013	21410.64	96.459	2.495	0.361	30678	561
Rabi 2013-14	23537.00	73.630	2.125	0.924	21943	1770
Kharif 2014	2567.67	10.99	2.748	0.281	2895	62
Rabi 2014-15	15379.43	87.68	2.434	2.490	23643	598
Kharif 2015	2227.60	9.811	0.245	-	2312	61
Rabi 2015-16	The scheme has been withdrawn					
Kharif 2016						

Source: Directorate of Agriculture, Assam.

## MODIFIED NATIONAL AGRICULTURAL INSURANCE SCHEME (MNAIS):

- The scheme is being implemented on pilot basis in 50 districts in the country. NAIS is withdrawn from those districts in which MNAIS will be implemented.
- Unit of insurance for major crops is Village / Village Panchayat.
- Scheme is compulsory for loanee farmers & voluntary for non-loanee farmers. Uniform seasonality norms will be applicable for both loanee & non-loanee farmers.
- Sum insured can be opted up to 150% of the value of average yield. Premium subsidy is available up to the value of threshold yield / loan amount only.
- Entire claim will be borne by the implementing agency. The scheme provides account payment up to 25% of likely claim for immediate relief to the farmers.
- Minimum indemnity level will be 70% against 60% in case of NAIS.
- Calculation of threshold yield: Average yield of last 7 years excluding up to 2 years of declared natural calamity.
- The scheme is implemented in two districts of Assam viz., Kamrup and Dhubri from Rabi, 2010-11.

The summary of progress of implementation of MNAIS in the above mentioned districts presented in the Table - 5.27 below:

TABLE- 5.27  
STATUS OF MNAIS (Kamrup & Dhubri district)

Season & Year	Area covered (hectare)	Sum insured (Rs. In crore)	Premium received (Rs. In crore)	Total Claims (Rs. In crore)	Farmers covered (No.)	Farmers benefited (No.)
Rabi, 2010-11	1564.19	4.98	0.12	0.039	2097	-
Kharif, 2011	3192.02	13.89	0.80	0.193	4641	711
Rabi, 2011-12	2670.87	8.75	0.32	0.060	3942	299
Kharif, 2012	3375.95	9.038	0.326	0.598	2722	388
Rabi, 2012-13	1849.32	12.284	0.298	0.096	2229	216
Kharif, 2013	2628.82	13.443	0.424	Not yet settled	3604	Not yet settled
Rabi, 2013-14	486.33	2.911	0.126	Not yet settled	828	Not yet settled
Total :	15767.50	65.296	2.414	0.986	20063	1614

Source: Directorate of Agriculture, Assam.

#### WEATHER BASED CROP INSURANCE SCHEME (WBCIS):

- With the objective to overcome the shortcoming regarding delay in settlement of claims etc. under NAIS, a Pilot Weather Based Crop Insurance Scheme (WBCIS) was introduced for implementation in 20 States on pilot basis. WBCIS has been implemented in Assam since Rabi, 2013-14.
- WBCIS is intended to provide insurance protection to the farmers against adverse weather incidence. Such as deficit and excess rainfall, high or low temperature, humidity etc. which are deemed to impact adversely the crop production
- WBCIS is based on actuarial rates of premium but to make the scheme attractive, premium actually charged from farmers have been restricted to at par with NAIS. The difference between actuarial rates and premium actually paid by farmers are borne by the Government (both Centre and State concerned on 50:50 basis). Besides. A cap on premium payable by farmers for annual commercial/horticultural crops has been provided.
- The scheme is available to all the farmers- loanee and non-loanee-irrespective of their size of holding. As under NAIS, the loanee farmers area covered on compulsory basis in a notified area for notified crops whereas for non-loanee farmers scheme is voluntary.
- Further, to provide competitive service private insurance companies i.e. ICICI-Lombard. IFFCO-TOKIO. M.S Cholamandalam and HDFC-ERGO General Insurance Companies have been involved for implementation besides Agriculture Insurance Company of India (AIC).

TABLE-5.28  
STATUS OF WEATHER BASED CROP INSURANCE SCHEME (WBCIS)

Season & Year	Area covered (Ha.)	Sum Insured (Rs. In crore)	Premium Received (Rs. In crore)	Total Claims (Rs. In crore)	Farmers covered (No.)	Farmers benefited (No.)
Rabi 2013-14	924.230	5.825	0.495	Not yet settled	1844	Not yet settled
Kharif 2014	11480.45	69.854	7.023	11.963	21710	19471
Rabi 2014-15	853.350	4.282	0.514	0.291	1593	771
Kharif 2015	17681.425	107.536	10.758	NA	29149	NA
Rabi 2015-16	8581.94	51.892	5.310	-	13551	-
Total:	39521.395	239.389	24.100	12.254	66003	20242

Source: Directorate of Agriculture, Assam.

## PROCUREMENT OF PADDY AS A MEASURE OF PRICE SUPPORT:

Assam has been able to become marginally surplus in Rice production for remarkable improvements achieved in productivity through better input management practices and adoption of improved technology. But the problem of disposal of produce by the farmers at un-remunerative prices discourages them considerably in the adopting improved measures that can result in more yields. With the consideration of the interest of the farmers the State Government has engaged Assam State Agricultural Marketing Board (ASAMB) for procurement of paddy at Minimum Support Price apart from procurement to be done by FCI. Table-5.29 shows MSP procurement for the last 8 years from 2008-09 to 2015-16.

TABLE-5.29  
MSP & PROCUREMENT OF  
MINIMUM SUPPORT PRICE OF AGRICULTURAL PRODUCE (Rs. Per quintal)

Commodity	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Paddy (Common)	900.00	1000.00	1000.00	1080.00	1250.00	1310.00	1360.00	1410.00
Paddy (Grade-A)	930.00	1030.00	1030.00	1110.00	1280.00	1345.00	1400.00	1450.00
Wheat	1080.00	1100.00	1320.00	1285.00	1350.00	1400.00	1450.00	1525.00
Maize	840.00	840.00	880.00	980.00	1175.00	1310.00	1310.00	1325.00
Arahar	2000.00	2300.00	3000.00	3200.00	3580.00	4300.00	4350.00	4425.00#
Greengram	2520.00	2760.00	3170.00	3500.00	4400.00	4500.00	4600.00	4650.00#
Blackgram	2520.00	2520.00	2900.00	3300.00	4300.00	4300.00	4350.00	4425.00#
Lentil	1870.00	1870.00	2250.00	2800.00	2900.00	2950.00	3075.00	3325.00*
Gram	1730.00	1760.00	2100.00	2800.00	3000.00	3100.00	3175.00	3425.00*
Rape & Mustard	1830.00	1830.00	1850.00	2500.00	3000.00	3050.00	3100.00	3350.00
Sesamum	2750.00	2580.00	2900.00	3400.00	4200.00	4500.00	4600.00	4700.00
Jute (TD-5)	1250.00	1375.00	1575.00	1675.00	2200.00	2300.00	2400.00	2700.00
Sugarcane	81.18	129.84	139.13	145.00	170.00	210.00	220.00	230.00

# - Bonus of Rs. 200.00 per quintal is payable over and above the Minimum Support Price.

\*-Bonus of Rs. 75.00 per quintal is payable over and above the Minimum Support Price.

TABLE-5.30  
STATUS OF PROCUREMENT OF PADDY IN ASSAM AT MINIMUM SUPPORT PRICE

Procurement Agency	Year-wise procurement of Paddy under CMR (MT)							
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
FCI	4103.00	12146.00	23282.00	34073.00	20104.00	45.00	6461.00	53087 (till 14.9.16)
ASAMB	Nil	Nil	Nil	Nil	7885.00	236.00	7577.15	9090.319
Total	4103.00	12145.00	23282.00	34073.00	27989.00	281.00	14038.15	62177.349

TABLE-5.31

STATUS OF PROCUREMENT OF JUTE IN ASSAM BY JUTE CORPORATION OF INDIA (JCI)  
AT MINIMUM SUPPORT PRICE

Region	Districts covered	2013-14		2014-15		2015-16	
		Quantity procured (Qtl.)	Value of produce (In Rs.)	Quantity procured (Qtl.)	Value of produce (In Rs.)	Quantity procured (Qtl.)	Value of produce (In Rs.)
Guwahati	Darrang, Kamrup, Goalpara, Barpeta	40263.92	87438626.00	290.06	649374	998.81	4933768
Nagaon	Nagaon, Morigaon	73343.41	158159084.00	5400.56	-	4942.53	-
Dhubri	Dhubri, Bongaigaon	5074.07	10957844.00	Nil	Nil	Nil	Nil
Total	8 (eight) districts	1,18,681.40	25,65,55,554.00	5694.62	649374	5941.34	4933768

## AGRICULTURE MARKETING AND STORAGE:

Marketing of Agriculture produces in the State is a serious problem for the farming community. Lack of organized marketing facility, lack of storage infrastructure near the field, poverty and need of money after harvest for repayment of agricultural debt forced the farmers to dispose off their hard earned produces at the earliest and that too at low prices. However, there is good potential for development of Agricultural Marketing Infrastructure and Storage facilities with Private Sector Participation. Keeping in view of the interest of farmers the State govt. has encouraged procurement of Paddy at Minimum support Price by engaging the Assam State Agriculture Marketing Board in addition to the procurement done by the FCI.

At present, there are 24 Regulated Market Committees, 20 Primary Market Yards, 143 Trader's Shop, 532 Auction Platform/retailers Shed, 806 Rural Primary Markets, 405 Wholesale Markets, One Organic Market, 18 Packaging Room, 42 Drying Platform and 15 Processing units in the State. The Regulated Markets have been covered under AGMARKNET. As regards to cold storage infrastructure in the State, there are 26 numbers of cold storages (Govt. Sector-3, private sector-23) are available in the State at present.

To assist the farmers for carrying vegetables to the distant market, the Assam State Agriculture Marketing Board provided transport subsidy to 980 farmers. The State Government proposed to construct three-storied Market at Pamohi (Guwahati), Growers Consumers Market Complex at Ulubari (Guwahati) and establish 11 nos. of Sale Counters for marketing of farm products. For transportation of agricultural produces from field to market as many as 1102 numbers of

Organisations	Storage Capacity (in MT)
FCI	296584
Central Warehousing Corporation	73400
State Warehousing Corporation	252622
ASAMB	46610
Total	469216

Source: Directorate of Agriculture, Assam

Market Infrastructure	Number
Cold Storage	4
Wholesale Market Developed (Out of 405 nos.)	3
Rural Primary Market (Out of 735 nos)	43
Organic Market	1
Sale Counter	11
Seed Storage Godown	-
Drying Platform	33
Three/Four Wheel Auto Van	-

Source: Directorate of Agriculture, Assam

three/four wheelers are provided during the year 2012-13. During the year 2013-14, the State Agriculture Department has planned to provide 2372 numbers of three/four wheel Auto Vans, 35 numbers of refrigerated vans and develop 15 numbers of Rural Hats to the farmers to facilitate marketing of farm produce. The Department has also taken initiative for establishment of market infrastructure, storage facility and to eradicate the transportation bottlenecks by distributing 224 auto vans, 610 mini trucks and providing transport for carrying the produces from remote areas to different markets. The rural connectivity scheme implemented under PMGSY is a major step towards benefit of farmers to take out their agricultural products to nearest urban markets.

Some of the major steps taken up to boost up marketing support and for post harvest management:

- Farming community has been mobilized to form 25 numbers of Farmer Producer Organizations (FPO) for securing better produce price;
- Rural farm women have been empowered by training and providing mini processing units of Pulses and oil seeds from which they can earn from their homes;
- Tie up has been made for export of Red Bao Paddy to USA and the process has started in 2012-13 on regular basis;
- Export of Pineapple cubes, orange, ginger, dendrobium orchids to other States and Countries have already been started;
- 0.56 lakh SHGs assisted to take up Agri-Horti activities including post harvest management; etc.

#### NATIONAL MISSION ON OILSEEDS & OIL PALM:

The State is highly deficient in Oil seed production. To achieve targeted area coverage of 4.65 lakh hectares and 3.44 lakh MT production during 2014-15 to drive the State towards self sufficiency at the end of 12<sup>TH</sup> Five Year Plan an amount of Rs.5000.00 lakh has been earmarked for launching Mini-Mission-I-Development of Cultivation of vegetable oilseeds crop, Mini-Mission-II-Development of Cultivation of Oil Palm and Mini-Mission-III-Development of Cultivation of Tree Borne Oil seeds.

#### ESTABLISHMENT OF MINI OIL MILL WITH PACKAGING UNIT:

For employment generation from value added products of oilseeds and to facilitate the farming community to assure supply of pure cooking oil locally with maximum return from oilseeds cultivation. The State Agriculture Department proposed to establish 800 mini oil mills with packaging unit involving an amount of Rs.2000.00 lakh. The Scheme will be envisaged for marketing linkage of oil produced involving ASAMB.

#### WOMEN WELFARE SCHEME AS A GENDER RESPONSIVE BUDGET:

Rural women are considered as the most productive workforce in all aspects of cultivation/crop production and processing to marketing. Development of farming women has been given special thrust by the State Govt. for which the scheme has been formulated which will cover 500 women. 200 spice and pulses grinding mills, 200 numbers of power weeder and 50 numbers of paddy transplanter will be provided to the women SHGs for their economic upliftment during the year 2014-15 with special reference to Chief Minister's Vision of Women & Children of 2016.

**BRING GREEN REVOLUTION TO EASTERN INDIA INCLUDING ASSAM:**

Central and State Governments have chalked out a strategy to achieve the planned growth in agriculture sector particularly with a view to achieving self-sufficiency in food production to provide food security. Several interventions with emphasis such as Bringing Green Revolution to Eastern India (BGREI), double cropping, supply of improved seeds, fertilizer and technology equipment etc. have been taken. Under this new initiative BGREI, the Government of India covers the states namely Assam, Bihar, Chhatisgarh, Jharkhand, Odisha, Eastern U.P. and West Bengal because of having excellent potential for increasing food grain production and productivity but is mired by low credit availability, poor extension facilities and infrastructure bottlenecks etc. To remove these impediments on a priority basis and transform these States into the best performing States steps have been taken by putting better Seed Replacement Ratio, adequate and timely availability of critical inputs, improving infrastructure facilities and other required programmatic interventions including bank credit etc.

In Assam, the scheme was launched in 2010-11 as a sub-scheme of RKVY to overcome the constraints limiting the productivity of rice based cropping system in the state by adopting short term activities related to Transfer of Technology through Rice demonstration in farmers field along with activities pertaining to assets building like creation of irrigation facilities to maximize agricultural production on sustainable basis. The scheme targets the main food grain crop of the State, i.e. Rice.

After 3 years (2010-11 to 2012-13) of implementation of the scheme the productivity and production of Rice has been increased by 21 percent and 19 percent respectively.

For successful implementation of the Scheme, [though the scheme is a sub-scheme of RKVY], separate fund has been provided by the Govt. of India. During the period 2010-11 to 30<sup>th</sup> September, 2013, the State has received an amount of Rs.19501.00 lakh from the Govt. of India.

**PRADHAN MATRI CROP INSURANCE SCHEME:****(PRIME MANTRI FASAL BIMA YOJANA):**

Every single farmer of country is the root of our economy. We rely heavily on the work done by our farmers. The crops cultivated by farmers are distributed all over the country and in some cases to other countries too. Although farmers do a great deal of work for us, their very own work have no security. Bad weather can lead to damage of their crops. It is a 100% loss case for the farmers who rely only on farming. Many poor farmers across the country borrow money for farming and in the scenario when crops are damaged, they find themselves in middle of nowhere. This leads to acts like Suicide which is unacceptable. We can't let that happen. So, the need of any scheme that could help the farmers was always there. Recently, Pradhan mantri Narendra modi announced the scheme named as "Pradhan Mantri Fasal Bima Yojana". If implemented carefully, this scheme alone can help the farmers to great extent. Our farmers brothers are now no longer alone. If the crop damages due to any reason, the Government will come forward. With the Launch of this crop insurance scheme, there will be some RELIEF FOR OUR FARMER BROTHERS.

## HIGHLIGHTS OF PMFBY:

- There will be a uniform premium of only 2% to be paid by farmers for all Kharif crops and 1.5% for all Rabi crops. In case of annual commercial and horticultural crops, the premium to be paid will be only 5%.
- The premium rates to be paid by farmers are very low and balance premium will be paid by the Government to provide full insured amount to the farmers against crop loss in any natural calamities.
- There is no upper limit on Government subsidy. Even if balance premium is 90%, it will be borne by the Government.
- Earlier, there was a provision of capping the premium rate which is low claims being paid to farmers. Now this is removed and farmers will get claim against full sum insured without any reduction.
- The use of technology will be encouraged to a great extent. Smart phones, Remote sensing drone and GPS technologies will be used to capture and upload data of crop cutting to reduce the delays in the claim payment.
- The insurance plan will be handled under a single insurance company, Agriculture Insurance Company of India (AIC).
- PMFBY is a replacement scheme of National Agriculture Insurance Scheme (NAIS) and Modified National Agriculture Insurance Scheme (MNAIS) and hence exempted from the service tax.

## OBJECTIVES OF THE SCHEME:

- To provide insurance coverage and financial support to the farmers in the event of failure of any of the notified crop as a result of natural calamities, pests & diseases.
- To stabilise the income of farmers to ensure their continuous process in farming.
- To encourage farmers to adopt innovative and modern agricultural practices.
- To ensure flow of credit to the agriculture sector.

## ASSAM SITUATION ABOUT PMFBY:

Guwahati, Oct 31 (PTI) The Assam government will roll out the Pradhan Mantri Fasal Bima Yojana in the state from this season with an aim to benefit over 5.5 lakh farmers in 2016-17.

"Assam is all set to implement the Pradhan Mantri Fasal Bima Yojana from Rabi season this year. Our target for the season in 2016-17 under PMFBY is 5,53,000 farmers.

During the current season, a wide range of crops, including summer paddy, wheat, potato, sugarcane, rapeseed and mustard will be covered.

Under the PMFBY scheme, paddy, jute, black gram and green gram will be covered during Kharif next year.

To improve yield data quality and timeliness, smart phones will be used.

"For effective rolling out of the scheme, training of Agriculture Department officials and publicity-cum-awareness programmes among the farmers will be organised in coming days.

Contingency fund proposal/supplementary demand proposal has already been submitted to the State Government for implementation of the scheme.



## APPENDIX - 5.1

## AREA, PRODUCTION AND AVERAGE YIELD UNDER FOOD AND NON- FOOD CROPS COVERED BY CROP FORECAST IN ASSAM, 2015-16 (PROVISIONAL)

Sl. No.	Commodities	Area (In Hect.)	Production (In Tonnes)	Average Yield (In Kg/Hect)
1	Autumn Rice	191322	256729	1364
2	Winter Rice	1888683	3727039	2003
3	Summer Rice	404982	1141336	2818
	Total Rice	2484987	5125104	2089
4	Maize	28420	87175	3067
5	Wheat	20975	34263	1633
6	Other Cereals and Small Millets	6602	4447	674
	Total Cereals	2540984	5250989	2067
7	Gram	2193	1544	704
8	Tur (Arahar)	6366	5600	879
9	Rabi Pulses	133611	100427	752
	Total Pulses	142170	107571	757
	Total Food Grains	2683154	5358560	1997
10	Sesamum	11770	7999	680
11	Rape and Mustard	285677	199501	698
12	Linseed	5272	3338	633
13	Castor	881	407	457
14	Nizer	6534	3949	604
15	*Coconut (2012-13, 2013-14 & 2014-15)	20340	137736	52
	Total Oilseeds	330474	215194	664
16	Cotton (b)	921	437	80
17	Jute (c)	72128	865805	2161
18	Mesta	4304	28259	1182
	Total Fibres	77353	894501	2081
19	Banana	51103	882706	17273
20	Pineapple	16195	285165	17608
21	Orange	15649	210141	13428
22	Papaya	7219	145476	20151
23	Potato	103812	694002	6685
24	Sweet Potato	5436	29339	5398
25	Topioca	3177	29139	9173
26	Onion	8503	80339	9448
	Total Fruits and Vegetables	211094	2356307	-
27	Arecanut (2012-13, 2013-14 & 2014-15)	66739	73870	143
28	Chillies	19929	17736	890
29	Turmeric	16272	16184	995
30	Sugarcane	29460	1038329	35246
31	Tobacco	243	125	496
	Total Misc. Crops	132643	1146244	-
	All Crops	3434718		

Note:

- (a) In terms of million nuts      (b) Bales of each 170 Kgs      (c) Bales of each 180 Kgs.  
(d) In terms of dry nuts      (e) Nuts per bearing tree      (f) \* in total Oil seeds coconut is excluded

Source: Directorate of Economics and Statistics, Assam

## APPENDIX - 5.2

## INDEX NUMBERS OF AREA, PRODUCTION AND PRODUCTIVITY FOR FOOD AND NON-FOOD CROPS IN ASSAM, 2015-16 (PROVISIONAL)

(Base Triennium ending 2007-08=100)

Sl. No.	Commodities	Area Index	Production Index	Productivity Index
1	Autumn Rice	54.03	73.77	136.55
2	Winter Rice	114.67	166.48	145.17
3	Summer Rice	125.42	155.95	124.34
4	Total Rice	110.68	154.43	139.53
5	Maize	154.78	654.61	422.94
6	Wheat	37.41	48.40	129.37
7	Other Cereals and Small Millets	95.14	126.30	132.75
8	Total Cereals	105.66	154.13	145.88
9	Gram	117.21	163.39	139.40
10	Tur	108.03	132.39	122.55
11	Other Rabi Pulses	126.89	179.24	141.26
12	Total Pulses	125.35	175.57	140.07
13	Total Food Grains	105.99	154.54	145.80
14	Linseed	69.08	85.90	124.35
15	Castor	73.85	79.96	108.28
16	Sesamum	92.72	110.51	119.19
17	Rape & Mustard	121.67	162.33	133.42
18	Coconut	108.12	93.65	86.61
19	Nizer	75.74	89.34	117.96
20	Total Oilseeds	112.46	123.44	109.76
21	Jute	120.53	131.82	109.36
22	Cotton	67.77	68.82	101.55
23	Mesta	81.93	105.07	128.23
24	Total Fibres	118.97	130.71	109.87
25	Plantation Crop (TEA)	98.47	102.79	104.39
26	Chillies	123.77	175.01	141.40
27	Turmeric	129.87	187.55	144.41
28	Arecanut	100.76	130.36	129.38
29	Total Condiments & Spices	107.17	142.88	133.32
30	Potato	138.05	133.25	96.52
31	Banana	116.15	145.48	125.26
32	Total Fruits and Vegetables	126.26	139.83	110.75
33	Sugarcane	114.48	105.98	92.57
34	Tobacco	48.50	47.17	97.25
35	Total Misc. Crops	114.05	105.60	92.59
36	Total Non-Food Crops	118.28	127.98	108.20
37	All Commodities	108.51	142.72	131.52

1. The Agricultural Indices is constructed only on the basis of crops covered by the Crop Forecast.
2. The Area and Production of Arecanut and Coconut are final estimates for the year 2014-15.

Source: Directorate of Economics and Statistics, Assam

## CHAPTER – VI

## IRRIGATION

Irrigation is essential for sustainable development in agriculture and agriculture plays an important role in the economy of Assam. Assam is predominantly rural in nature and the economy of Assam is also primarily based on rural life with 70% of its population directly dependent on agriculture as a source of livelihood. Out of the total geographical area of 78.44 lakh hectare the gross cropped area of the State is 40.76 lakh hectare [2012-13] and the net area sown is 28.08 lakh hectare. The area sown more than once is 12.67 lakh hectare.

In order to cope up with the growing need of agricultural production due to the population explosion and ensure food security to all by boosting up production, modernization of agriculture sector has been felt necessary. For this purpose availability of assured irrigation facility is undoubtedly the most important pre-requisite for sustained development in agriculture sector as water is essential for proper growth of crops. In spite of the rich resources of water in the State, irrigation has become highly essential because of adverse and unpredictable water condition experienced by the State. Moreover, out of the total quantity of water required for the growth of crops, some are met with natural precipitation and some are to be provided artificially. Irrigation is the process of providing artificial water to the crops for their full growth.

Out of the total gross cropped area of 40.76 lakh [2012-13] hectare the ultimate irrigation potential of the State is estimated at 27 lakh hectare which constitutes 66.24 % of the Gross Cropped Area. It is planned to irrigate 17 lakh hectare through Minor Irrigation Schemes and 10 lakh hectare through Major & Medium Irrigation Projects. Further, it is planned to irrigate 10 lakh hectare through Minor Irrigation Schemes taken up on surface water resources and the rest 7 lakh hectare through Minor Irrigation Schemes taken up on ground water resources. There are three types of Irrigation Schemes practised in Assam. These are -

1. Surface Flow Irrigation Scheme: Constructing diversion weir across the river to convey water through canal system by surface gravity flow. This type of Schemes consists of Major, Medium and Minor Irrigation Schemes.
2. Surface Lift Irrigation Scheme: Lifting of water by pump from river, lake or pond etc. and water is conveyed through canal system.
3. Ground Water Lift Irrigation Schemes: Lifting of ground water by installing Deep Tubewells or Shallow Tubewells and drawing water to the crop field through canal or through over ground flow or underground network of pipe.

The development programmes for improvement of irrigation facility in Assam taken up under two broad heads, viz., Minor Irrigation and Major & Medium Irrigation. While the Irrigation Schemes are classified as Major, Medium and Minor, they are categorized as Surface Flow, Surface Lift (for Major / Medium and Minor) and Ground Water Lift (for Minor only). Three Departments, viz. Irrigation, Agriculture and Panchayat and Rural Development are associated with development of irrigation facilities in the State. The State Irrigation Department, being the Nodal Department for development of irrigation in the State, executes and maintains Major, Medium and Minor Irrigation Schemes, the irrigation works of the other two departments are confined to minor irrigation schemes

like Shallow Tube Wells, Low Lift Points and Temporary Minor Irrigation Schemes only. The state Agriculture Department and Panchayat & Rural Development Department execute the Minor Irrigation schemes (shallow Tube wells, Low Lift Points and Temporary small diversions), the Irrigation Department alone executes and maintains Major, Medium and Minor Irrigation Schemes both on surface water and ground water sources.

Out of the Gross Cropped Area of 40.76 lakh hectares of the State, the Irrigation Department alone created irrigation potential of 9.32 (appox) lakh hectares up to March, 2016 by operating both completed and ongoing irrigation schemes of which 2.78 lakh hectares through both Major and Medium Irrigation Projects and the rest 6.53 lakh hectares through Minor Irrigation Schemes. Out of the 6.53 lakh hectares of created potential under Minor Irrigation Sector, a potential of 5.04 lakh hectares was created through the Govt. Minor Irrigation Schemes executed by the State Irrigation Department and the rest 1.49 lakh hectares through Shallow Tube Wells (STWs) and Low Lift points (LLPs) installed by the Assam State Minor Irrigation Development Corporation (ASMIDC) Limited. It is pertinent to mention that ASMIDC Ltd. was created in 1980 and its field work was started from 2081-82. As many as 35571 shallow tube wells and 14164 Low Lift Points (total being 49735 Nos.) were installed creating an irrigation potential of 149205 hectares in the plain districts of Assam except in Barak Valley. But its field works have been suspended since 1992-93 (April,1992) Even though the STWs and LLPs installed through ASMIDC Ltd. contributed a lot towards creating irrigation potential of 149205 hectares. The position of creation of irrigation potential under different sectors is presented in Table-6.1

TABLE – 6.1  
IRRIGATION POTENTIAL CREATED (AIA) UPTO MARCH, 2016

(In hectares)

Department/Agency	Major & Medium Irrigation Sector	Minor Irrigation Sector	Total
Irrigation Department	278783	503862	782645
ASMIDC Ltd (now merged with Irrigation, Deptt.)	NIL	149205	149205
Total	278783	653067	931850

Source: Chief Engineer, Irrigation Department, Assam.

The State Agriculture Department also has created a huge potential through the private Shallow Tubewells and Low Lift Points. The creation of irrigation potential through those private STWs and LLPs under Minor Irrigation sector during the last three years are may evident from the Table-6.2

TABLE-6.2

Potential/Area in hectare

Year	Irrigation potential created during the year	Irrigation potential created up to the year
2013-14	54822	771778
2014-15	39738	811516
2015-16	6000	817516

Source: Chief Engineer, Irrigation Department, Assam

However, the sources of Agriculture Department, Assam states that considering 10 years running life of STWs and LLPs the operational STW/ LLP will be less and the irrigation potential at present (up to March, 2016) is 746632 hectare.

#### CREATION OF IRRIGATED AREA AND UTILISATION OF POTENTIAL:

It is worth mentioning that no works of Irrigation Schemes could be successfully completed under normal State Plan due to low allocation of fund during VIII<sup>th</sup> to IX<sup>th</sup> Plan period. However since 1996-97 Central Assistances have been obtained under Accelerated Irrigation Benefit Programme (AIBP) in respect of Major and Medium Irrigation Sector. Since 2000-01 Central Assistances also provided for Minor Irrigation Sector also. Such assistances were also received from other programmes like Non Lapsable Central Pool of Resources (NLCPR), Assam Rural Infrastructure for Agricultural Services Programme (ARIASP) funded by the World Bank and National Bank for Agriculture and Rural Development (NABARD) under RIDF-X and RIDF-XI. With the above sources of funding the position of creation of irrigation potential has been improved in the State to certain extent. The year wise irrigation potential created during the last seven years is as follows.

TABLE – 6.3  
IRRIGATION POTENTIAL CREATED THROUGH GOVT. IRRIGATION  
SCHEMES 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.

#### IRRIGATION INFRASTRUCTURE:

Irrigation Department has executed a total of 3010 Irrigation Schemes of which 20 numbers are Major & Medium Irrigation Projects and 2990 numbers are Minor Irrigation Schemes. The Schemes are of various categories and are in different stages of construction. The category-wise and status-wise number of Government Irrigation Schemes as on 31<sup>st</sup> March, 2016 is as follows:

Status of Irrigation Schemes	Category	Number of Government Irrigation Schemes up to 31/03/2016		
		Major & Medium	Minor	Total
Completed	Surface Flow Irrigation Scheme	12	723	735
	Surface Lift Irrigation Scheme	3	402	405
	Deep Tubewell Scheme	NIL	326	326
	Shallow Tubewell Scheme	NIL	141	141
	Total : :	15	1592	1607
Ongoing	Surface Flow Irrigation Scheme	4	707	711
	Surface Lift Irrigation Scheme	1	176	177
	Deep Tubewell Scheme	NIL	465	465
	Shallow Tubewell Scheme	NIL	50	50
	Total : :	5	1398	1403
Grand Total : (Assam)		20	2990	3010

It can be stated here that the State Agriculture Department has installed 408249 Shallow Tubewells and 48374 Low lift Points up to 31/03/2016 and contributed to the irrigation system in the State.

PROGRAM UPTO MARCH 2015:

a) Major and Medium Irrigation Sector

At present there are 4(four) AIBP funded ongoing Major/Medium Irrigation Projects (Dhansiri I/P, Champamati I/P, Borolia I/P and Buridehing I/P) and all are in different stages of progress.

Reconstruction of flood damaged Bordikorai Irrigation Project (Major) in Sonitpur District has been taken up for Rs. 47.22 Crore under One Time ACA to revive lost potential of 34000 hectares. Till March 2013 revival of 30,300 Hectares covering 93 villages (out of the total 130 villages) within its command has been completed.

Under Assam Bikash Yojana, revival/ improvement work of Rupahi Irrigation Project (Medium) was taken up with the estimated amount of Rs. 2.47 Crore to restore lost potential of 5668 Hectares. The project is in progress.

In addition to the above, modernization of Sukla Irrigation Project (Major) in Baksa District has been completed with NABARD (RIDF-XI) and BTC fund and revived lost potential of 27400 hectares.

The State Irrigation Department has planned to complete all the ongoing projects within the 12th Five Year Plan period. In addition, one Major Irrigation Project viz., Puthimari Irrigation Project at an estimated potential of 12280 hectare and 3 medium Irrigation Projects –Burisuti Medium Irrigation Project, Dikhow Medium Irrigation project and Buroi Medium Irrigation Project having potential of 6500 hectares, 6000 hectares and 5000 hectares respectively have been proposed in the 12<sup>TH</sup> Five Year Plan with estimate costs of Rs. 1225.09 crore for creating additional potential of 29780 hectares (net Irrigation area).

b) Minor Irrigation Sector:

Under AIBP, State Irrigation Department received sanction of 778 nos. of minor irrigation schemes at an estimated cost of Rs.307856.96 lakh to achieve a target of 369568.71 hectares since 2000-01. Till now 493 nos has been completed creating (including revival) a potential of 203456 hectares against the release of Rs.164048.62 lakh by GOI for the period from 2000-01 to 2014-15.

Under the Non Lapsable Central Pool of Resources (NLCPR) fund, 12 nos of schemes have been taken up since 1999-2000 at the cost of Rs.79.88 crore for a target of 10,099 hectare and out of these schemes 5 nos have been completed while remaining 7 are partially completed achieving potential of 2,339 hectare.

Two NEC funded Minor Irrigation Schemes have been completed achieving a potential of 370 hectares. Works of another two new Minor irrigation Schemes are in progress with estimated amount of Rs.9.03 crore to achieve a potential of 635 hectares.

All total 33 Minor Irrigation Schemes have been completed with the NABARD assistance (RIDF-X and XI) creating potential of 14179 hectare. Construction of 2 Minor Irrigation Schemes are in progress with NABARD assistance to create a targeted irrigation potential of 570 hectares.

Another 102 nos. incomplete schemes are sanctioned under RIDF-XVII with estimated cost of Rs.78.86 crore to achieve a potential of 6862 hactre and under RID-XIX, 21

schemes sanctioned with estimated amount of Rs.115.66 crore to achieve irrigational potential of 9127 hectare.

Under Scheduled Caste Sub-Plan (SCSP), the Department has taken up works of 253 nos. of minor schemes since 2005-06 with estimated amount of Rs.153.92 crore to achieve irrigation potential of 30078 hectares. Till March, 2015, 134 nos. completed creating a potential of 16426 hectare.

Under the Tribal Sub-Plan (TSP) Schemes the Irrigation Department has taken up works of 102 minor irrigation schemes since 2005-06 with an estimated amount of out Rs.57.48 crore to achieve irrigation potential of 14135 hectare. Till March 2015, 45 nos. schemes completed creating a potential of 9757 hectare.

Under the Assam Vikash Yojana renovation/reconstruction of 27 sick Minor Irrigation Schemes are in progress for revival of lost potential of 1780 hectares. Out of the total aforementioned Schemes, 19 Schemes have been completed reviving a lost potential of 1367 hectare.

During the 12<sup>TH</sup> Five year Plan period, the State Irrigation department has targeted to create irrigation potential of 228664 hectares. According to the department, under AIBP there are 319 Minor Irrigation Schemes in different stages of completion. On completion the State could achieve an additional irrigation potential of 148680 hectares. The department has also proposed to take up 779 new Minor Irrigation Schemes to create additional potential of 151878 hectares in different districts subject to their feasibility during the Plan period.

The Department has also undertaken a Pilot Project of Solar Power Driven Deep Tube Well Scheme at Borlah near Hajo of Kamrup District on experimental basis to combat the problem of erratic power supply situation with a target of 30 hectare of irrigational potential. Proposal has been formulated to take up some irrigation schemes powered by solar energy for hassle free operation.

#### c) Command Area Development and Water Management (CADWM):

The Centrally Sponsored Command Area Development Programme was launched in the year 1974-75 for development of adequate delivery system of Irrigation Water upto the farmers' field with an objective to enhance water use efficiency and production and productivity of crops per unit of land and water for improving socio-economic condition of farmers.

Under the CADWM, 8 (eight) projects have been taken up –Jamuna Irrigation Project, Kaliabor Irrigation Project, Sukla Irrigation Project, Kolong & Sonai River Basin Irrigation Schemes (Integrated Irrigation Scheme), Kaldiya Irrigation Project, Dekadong Irrigation Project, Bordikrai Irrigation Project and Pahumara CAD Project. Out of these a(four) nos. of schemes namely Jamuna Irrigation Project, Kaliabor Irrigation Project, Sukla Irrigation Project and Kolong & Sonai River Basin Irrigation Schemes (Integrated Irrigation Scheme), has been completed and deleted from the CADWM programme, Assam during 2003-04.

At present 4(four) nos. of schemes namely Kaldiya, Dekadong, Bordikrai and Pahumara are running as ongoing schemes under CADWM programme. During the 11<sup>TH</sup> Five Year Plan period, overall physical achievement was 11090 hectare out of the total target of 35755 hectare against the existing 4(four) ongoing schemes.

During the 12<sup>TH</sup> Five Year Plan period (2012-2017), the State Irrigation Department planned to continue and complete the pending works of all the ongoing works to achieve

the objective to cover 96557 hectare. Accordingly planned to complete 4 (four) ongoing projects Viz., Kaldiya Irrigation Project, Dekadong Irrigation Project, Pahumara Command Area Development Project and Bordikorai Irrigation Project and initiate works of 8(eight) new projects as under:

- (1) Bhumki Command Area Development Project.
- (2) Moradiya Command Area Development Project.
- (3) CAD to LIS from River BurhiDihing in Khowang Area.
- (4) Sapkata Command Area Development Project.
- (5) Longa Command Area Development Project.
- (6) Dhansiri Command Area Development Project.
- (7) Champamati Command Area Development Project.
- (8) New Minor Irrigation Scheme (17 nos. of Clust), under Tangla Division Irrigation.

The Department has also undertaken a Pilot Project of Solar Power Driven Deep Tube Well Scheme at Borlah near Hajo of Kamrup District on experimental basis to combat the problem of erratic power supply. Introduction of the system is being proposed for more Schemes being the running cost is less.

(d) MAINTENANCE WORK OF IRRIGATION SCHEME:

Due to fund constraints, adequate maintenance works of schemes could not be taken up for a long period. As a result, many schemes remained partially or fully inoperative. However, with availability of adequate fund, maintenance works of schemes are taken up as follows to make the schemes fully functional.

- Under the 13th Finance Commission Grant- in-Aid for the year 2011-12, revival works of 83 Nos. Minor Irrigation Schemes are taken up to revive the lost potential of 3,755 Ha. In Major/Medium sector, 4 Projects are taken up to revive 1,000 Ha. of lost potential.
- Another 219 Nos. Minor Irrigation Schemes are taken up under Special M&R for the year 2012-13 for restoration/revival of 19,410 Ha. 12 Nos. Major/Medium Irrigation schemes are taken up under special M&R for the year 2012-13 for restoration/revival of 6,635 Ha.

(e) IRRIGATION SCHEMES POWERED BY SOLAR ENERGY:

To combat the erratic power supply situation a pilot Deep Tube Well scheme powered by Solar Energy at Borlah near Hajo has been taken up with a target of 30 Ha. of Irrigation potential. Proposal has been formulated to take up some irrigation schemes powered by solar energy for hassle free operation.

(f) REVIVAL OF LOST POTENTIAL:

89,231 Ha. of lost Irrigation Potential have been restored by reviving 11 Nos. of partially operated Major/Medium Irrigation Projects. Another 799 Nos. defunct Minor Irrigation Schemes have been put into operation reviving a lost potential of 1, 56,128 Ha since 2006-07.

(g) PARTICIPATORY IRRIGATION MANAGEMENT (PIM):

For better irrigation Management, and to improve Irrigation efficiency, active participation of farmers is necessary which is attained through PIM by formation of Water User's Association (WUA) from the beneficiary members. The WUA will be responsible for Operation & Maintenance of the schemes. In Irrigation Department altogether 1096 nos. of Water User's Association has been formed till 31-03-2015 out of which 582 are registered and 513 are unregistered. The process of handing over of the schemes to WUA for Operation & Maintenance has already been started and 170 nos. of schemes handed over to WUA.



TABLE- 6.4  
FINANCIAL ACHIEVEMENTS OF SOME OF THE CENTRAL SECTOR  
AND CENTRALLY SPONSORED SCHEME

(Rs. in lakh)

Year	Schemes											
	AIBP		AIBP		CADWM		NLCPR		NEC		RMIS	
	Major/Medium		Minor		Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
Target	Achievement	Target	Achievement									
2011-12	19503	4950	36046	34379.94	1736	292	625	156.63	610	135.66	-	
2012-13	21313	648.65	36676.10	14575.19	2933	80	800	22.04	500	351.28	-	
2013-14	13353	1140.80	43230	29614.17	2743	722.34	1200	31.79	543.68	140.00	167.90	0.00
2014-15	10452.50	4043.76	47949.00	18901.45	3960.00	179.23	1345.47	0	1037.77	263.11	176.30	15.40
2015-16	9513.40	5485	64578.54	5211.15	8150.00	0	1175.00	0	831.52	0	315.00	12.79

Source: Chief Engineer, Irrigation Department, Assam.

TABLE- 6.5  
PHYSICAL ACHIEVEMENTS OF SOME OF THE CENTRAL SECTOR  
AND CENTRALLY SPONSORED SCHEME

(Area in Hect.)

Year	Schemes									
	AIBP		AIBP		CADWM		NLCPR		NEC	
	Major/Medium		Minor		Target	Achievement	Target	Achievement	Target	Achievement
Target	Achievement	Target	Achievement							
2011-12	19244	4000	28580	36321	5430	1350	3010	2010	500	0
2012-13	53973	270	58334	35868	2100	360	2500	0	500	0
2013-14	48625	8000	33800	13543	7400	1508	2000	0	635	0
2014-15	32915	15220	44084	11266	8500	405	250	0	635	333
2015-16	30911	0	91204	11521	23010	0	250	0	635	635

Source: Chief Engineer, Irrigation Department, Assam.

TABLE- 6.6  
FINANCIAL ACHIEVEMENTS OF THE SCHEMES  
FUNDED UNDER DIFFERENT SOURCES

(Rs. In lakh)

Year	Scheme													
	NABARD		NABARD		Assam VikashYojana		TSP		SCSP		State Plan (ACA)		CM's special package	
	Major/ Medium Irrigation		Minor Irrigation		Minor Irrigation		Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
Target	Achievement	Target	Achievement	Target	Achievement									
2011-12	50.00	50.00	500	65.64	0.00	0.00	450	440.89	1450	1381.23	1667	325.80		
2012-13	0.00	0.00	415	274.26	100.00	59.90	735	680.04	2328	1475.73	0.00	0.00		
2013-14	0.00	0.00	415	209.84	122.60	120.48	800	799.15	2628	2627.15	1356	718.18	550	0
2014-15	600.00	42.55	4500.00	4222.21	0	0	925.00	907.23	3105.00	3096.25	0	0	147.00	147.00
2015-16	0	0	9918.00	3528.38	0	0	950.00	239.15	1000.00	630.61	0	0	300	168.87

Source: Chief Engineer, Irrigation Department, Assam.

TABLE- 6.7  
PHYSICAL ACHIEVEMENTS OF THE SCHEMES  
FUNDED UNDER DIFFERENT SOURCES

(Area in Hect.)

Year	Scheme											
	NABARD		Assam Vikash Yojana		TSP		SCSP		State Plan (ACA)		CM's special package	
	Major/ Medium Irrigation		Minor Irrigation								Target	Achievement
	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement				
2011-12	1300	700	497	0	3130	1040	8112	1156	5455	3100		
2012-13	570	0	627	110	2100	574	11239	1670	3700	0		
2013-14	570	0	497	35	1518	1220	3577	2292	3700	3650	400	0
2014-15	0	0	780	670	1779	1760	4028	3903	0	0	400	0
2015-16	0	0	0	0	680	1104	844	2928	1050	0	400	0

Source: Chief Engineer, Irrigation Department, Assam.

## UTILISATION OF IRRIGATION POTENTIAL:

Out of the cumulative Irrigation Potential Created / made available through Government Irrigation Schemes under Irrigation Department the position of utilization of the same during the last few years are as follows

TABLE- 6.8  
CROP SEASON WISE IRRIGATION POTENTIAL UTILISED

(Figures in hectares)

Year	Crop Season								
	Kharif crops season			Rabi & Pre-Kharif crops season			Total		
	Minor	Major/ Medium	Total	Minor	Major/ Medium	Total	Minor	Major/ Medium	Total
2011-12	71650	61028	132678	18360	6647	25007	90010	67675	157685
2012-13	92677	60700	153377	23546	4822	28368	116223	65522	181745
2013-14	99199	60058	159257	25301	4057	29358	124500	64115	188615
2014-15	129734	48142	177876	37549	4153	41702	167283	52295	219578
2015-16	119147	68772	187919	32447	8923	41370	151594	77695	229289

Source: Chief Engineer, Irrigation Department, Assam.

It is clear from the above that the utilisation of Irrigation Potential is not up to the expectation and there is a vast gap between Irrigation Potential Created and Irrigation Potential Utilised. There are many reasons for less utilisation and the identified causes are-

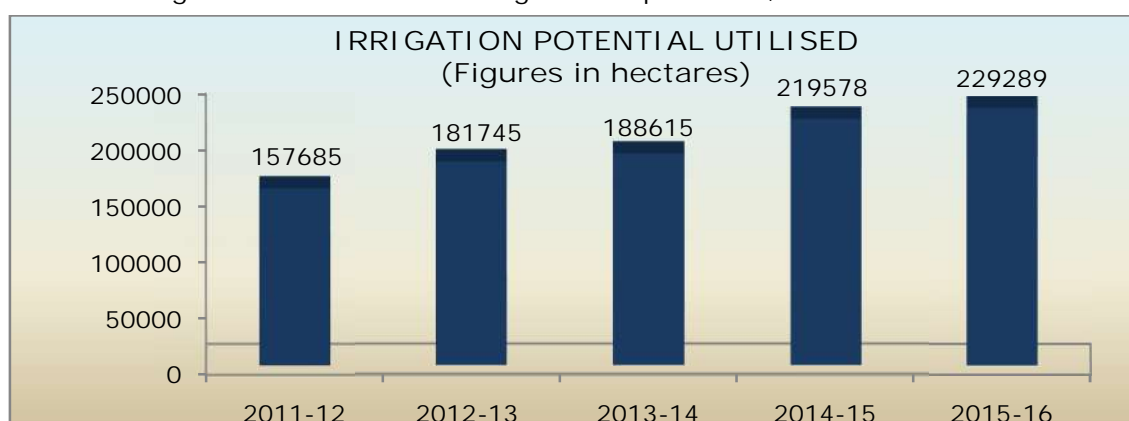
- i) General wear and tear of the Irrigation Schemes and on the other hand non-availability of fund in proper head of account in the State Budget for their repair in due time leading the created potential to remain unutilised.
- ii) Natural calamities like flood, storm etc. damaging the created potential as well as the Irrigation Schemes.
- iii) Erratic power supply in respect of the electrically operated Irrigation Schemes (Surface Lift and Ground Water Lift).
- iv) Damage of transformer, H T line and mechanical components at peak hours of requirement of water.
- v) Change of river course in respect of Surface Flow and Surface Lift Irrigation Schemes.

- vi) Damage of canal system.
- vii) Lack of demand from the cultivators for irrigation water.
- viii) Dependence of the cultivators on rain water as they adopt the traditional system of single cropping.
- ix) Stealing of motors/ pumps and other accessories in some areas leading to non-functioning of the Irrigation Schemes.
- x) Imposition of Irrigation Service Charges by Government for realization from the beneficiary cultivators. As the cultivators are economically poor, they are reluctant to pay Irrigation Service Charges and want to get water from Govt. Irrigation Schemes free of cost.

#### REALISATION OF IRRIGATION SERVICES CHARGES:

The position of realization of Irrigation Service Charges is not at all satisfactory in spite of endeavour of the field officers/ staff of Irrigation Department. In order to improve the scenario the following steps have been taken.

- The Assam Irrigation Act, 1983 and the Assam Irrigation Rules, 1997 were enacted making provision for imposition/ collection of the water tax.
- The Assam Irrigation Water Users' Act, 2004 has been enacted.
- District-wise Farmers' Motivation Trainings are conducted from time to time to encourage them to go for more multiple cropping with the help of irrigation water so that they become more sound economically and do not feel the pinch to pay the Irrigation Service Charges.
- A total of 1407 Water Users' Associations (WUAs) have been formed up to 2015-16 out of which 794 WUAs have already been registered with the Director of Registration of Firms & Societies, Assam, under the Society Registration Act, 1860.
- District-wise farmers' trainings were conducted to adopt scientific agriculture in the Irrigation Command.
- Out of State exposure visit to Tamilnadu, Andhra Pradesh and Jharkhand have been organized for officers of Irrigation Department, NGOs and WUA farmers.



In order to minimize the gap between irrigation potential created and irrigation potential utilised in the State as well as to encourage utilisation of irrigation facilities created by the state government departments, the following steps have been initiated:

- 1) Emphasis has been given on Participatory Irrigation Management (PIM) where the farmers can take part in the system and process of irrigation as well as its maintenance. Keeping this in view, the Department encouraged the farmers to form Water Users' Associations within the Command Areas of Irrigation schemes. A total of 1375 Water Users' Associations (WUA) have been formed up to 2014-15 out of which 769 WUAs have already been registered under the Society Registration Act, 1860.

- 2) State Level Co-ordination Committee as well as District Level Co-ordination Committees have been formed with the officials of Irrigation Department, Agriculture Department and other concerned Departments/ organizations to motivate farmers for optimum use of water.
- 3) Out of State exposure visit in Tamil Nadu, Andhra Pradesh and Jharkhand have been organized for some Irrigation officials, NGOs and WUA farmers.
- 4) Farmers' Motivation Trainings are conducted in every district to encourage them to go for more and more multiple cropping using assured irrigation provided by Govt. Irrigation Schemes.
- 5) The Assam Irrigation Act, 1983 and The Assam Irrigation Rules, 1997 have been enacted providing safeguard to the Irrigation Schemes and the cultivators as well.
- 6) The Assam Irrigation Water Users' Act, 2012 has been enacted with a view to safeguarding the right of the beneficiary cultivators of the Govt. Irrigation Schemes wherein provision for active participation of the cultivators has been made. Preparation of necessary Rules under the Act are under process.

#### CREATION OF IRRIGATION POTENTIAL AND ITS UTILIZATION:

[As per Census of Minor Irrigation Schemes]

The 4<sup>th</sup> Minor Irrigation Census was conducted with reference year 2006-07 under the guidance and supervision of Ministry of Water Resources, Govt. of India. As per 4<sup>th</sup> Census of Minor Irrigation, 2006-07, there were 104312 Ground Water Schemes (Shallow Tube wells and Deep Tube wells) and 6442 Surface Water Schemes (Surface Flow and Surface Lift) creating 306905 hectares and 322856 hectares of irrigation potential respectively in the State under Minor Irrigation Sector. Of the total potential of 629761 hectares (306905 hectares + 322856 hectares) created under Minor Irrigation Sector, a total of 323297 hectares of area was irrigated (utilized) during that particular year 2006-07. Thus, there exists large gap between irrigation potential created and irrigation potential utilized.

The table below shows the category wise number of Minor Irrigation Schemes, creation of irrigation potential and its utilization.

TABLE – 6.9

#### IRRIGATION POTENTIAL CREATED AND UTILISED IN ASSAM IN 2006-07

Category of Schemes	Total no. of Schemes	Schemes in use (No).	Irrigation Potential Created (In hect.)			Irrigation Potential Utilised out of the created potential in use (in hect)
			In use	Not in use	Total	
Surface Water	104312	5025	207049	115807	322856	137786
Ground Water	6442	91453	244216	62689	306905	185511
Total	110754	96478	451265	178496	629751	323297

Source: Chief Engineer, Irrigation Department, Assam.

#### IRRIGATED AREA AS PER AGRICULTURE CENSUS-2010-11:

As per Agriculture Census 2010-11, there is about 1.61 lakh hectare net irrigated area (including private sources) in the State of which 0.33 lakh hectare area irrigated from 'canal', 0.048 lakh hectare from 'tanks', 0.02 lakh from 'wells', 0.27 lakh hectare from 'tubewells' and 0.94 lakh hectare receives irrigation from 'other sources'. The table below shows the size class wise area receiving irrigation from different source

**TABLE- 6.10**  
**SIZE CLASS AND SOURCE-WISE AREA IRRIGATED IN ASSAM**  
 (Area in Hectare)

Sl. No.	Size Class (in Ha)	Area under Operational Holding	Area Receiving Irrigation from Sources					Net Irrigated Area
			Canal	Tanks	Wells	Tube wells	Other Sources	
1	Below 0.5	385255.42	1526.19	118.44	101.62	3529.43	8669.36	13944.04
2	0.5-1.0	389541.03	3196.83	468.34	84.74	1850.74	6593.15	12193.80
3	1.0-2.0	687156.19	6559.21	698.40	153.37	4339.87	16900.42	28651.27
4	2.0-3.0	480948.66	5841.16	1169.86	213.77	3413.60	11237.00	21875.39
5	3.0-4.0	337033.83	4578.28	879.46	159.52	2728.56	9871.89	18217.71
6	4.0-5.0	214768.17	2484.95	562.97	57.31	2207.41	7263.68	12576.32
7	5.0-7.5	184189.82	2763.62	256.95	48.59	1748.33	6113.66	10931.15
8	7.5-10.0	38414.24	892.87	79.07	0.00	103.15	2361.59	3436.68
9	10.0-20.0	24567.50	988.38	0.00	0.00	152.35	1264.93	2405.66
10	20 & above	257195.09	4268.05	542.82	1016.72	7095.84	24079.25	37002.68
11	All Classes	2999069.95	33098.54	4776.31	1835.64	27169.28	94354.93	161234.70

Source: Report of Agriculture Census, Assam 2010-11

#### AREA IRRIGATED:

The table below shows the crop season-wise area irrigated during the year 2014-15 and 2015-16 in different districts of Assam from Government source of irrigation:

**TABLE- 6.11**

Name of District	Kharif		Rabi & Pre-kharif		Total	
	2014-15	2015-16(P)	2014-15	2015-16(P)	2014-15	2015-16(P)
Kokrajhar	15985	13317	133	98	16118	13415
Dhubri	108	38	499	229	607	267
Goalpara	2747	1930	620	344	3367	2274
Barpeta	3845	9387	138		3983	9387
Morigaon	423	270	832	709	1255	979
Nagaon	18430	24725	3163	3660	21593	28385
Sonitpur	12403	19322	125	84	12528	19406
Lakhimpur	2053	329	500	61	2553	390
Dhemaji	1533	602	945		2478	602
Tinsukia	843	396	133		976	396
Dibrugarh	924	986			924	986
Sivasagar	927	398	25	89	952	487
Jorhat	2146	1100	772	68	2918	1168
Golaghat	928	1242	446	484	1374	1726
Karbi Anglong	40760	18857	24416	21197	65176	40054
Dima Hasao	3840	3826			3840	3826
Cachar	6570	3656	1491	193	8061	3849
Karimganj	2579	3844	161	132	2740	3976
Hailakandi	225	152	46	145	271	297
Bongaigaon	610	727	812	921	1422	1648
Chirang	13844	15199	1600	2834	15444	18033
Kamrup	3050	2356	219	396	3269	2752
Kamrup (M)	1005	1225	1139	2360	2144	3585
Nalbari	221	253	77	75	298	328
Baksa	12503	15631	1876	2013	14379	17644
Darrang	5386	4684	194	682	5580	5366
Udalguri	23988	43467	1340	4596	25328	48063
Assam	177876	187919	41702	41370	219578	229289

P= Provisional

Source: Chief Engineer, Irrigation Department, Assam.

**IMPOSITION OF IRRIGATION SERVICE CHARGES:**

Under the premises of The Assam Irrigation Act, 1983, the system of realization of Irrigation Service Charges was introduced in Assam on adhoc basis in the year 1993. As sufficient fund is required for operation and maintenance of Irrigation Schemes and as adequate fund is not available, Government introduced the imposition and collection of Irrigation Service Charges (Water tax) from the beneficiary cultivators. The rates of Irrigation Service Charges was subsequently revised in the year 2000 doubling the former rates to accrue at least some fraction of the operation and maintenance cost of Irrigation Schemes. The current rates of Irrigation Service Charges are as follows –

Crops	Rate per bigha (Rs.)	Rate per hect. (Rs.)
1. Kharif	37.50	281.24
2. Wheat and other Rabi crop	75.00	562.50
3. Early Ahu	100.00	751.00
4. Ahu	100.00	751.00
5. Jute	20.00	150.00
6. Sugarcane	29.60	222.00

The position of realization of Irrigation Service Charges during the last three years are as follows-

Year	Irrigation Service Charges realised (in Rupees)
2013-2014	7,95,236
2014-2015	7,21,493
2015-2016	6,71,940

The position of realization of Irrigation Service Charges is not at all satisfactory in spite of endeavour of the field officers/ staff of Irrigation Department. In order to improve the scenario the following steps have been taken.

- ❖ The Assam Irrigation Act, 1983 and the Assam Irrigation Rules, 1997 were enacted making provision for imposition/ collection of the water tax.
- ❖ The Assam Irrigation Water Users' Act, 2004 has been enacted.
- ❖ District-wise Farmers' Motivation Trainings are conducted from time to time to encourage them to go for more multiple cropping with the help of irrigation water so that they become more sound economically and do not feel the pinch to pay the Irrigation Service Charges.
- ❖ A total of 1407 Water Users' Associations (WUAs) have been formed up to 2015-16 out of which 794 WUAs have already been registered with the Director of Registration of Firms & Societies, Assam, under the Society Registration Act, 1860.
- ❖ District-wise farmers' trainings were conducted to adopt scientific agriculture in the Irrigation Command.
- ❖ Out of State exposure visit to Tamilnadu, Andhra Pradesh and Jharkhand have been organized for officers of Irrigation Department, NGOs and WUA farmers.

It is worth mentioning that there is a huge gap between Irrigation Potential Created (IPC) and Irrigation Potential Utilised (IPU). The Department has been endeavouring to reduce the gap so that the very purpose of creation of irrigation potential is fulfilled. With a view to bridge the gap much more emphasis has been laid on Participatory Irrigation Management and Water Users' Associations have been formed within the command areas of Irrigation Schemes. It has since been proposed that the entire amount of Irrigation Service Charges (Water Tax) realized from the beneficiary cultivators will be granted to the respective Water Users' Associations for operation and maintenance (including minor repair) of the Irrigation Schemes by themselves so that the cultivators feel the ownership of the Irrigation system and accrue benefit therefrom. For this purpose draft amendment of the Act has been proposed and it is expected that the same would be passed in the next session of the Assam Legislative Assembly.

The physical and financial targets and estimates of the schemes proposed to be undertaken by the Irrigation Department during the financial year 2016-17 is given in Annexure –I

**ANNEXURE-I**  
**PHYSICAL & FINANCIAL TARGETS AND ESTIMATES OF THE SCHEMES**  
**PROPOSED TO BE UNDERTAKEN DURING FINANCIAL YEAR 2016-17**

Sl. No.	Name of Programme /Scheme	FINANCIAL TARGET (Rs. In lakh)			Physical target during 2016-17 (Area in hectare)	Remarks
		Budget Allocation 2016-17				
		SP/SS	Central Share	Total		
Grant No. 49	4701 C.O. Major & Medium Normal Works					
	Jamuna I/P Modernisation	51	0	51	170	Renovation work
	Integrated Irrigation Project on Kolong Basin	90	0	90	150	Renovation work
	Rupahi Irrigation Project New Scheme	10	0	10	5668	Revival work
	Puthimari Irrigation Project	44.00	0.00	44	Survey & Investigation Work completed	DPR under preparation
	Burusuti Irrigation Project	38.50	0.00	38.5		
	Dikhow Irrigation Project	30.50	0.00	30.5		
	Buroi Irrigation Project AI BP	39.00	0.00	39		
	Dhansiri I/P	814	9490	10304	30108	Work of Dhansiri in progress
	Borolia I/P	0	0	0	3592	
	Buridehing I/P	50	0	50	0	
	One Time ACA (Recn. of Bordikorai)	0	638.49	638.49	1,050	Revival of lost potential, Revalidation required.
	Sub-Total of 4701:	1167	10128.49	11295.49	40738	
	4702 C.O. Minor Irrigation State Plan					
	Juluki LIS	10.79	0.00	10.79	60	
	Implementation of Pavoi FIS	150.00	0.00	150.00	60	
	Implementation of Behali Fis	150.00	0.00	150.00	60	
	DTW scheme with Solar System at Behali Area (5 nos.)	375.00	0.00	375.00	150	
	Irrigation Scheme in Abhayapuri South LAC	167.21	0.00	167.21	1260	
	Assam Bikash Yojana (DTW-5, FIS-1)	76.73	0.00	76.73	413	To complete 6 nos
	TSP (T=105, compl= 79no.)	350	0	350.00	2097	Ongoing-37, target-14
	SCSP (T-255, Com-171, OG-84)	350	0	350.00	3433	Ongoing-84, target-40
	NABARD (125 No.) Loan	2000	10240	12240.00	7336	To complete 71 nos
	AI BP (267 Nos. schemes)	2669.13	73173.14	75842.27	57772	To complete 101 schemes
	Shortfall of AIBP fund of 2007-08 & 2008-09	300	0	300.00		
	CM's special package for Dhemaji Dist.					
	i) Construction of Menjek Nalla FIS	93.00	0.00	93.00	150	80%
	ii) Construction of Borbila FIS at Bordoloni Dev. Block	141.14	0.00	141.14	250	98%
	CM's special package for Barak Valley (4 schemes)					
	i) Gobil FIS at Sudarshanpur-III (Gobil)	0	0	0		NIT floated
	ii) Construction of Matijuri Ph-I LIS main channel from control room to point I at Bor Hailakandi	75	0	75	80	Work in progress
	iii) Construction of Sluice Gate in Kakmara Beel Dhal at Ratanpur GP.	75	0	75	52	Work in progress
	CSS: RMIS & CENSUS		314.5	314.50		
	Sub Total of 4702:	6983	83727.64	90710.64	73173	
	4705 C.O. CADWM					
	Normal works	50	0	50	63514	Kaldia & Dekadong liabilities to be cleared, Pahumara & Bordikorai ongoing, Dhansiri & Maloibari included.
	CAD for Kaldia I/S	10	0	10		
	CAD for Dekadong I/S	10	0	10		
	CAD for Bordikorai I/S	50	1284.17	1334.17		
	CAD for Pahumara I/S	50	1067.10	1117.1		
	CAD for Maloibari LIS Project	190	581.14	771.14		
	CAD for Dhansiri I/P	190	4227.00	4417		
	Sub-Total of 4705:	550	7159.41	7709.41	63514	

Contd...

Grant No. 44	4552 CO					
	NLCPR (7 Nos.)					
	1) Burinagar LIS (Nalbari Divn.)		100	100	250	84%
	2) Construction of Dakhindol Lift I/S		3	3	500	100%
	3) Belsiri Lift Irrigation scheme		70	70	500	46%
	4) Lower Duloni I/S		1	1	1205	
	5) DTW I/S at 20 pts. Under Bihaguri Dev. Bl.		2	2	1300	
	6) Thengkhali Borhola Pather I/S		410.32	410.32	320	
	7) DTW I/S at 30 pts. Under Borsola Dev. Bl.		700	700	1700	
	8) Rangapani Flow I/S		1	1	1000	
	NEC (7 Nos.)					
	1) Longparpam MIS		50.82	50.82	220	
	2) Dhankhunda FIS		43.65	43.65	350	100%
	3) Ram Enghee Flow I/S		200	200	333	
	4) Gilabwr Flow I/S		125	125	285	100%
	5) Khaurang Bund Flow I/S		50	50	335	New
	6) Mahajanpara-Borigaon Flow I/S		10	10	500	New
	7) Khairabari Flow I/S		50	50	134	New
	Sub-Total of 4552:	0	1816.79	1816.79	8932	
	GRAND TOTAL:	8700	102832.33	111532.33	186357	

Source: Chief Engineer, Irrigation Department, Assam.



## CHAPTER-VII

## FLOOD AND FLOOD CONTROL MEASURES

The State of Assam comprises of two valleys namely the Brahmaputra and Barak Valley and it is situated in between 90° to 96° North Latitude and 24° to 28° East Longitude. The geographical area of Assam is 78,438.00 Sq. Km out of which 56,194.00 Sq. Km and 22,244.00 Sq. Km fall under the Brahmaputra and Barak Valley including 2 (Two) hill districts respectively.

The Brahmaputra Valley has an average width of about 80 Km. The main river of the valley, Brahmaputra is one of the largest rivers in the world and rank fifth with respect to its average discharge. The river originates from the Kailash ranges of Himalayas at an elevation of 5300 M. After flowing through Tibet it enters India through Arunachal Pradesh and flows through Assam and Bangladesh before it joins Bay of Bengal.

The catchments area of Brahmaputra in Tibet is 2,93,000 Sq. Km; in India and Bhutan is 2,40,000 Sq. Km and in Bangladesh is 47,000 Sq. Km. The Brahmaputra basin extends over an area of 5,80,000 Sq. Km up to its confluence within Bangladesh.

The average width of Brahmaputra is 5.46 Km. The maximum discharge of Brahmaputra at Pandu near Guwahati was recorded as 72,779 cumec on 23.08.62 and minimum discharge was recorded as 1757 cumec on 22.02.63. The average annual discharge is about 20,000 cumec and average dry season discharge is 4,420 cumec.

The Barak valley has a geographical area of 6922.00 Sq. Km excluding 2(two) hill districts. The local rainfall run off of the valley along with that of adjacent hilly areas flows through river Barak and its various tributaries and is drained out to Bangladesh. The Katakhal, Jiri, Chiri, Modhura, Longai, Sonai, Ruksni and Singla are the main tributaries of the valley. The tributaries are mainly rain fed and cause flood problems when precipitation occurs.

Flood and Erosion are two main natural disasters being faced by the state. The flood prone area of the state is 31,500.00 Sq Km as assessed by the Rastriya Barh Ayog which is about 39.58 % of the total land area of Assam. This is about 9.40% of total flood prone area of the whole country. The flood prone area of the country as a whole stands at about 10.2 % of the total area of the country, but flood prone area of Assam is 39.58 % of the area of the state. It signifies that the flood prone area of Assam is four times the national mark of the flood prone area of the country. Records show that average annual area affected by flood is 9.31 Lakh Hectares. The flood protected area of the state is 16500.00 Sq. Km till date.

The severity of flood problem of the state has been further aggravated by the acuteness of erosion on both banks of river Brahmaputra and its tributaries. Study reveals that an area of 4.27 Lakh Hectare of the state has been eroded by the rivers since 1950, which is 7.40 % of area of the state. The average annual rate of erosion is 8000.00 Ha.

#### FLOOD AND EROSION PROBLEM OF THE STATE:

The Brahmaputra and Barak Rivers with their 48 nos. of major tributaries and innumerable sub-tributaries have crises-crossed the plains of both valleys. Floods, bank erosion and drainage congestion are major problems faced by the state during the monsoon season. The flood of this region is a recurring phenomenon, every year several waves of flood cause damage to huge areas in the state. The loss to people in terms of houses, crops and cattle is immense. The figures of loss run into hundreds of crores every year apart from huge damages to roads, bridges, schools, communication systems and other such facilities. This diminishes the wealth of the nation and has adverse effects on the development of the state.

During post independence period, Assam faced major floods in 1954, 1962, 1972, 1977, 1984, 1988, 1998, 2002 and 2004. Almost every year three to four waves of flood ravage the flood prone areas of Assam. Average annual loss due to flood in Assam is to the tune of Rs. 200.00 Crores and particularly in 1998, the loss suffered was about Rs. 500.00 Crores and during the year 2004 it was about Rs. 771.00 Crores.

After the unprecedented floods in the country in 1954, the Govt. of India announced a National Policy on Floods comprising three phases viz. -

- The immediate,
- The short term and
- The long term measures.

The flood control activities in Assam started mainly after the announcement of National Water Policy. Subsequently, "Outlined plan for flood control in Assam" along with various comprehensive plans were prepared and the priority areas, which need immediate and urgent attention were identified.

Till date, the Water Resources Department has taken up works primarily for the general development of the rural sector and for the protection of major townships in both the Brahmaputra and Barak Valley. Schemes have also been taken up to relieve the drainage congestion in the cities and other important areas.

- Construction of Embankments and Flood walls
- River training and bank protection works
- Anti erosion and town protection works
- River channelization with pro siltation device
- Drainage improvement/ Sluices
- Raised Platform
- Flood forecasting and warning
- Flood zoning

The Water Resources Department, Assam has been implementing various flood management schemes from the beginning of 2<sup>nd</sup> Five Year Plan and is continuing till now.

**PHYSICAL ACHIEVEMENT OF THE WATER RESOURCES DEPARTMENT  
upto 12<sup>th</sup> Plan (upto March'16) since 10<sup>th</sup> Plan**

Nature of Work	10 <sup>th</sup> Plan (2002-2007)		11 <sup>th</sup> Plan (2007-2012)		12 <sup>th</sup> Plan (2012-2017)	
	Achievement during the plan	Total	Achievement during the plan	Total	Achievement upto 30.11.16	Total
Construction of Embankments (Km)	6.929	4465.85	7.97	4473.82	0.6	4474.42
Town Protection & Anti Erosion Works (Nos.)	23	746	138	884	55	939
Construction of Major Sluice (Nos.)	2	86	8	94	3	97
Construction of Minor Sluice (Nos.)	-	539	6	545	-	545
Drainage Channel (Km)	6.00	854.19	20.776	874.966	-	874.966
Raising & Strengthening of Embankment (Km)			527.758	527.758	244.114	771.872

## FLOOD MANAGEMENT SCHEMES TAKEN UP BY W. R. DEPARTMENT DURING XII PLAN:

The Water Resources Department had taken up the following flood management schemes during XII Plan –

- 41 Nos of Schemes under Flood Management Programme (FMP) costing Rs. 1387.00 Cr.
- 7 Nos of Schemes under NABARD (XVII) costing Rs. 37.55 Cr.
- 17 Nos of Schemes under NABARD (XVIII) costing Rs. 78.53 Cr.
- 24 Nos of Schemes under NABARD (XIX) costing Rs. 107.64 Cr.
- 44 Nos of Schemes under NABARD (XX) costing Rs. 282.50 Cr.
- 2 Nos of Schemes under ACA costing Rs. 12.84 Cr.
- 3 Nos of Schemes under SPA costing Rs. 22.33 Cr.
- 2 Nos of Schemes under NLCPR costing Rs. 12.71 Cr.
- 3 Nos of Schemes under State Plan costing Rs. 16.74 Cr.
- 3 No of Scheme under NEC costing Rs. 9.45 Cr.
- 14 Nos of Schemes under State Specific Schemes costing Rs. 74.56 Cr.
- 18 No of Scheme under CM Package in Barak Valley costing Rs. 65.78 Cr.
- 4 No of Scheme under CM Package in Lakhimpur district costing Rs. 15.59 Cr.

## ONGOING PROJECTS:

Various ongoing projects of the Water Resources Department are – 38 schemes under FMP, 1 scheme under NEC, 15 schemes under CM Special Package and 63 schemes under NABARD.

## COMPREHENSIVE PLAN FOR RAISING &amp; STRENGTHENING OF BRAHMAPUTRA RIVER EMBANKMENT:

Considering the vulnerability and the present status, the embankment system of Assam is required to be raised and strengthened in phased manner so that the same can provide flood protection to the state for sustainable socio-economic development. Accordingly, steps in this regard have been taken for fortification of embankments of Brahmaputra River at a probable cost of Rs.4454.09 Cr to be executed during 12th plan period the Detail Project Report (DPR) of which has been placed in Central Water Commission (CWC) for techno-economic appraisal.

## SCHEMES PROPOSED UNDER THE AEGIS OF ASIAN DEVELOPMENT BANK (ADB):

The Govt. of Assam has taken up projects to be funded by the Asian Development Bank. Two sub-projects at Dibrugarh and Palasbari area at a cost of Rs. 172.36 Cr and Rs. 80.235 Cr respectively have been implemented. Works for both the schemes are going on. Another sub-project at Kaziranga National Park costing Rs.141.50 Cr is under the scrutiny at Central Water Commission, New Delhi.

## SCHEMES PROPOSED UNDER THE AEGIS OF WORLD BANK (WB):

The Water Resources Department has embarked upon a project under the nomenclature "Assam: Flood, Erosion and River Management Modernization Project" at a tentative cost of Rs. 1500.00 Cr. The objectives of the program would be (i) to fill in the gaps in existing knowledge base of the Brahmaputra-Barak Basin, showcase the global best practices by the Water Resources Department in planning, design and implementation of projects; and (ii) to implement selected priority physical infrastructure

investments within the framework of an integrated flood, erosion and sediment management system for the Brahmaputra-Barak Basin in the State of Assam.

#### NEW INITIATIVES TAKEN BY THE DEPARTMENT:

##### i) Establishment of Assam Water Research & Management Institute (AWRMI):

The existing River Research Station of the Water Resources Department has been upgraded to "Assam Water Research and Management Institute" (AWRMI), with a view to modernise all the instruments, laboratories and to facilitate the Institution to a Training and Capacity building Institution.

It will be made a 'State of the Art' institute to facilitate planning, design and implementation of river erosion and flood protection works in Assam. The institute will co-relate with all state departments as well as Central Govt. departments in collecting hydro-metrological, river hydraulic, sediments transport and morphological data to make it an active Data Centre.

##### ii) Setting up Brahmaputra Gallery:

Setting up Brahmaputra Gallery in Assam has been completed during the year 2014-15 within AWRMI premises at Basistha, Guwahati. The Gallery exposes the different aspects of mighty Brahmaputra to the nation and abroad in a documented pictographic manner. The different aspect means the point of origin and its historic value, journey through the seven sisters and its geographical distribution, culture and heritage, its environmental and ecological aspects and biodiversity and finally its scientific and educational importance. The same is open for visit for the public and the students for educational tours.

##### iii) National Hydrology Project:

The Union Cabinet chaired by the Prime Minister Shri Narendra Modi has given its approval to Implementation of the National Hydrology Project. The NHP will help in gathering Hydro-meteorological data which will be stored and analysed on a real time basis and can be seamlessly accessed by any user at the State/District/village level. It will be a central sector scheme with a total outlay of Rs. 3679.7674 crore. This includes Rs.3640.00 crore for National Hydrology Project (NHP) and Rs. 39.7674 crore for National Water Informatics Centre. National hydrology project for the state of Assam will be implemented by the Water Resources Department, Assam. The total outlay for the State for the entire project period of eight years is Rs. 47.00 crore. In this regard the Project Implementation Programme (PIP) has already been submitted to the Ministry of Water Resource and River Development (MOWR&RD), Government. of India.

#### DETAIL STATUS OF VARIOUS SCHEMES TAKEN UP BY THE WATER RESOURCE DEPARTMENT:

##### Scheme under State Plan:

During the year 2014-15 fourteen numbers of schemes were taken up under State Plan with an estimated amount of Rs.74.56 crore. Out of these schemes ten schemes achieved 100% fulfillment. Works of the remaining schemes were in progress.

##### Additional Central Assistance (ACA) Schemes:

During 2013-14 Govt of India approved two schemes to take anti-erosion measure to protect Dikhow bund and Disang bund at Sivasagar District with an estimated amount of Rs.14.93 crore. Both of these schemes were completed within September 2016. Benefited area from these schemes is 8750 hectare.

**Flood Management Programme (FMP):**

Since Flood is a major annual problem of Assam like previous years, in the year 2014-15 also different flood management schemes were recommended under XII Plan. Altogether 41 schemes were undertaken covering an area of 307231 hectare. of land of the State. The estimated cost of the projects were Rs.1386.96 crore. Out of these schemes six schemes were completed and others are in progress.

**Schemes under North East Council (NEC):**

In order to protect Raimona Village and its adjoining area from river Janali and to protect Ranipur and its adjoining areas from the erosion by River Pekua two anti erosion schemes were taken up in Kokrajhar District with estimated expenditure of Rs.717.39 lakh. Both of the schemes were completed with benefited area of 1500 hectare.

Another scheme of anti erosion measures at different reaches on both bank of river Pomra in Baksa District was taken up with estimated cost of 227.94 lakh. Works on the scheme are going on and upto September 2016, 80 % physical achievement has been achieved.

**Scheme under CM's Special package: (For Barak Valley for 2013-14):**

As part of CM's special packages, a special package for Barak Valley for 2013-14 was recommended by the Government comprising eight schemes covering an area of 7990 hectare of land in the three Districts of Barak Valley. The estimated cost of these Projects were Rs.4199.96 lakhs. As per the report, five schemes were completed and the others are in progress.

**Additional Work in Barak Valley for the year 2014-15:**

Another ten schemes of anti erosion of rivers, restoration of breach of river bank, widening and strengthening of dykes in the District of Barak Valley were taken up with an estimated cost of Rs.2379 lakhs covering the benefited area of 1720 hectare.

**Scheme for Lakhimpur District for the year 2014-15:**

Three schemes for protection of RCC porcupine at different banks of river Subansiri and one scheme for erosion protection at Charikoria river in Lakhimpur District were implemented during the year 2014-15. The estimated cost of these schemes was 2296.07 lakhs, where only in one scheme 80% works were completed upto September 2016. Rest of the schemes are in progress.

**NABARD (RIDF-XVIII), 2013-14:**

Under RIDF-XVIII , 17 numbers of schemes were proposed with an estimated amount of Rs.78.53 crores during the year 2013-14. Out of these seventeen schemes 12 schemes were completed upto September 2016 with benefited area of 74915 hectare. Rests of the schemes are in progress.

**NABARD (RIDF-XIX), 2014-15:**

To take various flood control measures 24 nos. of schemes were taken up under RIDF-XIX during 2014-15 with an estimated amount of Rs.107.64 crore. Out of these schemes nine schemes were completed upto September 2016. Rest of the schemes are expected to be completed during the year 2016-17.

**NABARD (RIDF-XX), 2015-16:**

Under RIDF-XX forty four new schemes were proposed with an estimated amount of Rs.282.50 crore. Upto September 2016 only two schemes were completed and works on other schemes are in progress.

## CHAPTER – VIII

## LIVESTOCK, ANIMAL HUSBANDRY AND DAIRY DEVELOPMENT

Animal Husbandry is potentially one of the most important sectors for rapid socio-economic development of the State. Livestock is basically a component of production system and is contributing to sustainable agricultural system. Fast growth is essential not only to achieve higher productivity levels in livestock products but also for income generation of rural households of the State. Livestock in the State is thus highly livelihood oriented and is generally owned by small and marginal farmers and landless agricultural labourers.

Assam economy continues to be an agrarian economy as more than 85 percent of the population is living in the rural areas and about 52 percent of the total labour force is found to be engaged in agriculture and allied activities. Animal Husbandry sector has significant impact on employment generation in the State and plays a vital role in income generation of both the rural and semi-urban economy. The Animal Husbandry and Veterinary Department of the State has been implementing various developmental programmes to create gainful employment/income opportunities in the rural areas with the objectives to boost up the socio-economic condition of the rural economy and act to enhance the volume of livestock and poultry products in the State so as to reduce the gap between demand and supply of these products.

TABLE: 8.1

CONTRIBUTION OF ANIMAL HUSBANDRY TO GROSS STATE DOMESTIC PRODUCT  
[AT CONSTANT 2011-12 PRICES]

Year	2011-12	2012-13	2013-14	2014-15(P)	2015-16(Q)
Contribution to Agril & Allied Sector (%)	5.59	5.20	5.05	5.22	5.08
Contribution to GSDP (%)	1.11	1.17	1.04	1.01	0.95

P: Provisional, Q: Quick. Source: Directorate of Economics and Statistics, Assam

To achieve the goal, the Animal Husbandry and Veterinary Department of the State has been providing animal health care service and breed improvement facilities by setting up different type of veterinary infrastructures which are spread around the State. According to the Animal Husbandry and Veterinary department there are 22 nos. of Veterinary Hospitals, 337 nos. of Dispensaries, 684 nos. of Sub centres/ First Aid centres/ SMC and 30 nos. of Key Village Centres as on 2015.

LIVESTOCK POPULATION AS PER 19<sup>TH</sup> LIVESTOCK CENSUS:

According to the 19<sup>th</sup> Livestock Census 2012, the cattle population constitutes the largest group with more than one crore but the cattle population is (-) 0.56 percent less compared to 2007 Livestock Census. In respect of Cross breed cattle this decrease is about 43.0 percent. Buffalo, Pig and Elephant also counted 17.22 percent, 23.31 percent and 57.0 percent decrease during the 19<sup>th</sup> Livestock census, 2012 as against the previous Livestock Census. On the other hand, the population of Horse & Ponies, Sheep and Goat population counted increase during the Livestock Census, 2012 compared to the previous Livestock Census. The total goat population is counted at 61.69 lakh and Sheep 5.18 lakh during the Livestock Census, 2012.

The poultry population in the State, as revealed from the Livestock Census 2012, has registered decrease of 33.5 percent over the previous census 2007. The category-wise

decrease of population of these species during Livestock Census, 2012 was fowls 28.0 percent and duck 45.0 percent. The table 8.2 provides the species-wise livestock population of Assam as per Livestock Censuses 2012.

TABLE: 8.2  
LIVESTOCK AND POULTRY POPULATION IN ASSAM (in nos)

Sl. No.	Livestock Species	2012
1.	Total Cattle	10307604
	a. Crossbreed cattle	395902
	b. Indigenous Cattle	9911702
2.	Buffaloes	435265
3.	Sheep	518067
4.	Goat	6169193
5.	Horses & Ponies	14153
6.	Pigs	1636022
7.	Dogs	527521
8.	Elephant	445
9.	Rabbit	6170
10.	Fowls	18718209
11.	Ducks	7300402

Source: Directorate of Animal Husbandry & Veterinary, Assam.

The livestock products which are also known as availability of livestock items are presented for some years as follows:

TABLE – 8.3  
TREND OF LIVE STOCK PRODUCTS IN ASSAM

Item	2011-12	2012-13	2013-14	2014-15	2015-16
Milk (million litres)	838	845	857	873	888
Egg (million nos)	471	471	472	473	474
Meat ('000 tonnes)	34.19	36.63	38.34	42.0	44.81

Source: Directorate of Animal Husbandry & Veterinary Department, Assam.

#### SOME IMPORTANT ACTIVITIES:

##### BREED UP-GRADATION THROUGH ARTIFICIAL INSEMINATION PROGRAMME:

Despite having sizeable number of cattle, milk production in the State is not upto the satisfactory level as the major percentage of the cattle population in the State are of none-descript type. Implementation of World Bank funded scheme as well as the Scheme under National Project on Cattle-Buffalo Breeding [NPCBB] although assisted increase of milk production to a considerable extent in the State, achievements in case of production of cross breed animal was not very satisfactory. At present, breed up-gradation programme is carried out under AACP, RKVY and NPCBB Schemes.

The State Animal Husbandry & Veterinary Department has proposed to incorporate the following activities to enhance milk production:

- The State of the ART Frozen Semen production centre which is already set up in Barpeta will be strengthened to enhance semen production;
- Out sourcing of A.I. Services to boost artificial insemination activities;

- Improvement of Animal Health Services through holding of training and awareness campaign, organizing Health Camps;
- Induction of High Yielding indigenous breed of cattle like Sahiwal, Red Sindhi, etc in addition to routine A.I. activities;
- The number of frozen semen banks would be increased to improve the network of A.I. activities;
- Stall feeding practices and quality animal rearing would be promoted on cluster basis for better milk production.

#### POULTRY DEVELOPMENT:

The Animal Husbandry & Veterinary Department, Assam is encouraging backyard poultry rearing in the State for enhancing meat and egg production. As this sector generates employment and enhance rural income, a large number of people are directly or indirectly engaged in poultry sector in the state. The broiler raising programme under Chief Minister's Special Employment Generation Programme implemented in the State by the Department created direct employment to 824 people and indirect employment to more than 10 thousand people in the State. In addition, production of chicken achieved more than double of the targeted production.

Considering the achievement the State Animal Husbandry & Veterinary Department proposed to implement several schemes under the Assam Livestock & Poultry Development Corporation (ALPCO), strengthen the existing feed mill at Sonapur, rejuvenate the existing Poultry farm at Golaghat and Pork Processing Plant at Nazira, broiler raising programme through entrepreneurship development and distribution of poultry units to beneficiaries.

#### GOATERY AND PIGGERY DEVELOPMENT:

The State of Assam produces highest quantity of pork in the country. But the production is found to be too little to meet the demand of the State and the North East region. The importance of piggery sector in poverty alleviation cannot be ignored including its role in inclusiveness of agricultural growth. In order to meet the demand of improved germplasm and breeding animals, the National Research Centre on Pig(ICAR) has been established in the State and Artificial Insemination(AI) technology on pig is adopted by the centre need to be replicated in the potential area. Moreover, with the growing demand of pork in the State the growth of this sector is essential. To boost production of pork, the Animal Husbandry & Veterinary Department, Assam has planned to upgrade all the departmental Pig Farms to produce pure breed high yielding piglets for sale to the rural pig farmers. Steps have also been taken for breed up gradation of local pig through natural breeding by distributing quality Boar to meet the gap of meat production. The Department also took steps to encourage pig rearing through individual farmers, SHGs, CIGs etc., and establish "Pig Villages" to create organized network for more production of meat and to create gainful employment. Moreover, focused attention is also proposed to be given to encourage the people of rural areas to rear goat in a systematic manner and the scheme is planned to be implemented through individual farmers and through SHGs. The Animal Husbandry & Veterinary Department, Assam is commissioned two establishments of NUCLEUS pig breeding farm at Kothiatoli, Nagaon under RKVY-NMPS scheme and goat breeding farm at Howly, Borpeta for development of piggery and goatery service sector.



**FODDER DEVELOPMENT:**

Though feed and fodder is one of the most important contributing factors for the growth of livestock sector, development of this sector is necessary. It is estimated that about 60-70 percent of the total cost of livestock production is due to feed and fodder. Due to heavy rainfall in the region and for availability of wild grass in the monsoon season; farmers are not habituated with fodder cultivation. The Department has planned to popularize fodder cultivation at institutional waste land, strengthen and revamp the Regional Feed Testing Laboratory, located at Khanapara and establish Silage making unit in each Government Livestock Farm for demonstration purpose.

The Animal Husbandry and Veterinary department, Assam has also proposed establishment of 6(six) numbers of feed mill and fodder block making units in PPP mode to provide available source of fodder for cattle to enhance milk production.

**FROZEN SEMEN AND ASSAM LIVESTOCK DEVELOPMENT AGENCY (ALDA):**

The semen station at Khanapara was initiated at 1968-69 under Intensive Cattle Development Project (ICDP). Later the station was updated in the year 1975-76 under the Indo-Australian cattle Breeding Project (IACBP) for production of chilled semen till the beginning of 1995-96. In the year 1995-96 under the ARIASP, Khanapara semen station was strengthened with new Bulls and equipments for production of frozen Semen.

The production of Frozen Semen was temporarily suspended due to transaction of old semen station of Khanapara to the new one located at Borpeta which was commissioned from March'2015. Till date 200,000 Frozen semen doses of pure Jersey and H.F. has been produced. The Semen produced will be distributed in the field after CMU evaluation.

ALDA was constituted under the society Act as per guidelines of national Project on Cattle and Buffalo Breeding (NPCBB) and it started functioning from 2004. The main objective of ALDA is to produce good quality semen, to improve training facilities for extending breeding network. All the objectives are targeted for improving milk production in the State.

TABLE – 8.4

**COMPARATIVE ANNUAL REPORT OF A.I. DONE AND CALF BORN FOR IN ASSAM**

2013-14		2014-15		2015-16	
A.I Done (No. of Doses)	Calf Born (In No.)	A.I Done (No. of Doses)	Calf Born (In No.)	A.I Done (No. of Doses)	Calf Born (In No.)
330049	115764	322065	135899	217247	110702

A.I.:: ARTIFICIAL INSEMINATION SOURCE :: ALDA

TABLE—8.5

**YEAR WISE INCOME FROM SEMEN SALE PROCEEDS**

YEAR	INCOME FROM SEMEN SALE PROCEEDS (Rs.)	BANK INTEREST (Rs.)	TOTAL AMOUNT (Rs.)
2012-13	70,82,859.00	12,43,611.00	83,26,470.00
2013-14	1,04,31,048.00	14,09,739.00	1,18,40,787.00
2014-15	92,67,740.00	21,30,266.00	1,13,98,006.00
TOTAL:	5,15,50,323.00	64,36,807.00	5,79,87,130.00

A.I.:: ARTIFICIAL INSEMINATION SOURCE :: ALDA

**COORDINATED CATTLE BREEDING PROJECT (S.E):**

C.C.B.P (S.E) was launched in the year 1980-81 with the objective to select Proven Bulls having high genetic merit by Sire evaluation through their field progeny testing which has great importance in extensive breed improvement programme of the state cattle breeding policy. Here selective breeding in elite herd is done to get the progeny with higher milk production ability, draught ability and adaptability to meet the local requirements and thus to generate rural self-employment as well as to boost up the rural economy.

Rearing of Cows for milk is still a tradition for most of the livestock farmer in Assam but most of them own only one or two cows that too indigenous type. The milk production in Assam is mainly from these indigenous non-descript type cattle with very low milk production. Therefore, the CCBP was launched to infuse superior germ plasm into the non-descript low producing stock by artificial insemination with the sole aim to increase productivity.

**ANIMAL HEALTH CENTRE:**

The Department of Animal Husbandry, Dairying and Fisheries, Govt. of India under the scheme "Animal Disease Management & Regulatory Medicine" has established North Eastern Regional Disease Diagnostic Laboratory (NERDDL) for the North Eastern Region. NERDDL is one of the five laboratories established in India to serve in regional context. The NERDDL had provided referral and consultancy services to the state diagnostic laboratories of the region for economically important livestock and poultry diseases, as and when needed.

**Preparedness for control and containment of Avian Influenza:**

1. The BSL –III mobile laboratory in NERDDL is presently used for testing of bird flu samples by RTPCR technology.
2. Training of veterinary workforce for handling outbreaks, including control and containment operations for HPAI already completed in all the NE states.
3. Constant and continued surveillance of bird flu is going on with active collection of representative samples. During the year 2014-15 a total of 3097 samples are processed.
4. High surveillance priority is given to the villages neighbouring the water bodies where migratory bird are known to frequent and also in the 5 km zone from international borders.

Awareness programme are also continued with the Forest personnel to report any unusual death of wild migratory birds.

**LIVESTOCK PRODUCTS: REQUIREMENT AND AVAILABILITY OF MILK, EGG AND MEAT:**

According to the Sample survey results for the year 2014-15 published by the Directorate of Animal Husbandry & Veterinary, Assam reveal that there exists large gap between the requirement and availability of livestock products in the State. It is seen that quantity of milk, egg and meat is available in the State is 36 percent, 8 percent and 13 percent to total requirement of milk, egg and meat respectively during the year 2015-16. Although the Department does not carry survey about requirement of livestock products but prepares a departmental estimate of it on the basis of requirement norms of milk, egg and meat fixed by the ICMR.

Following table below shows the requirement and availability of livestock products during the last couple of years:

TABLE – 8.6  
REQUIREMENT AND AVAILABILITY LIVESTOCK PRODUCTS IN ASSAM

Year	Milk (million ltrs)		Egg (in million nos.)		Meat (in'000tones)	
	Requirement	Availability	Requirement	Availability	Requirement	Availability
2011-12	2338	838 (37.1)	5542	471 (8.5)	336	35 (10.4)
2012-13	2395	845 (35.3)	5677	471 (8.3)	347	37 (10.7)
2013-14	2423	857 (35.4)	5744	472 (8.2)	351	38 (10.9)
2014-15	2452	873 (35.60)	5812	573 (9.88)	355	42 (11.8)
2015-16	2480	888 (35.81)	5881	474 (8.06)	359	45 (12.53)

Figure in bracket shows the 'Availability" in % to "Total Requirement"

Source: Directorate of Animal Husbandry and Veterinary, Assam.

#### INTEGRATED SAMPLE SURVEY:

The Integrated Sample Survey Scheme was introduced in the state veterinary department of Assam in 1968-69 along with the state veterinary department of the other states of India for ascertaining uniform pattern in the estimation of milk, egg and meat and livestock keeping practices in the state. This has been an essential survey to estimate the quantum of livestock products produced by the state annually and most importantly the extent of contribution being made by the livestock sector to the state domestic products and for the preparation of future plans of the department.

#### • MILK PRODUCTION :

The total milk production of the state for the year 2015-16 was estimated at 888.18 million liters as against 872.98 million liters of the previous year. It reveals that the growth of milk production has increased marginally by 1.75% over the previous year. Further during the year Indigenous/ Non descript cattle milk is observed to have constituted 53% of the total milk production of the State while the contribution of Crossbreed cattle milk is around 30% and thus the cattle milk together contributes 83% to the total milk. Buffalo and Goat milk contributes 14% and 3% respectively to the total milk production. It means that about 17% of the total milk production is shared by buffalo and goat milk.

The per capita availability of milk for the year 2015-16 is estimated on the basis of total milk production and total population of the state for the period. As such the per capita availability is estimated to have become 74 ml per day. Thus the per capita availability of milk is observed to have remained almost same in comparison to the previous year, which might be due to rise in population (projected) by 1.2% even with the increase in milk production. But the fact is that per capita availability of milk of the State is much lower than the norms determined by the ICMR.

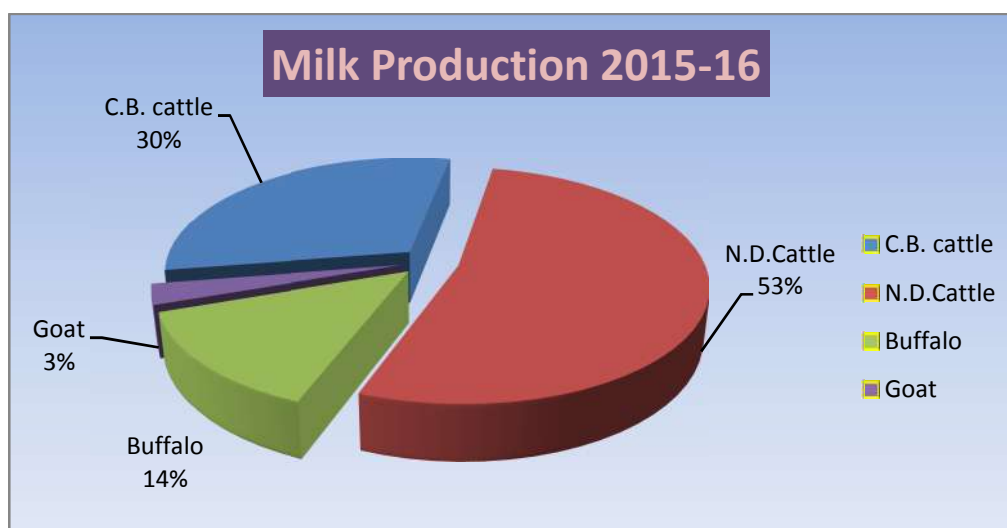
TABLE-8.7  
TREND OF TOTAL MILK PRODUCTION IN ASSAM

(in million litres)

YEAR	Cattle		Buffalo	Goat	Total milk
	Crossbreed Cattle	Indigenous Cattle			
2011-12	236.53	455.49	123.41	22.94	838.37
2012-13	247.07	450.42	128.72	18.68	844.90
2013-14	247.17	465.61	128.56	16.15	857.39
2014-15	246.06	475.03	126.25	25.64	872.98
2015-16	270.11	470.02	123.05	25.00	888.18
Variation (%) 2015-16 over 2014-15	9.77	(-)1.06%	(-) 2.50%	(-) 2.34%	1.75%

Source: Directorate of Animal Husbandry and Veterinary, Assam

A graphical representation of share of milk production of different items for the year 2015-16



#### EGG PRODUCTION:

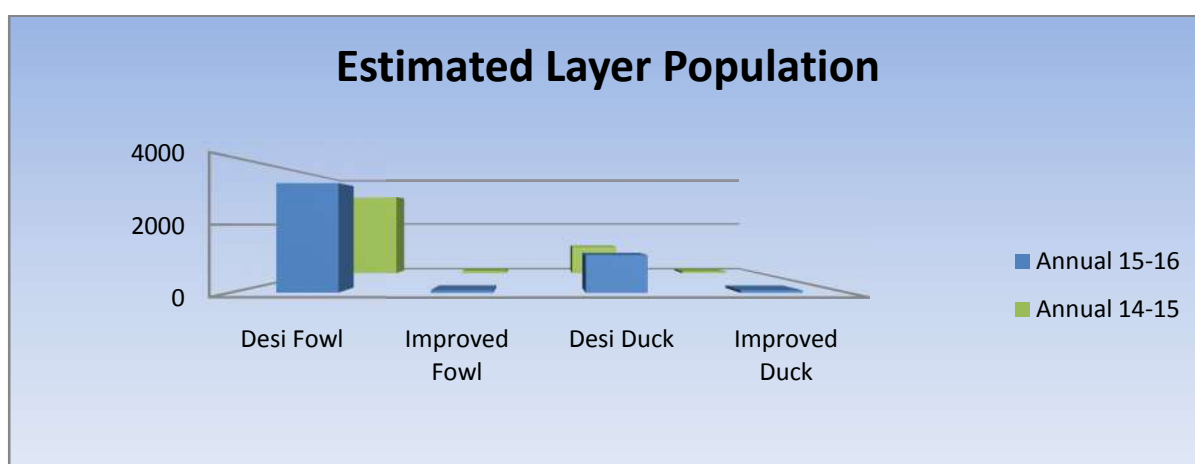
The layer population of fowl and duck for the current year is estimated at 3300.75 and 1183.62 thousand numbers respectively. It reveals 2.79% and 4.09% growth of layer population in respect of fowl and duck as compared to the previous year. The layer population of Improved Fowl and Improved duck is found to have declined by 14.91% and 4.85 respectively for both according to sample survey estimation.

Further, desi layer fowl constitutes 98% of the total layer Fowl population while it constitute 72% of the total layer population comprising fowl and duck population.

## ESTIMATED NO. OF LAYERS IN THE STATE DURING 2015-16

(in 000 nos.)

Season	Fowl		Total Layer Fowl	Duck		Total Layer Duck
	Desi	Improved		Desi	Improved	
2015-16	3221.05	79.70	3300.75	1108.46	75.16	1183.62
2014-15	3117.36	93.67	3211.03	1058.15	78.99	1137.14
% Change over 2014-15	3.33%	(-) 14.91%	2.79%	4.75%	(-) 4.85%	4.09%

ANNUAL AVERAGE YIELD PER LAYER IN 2015-16  
(in Nos.)

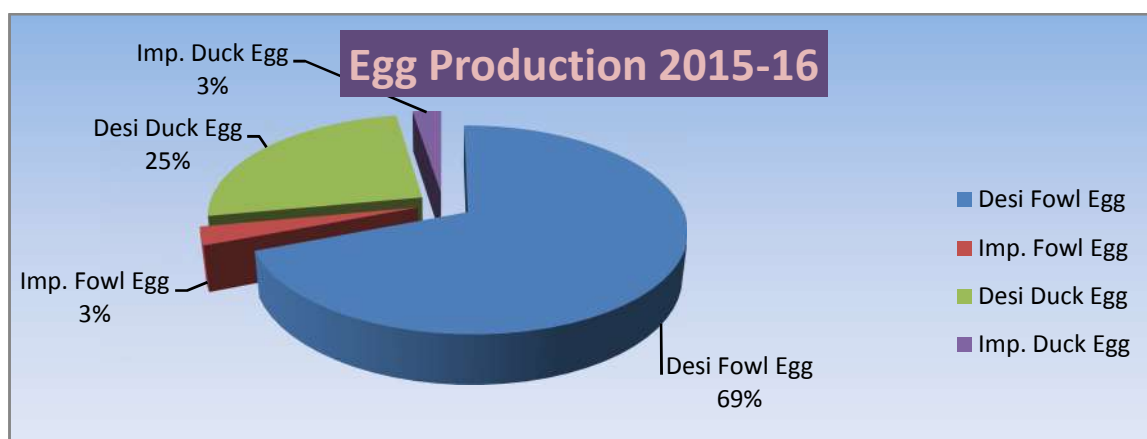
Season	Fowl		Duck	
	Desi	Improved	Desi	Improved
2015-16	101	171	106	167

Annual average yield rate of Fowl egg is 108 and 182 numbers per layer per season for local and improved fowl while 108 and 175 were the yield rate of per layer per season for local and improved duck respectively for the year 2015-16.

TABLE-8.8  
ESTIMATED EGG PRODUCTION IN THE STATE DURING THE YEAR 2015-16

(in lakh nos.)

Season	Fowl		Duck		Total
	Desi	Improved	Desi	Improved	
2015-16	3278.88	136.36	1204.36	120.88	4740.48
2014-15	3305.9	160.93	1131.08	131.01	4728.92
% Change over 2014-15	(-)0.82%	(-) 15.27%	6.48%	(-) 7.73%	(+) 0.24%



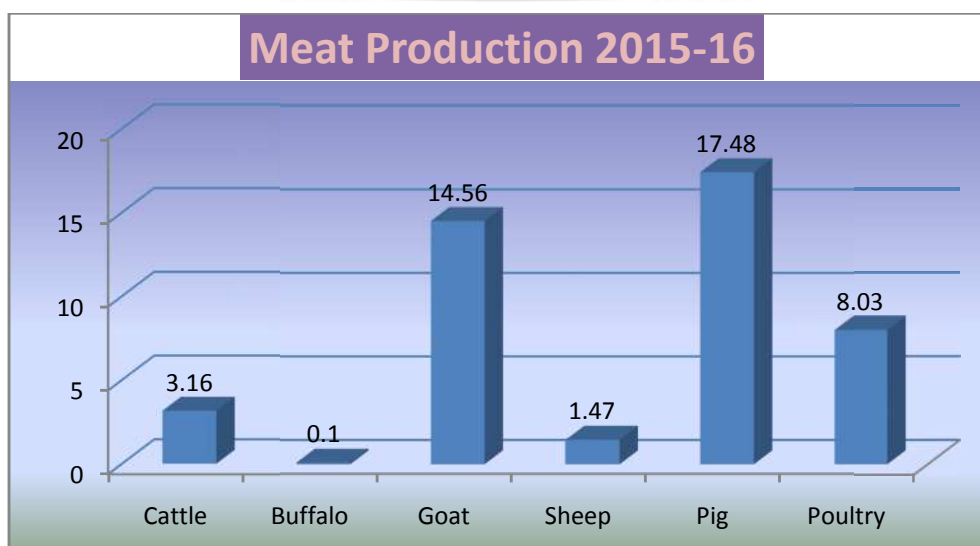
The season wise egg production in the State is estimated by multiplying the average yield per layer per season with the numbers of the particular breed of layers in the season. The total numbers of egg in the State for the year 2015-16 was estimated at 4740.48 lakh numbers in comparison to 4728.92 lakh numbers of egg estimated in the previous year showing a marginal growth of about 0.24% over the year 2014-15.

- **MEAT PRODUCTION :**

The meat production in the state is estimated based on the no. of animals /birds of different types slaughtered per season and per year and average meat yield. The total meat production during 2015-16 was estimated to be 44.81 thousand tons against 42.60 thousand tons of the previous year of 2014-15 showing about 5 percent increase in meat production over the previous year. The number of animals/birds slaughtered, average meat yield and total meat production during the year is shown in the following table:

**TABLE-8.9**  
**NO OF ANIMALS / BIRDS SLAUGHTERED, AVERAGE YIELD AND MEAT PRODUCTION**  
**DURING THE YEAR 2015-16**

Sl. No.	Item	No. of animals Slaughtered during the year 2015-16 (000'no)	Average meat yield per animal/bird (in kg)	Meat production (in 000'tonnes )
1	Cattle	51.0	62	3.16
2	Buffalo	1.4	72	0.10
3	Goat	2075.0	7	14.56
4	Sheep	209.3	7	1.47
5	Pig	549.7	32	17.48
6	Poultry	6634.76	1.21	8.02
Total Meat				44.81



#### INSTITUTE OF VETERINARY BIOLOGICALS [IVB]:

Institute of Veterinary Biologicals (IVB) is a vaccine production centre of A.H. & Vety. Deptt. Govt. of Assam. IVB plays major role in Livestock Health coverage for growth and development of A.H & Veterinary sector. The institution associates with mainly medicinal preparation made from living organisms and their products widely used in the field of immunization and disease diagnosis of animals and birds. These immunizing agents may be classified as vaccine, immunoglobulin, antiserum, antitoxin or antigen, which play a vital role in immune-prophylaxis and diagnosis of diseases

The IVB has been producing vaccine since its inception in 1950. The quantity of production, procurement & distribution w.e.f. 2005-06 to 2015-16 has been represented as follows: -

Vaccine production	69,79,865 doses
Vaccine procurement	1,76,50,370 doses
Vaccine distribution	2,46,85,510 doses

The IVB has well developed infrastructure for production of various bacterial and viral Vaccines. However, it has some constraints to be wiped out to cope with the modern vaccine production technology. At present the institute is producing the following type of vaccines.

- a) Bacterial Vaccine - H.S., B.Q., Anthrax
- b) Viral Vaccine - F<sub>1</sub>, R<sub>2</sub> B, Duck Plague, Swine Fever

#### ACHIEVEMENT:

1. The IVB, Khanapara has successfully come out with its promise to assured disease protection to the livestock and birds of the state.
2. Due to untiring effort of the institute many organization like NABARD, DRDA, SIRD and several NGO's has taken up initiative in establishing small and large scale livestock industry in the region.
3. It is the major achievements of IVB that the entire NE region has been provisionally declared free from Rinderpest disease due to relentless effort of the institute through its product.

4. IVB is pertaining internship training regularly to the students of Veterinary Science, AAU besides other departmental training programme.
5. The major immunization programme of livestock under the project ASCAD is in service.
6. During 2005-06 to 2015-16 all total 2.46 crore vaccine doses produced / procured at IVB.
7. During 2005-06 to 2015-16, 2 state level seminar, 89 district level and 831 block level awareness camps have been completed.
8. All together 410 Vets and 381 Para-vets completed training on different disciplines.
9. Different modern sophisticated laboratory instruments / appliances / machineries and other related facilities are replacing the outdated ones in phase manner.
10. The IVB is almost ready to apply for certification of GMP norms.
11. Altogether 10 Officers has been trained in vaccine production technology at IVRI, Izatnagar, UP.
12. During 2005-06 to 2015-16 the IVB has distributed 2.47 crores doses of vaccines to the field.
13. A Technical Advisory Committee (TAC) is created vide govt. notification No. VFV. 107 / 2007 / 4 dated 21<sup>st</sup> June, 2007 to render best services both in terms of Veterinary Biologicals and diagnosis of the prevailing diseases of livestock and birds, their epidemiological study and measures for control and eradication, to adapt latest technical strategy with the tools of information, knowledge and experiences.

#### DAIRY DEVELOPMENT:

The Dairy Development in Assam was initiated in the latter part of the Second Five Year Plan period with the basic concept to develop the Dairy industry in the State through establishment of Town Milk supply scheme almost in all important towns of Assam to feed the consumers hygienic, clean milk at reasonable price. Till February 1982 the Dairy Development activities were carried out by the Director of A.H. & Veterinary Department. To expand the role of Dairy activities in the state economy, the Govt. of Assam created a separate Directorate of Dairy Development bifurcating it from the Animal Husbandry and Veterinary Department during the year 1982. The primary focus areas of Dairy Development, Assam are:

- i) Procurement, processing and distribution of milk aiming at economic upliftment of rural milk producers and help urban consumers to get quality milk at a reasonable price.
- ii) Developing adequate infrastructure to ensure procurement and processing of milk produced in the State.
- iii) Organizing milk producers for efficient procurement, processing and marketing
- iv) Awareness among milk producers, traders and consumers regarding clean milk production and consumption.
- v) To modernize the supply of inputs like A.I., Feed, Fodder, Animal Health coverage and Training etc. to the Dairy farmers in the milk shed areas linked with Milk Supply Schemes and Milk Plants.
- vi) To help the villagers in marketing their produce by setting up of suitable transport and marketing organization.



## PRESENT STATUS:

- The milk production in Assam has been increased from 833 million litres in 2010-11 to 888 million litres in the year 2015-16.
- Delivery of clean milk to the consumers, concept of Any Time Milk through Milk Vending machine has been started from 2008-09.
- Comprehensive network of Bulk Milk Coolers has been initiated in the state to facilitate processing of milk from the year 2009-10.
- Automatic Milk Collection units in 65 locations in the state are being setup since 2008-09.
- Organised 312 Dairy Cooperative Societies.
- Organised 300 Milk Producer Institutions.
- For efficient maintenance of cold chain from producer level to consumers level following steps have been taken:
  - a) Upgraded 2 numbers of Milk Processing Plants i.e. Nagaon and Bokakhat Milk Processing Plants from 2000 ltrs to 5000 ltrs.
  - b) Revived 10 defunct Chilling Plants.
  - c) Established 59 numbers of bulk coolers in the State.
  - d) Established 53 Milk Collection Centre with Automatic Milk Collection Units.
  - e) Procured 17 numbers of Road Milk Tanker.
  - f) Established a Central Milk Testing Laboratory at Khanapara for checking quality of milk for the consumers.

TABLE – 8.10  
TRENDS OF MILK PRODUCTION IN ASSAM AND INDIA

(In'000 Tonne)

Year	2010-11	2011-12	2012-13	2013-14	2014-15
Assam	791 (0.69)	796 (0.62)	800 (0.60)	815 (0.59)	829 (0.57)
All India	114305	127904	132431	13766	146314

\*Figure in bracket shows the percentage share of Milk production in Assam to All India.

Sources: Directorate of Animal Husbandry and Veterinary, Assam and Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture, GOI

## STRATEGIES DURING TWELFTH FIVE YEAR PLAN:

- ❖ To give thrust on the programmes to enhance the milk production of the state and programme benefitting the rural dairy farmers for economic upliftment through self employment scope.
- ❖ To continue all projects/schemes existing at the end of the eleventh five year plan with rational proposition for further strengthening wherever it feels to be necessary.
- ❖ To create one milk surplus district per year in convergence with Veterinary department.
- ❖ To avail more benefit out of centrally sponsored schemes under NEC, schemes under World Bank and schemes funded by other related agencies.

To achieve the objectives following ongoing schemes/projects under State Plan, Centrally Sponsored Scheme, World Bank Aided Projects and other schemes are proposed to be taken up during the twelfth Five Year Plan:

#### ENHANCEMENT OF MILK PRODUCTION:

Thrust has been given upon the projects to enhance milk production of the State through integrated dairy activities. The Dairy Development Department proposed to create opportunities for self employment for economic up-liftment of both the rural as well as urban/peri-urban dairy farmers during the twelfth Five Year Plan period. Accordingly the following steps have been taken:

- Integrated Support Services Scheme for creation of milk surplus district.
- Establishment of Commercial Dairy Unit.
- Milk Marketing.
- Support inputs to dairy farmers.

#### MILK PROCESSING FACILITY:

To achieve the minimum per capita availability of 208 ml per day as recommended by ICMR, the Dairy Development Department has given thrust in increasing milk production as well as to increase milk processing facility to maintain cold chain covering the entire State for economic upliftment of rural dairy farmers. To achieve the goal following steps have been proposed to be taken:

- To re-establish and develop processing infrastructures of Dairy Development to assist milk producers in enhancing milk production and to establish market linkages.
- Renovation/upgradation of existing milk processing plants and setting up of new Central Dairy/Milk processing plants in potential milk shed areas.
- Establishment of Bulk Milk Coolers in milk potential areas.
- Incorporation of INSULTED Milk Tankers for maintaining cold chain with Bulk Milk Coolers, Milk Processing Plants and Central Dairy.
- Establishment of Milk Vending machines in strategic locations ensuring Any Time Milk to the consumers.
- Establishment of milk booths in major milk consuming areas.
- Establishment of Milk Parlor in each district to ensure availability of quality of quality milk and milk product for the urban consumers.

The Dairy Development Department also planned to organize 20000 rural farmers into Dairy Cooperative Societies (DCSs), SHGs and Milk Producer Institutions (MPIs) so that opportunities can be availed by the groups including training on clean milk production and management practices.

#### IMPLEMENTATION OF VARIOUS PROJECTS:

The State Dairy Development Department have been implementing various schemes/projects to increase milk production in the State.

#### ASSAM AGRICULTURAL COMPETITIVENESS PROJECT (AACP):

(Externally aided project)

The objective of the project in respect of Dairy Development is to organize the dispersed dairy farmers into Dairy Cooperative Society (DCS) and Self Help Group (SHG) and Milk

Producers Institutions (MPIs) to provide both forward and backward linkage to them in order to strengthen their capacity, make them more competitive and economically sustainable and to make them able to take advantage of emerging commercial opportunities. A substantial number of dispersed dairy farmers have been organized in viable groups with assured linkages under the Assam Agricultural Competitiveness Project (AACP).

#### CHIEF MINISTER'S SPECIAL PACKAGE FOR DHEMAJI DISTRICT:

The Dairy Development department has proposed to establish 13 nos. of Commercial Dairy farms in the District as well as to complete ongoing project of 5000 LPD Dairy Plant. In addition, the Department has planned for upgradation of existing Lahowal Milk Processing Plant.

#### INTEGRATED SUPPORT SERVICES FOR CREATION OF MILK SURPLUS DISTRICT:

The scheme envisages providing support services to identify dairy clusters of Barpeta District and Sadiya Sub-Division for enhancement of milk production and livelihood avenues to the poor dairy farmers and to create the district as milk surplus district.

#### SUPPORT INPUTS TO DAIRY CO-OPERATIVE SOCIETIES (DCSS):

The Dairy Co-operative Societies organized under AACP and IDDP are doing well in milk production. To provide input support for clean milk production as well as enhance milk production, the State Dairy Development Department proposed to give cattle feeds, Green fodder, Milk procurement inputs, feed supplements etc., to the members of DCSSs.

#### EMPLOYMENT GENERATION:

- All the existing or new Schemes/projects under the Dairy Development, Assam will be carried out in synchronization with each other irrespective of source of fund to achieve the common objective: to increase overall milk production in the state, thereby giving livelihood avenues to the poor dairy farmers.
- The proposed acquisition of Bulk Milk Cooler which will be installed under different Dairy Cooperatives to create employment avenues in the State.
- The Department proposed to provide financial assistance to prospective dairy entrepreneurs to establish Commercial Dairy Farm in semi urban/rural areas for which 66.66 percent of the total unit costs will be provided through bank finance and remaining 33.33 percent will be as Government as subsidy. The department proposed to implement the scheme by setting up 5 numbers of such units to generate employment.

#### SCHEMES FOR WOMEN:

Though women play an important role in livestock management, their control over income from livestock products and its product is negligible. To empower and economic upliftment of the womenfolk involved in dairy farming, the Dairy Development department has taken special initiative since 2013-14 by forming women groups like Dairy Cooperative Societies, Self Help Groups so that they can avail easy credit, inputs and marketing facilities under the Milk Village scheme. The department also initiated training to give updated exposure and skill development on the animal rearing front and other management activities including marketing of their produce. Number of Dairy Cooperative Societies in Assam has increased from 294 in 2014-15 to 332 in 2015-16.

## CHAPTER -IX

## FISHERIES

Fishery sector occupies a very important place in the socio-economic development of Assam. It has been recognised as a powerful sector both for income and employment generation. Assam is endowed with vast water resources suitable for pisciculture, and having great potential and prospects for the development of the fishery sector. The State's vast water resources, includes its two major river systems – the mighty Brahmaputra and the Barak with its tributaries, covering a water spread area of 4820 kms. Besides wetlands, low-lying areas, derelict water bodies, beels, tanks, ponds etc, which all add up, to its vast potential for fish production covering an area of 2.86 lakh hectares. The state is considered a bio-diversified hotspot, for its diversified aquatic flora and fauna. The state has, so far a record of a total of 217 fish species, out of which 150 species have ornamental importance and 50 species have overseas ornamental value. However, though the state has abundance of water resources, it has yet to tap the potential area for inland fish production. Among the fish farming environments prevalent in the state, the most dominant system practiced is semi-intensive polyculture. Basically aquaculture in the state is carp oriented and the contribution of other species is marginal.

The contribution of the fishery sector to the State Domestic Product (at constant 2011-12 prices) was Rs. 4414.30 lakhs (with a growth rate of 6.86 percent) as per provisional estimates 2013-14, Rs. 451000 lakhs (with a growth rate of 2.17 percent) as per provisional estimates, 2014-15 (P) and Rs. 472119 lakhs (with a growth rate of 4.68 percent as per quick estimates 2015-16 (Q)

Fish forms an integral part of the cuisine and culture of the people of Assam. It is highly preferred and largely consumed, as fresh fish is an important part of the daily meal. Fisheries sector development is also very important for the state's economic development, as a livelihood issue, for the provision of the required nutrition, employment and income to its people and being traditionally interwoven in their everyday life. Since the last two decades, fisheries sector has been able to achieve remarkable growth. It has also been taken up as a commercial activity and has ushered in a silent revolution of progress and prosperity throughout the length and breadth of the state.

The Fisheries department has put in various efforts to enhance and further develop this sector by its interventions, encouragement of taking up scientific fish farming methods and adoption of related technologies, quality fish seed production and establishment of various infrastructure along with marketing facilities. Total fish production in the state has also increased from 2.82 lakh MT in 2014-15 to the tune of 2.94 lakh MT in 2015-16, against the nutritional demand of 3.36 lakh MT in the state. It is observed on calculation that present per capita availability of fish is about 9 kg which is for below the minimum per capita nutritional requirement of 11 kg.

## PRESENT STATUS OF DEVELOPMENT AND MANAGEMENT OF RESOURCES:

Although the resource potential for fish production is high, scientific fish farming and management is being practiced only in a small portion. In some bills and low-lying areas, culture based capture fisheries enhancement programme have been undertaken, which has resulted in the increase in productivity to a considerable extent, with a maximum of 1600 kg/ha/per year. Riverine fisheries are being exploited with little conservation effort.

The revenue fisheries, i.e. rivers and beels at present under Assam Fisheries Development Corporation Ltd; Fisheries Administrative Departments, Government of Assam, Deputy Commissioners and Sub-Divisional Officers (Civil.) and Panchayats through bearing out to individuals and Co-operative Societies.

Major Infrastructure, as available in the Fishery Sector are as follows:

1. Eco Hatcheries & other Infrastructure:

- Departmental : 7 Nos.
- Private : 384 Nos.
- Mini Bandh : 9 Nos. (Departmental)

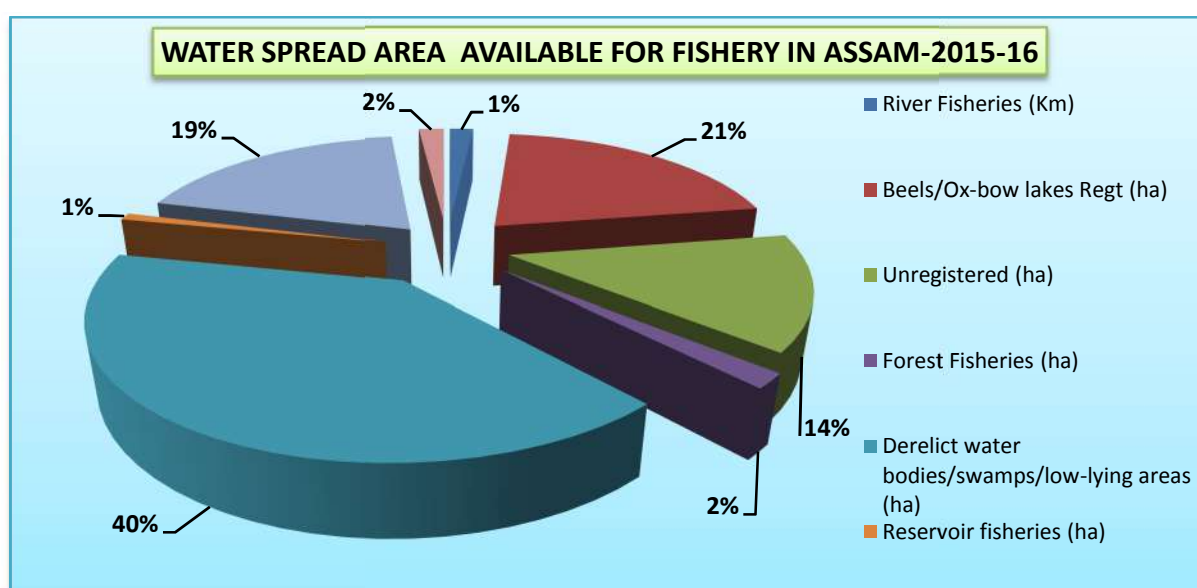
2. Departmental Farm

- Handed over FFDA : 121 Nos.
- Retained with the Department : 20 Nos.
- Total farm : 141 Nos.
- Fish Feed Mill (Private) : 8 Nos.
- Fisheries Training Centre : 9 Nos.
- Hygienic Fish Market : 8 No.

TABLE – 9.1

FISHERY WATER RESOURCES AS PER WATER SPREAD AREA AVAIL ABLE FOR FISHERY IN ASSAM 2015-16

Sl. No.	Resources	Number	Water Spread Area
1	River Fisheries	Main River 2, Tributaries-53	4820 Km.
2.	Beels/Ox-bow lakes	Registered -430 Unregistered -767	60215 Ha 40602 Ha
3.	Forest Fisheries	71	5017 Ha
4.	Derelict water bodies/swamps/low-lying areas	3887	116444 Ha
5.	Reservoir fisheries	2	2553 Ha
6.	Individual Ponds	367173	56279 Ha
7.	Community Tanks	6328	5152 Ha

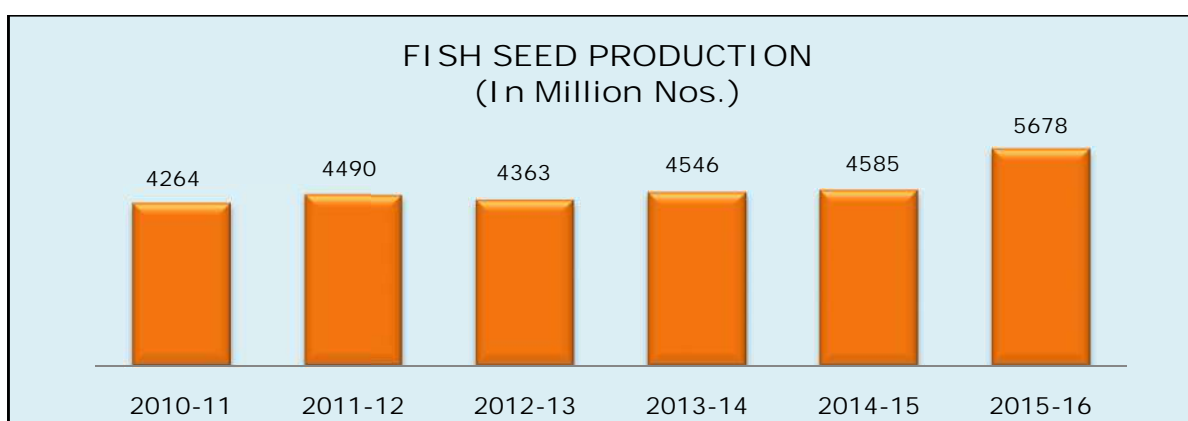
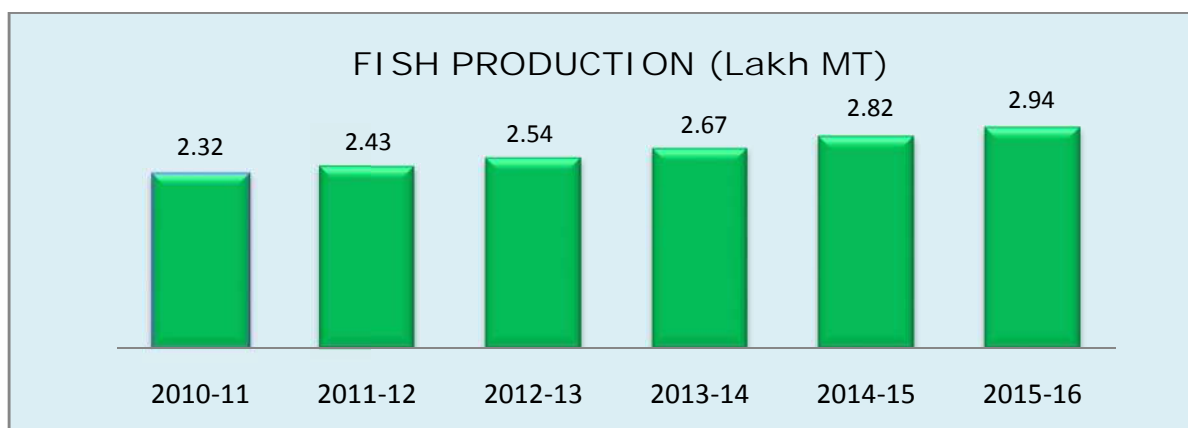


Taking into consideration the vast potential and development prospects of the fisheries sector, the Central and State Government have come up with various schemes. It is hoped that these schemes will go a long way to help the cause of the fish farmers and see to their well-being, development and prosperity. A system of horizontal expansion had been adopted, followed and accomplished through creation of new ponds, reclamation and renovation of existing areas followed by fish culture through Community and Self Help Groups (S.H.Gs.). Thrust has also been given on vertical expansion through adoption of methods like productivity enhancement, use of improved and advanced culture techniques and better sustainable management practices. Emphasis is also been given and laid on making fish, the best animal protein source in the form of fish available to all and also for the creation of self-employment opportunities.

TABLE-9.2

FISH AND FISH SEED PRODUCTION IN ASSAM FROM 2010-11 TO 2015-16 FOR THE (LAST SIX YEARS PERIOD)

Years	Fish Production (Lakh MT)	Fish Seed Production (Million nos.)
2010-11	2.32	4264
2011-12	2.43	4490
2012-13	2.54	4363
2013-14	2.67	4546
2014-15	2.82	4585
2015-16	2.94	5678



FINANCIAL ALLOCATION AND EXPENDITURE DURING THE LAST FOUR YEARS OF 12<sup>TH</sup> FIVE YEAR PLAN (2012-13 TO 2015-16):

During the last three years of 12<sup>th</sup> Five year plan period, an amount of Rs. 24348.00 lakhs have been allocated against which Rs. 14390.56 lakhs have been received and utilised. The brief component-wise allocation and expenditure statement is shown below in Table 9.3

**TABLE-9.3**  
**COMPONENT WISE ALLOCATION AND EXPENDITURE FOR 12<sup>TH</sup> FIVE YEAR PLAN**  
**PERIOD FROM 2012-13 TO 2015-16)**

Rs. In lakhs

Sl. No.	Category	Allocation				Expenditure			
		2012-13	2013-14	2014-15	2015-16	2012-13	2013-14	2014-15	2015-16
1.	General Areas (Including State Share of CSS)	3585.20	4740.85	4395.00	4921.39	2817.15	2590.91	3114.22	880.47
2.	SCSP	550.00	580.00	500.00	583.00	538.00	576.00	500.0	-
3.	TSP	88.00	100.00	100.00	110.00	88.00	88.00	100.0	-
4.	Central Share for CS	414.00	214.00	8.46	77.16	18.07	47.46	8.46	-
5.	EAP (AACP)	1477.60	1081.11	822.03	-	1412.80	1081.11	529.82	-
Total		6115.00	6715.96	5825.49	5691.55	4874.02	4383.57	4252.50	880.47

BRIEF DESCRIPTION OF THE MAJOR DEVELOPMENT SCHEMES/PROGRAMMES IMPLEMENTED DURING THE LAST FOUR YEARS OF 12<sup>TH</sup> FIVE YEAR PLAN PERIOD (UP TO 2015-16):

**A. STATE PLAN SCHEMES:**

**1. FISH AND FISH SEED FARMING:**

This is one of the major schemes implemented by the Department of Fisheries for enhancing fish and fish seed production along with other related activities and infrastructure development. Under this scheme, various programmes has been taken up for fish seed production, namely construction of hatcheries, production and raising of seed in departmental as well as in private farms, assistance given to progressive farmers for production of fingerlings etc. Strategies have also been adopted to narrow down the gap between demand and supply of fish by vertical expansion through productivity enhancement from the existing culture areas and horizontal expansion through creation of new areas for fish culture. Programme that has been implemented with this strategy during the last few years are construction of new ponds through groups, SHGs, Community, individuals, scientific fish culture, air-breathing fish culture like magur and kuchia etc. During the last three years of 12<sup>th</sup> five year plan period the following beneficiary oriented programmes has been implemented under the scheme 'Fish and Fish Seed Farming'.

**B. CONSTRUCTION OF NEW PONDS THROUGH WOMEN SHG-GENERAL:**

1. Empowerment of women, being a very important aspect in the present world scenario, specially for the society as they form the supporting pillars. In the last few years women in the form of Self Help Groups (SHGs), has reported to play a very important role in agriculture and allied sectors and to contribute significantly for the upliftment of the rural economy. There is also, the presence of vast scope for the development of women in the fisheries sector, to strengthen themselves both socially and economically, besides being self-employed. With this, present scenario, Fisheries Department, has taken up programmes for provision of support not only to increase fish production, but also to empower women, specially in the rural areas.

**2. RECLAMATION/DEVELOPMENT OF DERELICT WATER BODIES:**

Assam is gifted with about 1,16,444 hectares of derelict water bodies, which are either lying in a unutilized or under-utilized state. These areas are very potential for fish production and can be reclaimed with comparatively less capital expenditure. After development these areas can yield over 3 MT hectares/yearly through practise of

scientific pisciculture besides providing employment opportunity to the local unemployed youths. With such a strategy, the scheme is being implemented through involvement of concerned communities forming SHGs.

### 3. DEVELOPMENT OF INSTITUTIONAL PONDS FOR FISH HARVEST DURING LEAN PERIOD UNDER TANK RESERVOIR FISHERIES:

Various institutes and organisations in the State like mandirs, majids, schools, colleges, satras, clubs etc. have ponds and water bodies potential for fish production. With the help of an initial assistance, along with a capacity building programme, a significant quantity of fish can be produced from these ponds. Moreover, during the last few years, there has been an observation and an implication that during the fishing restriction period, from April to July, availability of local fish in the market, comes down considerably and is also at its minimum. This leads to the existence of a large gap in the demand and supply situation of fish, thereby increasing its prices considerably. Thus, to deal with the issue of temporary scarcity of fishes, during the fishing lean period, it is proposed to adopt the culture programme under this scheme in such a way that harvesting is done during the lean period also.

### 4. DISTRICT ADMINISTRATION :

Under this scheme, construction of departmental infrastructure like the offices of the District and Sub-Divisional Fishery Development offices, along with provision of training halls are taken up. Already 80 Districts Meen Bhawans including Sub-Divisional Meen Bhawans have been constructed at various districts and sub-divisions.

### 5. FISHERY EXTENSION SERVICE:

One time assistance to fisherman during fishing lean period.

Due to weather and climatic conditions during the monsoon months makes it difficult for the fisherman to go for fishing. Additionally, for conservation of indigenous fishes in the natural water bodies in Assam, a fishing ban period has been imposed from 1st April to 15<sup>th</sup> July, as per Assam Fishery Rules 1953 and Assam Fishery Rules (Amendment 2005). Thus the poor fisherman has to pass through a distress situation during the lean season and practically left with no income or means of livelihood during this period. With a view to partially relieve them from this situation and for sustenance, during the lean period, the Department has implemented the programme to provide one time financial assistance @ Rs. 10,000/- to each fisherman family.

### 6. CONSTRUCTION OF HYGIENIC FISH MARKETS:

Proper marketing of fish is not only an important aspect for a consumer's safety but as well as to encourage more and more people to take up fisheries as a source of livelihood. Although Assamese people prefer fresh fish, for transportation and marketing shelf life of fish has to be increased by different methods out of which use of ice is the most prevailing one. Whether fish is marketed fresh or iced, hygienic handling and clean market environment is a very essential, to maintain a healthy standards for the consumers, as fish is perishable by nature. In Assam, fish trade is mainly organized by the private sector with the involvement of importers, whole sellers, retailers, vendors at different levels. Existing wholesale, as well as retail fish markets, both in urban and rural areas, is very poor in infrastructure status and sanitary, hygienic conditions are lacking, which is posing a threat to human health. In the rural areas, fish is sold in rural huts, without shed facilities, along with marketing of other commodities like vegetables. Majority of fish markets also face the problem of very congested area. The state requires and is in dire need of new hygienic fish markets. Hence, it is proposed to construct, as



well as remodel existing fish markets with modern amenities for maintaining the minimum of hygienic conditions possible. Construction of hygienic Fish Markets has been taken up by the Department of Fisheries, Assam with this possible background.

Construction of such fish markets completed at Sulung (Nagaon), Cachar (Silchar), Adabari (Nalbari), Nalbari (Municipal area), Jorhat, Lakhimpur, Karimganj and Darrang (Mangaldoi) and under construction at Bongaigaon, Dhemaji, Titabor, Gohpur, Hailakandi, Dhubri, Morigaon, Goalpara, Howly and Dibrugarh.

#### 7. CENTRAL SECTOR SCHEME:

##### STRENGTHENING OF DATABASE AND INFORMATION NETWORKING:

The objectives of this Central Sector Scheme is to improve the database of the inland fisheries resources and catch of fish by adoption of standardized methodology of data collection through sample survey; to improve Information technology system so that data collection and their analysis can be done efficiently and effectively and to conduct census of Inland Fisheries.

This scheme has been introduced in the state during 6<sup>th</sup> Five year plan to cater the need for regular collection and compilation of statistics on fisheries activities for taking up planning and project preparation subsequently. It has been widely recognised that policy framework and programme for development depend on basic information of the resource. The department carrying out the work of Fish catch estimation as per SIFRI's (Central Inland Fisheries Research Institute, ICAR, Barrackpore, West Bengal) methodology for creation of Fishery database of water spread area, fish production etc.

#### 8. CENTRAL SECTOR SCHEMES:

##### 1. FRESH WATER AQUACULTURE UNDER FISH FARMERS DEVELOPMENT AGENCIES:

It is a Centrally sponsored subsidy oriented schemes, under which there is provision of new pond construction and development of existing ponds for fish culture activities. The scheme aims at development of individual ponds through involvement of fish farmers by providing them with financial assistance in the form of subsidies and bank loans. The funding pattern of the scheme is 75:25 as Central and State share respectively.

##### 2. DEVELOPMENT OF WATER LOGGED AREAS INTO AQUACULTURE ESTATE:

The objective of this scheme is the utilization of water logged areas and derelict water bodies of the State and turn them into Aquaculture Estates for the enhancement of fish production and for the benefit of the local communities. The funding pattern of this scheme is 75:25 as Central and State share respectively.

##### 3. NATIONAL WELFARE FUND FOR FISHERMAN:

The main objectives of the scheme are the provision of basis amenities like housing, drinking water, community halls etc. for fishers, to facilitate better living standards for fishers and their families, for upliftment, social and economic securities for active fishers and their dependents and to update knowledge. The following components are being implemented in the State, with fund sharing pattern of 75:25, between the Government of India and State Government.

##### I. HOUSING:

Under this scheme, low cost house with plinth area of 35 sq. m. are provided to poor traditional Scheduled Caste fishermen in selected villages, along with construction of community halls and tube wells.

## II. FISHERMAN INSURANCE:

Under this component, fisher folk licensed, identified or registered with the State Government could be insured up to Rs. 2.00 lakhs against death or permanent disability, Rs. 1.00 lakh for partial disability. The insurance cover will be for a period of 12 months, and the policy would be taken out by FISHCOPFED, in respect of all States.

### 9. RURAL INFRASTRUCTURE DEVELOPMENT FUND (RIDF) :

Department of Fisheries, Assam has been implementing different fishery related infrastructure development programmes under NABARD instituted Rural Infrastructure Development Fund (RIDF), contributing towards agriculture growth, rural connectivity and other social sector development. Under this programme 17 beel fisheries has already been developed till date through Assam Fisheries Development Corporation Ltd. Further, upgradation of J. B. Garh Departmental Fish Farm at Raha and development of Low-lying area of Chilabandha beel and Joysagar doloni in Nagaon district were completed during 2015-16.

BRIEF DESCRIPTION OF THE SCHEMES/PROGRAMMES IMPLEMENTED DURING LAST FOUR YEARS OF THE 12<sup>TH</sup> FIVE YEAR PLAN UNDER EAP, RKVY AND NFDB (UPTO 2015-16):

#### A. EXTERNALLY AIDED PROJECT (EAP) ASSAM AGRICULTURAL COMPETITIVENESS PROJECT (AACP) AND AACP- ADDITIONAL FINANCING):

The Assam Agricultural Competitiveness Project-Additional Financing (AACP-AF) has been formulated with the same project design and objectives of AACP, with scope of making improvements in management and implementation, during a period of three years of the project. The programme proposed, expands the on-going activities and scales up the project's impact and development.

In order to ensure inclusive development, the following beneficiary oriented major components, are targeted at, under this project:

- |                                   |   |        |
|-----------------------------------|---|--------|
| 1. Development of Farmer's Ponds  | : | 800 ha |
| 2. Development of Community Tanks | : | 300 ha |
| 3. Integrated Fish Farming        |   |        |
| a. Pig cum Fish culture           | : | 200 ha |
| b. Paddy cum Fish culture         | : | 100 ha |
| 4. Development of Beel Fisheries  | : | 700 ha |

Unlike AACP which covered the entire state, except the two hill districts AACP-AF has targeted only 12 nos. of districts, selected on the basis of availability of comparatively more water area under ponds and tank fisheries and achieving of more annual fish production than other districts.

#### 2. RASTRIYA KRISHI VIKASH YOJANA (RKVY):

A flagship programme of Government of India, introduced in the State by the Fishery Department during the year 2008-09, which is supported by 50% subsidy to fish farmers against schematic cost. The list of beneficiaries under RKVY is recommended by Zila Parishads. The major schemes implemented under RKVY are development of existing ponds, low-lying areas converted to communities tanks, construction of new ponds, creation of nursery and rearing tanks.

One of the remarkable programmes with considerable success under RKVY, is Fresh Water Prawn seed production in artificial sea water in the Freshwater Prawn Hatchery established at Meen Bhawan Complex, Guwahati.

#### 4. AQUACULTURE DEVELOPMENT UNDER NATIONAL FISHERIES DEVELOPMENT BOARD (NFDB):

Schemes are implemented in the State with financial support from National Fisheries Development Board (NFDB) namely construction of new ponds, Eco-hatcheries, Fish feed mills, renovation of existing ponds, development of departmental fish farms, Training & Demonstration and Awareness Programmes. Significant infrastructure established with NFDB's support are three nos. of Hygienic Wholesale Fish Markets at Nagaon, Cachar and Nalbari. More such markets are in the pipeline for construction in the near future.

##### SCHEMES/PROGRAMMES PROPOSED FOR THE YEAR 2016-17:

Besides continuing with the schemes of earlier years of the 12<sup>th</sup> five year plan, namely Aquaculture Development FFDA, Fishery Extension Service, Schemes under RIDF etc. under State plan, National Welfare Fund for Fisherman, Strengthening Database and GIS under Centrally Sponsored Scheme and Central Sector Schemes respectively. A new scheme in the name of "Matsya Jagaran" has been proposed under which there will be provision of engagement of fishery extension workers as "Matsya Mitra" in the Village level. Construction of New Individual Ponds for fish production will be included under this project. A total of 76.004 Ha. Of water area has been proposed under this project for construction of new ponds.

Moreover, 189 Ha. Of water area has been proposed to develop for new pond creation, institutional pond, rearing pond, departmental fish farms etc, along with capacity building of 900 farmers and supply of AQUAKITS to 105 farmers for soil and water quality analysis under RKVY. Proposal for development of 2250 Ha. Of water area including training to 1135 farmers for their capacity building has been made under NFDB.

Under the Central Sector Scheme "Blue Revolution," 180 Ha of water area would be developed for enhancement of fish production. Besides, 12 nos of feed mills, 10 nos of fish seed hatcheries and construction of 75 houses for fishers are also proposed to be implemented.

##### COMPARATIVE ANALYSIS ON TARGET AND ACHIEVEMENTS (BOTH FINANCIAL AND PHYSICAL) ON DEVELOPMENTAL ACTIVITIES UNDERTAKEN BY THE FISHERY DEPARTMENT DURING 11<sup>TH</sup> FIVE YEAR PLAN AND ANNUAL PLANS OF THE 12<sup>TH</sup> FIVE YEAR PLAN:

During the 11<sup>th</sup> Five Year Plan period an amount of Rs. 19431.50 lakhs was allocated against which an amount of Rs. 12342.67 lakhs was received and utilized for adoption of resource based technology to produce fish to the extent possible to meet the existing demand and to create employment. Utilization of fund against the allocation of eleventh five year plan is 63.52%. However the utilization is 100% against release of fund during the period. Due to plan intervention, major achievements during the eleventh plan period are as follows:

- Development of 4800 ha of water area for scientific fish farming.
- Productivity level of Ponds and Tank has increased from 1000 kgs to 3000 kgs per ha.
- Productivity has increased from 150 kgs to 2500 kgs per ha in derelict water bodies after reclamation.
- Under women specific schemes 6530 women have received training for rearing of quality fish seed and have thus been immensely benefitted.
- Generation of employment through Self Help Groups (SHGs). Already 701 nos. of SHGs has got the benefits through reclamation of derelict water bodies.

Moreover, a long felt need has been fulfilled during the 11<sup>th</sup> plan period by the construction of District Meen Bhawans, along with farmers training centres and Sub-

Divisional Meen Bhawans at various Districts and Sub-Divisional Headquarters. These buildings are the permanent assets for the Department as a whole.

The Department has also implemented a number of schemes under Rastriya Krishi Vikash Yojana (RKVY) during the years 2008-09, 2009-10 & 2010-11. An amount of Rs. 44.00 crores was received for development of existing ponds, low-lying areas and creation of nursery and rearing ponds.

In the 12<sup>th</sup> year plan period, during 2012-13 to 2015-16, overall 2363.55 ha of water area have been developed under State Plan and AACP which cover new Pond Construction, Reclamation of Derelict Water Bodies and Renovation of Existing Ponds. During the period, also 1239 nos of SHGs including 115 women SHGs have been supported from the Department, 79 Co-operative Societies have been provided financial assistance, 377 nos of Institutional Ponds have been developed and 600 Awareness Camps organised all over the state for creating awareness regarding implementation of fish seed act and fish seed rule.

Besides, 22176 nos. of individual beneficiaries have been covered and 2386.74 Ha of Beel Fisheries have been developed during these three years of 12<sup>th</sup> five plan period.

Under Rastriya Krishi Vikas Yojana (RKVY) during the period 2012-13 to 2015-16, overall 1478.20 ha of water area have been developed involving construction of new ponds, fresh water prawn farming, creation of rearing tanks, low-lying areas converted to community tanks etc, including development of 160 ha of Beel fisheries. For capacity building purpose 4300 nos. of Fish Farmers were imparted training on Scientific Fish Farming practices. Moreover, 315 nos of awareness camps were organised for making awareness about different aspects of piscicultural practices and 398 nos of Community/ShGs have been supported financially.

Under National Fisheries Development Board (NFDB) 394.10 Ha of water area have been developed including creation of new ponds and development of existing tanks with the purpose to enhance fish production.

Over the period from 11<sup>th</sup> five year plan to the current year of 12<sup>th</sup> five year plan, significant changes has been brought about in the fisheries sector in terms of growth and production. During this period, the sector has been growing at an average annual growth rate of 5% in terms of fish production (1.90 lakhs ton during 2007-08 and 2.94 lakhs during 2015-16). Besides, fish production, major achievements of the department, especially during the last part of the 11<sup>th</sup> plan period till the current year are development of related infrastructure such as Development of beel fisheries, Hygienic fish markets, Fish seed hatcheries and Fish feed mills. Capacity building programme was also conducted for fish farmers through training, exposure visits and mass awareness camps.

\* \* \* \* \*

## APENDIX-9.1

## DISTRICTWISE NUMBER AND AREA UNDER FISHERIES IN ASSAM, 2015-16

(Area in hect.)

Sl. No.	Districts	Reservoir Fisheries		Forest Fisheries		Beel Fisheries		Ponds and Tanks		Derelict Water Bodies Swamps	
		Nos.	Area	Nos.	Area	Nos.	Area	Nos.	Area	Nos.	Area
1	2	3	4	5	6	7	8	9	10	11	12
1.	Kokrajhar	-	-	2	35	14	955	7758	1067	163	1029
2.	Dhubri	-	-	-	-	156	7000	21846	2866	283	8280
3.	Goalpara	-	-	-	-	57	6820	9095	1621	70	677
4.	Barpeta	-	-	11	131	23	6298	24395	3927	160	6119
5.	Morigaon	-	-	9	955	84	8300	11033	1737	163	1583
6.	Nagaon	-	-	8	410	134	9919	41232	6345	143	23578
7.	Sonitpur	-	-	6	270	60	7032	14690	1757	132	461
8.	Lakhimpur	1	840	-	-	20	6499	10842	1795	68	4273
9.	Dhemaji	-	-	8	900	16	4575	4050	464	160	731
10.	Tinsukia	-	-	5	240	36	2957	8121	1556	126	394
11.	Dibrugarh	-	-	3	46	38	5289	6609	809	115	310
12.	Sivasagar	-	-	3	92	66	3878	9347	1222	216	7129
13.	Jorhat	-	-	-	-	124	6298	6631	1058	245	7592
14.	Golaghat	-	-	12	1720	15	2600	7510	1010	102	557
15.	Karbi-Anglong	-	-	-	-	19	60	8016	1441	106	332
16.	Dima-Hasao	1	1713	-	-	1	3	972	125	13	5
17.	Cachar	-	-	-	-	75	3359	36992	6449	437	10049
18.	Karimganj	-	-	-	-	37	3459	22002	3921	52	31240
19.	Hailakandi	-	-	-	-	35	1241	34742	6707	225	2343
20.	Bongaigaon	-	-	2	51	47	4347	7013	1032	70	1606
21.	Chirang	-	-	-	-	16	145	3047	363	16	60
22.	Kamrup	-	-	2	167	59	1418	21921	3077	116	322
23.	Kamrup (M)	-	-								
24.	Nalbari	-	-	-	-	19	2248	22818	2735	515	3645
25.	Baksa	-	-	-	-	18	151	8950	1807	93	326
26.	Darrang	-	-	-	-	27	5959	23851	6379	78	3713
27.	Udalguri	-	-	-	-	1	5	318	160	20	90
	ASSAM	2	2553	71	5017	1197	100815	373801	61430	3887	116444

Source: Directorate of Fisheries

## APPENDIX- 9.2

## DISTRICT-WISE NUMBER OF HATCHERIES, FISH SEED AND PRODUCTION IN ASSAM, 2014-15

Sl. No.	District	No. of Hatcheries		Production of Fish Seed (in Million Nos.)		Production of Fish (in tonne)
		Govt.	Pvt.	Govt.	Pvt.	
1	2	3	4	5	6	7
1.	Kokrajhar	1	3	-	66.99	4320
2.	Dhubri	0	10	-	8.30	15760
3.	Goalpara	0	9	-	129.40	8380
4.	Barpeta	0	43	0.80	925.93	19730
5.	Morigaon	0	31	-	147.60	14290
6.	Nagaon	1	125	1.52	1921.94	31485
7.	Sonitpur	1	7	0.12	48.00	8595
8.	Lakhimpur	1	9	0.44	43.01	13330
9.	Dhemaji	0	8	-	9.10	5800
10.	Tinsukia	0	12	-	20.50	7675
11.	Dibrugarh	1	8	-	25.30	11227
12.	Sivasagar	1	3	0.26	30.50	11850
13.	Jorhat	1	6	0.24	9.60	14245
14.	Golaghat	0	9	-	30.50	8860
15.	Karbi-Anglong	5	1	-	0.00	2310
16.	Dima-Hasao	0	0	-	0.00	830
17.	Cachar	1	12	-	35.00	23023
18.	Karimganj	0	25	-	1697.20	18393
19.	Hailakandi	0	4	-	239.00	10848
20.	Bongaigaon	1	5	-	16.49	7590
21.	Chirang	0	1	-	64.25	2116
22.	Kamrup	1	12	0.45	91.80	22630
23.	Kamrup (M)	-	-	-	-	
24.	Nalbari	0	12	-	13.25	11940
25.	Baksa	1	5	-	64.50	6278
26.	Darrang	2	11	0.06	9.34	10485
27.	Udalguri	0	2	-	27.00	2210
	ASSAM	18	373	3.89	5674.50	294200

Source: Directorate of Fisheries

## APPENDIX- 9.3

## DISTRICT-WISE FISH PRODUCTION, FISH IMPORTED AND REGISTERED FISH MARKET IN ASSAM 2014-15

Sl. No.	District	Production of Fish	Fish imported from other State	Nos. Of Registered Fish Market	
		(in tonne)	(in tonne)	Raw Fish	Dry Fish
1	2	3	4	5	6
1.	Kokrajhar	4320	113	7	-
2.	Dhubri	15760	355	8	-
3.	Goalpara	8380	565	4	-
4.	Barpeta	19730	125	8	-
5.	Morigaon	14290	435	2	1
6.	Nagaon	31485	142	11	-
7.	Sonitpur	8595	912	5	-
8.	Lakhimpur	13330	112	3	-
9.	Dhemaji	5800	95	3	-
10.	Tinsukia	7675	240	4	-
11.	Dibrugarh	11227	365	3	-
12.	Sivasagar	11850	485	3	-
13.	Jorhat	14245	1245	2	-
14.	Golaghat	8860	354	4	-
15.	Karbi-Anglong	2310	498	3	-
16.	Dima-Hasao	830	70	2	-
17.	Cachar	23023	1232	2	-
18.	Karimganj	18393	956	4	-
19.	Hailakandi	10848	120	2	-
20.	Bongaigaon	7590	235	4	-
21.	Chirang	2116	110	1	-
22.	Kamrup	22630	4723	16	1
23.	Kamrup (M)				
24.	Nalbari	11940	175	5	-
25.	Baksa	6278	145	6	-
26.	Darrang	10485	790	7	-
27.	Udalguri	2210	228	2	-
	ASSAM	294200	14825	121	2

Source: Directorate of Fisheries

\* \* \* \*

## CHAPTER –X

### FORESTRY

Forestry is a very vital sector of the state. The State Forest Department has been entrusted with the task of maintenance of Forest, its produce and the Wild Life in the State. In the recent past, the issue of environment protection, conservation of natural resources has not only been given wide attention and gained importance, both in the state and national level. As a result of the same, various N.G.Os, along with the Forest Department has come forward to see to the protection and maintenance of the Forestry Sector of the State, with added responsibilities thereby.

The State of Assam is enriched with an intensive forest area and huge wealth of valuable forest products, enriched with different species, variety of flora and fauna. Since times immemorial, people of Assam have also been dependent upon its forest, to meet to their daily needs and requirements. As per the National Forest Policy, the minimum desired area considered safe for a tropical country like India is about 33 percent. As per broad policy recommendations, forest area in the Himalayas & the Peninsula hills should be about 60 percent, and about 20 percent in the Great Plain.

#### RECORDED FOREST AREA:

In Assam, the recorded forest area is about 26,832 km<sup>2</sup>, accounting for 34.21 percent of the total geographical area of the State, with a share of 3.5 percent of the total forest area of the country, as a whole, as per India State Forest Report 2015. Out of the total recorded forest area, Reserve forest area constitutes 17864 km<sup>2</sup>. i.e., 66.58 percent of the total area, and un-classed forest constitutes 8968 km<sup>2</sup> i.e, 33.42 percent of the total area.

#### FOREST COVER:

There has been an increase of 3775 km<sup>2</sup> in the country's forest area, since 2013 according to the biennial "India State Forest Report 2015." As per the report the total forest cover in India in 2015 is 701673 km<sup>2</sup> as against 697898 km<sup>2</sup> in 2013. At the country level, there is an increase of 2402 km<sup>2</sup> in Very Dense Forest (VDF) Areas and 4744 km<sup>2</sup> in Open Forest (OF) areas while there is a decrease of 3371 km<sup>2</sup> in Moderately Dense Forest (MDF) areas. The forest cover in the state of Assam was 27671 km<sup>2</sup> as per India State Forest Report 2013. There is a decrease of 48 km<sup>2</sup>, in the total forest cover in the state, as per India State Forest Report 2015 to 27623 km<sup>2</sup>, which is 35.26 percent of the total geographical area of the State. This decrease is mainly due to encroachment in the forest land, biotic pressure and shifting cultivation. The per capita forest and tree cover in the state is 0.094 hectare. Total forest and tree cover constitute 37.27 percent of the state's geographical areas against the all India's forest and tree cover of 3.68 percent.

#### FOREST CANOPY:

In terms of forest canopy density classes as per India State Forest Report 2015, the state has very Dense forests of 1441 km<sup>2</sup>. Moderately dense forest of 11268 km<sup>2</sup>, and open forest of 14,914 km<sup>2</sup>.



TABLE - 10.1  
TRENDS IN THE FOREST COVER IN ASSAM

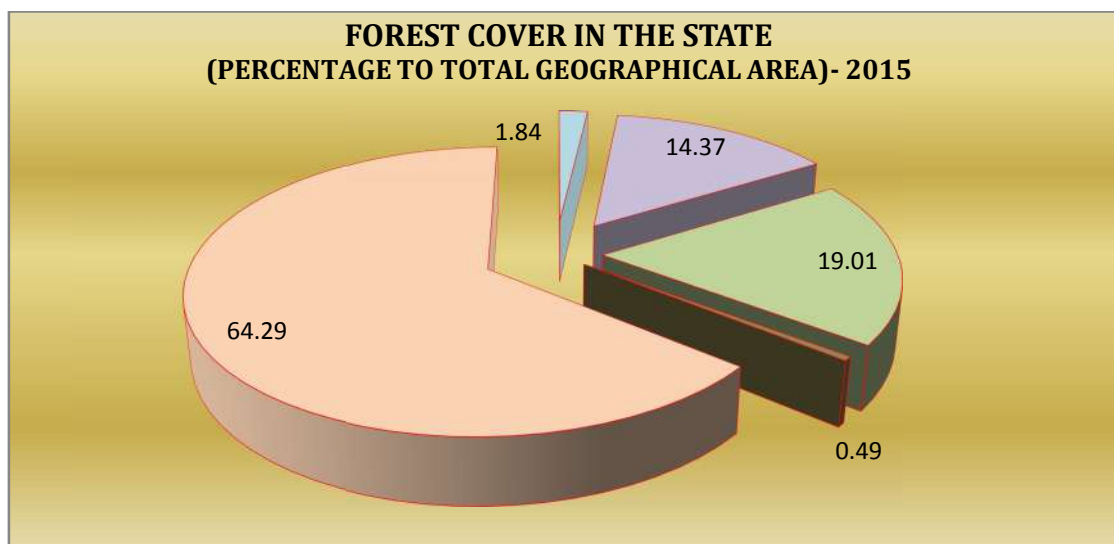
Item	Area in km <sup>2</sup>					
	Very Dense Forest	Moderately Dense Forest	Open Forest	Shrub	Non Forest	Geographical Area
As per Assessment in 2011	1,444 (1.84)	11,404 (14.54)	14825 (18.90)	182 (0.23)	50583 (64.49)	78,438 (100.00)
As per Assessment in 2013	1,444 (1.84)	11,345 (14.46)	14,882 (18.97)	182 (0.23)	50585 (64.50)	78,438 (100.00)
As per Assessment in 2015	1441 (1.84)	11268 (14.37)	14914 (19.01)	384 (0.49)	50431 (64.29)	78438 (100.00)
Net Change in 2015 over 2015 (-)/(+)	(-)3	(-)77	(+)32	(+)202	(-)154	

Note: Figures in brackets indicate percentages to the total geographical area.

Source : Forest Survey of India, 2011 and 2013 and 2015

The Table-10.1, above shows the trends of Forest Cover and its details, as per Assessments made in 2011, 2013 and 2015. It reveals, that there is a depletion of 77 km<sup>2</sup> of Moderately dense forest cover in the state and an addition of 32 km<sup>2</sup> of Open Forest cover, as per assessment made in the period 2013 and 2015. Besides forest cover, there is 1613 km<sup>2</sup> of Tree Cover in the State, as per report. Thus, the total of forest cover and tree cover is calculated at 29236 km<sup>2</sup> which chares 37.27 percent of the total geographical area of the state and 3.68 percent of total forest and tree cover of the country as a whole. The per capita forest cover and tree cover in the state is calculated as 0.094 hectares.

Table-10.1 also reveals, that there is a decrease of 3 km<sup>2</sup> in respect of very dense forest and 77 km<sup>2</sup> in Moderately dense forest and an increase of 32 km<sup>2</sup> in Open forest area in the state. The National Forest Policies 1952 and 1988 aims at having one third of the country's land area under forest and tree cover.



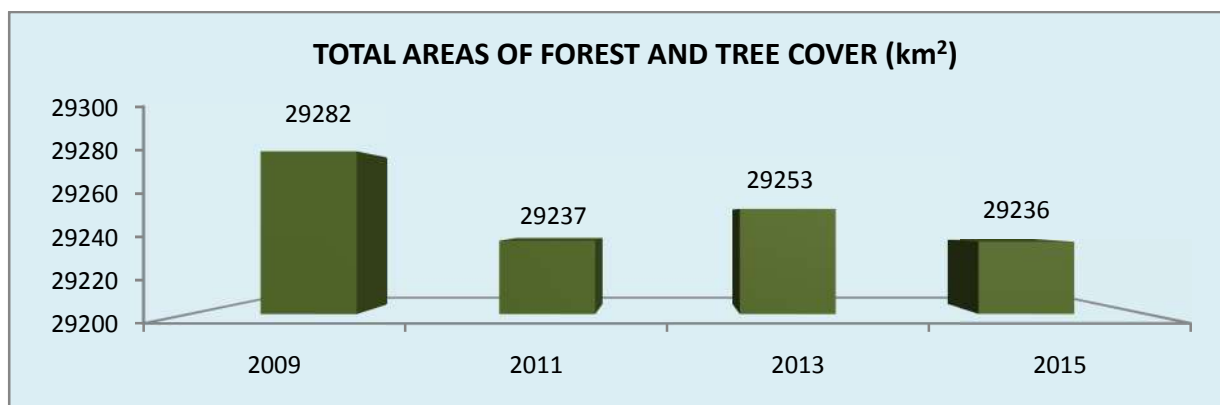
#### TREE COVER:

The Forest Survey Assessment Report, published by the Ministry of Forest and Environment, Govt. of India, estimates, the tree cover in the state as 1613 km<sup>2</sup> in the year 2015 i.e., 2.06 percent of the geographical area of the state. In the assessment made in 2013, the estimated tree cover in the state was 1582 km<sup>2</sup> i.e., 2.0 percent of the total geographical area of the state.

TABLE-10.2  
FOREST AND TREE COVER IN THE STATE

Forest and Tree cover	Units	2009	2011	2013	2015
Area of Forest Cover	km <sup>2</sup>	27692	27673	27671	27623
Area of Tree cover	km <sup>2</sup>	1590	1564	1582	1613
Total areas of Forest and Tree cover	km <sup>2</sup>	29282	29237	29253	29236
Forest and Tree cover to the Total Geographical area of the state	Percentage	37.33	37.27	37.29	37.27

Source: Forest Survey of India Reports, 2009, 2011, 2013 and 2015



#### STATE FOREST PROFILE:

As per, Forest profile of the State, the Reserved Forest area and proposed Reserve Forest area is 13973 km<sup>2</sup> and 1757 km<sup>2</sup> respectively in 2015-16, as reported by the State Forest Department. The total Forest area excluding unclassified State Forest is 19352 km<sup>2</sup> and the area under Protected Area Network is 3621 km<sup>2</sup> in 2015-16, as reported. The reserved forest area constitutes around 18 percent and the total forest area excluding unclassified forest constitutes 25 percent of the total geographical area of the state. However, the scenario within the notified area in the state, a gloomy picture is depicted in terms of degradation as noticed during the last 20 years, due to various biotic factors, encroachment of forest land and shifting cultivation. As a result, considerable rich bio-diversity has been lost, and this needs to be dealt with, stopped and re-build once again, to arrest further degradation to the environment.

The thrust areas identified by the State Forest Department are as follows:

- (1) Preservation of the existing biodiversities
- (2) Arresting the trend of existing degradation, reverting the process of re-afforestation, and extension of forestry with multiple stake holders.
- (3) Preservation and development of the existing Protected Area Network (PAN) and their expansion in suitable areas.
- (4) Improvement of research and development activities in Forestry and Wildlife
- (5) Bridging the gaps in infrastructural and Logistical front.

#### FOREST ROADS:

For patrolling inside the Forest Area and to harvest the forest produces, improvement and development of the creation of infrastructure is very essential from the point of view of forest management context. Accordingly, the State Forest Department has given special emphasis on the matter and propose to improve 150 kms of forest roads with 50 nos. of culverts during the 12<sup>th</sup> five year plan period. Statistics of forest roads in Assam is shown in Table-10.3 below:

TABLE – 10.3  
FOREST ROADS IN ASSAM (CUMULATIVE)

Category of Roads	Length in Kms			
	Surfaced	Unsurfaced	Motorable	Non-Motorable
2012	635.84	8631.03	5060.26	3570.77
2013	640.635	10672.647	6235.357	4437.29
2014	723.435	12729.627	7628.177	5101.45
2015	-	-	-	-
2016	1077.953	16229.357	7972.050	6938.570

Source : Office of the Principal Chief Conservator of Forest & Head of Forest Force, Assam.

#### OUT-TURN OF FOREST PRODUCE AND REVENUE:

The various forest products of the State, mainly comprises of Major forest produce includes Industrial Wood or Timber namely Teak, Shisan, Sal, Deodar, Chir, Kait and in others, Pulp & Match wood, Round wood and Fuel Wood. Minor forest products includes Bamboo, Sand, Gravel, Stone, Silt, Clay, Thatch, Others etc. The production of various forest produce and out turn in the state for 2015-16 as under in Table-10.4:

TABLE – 10.4  
PRODUCTION AND OUTTURN OF FOREST PRODUCTS IN ASSAM DURING 2015-16

Forest Produces	Units	2015-16
Industrial Wood/Timber	Cubic metres	14074.53
Fuel Wood	Stack Cubic metre	15151.47
Sand	Cubic metre	338604.69
Gravel/Stone	Cubic metre	806423.47
Silt/Clay	Cubic metre	1986018.72
Others	Cubic metre	22604.30

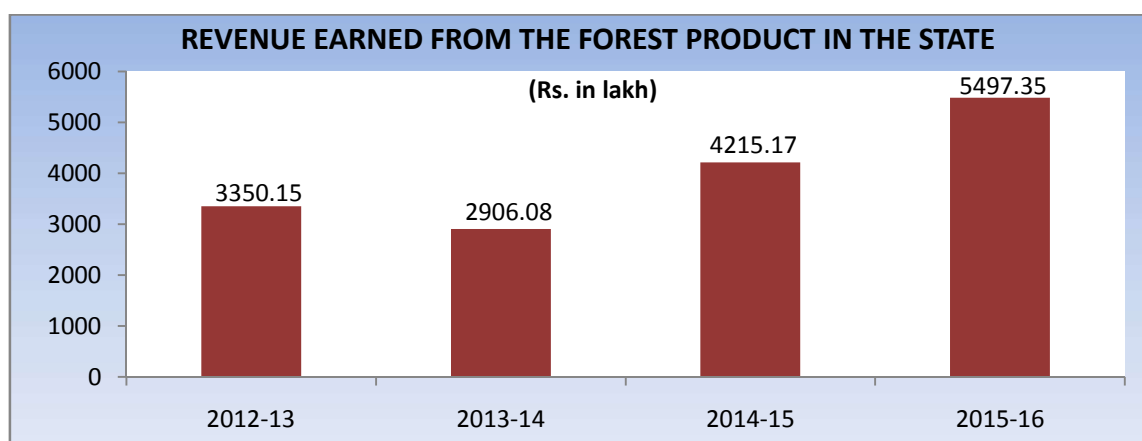
Source: Office of the Principal Chief Conservator of Forest, Assam

The State Government earns a good amount of revenue from its various forest produces. The revenue earned from the various forest products, during the last few years are shown in Table-10.5 below:

TABLE – 10.5  
REVENUE EARNED FROM VARIOUS FOREST PRODUCTS IN THE STATE

Items	Rs. In lakhs			
	2012-13	2013-14	2014-15	2015-16
Timber	405.40	275.57	170.53	164.99
Fuel Wood	1.39	1.51	9.51	6.90
Sands and Gravel/Stone	2585.67	2063.08	3671.73	4601.60
Silt/Clay	65.97	110.29	363.40	19.86
Others	291.72	455.45	-	704.00
Total	3350.15	2906.08	4215.17	5497.35

Source: Office of the Principal Conservator of Forest & Head of the Forest Force, Assam.



### PROTECTED AREA-WILDLIFE, NATIONAL PARKS & SANCTUARIES:

Wild and Magnificent, describes the state of Assam, in true sense, a place of enviable natural beauty not only in terms of her mystic charm but also in the qualities of its wildlife. The mystic nature and the precious natural wealth have combined together to make this land as one of the most cherished tourist destination in the country. This goes for its wild habitats, warm hospitable people, who all make the discerning travellers spellbound.

Assam, has as many as five national parks, two of which are designated as World Heritage Sites by UNESCO in 1985. There are also twenty wildlife sanctuaries, numerous reserved forests and many perennial water bodies. These national parks and wildlife reserves are the safe haven for a wide range of rare and endangered animals, birds, and rich floral diversity. Here the wild side of Assam is as mysterious and magnificent as the natural beauty of the state.

The wildlife Act, provided for setting up national parks and sanctuaries for wildlife. In the State of Assam, the total wildlife Protected Areas at present is 3817.92 km<sup>2</sup>. This protected area network in Assam includes five (5 nos.) of National Parks, and eighteen (18 nos) of wildlife Sanctuaries constituting 4.87 percent of the geographical area of the State.

The Category wise Wildlife Protected area is shown in Table-10.6 below as follows:

TABLE-10.6  
AREA OF THE NATIONAL PARKS AND WILDLIFE SANCTUARIES  
IN ASSAM, 2015-16

Name of the National Park	Location (District)	Area in km <sup>2</sup> .
Kaziranga National Park	Golaghat, Nagaon & Sonitpur	858.98
Manas National Park	Chirang and Baksa	500.00
Orang National Park	Udalguri and Sonitpur	78.81
Nameri National Park	Sonitpur	200.00
Dibru-Saikhowa National Park	Dibrugarh and Tinsukia	340.00

#### WILDLIFE SANCTUARIES (WLS)

Name of the Wildlife Sanctuaries	Location (District)	Area in km <sup>2</sup> .
Bhejan-Borajan-Padumoni WLS	Tinsukia	7.22
Panidehing WLS	Sivasagar	33.93
Gibbon WLS	Jorhat	20.98
Nambor-Doigurung WLS	Golaghat	97.15
Garampani WLS	Karbi Anglong	6.05
Nambor WLS	Karbi Anglong	37.00
East Karbi Anlong WLS	Karbi Anglong	221.81
Marat Longri WLS	Karbi Anglong	451.00
Burhachapori WLS	Sonitpur	44.06
Laokhowa WLS	Nagaon	70.13
Pabitora WLS	Morigaon	38.80
Sonai-Rupai WLS	Sonitpur	220.00
Barnadi WLS	Udalguri	26.22
Chakrasila WLS	Kokrajhar	45.56
Dihing-Patkai WLS	Dibrugarh and Tinsukia	111.19
Barail WLS	Cachar	326.25
Amchang WLS	Kamrup (Metro)	78.64
Deepor Beel Wildlife Sanctuary	Kamrup (Metro)	4.14

#### PROPOSED WILDLIFE SANCTUARIES

Name of the Proposed Wildlife Sanctuaries	Location (District)	Area in km <sup>2</sup> .
North Karbi Anglong WLS	Karbi Anglong	96.00
Bardoibam Beelmukh WLS	Lakhimpur	11.25

Source: Chief Conservator of Forest (WL), Assam.

**WILDLIFE PRESERVES:**

Assam, has more than 70 percent of the world's population of one-horned rhinos, is the herbivore's ultimate abode. The bulk of these rhinos-2,329 as per 2013 Census are in Kaziranga National Park, the epicenter of two biodiversity hotspots straddling Northeast India.

The other wildlife preserves in the Northeast cater to a set of rare animals, birds, reptiles and amphibians, besides harboring 50% of India's butterfly species. Together, they occupy 36.67 percent of Assam's landmass.

**KAZIRANGA NATIONAL PARK:**

Established in 1905, Kaziranga, is a remarkable biodiversity hotspot, unlike any other in the world. It is also a home to rare and endangered mammals, birds, aquatic fauna and a considerable amount of flora.

It is the most popular abode of the one horned rhinoceros, has the highest concentration of the world's Royal Bengal tigers. It is also home to nine of 14 primate species found across South Asia, the purest breed of Asiatic water buffalo and one of the largest herds of Asian elephants Kaziranga National Park has the following.

- 80% of the worlds population of one horned rhinoceroses
- Highest ecological density of Royal Bengal Tiger
- Worlds largest population of Asiatic wild Buffalo
- Nearly 500 species of birds
- Significant population of Asiatic elephant
- Last surviving population of Eastern Swamp Deer

The other wildlife found here are Leopards, fishing cat, other known cats, large Indian civet, sambar, barking deer, hog deer, gaur, hog badger, hoolock, gibbon, caped langur, pangolin, Assamese macaque, rhesus macaque, sloth bear, other Gangetic dolphin and birds like Greater Adjutant stork, lesser Adjutant stork, hornbill, fishing eagle, king fisher, green pigeon, myna, Bengal florican, osprey etc.

Kaziranga is a unique mix of grasslands, wetlands, forestlands, and sandwiched between Brahmaputra in the north and National Highway 37 to the south. It is a UNESCO World Heritage Site, a bird watcher's paradise, offering a range of quality accommodation and other activities like elephant ride, jeep safaris, Tea Garden visit, hill trekking and visit to a nearly Archaeological site at Numaligarh, 35 kms away from the National Park.

**2. MANAS NATIONAL PARK:**

Pristine in its beauty, and forming one of the most stunning geographical locations in the world. The 500 km<sup>2</sup> Manas wears many hats, Declared World Heritage Site by UNESCO in 1985. Tiger Reserve, Elephant Reserve and Biosphere Reserve- it extends miles into adjoining Bhutan. Sited 176 kms. Northwest of Guwahati, it derives its name from river Manas flowing through it. Vegetation varying from river-nurture grasslands, swamps, sub- Himalayan mountain forests, makes it home to a large number of wild animals and more than 20 endangered species. It is also famous, as an important Bird area.

**OTHER WILDLIFE PRESENT ARE:**

Royal Bengal Tiger, Leopard, clouded leopard, wild water buffalo, Asiatic elephant, Asiatic Water buffalo, Rhinos, red panda, Golden langur, Swamp deer, Barking deer, Hog Deer, Gaur, Sambar, Sloth bear, Himalayan Black bear, Golden cat, Fishing cat, Toddy cat, Binturung, large Indian Civet, highly endangered roofed turtle, hispid hare, Pygmy hog and a wide variety of birds reptiles, especially the Burmese Rock Python etc.

**(3) ORANG RAJIV GANDHI NATIONAL PARK:**

The smallest of Assam's five national parks, 78.8 km<sup>2</sup>, but is no less significant from the ecological points of view. Its landscape, flora and fauna are similar to Kaziranga national Park. It is a microcosm of Kaziranga across river Brahmaputra, and is often called Miniature Kaziranga.

Orang is rich in vegetation is also a birdwatcher's paradise with a variety of resident and migratory birds such as green pigeon, Bengal florican, spot-billed pelican, black necked stork, Greater Adjutant stork, etc.

Orang Rajiv Gandhi National Park, can be best enjoyed an elephant back ride, an exploration of its local villages and tea estates for an ethnic flavour.

**(4) NAMERI NATIONAL PARK:**

A sub-Himalayan expanse of semi-evergreen and moist deciduous forests, Nameri is home to one of the largest and endangered groups of Asian elephants and Royal Bengal Tigers. The 200 sq. kms park adjoins the 800 sq km Pakhui Tiger Reserve in Arunachal Pradesh, making it an important elephant corridor. Nameri is also known for more than 600 varieties of trees and plants many with medicinal properties. It was declared a Tiger Reserve for being the striped cat's favourite haunt in the Himalayan foothills. Under the elephant and tiger's shadow are leopards, Gaur (Indian Bison), Dhole (Asiatic Wild dog), Himalayan Black Bear, Capped Langur, Wild Bear, Giant Indian Squirrel, Asiatic Giant Moth, Clouded Leopard, Hornbill and other animals.

Nameri and adjoining protected areas such as Sonai-Rupai Wildlife Sanctuary are crucial for the reintroduction of the highly endangered pygmy hog in the wild and its survival. The park is also a birdwatcher's paradise with more than 300 avian species such as white-winged wood duck, great pied hornbill, wreathed hornbill, rufous-necked hornbill, black stork, black beared bee-eater and plover.

**(5) DIBRU-SAIKHOWA NATIONAL PARK:**

Assam's easternmost National park, the 340 km<sup>2</sup> Dibru-Saikhowa, is essentially an island formed by rivers Brahmaputra and Diboru. Located 40 kms from eastern Assam's Dibrugarh town, it boasts of a sizable number of tigers, leopards, elephants, Asiatic water buffaloes, but feral horses are its prime attraction. These horses with a World War –II connection, number more than 80.

Among the most vibrant of India's wildlife preserves with serenely scenic beauty. It has the bio-geographical properties of both Indian and Malayan sub-regions. Its topography ensures a safe haven for extremely rare species of wildlife, herbivores and carnivores, besides Gangetic river dolphins, eight species of turtles and 382 species of birds.

The park comprises of semi-evergreen, deciduous, littoral, swamps and patches of wet evergreen forests. It facilitate a wide varieties of trees, plants, massive grasses, providing refuge to mammals like clouded leopards, Jungle Cat, Sloth bear, Dhole, Small Indian Civet, Malayan giant Squirrel, Chinese pangolin Pig-tailed macaque, Assamese macaque, Capped langur besides Swamp, Barking and Hog deer.

**PROJECT TIGER:**

Assam has three Tiger Reserves, namely Kaziranga, Manas and Nameri. To ensure the conservation of Tiger, the State Government has further notified the Tiger Conservation Rules, 2010. Government of India, has also been requested to directly fund these Tiger Conservation Foundations. Kaziranga and Manas National parks, are been declared as World Heritage Sites by UNESCO.

Out of 25 Protected Areas (P.As) in Assam, Manas N.P., Nameri N.P, were notified as Project Tiger in 1973 and 1985 respectively. Recently in 2007, the Kaziranga N.P. was also brought under the agencies of Project Tiger inclusive of Laokhowa - Burachapori L.S

complete. The Manas N.P has the distinction of having the highest number of endangered species which under went cruel unrest during the 1990s, consequent of which the Manas N.P was enlisted as World Natural Heritage Site. The total Tiger population in Assam in 2014 is 167 as per the census of Wildlife in Assam

During the 12<sup>th</sup> Five Year Plan, a sum of Rs. 2200.00 lakhs was proposed for preservation of Tiger Population under the component of 3 nos. of Tiger Reserve on 50:50 Central and State share basis. During 2014-15, a sum of Rs. 300.00 lakhs was proposed for implementation of schemes to preserve the Tiger population, by the provision of all round protective measures.

Emphasis has also been given for the conservation of the one-horned Rhinos, which is the pride of the state. The elephant, rhino, Tiger and Swamp Deer population is increasing, as per Census reports. The National Parks & Wildlife Sanctuaries of the State, a total of 25 in numbers, are managed with the assistance under Development of National Parks & Sanctuaries. The expenditure on ex-gratia relief for loss of life and for the scheme Reduction of Man Elephant conflict out of a total of Rs. 700 lakhs, Rs. 400 lakhs was allocated in 2014-15, under Chief Minister's special package. The table viii, below shows the Rhino, Elephant, Tiger, Swamp Deer and other animals population during different census periods.

TABLE-10.7  
POPULATION OF RHINOS, ELEPHANTS, TIGERS AND SWAMP DEER & OTHERS IN THE STATE.

Year of Census	Rhino Population	Area
2006	2006	In all National Park (Kaziranga NP, Manas NP, Nameri Orang NP), Wild Life Sanctuary (Pobitora WLS) and all Protected Areas.
2009	2201	
2012	2505	
2013	2329 (only in KNP)	
2015	2431*	*Only for Kaziranga and Manas national Park
	Elephant Population	
2002	5246	All the Protected Areas, Elephant Reserves, Reserved Forests and Unclassified State Forests in Assam.
2007	5281	
2009	5620	
2011	5620	
	Tiger Population	
2006	70	All Protected Areas, Reserved Forests and Unclassified State Forests in Assam.
2009	143	
2014	167	
2000	248	Leopard
	Swamp Deer Population	
1998	526	All Protected Areas, Reserved Forests, Unclassified State Forests in Assam
2007	681	
2011	1169	

Others Primate Census During 2009	
Rhesus Macaque	72674
Assamese Macaque	30866
Slow Loris	431
Pig tailed macaque	649
Capped Langur	17813
Golden Langur	2772
Hoolock Gibbon	1517
Stump tailed macaque	648
Phayres leaf Monkey/Spectacled langur	132

Source : Department of Forest & Environment, Assam.

**SCHEME FOR MAN-ELEPHANT CONFLICT RESOLUTION:**

The Hon'ble Chief Minister, Assam has given emphasis to reduce "Man-Elephant Conflict". The following activities are proposed under 12<sup>th</sup> Five Year Plans (2012-17), which comprises of:

- Erecting Solar Power Tensing in 25 kms long stretch of vulnerable areas in effected districts.
- Enhancement of 100 hectares Plantation of species like outenga, kathal, sam, gamari, koroi, odal, cane and bamboo etc palatable to the elephant shall be taken up in Assam. For this, the total expenses for the five year period of 12<sup>th</sup> Plan comes up to Rs. 3439.00 lakhs, against which a provision of Rs. 400.00 lakhs was allocated during 2014-15.

**ASSAM PROJECT ON FOREST AND BIODIVERSITY CONSERVATION:**

This is a Externally Aided Project (EAP), funded by the French Development Agency under Indo-French Development Co-operation. The State of Assam being a part of eastern Himalayan region, a Bio-diversity hot spot, so the issues of Conservation of Forests and Biodiversity in the state assumes significant importance in the face of mounting anthropogenic pressure and anticipated impacts of climate change on forest ecosystems. Moreover, forest in Assam provide important source of livelihood to a marginal sections of tribal people, as well as ecological services in terms of soil and water conservation issues which are of great importance. Since more than 50 percent of notified forest area in the state falls under the category "Open Forests", restoration of such forest areas, enhancing of human and infrastructural capacity of the State Forest Department, along with the need to provide livelihood opportunities and alternatives to forest dependent communities, requires infusion of various funds, at a very large scale and enhanced forms:

The project has four technical components. They are :

- (1) Institutional Strengthening of the Forest Department
- (2) Multi-level Strategic Planning
- (3) Sustainable Forest management
- (4) Addition of value and the opening of market opportunities for forest and bio-diversity goods and services and Project management of non technical components.

**WILDLIFE MANAGEMENT:**

**Project Elephant :** This scheme is meant for payment of ex-gratia for loss of life and property due to man-elephant conflict, procurement of Arms & Ammunition, Setting up of anti depredation squads of villagers to scare away wild elephants, establishment of squads with temporary camps, mobile power fencing for the protection of villagers under logistic circumstance etc.

**Integrated Development of Wildlife Habitat Area:**

The scheme includes preparation of management plans, Surveys, Demarcation of boundaries for protection of wildlife habitat areas, prevent anti poaching activities etc. Besides these, some community development activities are also taken up, like the supply of furniture and education implements to schools under eco-development activities are also covered under this scheme.

**Financial Assistance to Conservation and Management of Deepar Bill Wetland:**

The Deepar Bill Wetland, located in the southwest at a distance 10 kms away from Guwahati city, is considered as one of the large riverine wetland in lower Assam. Originally the beel had its natural linkage with river Brahmaputra through the Sola Beel and the swampy area of Pandu to the Northeast. Due to construction of residential buildings, NH-37 and Railway line, the main link has already been disrupted, and it remains as a small secondary channel. A sum Rs. 1500.00 lakhs was proposed for



Twelfth Five Year plan, against which a provision of Rs. 200.00 lakhs was earmarked for 2013-14, for setting up of a Deepar Beel Authority in implementing the conservation and management initiative for restoration of Deepar Beel.

Tourists Arrivals in National Parks:

For the famous one horn Rhino of Assam and various species of unique flora and fauna, a large number of Domestic and Foreign Tourists visit the state every year. However, except in Dibru-Soikhowa National Park, visit of number of Indian tourists in other national parks of Assam has increased during the period 2015-16 in comparison with 2014-15. The number of foreign tourists has also increased during 2015-16, both in Kaziranga and Manas in comparison to 2014-15.

Numbers of Tourists Arrivals in National Parks and Revenue Collection out of the Tourists Visits during the last few years is presented below in Table -10.8

TABLE – 10.8

Names of National Parks	Years	No. of visitors		Revenue Collected (Rs. in lakh)
		Indian	Foreign	
Kaziranga National Park	2009-10	1,05,264	7,580	121.68
	2010-11	1,12,392	7,447	136.73
	2011-12	1,17,308	7,521	149.46
	2012-13	93,747	7,418	205.76
	2013-14	1,19,289	6,922	268.66
	2014-15	1,23,360	7,994	294.59
	2015-16	1,62,799	11,417	419.77
Manas National Park	2009-10	8,030	139	16.96
	2010-11	10,843	503	14.67
	2011-12	19,705	237	21.17
	2012-13	15,890	218	25.48
	2013-14	20,527	211	30.93
	2014-15	9,786	475	33.48
	2015-16	40,559	614	73.69
Rajib Gandhi Orang National Park	2009-10	1,628	325	3.11
	2010-11	1,702	180	1.82
	2011-12	2,678	159	2.44
	2012-13	1,847	70	2.76
	2013-14	2,329	16	2.43
	2014-15	1,946	45	2.31
	2015-16	3,502	20	4.04
Nameri National Park	2009-10	4,342	346	2.79
	2010-11	4,460	352	2.72
	2011-12	5,601	457	3.50
	2012-13	4,370	528	4.54
	2013-14	5,866	806	11.26
	2014-15	8,448	1,035	14.13
	2015-16	10,384	702	9.25
Dibru-Soikhowa National Park	2009-10	2,613	62	0.61
	2010-11	2,351	40	0.55
	2011-12	3,970	42	0.89
	2012-13	2,656	19	1.08
	2013-14	4,230	54	2.09
	2014-15	4,249	27	2.10
	2015-16	2,695	27	0.16

## REVIEW OF ELEVENTH FIVE YEAR PLAN (2007-08 TO 2011-12):

## FINANCIAL PROGRESS:

[Rupees in lakhs]

The total allocation for 11<sup>th</sup> Five Year Plan period for Forestry Sector was Rs. 26514.79 lakhs, against which an expenditure of Rs. 16165.18 lakhs, has been made.

YEAR	ALLOCATION	EXPENDITURE
2007-08	1881.79	1312.52
2008-09	4225.00	3419.92
2009-10	6915.00	6019.56
2010-11	6546.00	1894.54
2011-12	6947.00	3518.64
Total	26514.79	16165.18

Physical Achievements made During 11<sup>th</sup> Five Year Plan Period:

- Plantation area raised to a total of 46080.56 hectares
- World Bank Project (NaRMIL) was implemented to support the livelihood of forest fringe communities, at a cost of Rs. 28.10 crores through the improvement of natural resources management with communities participation.
- Under Chief Minister's special package for the forest sector, a new scheme "Assam, Bikash Yojona" – Plantations – Plantation in community places has been launched since 2008 onwards, and on the first phase of the scheme extensive plantations have been done in 1163 nos. of schools and 1566 nos. have been benefited by the same.
- Kaziranga National Park has been included in the Tiger Project
- Assam State Zoo cum Botanical Garden has been modernized and night safari rides facility has been launched.
- For the protection of wildlife, 2<sup>nd</sup> AFPF Battalion has been raised exclusively for reforestation of extensive degraded of area in Reserve Forest Ecological Task forces have been raised.

## STRATEGY FOR TWELFTH FIVE YEAR PLAN (2012-17):

- Strengthening of forest protection machinery by the development of necessary infrastructure and Logistic support namely roads, buildings, barracks, Watch Towers, camp huts, demarcation of forest boundaries, procurement of vehicles and motor boats for patrolling, procurement of wireless sets and ammunition and anti poaching equipments etc.
- Increasing the productivity of forest through coverage of more and more degraded forest areas, coverage of forest areas with crown density less than 40% and available revenue land under plantations of Indigenous, fast growing, economically important species of timber, as well as Raising plant of Non Timber forest produces including Medicine plant & Bamboo plantation etc. The natural regeneration existing in forests needs to be assisted by silvi culture works and aided plantations.
- To strengthen research wing of departments to create seed orchards, progeny trails for quality seed production. As afforestation proceeds at current pace no guarantees can be given that area once afforested would not relapse to their old status given the high biotic factors responsible for degradation and the inadequate funding.
- Expand forest coverage of the state through private plantations by motivating people through awareness programmes, distribution of seedlings to people from forest nurseries. In this regard, the strategy is to associate various communities, groups, associations, NGO's & FDA's in such activities of the department, by providing them some financial assistance.

- Strengthen resources survey, planning, monitoring and evolution of organization for the development of building infrastructure for speedy collection of monitoring data, extension of computer facilities upto division level; and advance training of officers and staff.
- Strengthening wildlife conservation through intensive patrolling, deployment of adequate man power along with provision of requisite patrolling gears including arms and wireless equipments etc.
- Developing both short term and long term measures for the reduction depredation of elephants and other wildlife.
- Enlisting support of local people through Awareness Programmes and Eco-development activities.

Some other important schemes have been continuing and also newly taken up are as follows:

The Hon'ble Chief Minister, Assam has announced the following Schemes are included under "Mukhya Mantrir Assam Bikash Yojana" for the year 2011-12.

- Seuji Dhora Achoni for School children
- Outside Forest area plantations
- Guwahati Hills area plantations

During the 12<sup>TH</sup> Five year plan a sum of Rs. 3200.00 lakhs was proposed for the creation of School plantations-500 numbers of community plantations / Hills area plantations-1800 hectares and creation of nurseries-10 numbers under the above component.

#### SCOPE OF WOMEN EMPOWERMENT:

The Schemes implemented for Development of Forests & Wildlife are mostly labour oriented & these labours are engaged from forest fringe dwellers. The Nursery, Plantation works, Maintenance of plantations by weeding, climber cutting etc. are done by engaging labours & in these works mostly women labours take active participation while male members keep busy in other Agricultural works. Thereby, women folk from the forest fringe villages get the opportunity for their employment & their Livelihood.

#### SCOPE OF GENERATION OF EMPLOYMENT:

Schemes/Projects proposed to be implemented during the 12<sup>th</sup> Five year Plan Period are labour intensive activities providing people employment, living in and around Forest areas. The total nos. of persondays to be generated annually is estimated at 13,53,704.

#### LIKING OF SCHEMES/PROJECT WITH DISASTER MANAGEMENT:

Forests plays a pivotal role in preventing natural disasters, a role in amelioration of flood waters dynamics, erosion control, soil and water conservation, carbon sequestration etc. According, forest schemes proposed for Annual Plan 2011-12, comprise of activities like Afforestation, Rehabilitation of Degraded Forest etc. by creating plantations. These schemes plays positive role in the preventing & mitigation of calamities threatening human existence. Thus, these schemes need to be placed at the top of the preference ladder.

#### PARTICIPATION OF NGOS AND PEOPLES WITH THE SCHEMES/PROJECT ETC:

The involvement of NGOs and civil players is integrated in project implementation and monitoring. There are quite a few NGOs who is playing very proactive role in the forestry sector, along with academicians, prominent citizens are taken on board in these matters.

"NGOs" running environmental awareness generation Programmes in different Villages of the district is keen to implementing the project in support of NAEB. The National

Afforestation & Eco-Development Board (NAEB) is implementing the National Afforestation Programmes (NAP) through Forest Development Agency (FDA) and Joint Forest Management Committee (JFMC) etc.

In the field of Wildlife, the role of NGOs in the State is quite appreciable. They are playing an active part in awareness programmes amongst people and Eco-Development Committees are formed in fringe villages of NAP.

#### MEASURES FOR 2016-17:

In view of protection of Environment & Forests State Government has initiated the following steps –

- (a) It is decided to raise first company of special Rhino Protection Force with 112 personnel with Central Assistance to be deployed at Kaziranga National Park for protection of one Horned Rhino and other wild life. Priority is also given to combat the nefarious designs of the poachers. For procurement of modern arms and ammunition an amount of Rs. 10 crore allotted for the year 2016-17.
- (b) A programme of skill development for youths living on fringe villages of Reserved Forest and Protected Areas will be taken up under Assam Forest and Biodiversity Conservation Project.
- (c) Consolidation of forest Boundaries will be carried out through construction of permanent boundary pillars in vulnerable Reserve Forest and Protected Areas on Priority basis.
- (d) Payment of ex-gratia/compensation to person/families affected by depredation by wild Elephant and other wild life upto 31<sup>st</sup> march, 2016 covering 14,297 cases will be taken up on priority basis. An amount of Rs. 2 crores is allotted for this purpose during 2016-17.
- (e) Laika and Dadhia forest reserves are adjacent to the famous Dibru Saikhowa National Park. It has been a challenge to shift the existing populace of these forest areas to the maintained. In order to shift them with proper livelihood pattern. In order to start the process of shifting the populace from these two reserve forest areas an amount of Rs.10 crores is proposed for the year 2016-17.

(Source: Budget Speech of Finance Minister 2016-17)

#### Forest cover in North Eastern States at a Glance

(in Km<sup>2</sup>)

States	Geographical Area(GA)	2015 Assessment				% of GA	Change w.r.t. 2013	Scrub
		VDF	MDF	OF	Total			
Arunachal Pradesh	83,743	20,804	31,301	15,143	67,248	80.30	-73	264
Assam	78,438	1,441	11,268	14,914	27,623	35.22	-48	384
Manipur	22,327	727	5,925	10,342	16,994	76.11	4	1182
Meghalaya	22,429	449	9,584	7,184	17,217	76.76	-71	348
Mizoram	21,081	138	5,858	12,752	18,748	88.93	-306	0
Nagaland	16,579	1,296	4,695	6,975	12,966	78.21	-78	622
Sikkim	7,096	500	2,160	697	3,357	47.31	-1	311
Tripura	10,486	113	4,609	3,089	7,811	74.49	-55	55
G. Total	266,179	25,468	75,400	71,096	171,964	65.59	-628	3166

Source: India State of Forest Report, 2015

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## CHAPTER – XI

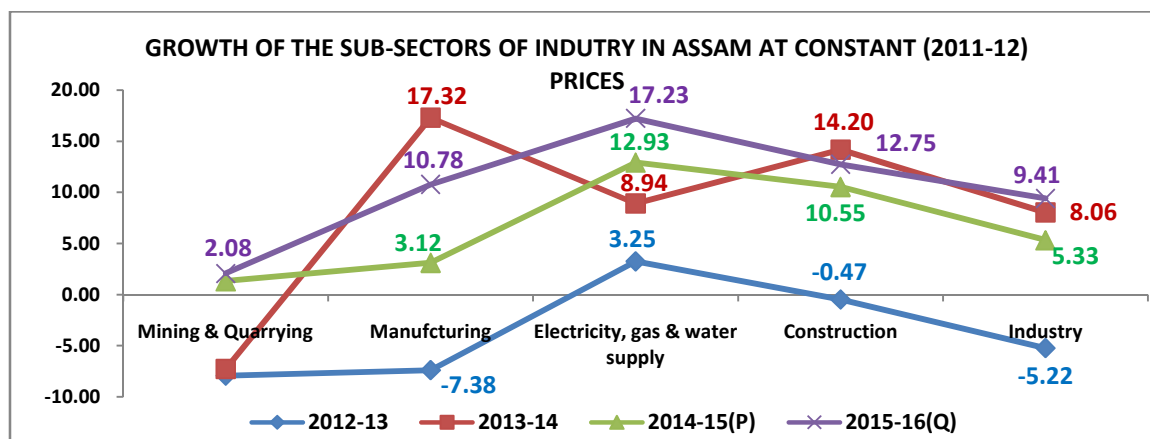
## INDUSTRY, TRADE AND MINING

Assam is a house of natural and precious mineral resources. Assam though finds its place in the industrially developed map of the world during the pre- independence period but at present Assam is amongst the industrially under- developed States in the Country. The industrial scenario of the State is confined within the growth of employment oriented SSI Sector. Assam is still making efforts desperately for gearing up industrial activities by harnessing the un-tapped resources available in the State through various growth-inducing factors as well as by removing the infrastructure inadequacies primarily in the power sector. Despite existence of constraints, a favourable industrial climate is gradually being created in the State as discernible from the increasing interest shown by investors both from within the State as well as from outside the State. The communication and transport sector, on the other hand, has shown some improvement during the recent past. The declaration of the North East Industrial Investment Promotion Policy-2007, removal of notified area concept and introduction of neutrality of location clubbed with Excise duty exemption, Income Tax exemption, Capital Investment Subsidy, Interest Subsidy, Comprehensive Insurance Subsidy, Incentive to Bio-Technology Industry, Incentive on Power Generation Industry, Transport Subsidy etc., are the major steps towards industrialization of the state. The thrust has been given both by the State and Central Government to enhance benefits to those entrepreneurs' desirous to set up their units. The State Government in turn has to provide supplement effort by development of infrastructure and offers its participation in the form of Government share or partner in the PPP models of projects which are of prime importance considering the location of the State.

The Department of Industries & Commerce, Assam has established one Export Processing Industrial Park (EPIP) at Amingaon in kamrup district, 3 Industrial Growth Centre, 11 nos of Industrial Infrastructure Development centres (IIDCs), one foodpark at chaygaon & one North East Mega Food Park at Nalbari District .Besides, there are 20 Industrial Estate, 8 Mini Industrial Estate, 17 Industrial area, 18 Growth Centres in Assam. At present a total of 763nos of industrial units are functioning in these Industrial infrastructures.

## GROWTH OF INDUSTRIAL SECTOR IN ASSAM:

During the last four years (2012-16), the Industry sector grew at an annual average growth of 4.39 percent calculated as per the new base 2011-12. The period started with a negative growth of 5.22 percent during 2012-13 followed by high growth of 8.06 percent during 2013-14 mainly contributed by a high growth of 17.32 in the manufacturing sector and 14.20 percent in the construction sector and again slowed down in 2014-15 to an annual average growth of 5.33 percent. The growth during 2015-16 was 9.41 percent contributed by an annual growth of 17.23 in the electricity, gas and water supply followed by 12.75 percent growth in the construction sector and 10.78 percent growth in the manufacturing sector. During the last four years (2012-2016), the mining and quarrying sector showed an average annual growth of (-)2.94 percent. This sub-sector starting with a negative growth of 7.92 percent during 2012-13 at Constant (2011-12) prices turned to a positive growth during 2014-15. The growth during 2015-16 was 2.08 percent.



Source: Directorate of Economics and Statistics, Assam

During 2015-16, the Index of Industrial Production (Base: 2004-05=100) in respect of manufacturing sector was 174.27 showing a negative growth of 2.30 percent over the previous year. IIP of Assam during 2015-16 was 134.09 and decreased by 0.89 percent over 135.30 in 2014-15. Production of some selected industries may be evident from the table-11.1

TABLE – 11.1  
PRODUCTION OF SOME SELECTED INDUSTRIES IN ASSAM

Year	Tea (000 tonnes)	Wheat Flour (000 tonnes)	Coal (000 tonnes)	Jute Textiles (Tonnes)	Crude Oil (000 tonnes)	Cement (000 tonnes)	Fertilizer (000 MT)
2007-08	486	837	1101	9494	4361	213	346
2008-09	484	848	1147	11249	4673	446	313
2009-10	498	1044	1203	12511	4738	644	338
2010-11	525	1198	1110	12904	4714	736	325
2011-12	501	866	590	19956	5023	984	394
2012-13	588	898	605	22717	4861	1181	514
2013-14	629	1003	665	25625	4718	1107	515
2014-15	607	951	797	24275	4447	1277	488
2015-16	653	1041	397	27237	4513	1169	506

Source: Tea: Tea Board of India; Minerals: Indian Bureau of Mines, Nagpur; Others: Individual Industrial Units.

#### MINING SECTOR:

The State is richly endowed with mineral resources and is a major contributing factor for industrial performance. During the year 2015-16, mineral production in the State went down against a higher production of minerals during 2014-15 except crude oil. The Table-11.2 shows the trend of some major minerals exploited in the State during the last nine years.

TABLE – 11.2  
MINERAL PRODUCTION IN ASSAM

Year	Coal (000MT)	Crude Oil (000MT)	Natural Gas Utilised (MCM)	Limestone (000MT)	Sulphur (000 MT)
2007-08	1151	4308	2417	367	224
2008-09	1147	4673	2603	363	566
2009-10	1203	4738	2476	402	665
2010-11	1110	4714	2500	334	2991
2011-12	590	5023	2726	245	5457
2012-13	605	4861	2681	292	3706
2013-14	665	4718	2655	208	5334
2014-15	797	4447	2726	681	5794
2015-16	397-(-)50.19	4513-1.48	2903-6.49	442-(-)35.10	4322-(-)25.41

Source: Indian Bureau of Mines.

During the year 2015-16, production of Coal, Limestone and Sulphur decreased substantially by 50.19 percent, 35.10 percent and 25.41 percent respectively over the previous year. However, during the year 2015-16 production of Crude Oil and Natural Gas increased by 1.48 percent and 6.49 percent respectively.

#### INDUSTRIAL INFRASTRUCTURE FACILITIES IN ASSAM:

##### INDUSTRIAL ESTATE AND INDUSTRIAL GROWTH CENTRE:

Creation of environment for industrialization by setting up Industrial infrastructure in the perspective of industrial development and attract investment through proper planning is the prime objective of the State Government. To achieve the goal the department is creating a good numbers of infrastructural facilities as well as upgrading the existing ones located in different districts of the state. Infrastructural facilities in the form of Export Processing Industrial Park (EPIP), Industrial Infrastructure Development Centre (IIDC), Growth Centers, Food Processing Industrial Park, Industrial Estates, Industrial Areas, and Commercial Estates etc are spreading throughout the State.

At present, there are 20 Industrial Estates, 8 Mini Industrial Estates, 17 Industrial Areas and 12 Growth Centres in the State where 722 numbers of Industrial units are functioning. One Export Promotion Industrial Park (EPIP) has also been established with world class infrastructure at Amingaon in Kamrup district where 47 numbers of industrial units are producing some export quality product of various kinds. In addition, 11 nos. of Industrial Infrastructure Development (IID) Centre in 11 different districts and 3 numbers of Industrial Growth Centre, one Food Park at Chaygaon in Kamrup District and one North East Mega Food Park at Nalbari District have been established.

The Department has established 3 (three) Industrial Growth centre, a centrally sponsored project at Balipara (Chariduar), Matia and Chaygaon.

##### Industrial Growth Centre, Chariduar

The Centre is being set up with a total project cost of Rs.2543.40 lakh of which Central share is Rs.1500.00 lakh and State share is Rs.1043.40 lakh. Up to 2015-16, Govt. of India has released Rs.1216.00 lakh while the State Govt. has released Rs.22.20 lakh. The first phase work of the project has been completed and an area of 20 bigha of land has been allotted for setting up a pharmaceutical unit. The Assam Industrial Development Corporation (AIDC) is the implementing agency of the project.

##### Industrial Growth Centre, Matia

The Centre in Goalpara District is being implemented by AIDC with a total project cost of Rs,2200.00 lakh of which Central share is Rs.1500.00 lakh and State share is Rs.700.00 lakh. Till the end of 2015-16, the Government of India has released Rs.1500.00 lakh while State Govt. has released Rs.217.14 lakh. The first phase work has been completed and plots to various industrial units have been allotted. Financial achievement up to 2015-16 is Rs.1717.14 lakh.

##### Industrial Growth Centre, Chaygaon-Patgaon-Jambari

The centre is located at split locations at Chaygaon-Patgaon-Jambari in Kamrup District and is being implemented by Assam Industrial Infrastructure Development Corporation (AIIDC) with a total project cost of Rs.1615.24 lakh of which the Central share of Rs.1500.00 lakh has been released and the State share of Rs.115.24 lakh has been released by the Central and Satte Government respectively. The project at all the three locations have been completed and altogether 38 number of units at Chatabari, 37 number of units at Jambari and 6 units at Patgaon location have been allotted land for their proposed ventures. Out of these, 25 units at Chaygaon Chatabari location, 13 units at Jambari lication and 6 units at Patgaon have already started their commercial production. The Bamboo Technology Park is also located in the IGC, Chaygaon project.

**EXPORT PROMOTION INDUSTRIAL PARK (EPIP):**

The Department of Industries and Commerce, Assam has established an Export Promotion Industrial Park at Amingaon in Kamrup (Rural) District at a total project cost of Rs.1462.00 lakh. A total of 44 numbers of industrial units are functioning in the park.

**BORDER TRADE CENTRES:**

Assam is sharing international border with Bangladesh, Bhutan and Myanmar and thus has ample scope to enhance trade with these countries. To facilitate foreign trade with various neighbouring Countries bordering North-East India, Government of India has taken a new initiative to create all infrastructure facilities for the exporter of the region for development of Trade & Commerce. The State Government has approved for setting up of five numbers of Border Trade Centres- one at Sutarkandi in Karimganj district, at Mankachar and Golokganj in Dhuburi district, Darranga in Baksa district and Jagun in Tinsukia district to facilitate border trade with neighbouring countries like Bangladesh, Bhutan etc.

**a) Border Trade Centre, Sutarkandi**

The Border Trade Centre, Sutarkandi project in Karimganj district was approved by Government of India in the year 2000 under Critical Infrastructure Balance (CIB) and ASIDE scheme. The total project cost (both 1<sup>st</sup> and 2<sup>nd</sup> phase) was Rs.2563.00 lakh, sharing between central and state govts as Rs.2400.00 lakh and Rs.163.00 lakh respectively. Till 2015-16 Government of India has released Rs.2400.00 lakh and the State Government has released Rs.163.00 lakh respectively against their share. Both the phase of the project has been completed. The project has been implemented through AIIDC and normal trade is going on.

**b) Border Trade Centre, Mankachar**

The Government of India has approved for setting up of a border trade centre at Mankachar town in Dhuburi district under ASIDE scheme. The centre also has a linkage with Tura of Maghalaya. The approved project cost of this project is Rs.466.00 lakh. The Central share is Rs.380.83 lakh and the State government share is Rs.85.17 lakh. Up to the year 2015-16 Government of India has released its full share of Rs.380.83 lakh and state government has released Rs.85.00 lakh for the project. The project has already been completed and trade is going on. The Project was implemented by AIDC.

**c) Trade Facilitation Centre, Jagun, Tinsukia**

A Trade Facilitation Centre (TFC) has been created at Jagun in Tinsukia district which is about 3 Km away from Jairampur (Assam-Arunachal Pradesh border point) and 20 Km from Panchu Pass (Indo-Myanmar Border on Stilwell Road). The Trade Centre has been constructed with a project cost of Rs.5.98 crore and completed. Facilities like warehouse, Parking Yard, loading & unloading platform etc., are created in this centre. The Govt of India has released Rs.530.98 lakh for the project during 2015-16.

**d) Border Trade Centre, Darranga, Baksa (Indo-Bhutan Border)**

In view of growing Indo-Bhutan trade and to encourage formal trade, a Border Trade Centre is proposed to set up at Darranga, Baksa district of Assam. The estimated cost of the project is Rs.14.33 crore and construction is in progress. The infrastructure facilities will be available in the centre are: Cold storage, Parking yards, warehouse, weighbridge, loading & unloading platform etc. The project is the final stage of completion. The Central Govt. has released Rs.1402.71 lakh up to 31<sup>st</sup> March 2016.



## e) Border Trade Centre, Golokganj, Dhubri

This Border Trade Centre is under construction near the Gate no.24 of Sonahat in Dhubri district and the project is implemented by AIDC Ltd with a project cost of Rs.1938.00 lakh. This centre has a competitive advantage and may become a Hub of trade in the coming years. On 28<sup>th</sup> April, 2014, the first consignment of coal crossed this border point to Bangladesh and was inaugurated on 12<sup>th</sup> December, 2015. Govt. of India has released 82 percent of its share i.e. Rs.1589.00 lakh for the project up to 31<sup>st</sup> March, 2016.

## FOOD PROCESSING INDUSTRIAL PARK:

The Ministry of Food Processing Industries, Government of India has approved for setting up of a Food processing Industrial Park at Chaygaon in Kamrup District with a project cost (revised) of Rs.496.00 lakh. The Central Govt. share is Rs.350.00 lakh and the State share is Rs.146.0 lakh. The Government of India has released Rs.262.50 lakh while the Government of Assam has released its full share of Rs.146.00 lakh against their respective share upto the year 2015-16. The Project is completed by ASIDC and plots to 13 units have been allotted, out of which 10 nos of units are under various stages of construction and three units have started commercial production.

## INTEGRATED INFRASTRUCTURE DEVELOPMENT CENTRES (IIDC):

The Ministry of MSME, Government of India has approved for setting up of 11 (eleven) numbers of Integrated Infrastructure Development Centre (IIDC) at different locations in 11 (eleven) districts of Assam. Government of India has released Rs.2411.66 lakh and the Government of Assam has released Rs.665.88 for the project. All the projects have been completed and at present 48 units are functioning in different IID centres.

## NORTH EAST MEGA FOOD PARK, TIHU:

With the objective of providing adequate infrastructure for the food processing industries of the region along with the value chain from farm to market, a Mega Food Park is under construction at Nathkuchi (Tihu) in Nalbari district. The park is being developed in PPP model with assistance from the Ministry of Food Processing Industries, GOI in an area of 50 acres. The total project cost is Rs.8085.37 lakh where central share is Rs. 5000.00 lakh and State share is Rs.1698.00 lakh and term loan is Rs.1387.37. The Central Govt. has released its full share of Rs.5000.00 lakh and the State Govt. has released Rs.63.59 lakh up to 31<sup>st</sup> March, 2016. The park is located on NH-31 at a distance of 90 km from Guwahati and will accommodate 27 numbers of food processing units. The Mega Park was inaugurated on 28<sup>th</sup> May, 2015 and one unit is presently functioning.

## PLASTIC PARK:

To facilitate the growth of downstream industries based on the Assam Gas Cracker Project (Brahmaputra Cracker and Polymer Ltd.), Government of Assam has proposed to set up a Plastic Park at Gelapukhuri in Tisukia District to facilitate polymer based downstream industries. The project site is located 3-4 kms from the Tinsukia town and about 60 kms from the Assam Gas Cracker Project site. It is proposed to provide the following facilities:

- Developed plots
- Internal roads
- Water supply system
- Captive power plant
- Internal drainage system
- Boundary wall
- Street lighting
- Medical/ recreation/ canteen
- Tool room
- Recycling plant, etc.

The Approved project cost of the Plastic Park covering an area of 500 acres is Rs. 9365.00 lakhs, out of which Central share is Rs.4000.00 lakh & State share is Rs.5365.00 lakh. AIDC Ltd has been designated as the nodal agency for implementation of the Plastic Park project and 25% work of the project has so far been completed. Up to March, 2016, the Govt. of India has released Rs. 2176.00 lakh and the Govt of Assam has released Rs.2262.00 lakh.

#### BAMBOO PARK:

A bamboo park at Chaygaon in Kamrup (Rural) is under construction. The proposed park is being developed in PPP model with the assistance from Ministry of Commerce & Industry, GOI; State Govt. and private promoters. The cost of the Project is Rs.62.28 crore out of which the Central Govt. contribution is Rs.52.63 crore and the State Govt. share is 3.90 crore and term loan is 5.75 crore. The Central Govt. has released Rs.51.05 crore and the State Govt. has released Rs.1.51 crore of which 0.50 crore is under grant. The objective of park is to create integrated infrastructure for promotion of bamboo based industries in the State.

### MAJOR SCHEMES IMPLEMENTED BY THE DEPARTMENT OF INDUSTRIES AND COMMERCE, ASSAM

#### PRIME MINISTER ROJGAR YOJANA (PMRY) /

#### PRIME MINISTER EMPLOYMENT GENERATION PROGRAMME (PMEGP):

Prime Minister Employment Generation Program (PMEGP) has been introduced by merging the PMRY and REGP with the same aims and objectives of Prime Minister Rojgar Yojana (PMRY). The KVIC is implementing the PMEGP scheme as the nodal agency at the national level and at the State level KVIC Directorate, State KVIB and the District Industries and Commerce Centres and Banks implement the scheme in Assam. The Government subsidy under the scheme is being routed by the KVIC through the identified Banks. Table 11.3 shows achievements of implementation of PMEGP in Assam during the year 2008-09 and 2015-16.

TABLE – 11.3  
TARGET AND ACHIEVEMENTS OF PMEGP IN ASSAM

Year	Physical target (in nos.)	Financial Target (margin money) (Rs. in Lakh)	Total Cases sanctioned (Rs. in Lakh)	Physical achievement (in no.)	Financial achievement (Rs. in lakh)	Remarks
2008-09	685	820.22	861	617	676.95	Information represents DICC part only
2009-10	1292	1550.00	2440	2440	1899.71	For the State
2010-11	3193	4469.66	4756	4756	4801.10	For the State
2011-12	5047	7065.80	5280	5280	5544.99	For the State
2012-13	4644	6500.20	7336	7336	5801.15	For the State
2013-14	4588	6210.97	8049	8049	7219.90	For the State
2014-15	5101	7238.82	5584	5584	5042.41	For the State
2015-16	1913	-	3382	3382	2793.39	For the State

Note: Physical and financial targets are subject to revision from time to time.

Source: Office of the Commissioner of Industries & Commerce, Assam.

#### SMALL SCALE INDUSTRIAL UNITS (SSI) /

#### MICRO, SMALL & MEDIUM ENTERPRISES AND HANDICRAFTS UNITS:

The strategy for industrial growth in Assam must focus on generating jobs for unemployed youth to ensure regionally balanced, socially equitable and economically inclusive growth. The Small Scale Industries have played vital role in fulfilment of socio-

economic development perspectives in Assam. Presently the small-scale industries have been sub- divided into Micro, Small and Medium Enterprise (MSME) under the Micro, Small and Medium Enterprises Development Act 2006. The categorization of enterprises is made based on their investment in plant and machineries in case of manufacturing sector or in equipments in case of service sector. In this context, special focus has been given by the State Government on development of the MSME sector for generation of economic activities and skill development in employable trades with a view to generate rural income and employment. For speedy growth of this sector, the Government of Assam has already brought some simplification in its procedures in respect of registration as well as declared incentives in its Industrial Policy – 2008.

There are 43332 SSI/MSME units in Assam and provided employment to 2.49 lakh persons till the end of March 2016. The Table–11.4 shows some annual statistics in respect of setting up of SSI/MSME units upto 31-03-2016. It is evident from the table that average employment per unit of manufacturing enterprises in Assam is around 7(seven) person during the period 2005-06 to 2015-16 and average investment per unit is Rs.13.49 lakh. The table also depicts that the average investment per unit was on an increasing trend up to 2011-12 reaching Rs.21.58 lakh and thereafter went on a decreasing trend falling to Rs.13.49 lakh in 2015-16.

TABLE – 11.4  
GROWTH OF SSI /MSME UNITS, EMPLOYMENT,  
INVESTMENT AND PRODUCTION IN ASSAM  
(as on March)

Year	No. of SSI /MSME units	No. of Employment	Average no of Employment per unit	Investment on Plants & Machinery (Rs. in lakh)	Average investment per Unit (Rs in lakh)
Upto 31.03.2005	23658	108467	4.6	46085.89	1.95
2005-06	2082	10780	5.2	23776.88	11.42
2006-07	2172	11852	5.5	9282.72	4.27
2007-08	1692	10471	6.2	26637.42	15.74
2008-09	1711	12914	7.5	26348.26	15.40
2009-10	1678	12787	7.6	29901.68	17.82
2010-11	1214	9002	7.4	25557.59	21.05
2011-12	1287	13886	10.8	27776.15	21.58
2012-13	1451	11671	8.0	27397.47	18.88
2013-14	1860	12971	7.0	31099.08	16.72
2014-15	2629	20496	7.8	26923.29	10.24
2015-16	1898	13848	7.3	25597.96	13.49

Source: Office of the Commissioner of Industries & Commerce, Assam.

#### BIPONI :

This is an innovative marketing scheme for Micro and small entrepreneurs of Assam. The basic objective is to give support to the entrepreneurs to participate in trade fairs or events organised within the State, Country or abroad. Under the scheme, for the events organised within the State, the participants coming from other districts are given Rs.5000.00 towards stall rent and Rs.500.00 per day to meet the expenditure on travelling, food and lodging. For participating outside the State, the selected participants will be given 50 percent of the stall rent (maximum ceiling being Rs.10.00 thousand), sleeper class to and fro railway fare for two person and each member will get Rs.300.00 per day towards food and lodging for the fair period

The scheme also includes free stall space for the selected participants for events outside the Country. The participant will also be provided with Economy Class Air fare and Rs.1000.00 per person per day for lodging and expenditure on food.

#### BONEEJ:

This special scheme was announced by the Hon'ble Finance Minister on 26<sup>th</sup> July 2016 on his Budget Speech to provide special grant to the rural industries of the State dealing with traditional and micro sector. The scheme will cover all the districts except Karbi Anglong, Dima Hasao and Bodoland Territorial Autonomous District. Under the scheme, it is proposed to provide Rs.25.00 thousand as grant to the industries located in rural areas and whose annual turnover is less than Rs.5.00 lakh.

#### SAROTHI :

This scheme is a Chief Minister's Start Up Fund launched to encourage the young talented entrepreneurs facing resource crunch to start new ventures in the State by giving financial assistance. Under the scheme, budgetary provision for an amount of Rs.10.00 crore has been made in the State Budget, 2016-17. The fund will be managed by the Industries and Commerce Department as per its operational guidelines.

The basic objective of the scheme is to provide financial assistance in the form of loan with interest subvention through a designated Bank covering whole Assam. The loan so availed by the beneficiaries will be supported by the Satte Govt. through interest subvention at the rate 5 percent per annum.

#### TEA INDUSTRY:

The Tea industry occupies an important place in Assam and plays a very special role in the State economy. The first Indian tea produced in Assam was sent to United Kingdom for public sale in the year 1838. Although the tea cultivation was extended to other parts of the country between 50's and 60's of the last century, as of today, Assam Tea has maintained its international reputation and commands significant share in the World Tea Market. The total area under tea cultivation in Assam is accounting for more than half of the country's total area under tea. In addition to existing big & large tea gardens owned by reputed both Indian and multinational Companies, the profession of tea plantation in the State has been taken up by common people as business venture at present, especially by unemployed youths. The tea industry in Assam also provides average daily employment to more than 6.86 lakh persons in the State, which is around 50 percent of the total average daily number of labour employed [on an average 11.1 lakh labour employed per day] in the country.

Assam has witnessed a spurt in the growth of small holdings during the last three decades and there is more than 1.0 lakh small holdings accounting for 200 hundred million kgs of made tea. Most of the STGs are first generation young and educated entrepreneurs who have started contributing immensely towards transformation of socio-economic life of rural Assam. According to the Tea Board of India, there are about 68.5 thousand registered small tea growers [STG] in Assam producing about 106881 thousand KG in 88674 hectares of land in Assam.

Assam alone produces more than half of India's tea production. The estimated production of tea in Assam was 642.0 thousand tonnes in 2016 which is being produced in a 304 thousand hectare of land. Statistics of area and production of Tea in Assam are shown in the Table - 11.5.

TABLE – 11.5  
TEA STATISTICS OF ASSAM AND INDIA

Year	No. of Tea Gardens		Area under Tea (in'000 hectare)		Total Tea Production (in 000 kg.)		Average yield (kg/ hectare)	
	Assam	India	Assam	India	Assam	India	Assam	India
2007	825	NA	321.3	578	511885	986427	1593	1705
2008	760	1385	321.4	560	487497	980818	1517	1750
2009	760	1385	321.7	561	499997	978999	1554	1746
2010	760	1385	322	561	480286	966403	1492	1724
2011	765	NA	322	560	589110	988323	1830	1764
2012	78856	NA	322	579	590120	1111760	1833	1919
2013	69220	NA	322	564	629050	1208780	1953	2143
2014	77710	NA	304	564	610970	1208780	2010	2143
2015	83566	NA	316	564	526185	-	1665	-
2016	85344	NA	304	-	642180	-	2112	-

Note : 1. No. of Tea Gardens shown from 2007 to 2011 refers to only Tea Gardens having area above 10.12 Hectare and excluding Small Growers.

2. Area, Production and Average yield estimated and subject to revision.

Source: Tea Board of India.

The Guwahati Tea Auction Centre is actively taking part in trading of the Tea produced mainly in the North-eastern States since its establishment. Statistics of quantity and average price of tea sold in the Guwahati Tea Auction Centre is shown in the Table-11.6.

TABLE – 11.6  
QUANTITY AND AVERAGE PRICE OF TEA SOLD IN GUWAHATI TEA AUCTION CENTRE

Year	Leaf				Dust			
	CTC		Orthodox		CTC		Orthodox	
	Quantity (million Kg.)	Average Price (Rs. per Kg)	Quantity (million Kg.)	Average Price (Rs. per Kg)	Quantity (million Kg.)	Average Price (Rs. per Kg)	Quantity (million Kg.)	Average Price (Rs. per Kg)
2005	101.94	61.11	0.61	61.62	40.30	59.19	-	-
2006	100.75	67.96	0.72	78.18	40.90	68.27	-	-
2007	106.88	70.09	4.16	73.93	41.51	73.02	0.001	50.00
2008	110.14	90.20	0.56	92.39	41.99	95.73	-	-
2009	98.33	108.52	0.44	111.21	39.74	115.10	-	-
2010	87.33	113.06	0.36	122.09	38.94	116.26	-	-
2011	86.2	108.74	0.254	109.28	36.23	107.93	-	-
2012	70.84	138.27	0.551	163.07	30.97	143.17	-	-
2013	87.36	130.11	0.91	168.58	38.30	137.34	-	-
2014	80.34	142.52	0.48	143.32	39.64	145.15	-	-
2015	86.70	140.93	1.40	186.40	41.20	146.80	-	-
2016 (upto July)	38.12	137.71	0.32	186.03	17.78	143.65	-	-

Source: Guwahati Tea Auction Centre

**RUBBER INDUSTRY:**

The rubber cultivation has gained its popularity in Assam due to congenial agro-climatic condition as well as its eco-friendly environment. The Rubber Board has identified Assam as a "Potential State" from the "productivity" point of view as the State too has ample scope of rubber plantation. Considering the said conditions, the Rubber Board has planned to enhance rubber plantation area to 2 lakh hectares at the end of Twelfth Five Year Plan from the 28102 hectare at present to cope with the growing demand of rubber in the country which is expected to touch 1.78 lakh MT at the end of 2025. The area under rubber cultivation has grown from 16.5 thousand hectares in 2006-07 to 55.99 thousand hectares in 2015-16. The tapping area as well as production of rubber has also been increased considerably during the same period. The growth of coverage of the rubber plantation area as well as production in the State is presented in the Table 11.7 Considering the growth of plantation areas and rubber production trends, there is vast potential for setting up of rubber industries in the State.

TABLE – 11.7  
AREA AND PRODUCTION OF RUBBER IN ASSAM

Year	Area (in hectare)	Production (in MT)	Tapping Area (in hectare)	Employment Generation (Mandays)
2006-07	16508	3050	NA	1503550
2007-08	18271	4750	3320	1762591
2008-09	20975	5097	3518	2040686
2009-10	23075	9832	6505	2710230
2010-11	27083	10213	7686	2767450
2011-12	30791	10437	8608	3034993
2012-13	34537	11054	7634	381992
2013-14	39855	14337	9070	140386
2014-15	42097	15342	11080	134357
2015-16	55990	16400	12308	174763

Source: The Rubber Board, Zonal Office, Guwahati.

**SERICULTURE:**

Traditionally, sericulture is a major cottage industry in the State. Sericulture has been practiced in Assam from time immemorial and continues to be an important labour-intensive and agro based cottage industry providing gainful occupation to around 2.50 lakh person in rural and semi-urban areas of Assam. Of this a sizeable number of male workers belong to the economically weaker section of the society and women. Moreover, sericulture is a sustainable farm-based economic enterprise positively favouring the rural poor in the un-organized sector because of its relatively low requirement of fixed capital and higher returns on investment.

The State of Assam is proud of traditionally producing Muga, Eri and Mulberry and lastly the Oak tassar in the hills districts. The State accounts for highest production of non-mulberry silk, muga and eri in the country. Assam has the monopoly in the world in the production of Muga, the "Golden Silk", as more than 97 percent of Muga Silk is produced

in Assam. Assam has also achieved the right of 'Geographical Indication' for Muga thread. The State is also a Major producer of Eri Silk (about 65 percent).

This industry has undergone a number of changes with the changes in loom, fabric, design, technology etc. Non-mulberry silk in general and Muga silk in particular has been closely associated with the rituals and traditions of Assam and thus, silk production and its usage has been an important household activity in the State over the years. Muga Silk and Eri Silk have good demand in the national and international market. Rearing of Eri, Muga and Mulberry silkworm are playing an important role in the economic development of a large section of rural population of the State. It is practiced in 11281 villages at present and provides employment to 6.5 lakh families of the State.

The production of silk in the State was 2713 MT during the year 2015-16 which is 8.62 percent higher than the previous year. The performance of Sericulture is presented in the table below.

TABLE – 11.8  
SERICULTURE ACTIVITIES IN ASSAM

Item		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
1.	Sericulture Villages (Nos.)	10532	10740	10746	11411	11281	11281
2.	No. of Families Engaged	254134	254516	291592	282073	652406	496901
3.	Area under Silk Worm food Plants (In Hect.)	21301	24268	26827	33790	15417	11434
3.1	Eri	7670	8044	9172.5	15796	6601	5510
3.2	Muga	8908	9400	10230	10371	5995	4383
3.3	Mulberry	4723	6824	7424	7623	2821	1541
4.	Yield of Cocoons						
4.1	Eri Cut Cocoons (in MT)	1108	1622.51	2514.16	3182	3050	3317
4.2	Muga Cocoons (in lakh Nos.)	6368	5812	5450	6361	6528	6864
4.3	Mulberry Reeling Cocoons (in MT)	110	129.28	225.0	340.5	268	328
5.	Production of Silk Yarn (in MT)	935.66	1187.42	2068.0	2700.04	2497.40	2712.80
5.1	Eri Raw Silk	810.98	1061.61	1934.0	2545.6	2345.0	2555.00
5.2	Muga Raw Silk	113.28	114.56	109.0	127.2	126.0	127
5.3	Mulberry Raw Silk	11.4	11.25	25.0	27.24	26.4	31.02

Source: Directorate of Sericulture, Assam.

At present Muga silk worm rearing in Assam is suffering due to high climatic pollution, extreme temperature and continuous rearing under domestic nature. To overcome the problem and to regain its wild nature and strength to survive with the present topography, the department proposed to release some muga silk worm in wild plantation in the Assam-Meghalaya border area near Boko in collaboration with State Forest Department. This will help improvement of domesticated Muga silk worm for quality seed production. The department also proposed to provide financial assistance to re-vitalize the Muga Research Sub-Station located at Dhakuakhana and other research organizations/private farms for conducting different experiments/researches for conservation and protection of muga silk worms.

#### HANDLOOM:

In Assam, Handloom Weaving is inexorably linked with Assamese Culture and Heritage. Handloom Industry of Assam provides maximum number of employment after agriculture is known for its rich glorious tradition of making handloom and handicraft products. Handloom is a precious part of generational legacy and has been kept alive by

the skilled weavers engaged in the age old tradition of weaving since antiquity in Assam. Contrary to use of modern technology and tools in the textile sector in present days, the handloom sector continued to play very important role in terms of employment generation and the socio-economic development of Assam. Handloom sector in Assam has gradually grown to the expected level for commercial production.

During 2015-16, there were 19.49 lakh weavers in the State out of which 15.30 lakh were part time weavers and 4.19 lakh whole time weavers. Number of Handloom demonstration circle were 221 and 14273 numbers of villages were covered under the activity. During the year, under Centrally Sponsored Scheme, 60935 numbers of weavers were covered under the Health Insurance and 4034 weavers were given Weavers Credit Card.

#### TOURISM:

Tourism is a fastest growing industry in the world. Tourism is not only a growth engine but also an employment generator that has the capacity to create large scale employment both direct and indirect, for diverse sections in society, from the most specialized to unskilled workforce. Tourism in Assam is based on wildlife, natural beauty, unique flora & fauna, holy shrines, lush green tea gardens, turbulent rivers, vibrant and colourful cultural festivals. Assam has immense tourism potentials, which are to be explored as commercial resources. Eco-tourism is one of the fastest growing tourism segments and therefore the Government of Assam has given tremendous thrust with relevant to natural beauty and bounty.

The State Tourism Department has witnessed a considerable success and all round development both in respect of infrastructure development and creation of other facilities over the years with the financial assistance from the Central as well as the State Government. It is felt that to explore tourism potentials, adequate investments and integrated, coordinated and concerted efforts from all concerned departments are necessary. However, the State Tourism department has undertaken various steps for promotion/ infrastructure development in the State both individually and jointly with private sector.

For the growth of tourism sector, special emphasis has been given on Tourism Circuit Development, Destination Development, Wayside Amenities etc., through public and private partnership to tap the unexplored potential opportunities. Assam Tourism Policy, 2008 has also been adopted by the State Government giving special emphasis to encourage private investment in Tourism sector by providing financial and logistic support. The State Government has made all basic arrangements for construction of chain of 5[Five] Star Hotels in collaboration with private investors and Indian Hotel Company Ltd.

Eco-tourism is aimed at the appreciation of both natural world and traditional cultures existent in natural areas and to protect natural and cultural assets. Assam has several ethnic groups residing in harmony in spite of the differences in rites and rituals, festivals and attires. One may discover the fascinating legacy of art and crafts in Assam, the proud producer of three unique varieties of Silk, the Golden Muga, the White Pat and Warm Eri. In Assam, one can hear the rhythms of the shuttles of looms in the craft village, which get momentum with the advent of spring. Special priority for development of Religious Tourism & Cultural festivals like "Ambubachi Mela" in Maa Kamakhya Temple, Dol Utsav in Barpeta has also given to attract both Indian and foreign tourists. The Brahmaputra Beach Festival, Kite festival, Kaziranga Golf Competition etc., are organised in collaboration with the Tourism Department is another important step to attract Indian and Foreign tourists to Assam.

Assam is also blessed with minerals especially petroleum. It is worth mentioning that India's first oil well was drilled in Digboi. The world's third oil refinery and the first oil



refinery in India and too in Asia was established and located at Digboi has also special importance from the tourism point of view.

River cruise on the Brahmaputra from Guwahati, organised by Government as well as Private tour operators are major attractions. One can opt for short cruises or can avail longer sailing to Kaziranga National Park or to the ethno-religious island of Majuli or to the remnants of the Great Ahom Kingdom in Sivasagar. "M.V. Mahabahu"- the latest addition for river cruise with starred facility is new attraction for adventure tourism. Of late, Brahmaputra cruises has been recognised as one of the top 10 most adventures cruises by the CNN International in 2013.

The Table 11.9 shows the volume of tourist traffic and magnitude of revenue earning by the State over the last seven years.

TABLE –11.9  
NUMBER OF INDIAN AND FOREIGN TOURIST TO ASSAM  
AND REVENUE EARNED FROM THE TOURISTS

Year	Tourist staying in Tourist Lodges		Tourist Staying in other accommodation like Hotel etc.		Total Revenue earned from Tourist Lodges only (Rupees in lakh)
	Indian	Foreign	Indian	Foreign	
2006-07	20279	649	3459591	13008	81.30
2007-08	24057	960	3465757	12839	94.99
2008-09	26439	674	3672267	13859	103.92
2009-10	25665	664	3869860	14030	131.63
2010-11	25831	594	4101616	15039	143.60
2011-12	26439	696	4381897	15964	184.49
2012-13	22057	711	4522609	16997	248.19
2013-14	26394	726	4417999	18360	191.32
2014-15	21092	422	4842734	19583	211.77
2015-16	42988	1077	5599962	25243	1057.24

Source: Directorate of Tourism, Assam.

During the year 2015-16, out of the five National Parks in the State, number of visit by foreign tourist increased in only Kaziranga and Manas National Park. Maximum increase of 42.82 percent was noticed in Kaziranga National Park compared to number of visit in 2014-15 followed by Manas (29.26 percent) National Park. The Table below shows the trend of number of tourists visited various National Parks in Assam during the last nine years.

TABLE – 11.10  
NUMBER OF TOURIST VISITED NATIONAL PARKS IN ASSAM

Year	Kaziranga National Park		Manas National Park		Orang National Park		Dibru-Saikhowa National Park		Nameri National Park	
	Indian	Foreign	Indian	Foreign	Indian	Foreign	Indian	Foreign	Indian	Foreign
2007-08	53640	6106	6391	624	1631	215	1766	53	4154	524
2008-09	100384	5767	1104	240	1285	267	2567	74	5489	479
2009-10	105264	7580	8030	139	1628	325	2613	62	4342	346
2010-11	112392	7447	10843	503	1702	180	2351	40	4460	352
2011-12	117308	7521	19705	237	2678	159	3970	42	5601	457
2012-13	93747	7418	15890	218	1847	70	2656	19	4370	528
2013-14	119289	6922	20527	211	2329	16	4230	54	5866	806
2014-15	123360	7994	9786	475	1946	45	4249	27	8448	1035
2015-16	162799	11417	40559	614	3502	20	2695	27	10384	702

Source: The Principal Chief Conservator of Forest (Wildlife), Assam and Directorate of Tourism, Assam.

**EFFORTS TO UNVEIL ASSAM TO NATIONAL AND FOREIGN TOURIST:**

At present, infrastructure development and destination management has been emphasised for sustained growth of tourism sector of Assam. Priority has also been given to establish an impeccable brand identity in the domestic and international market through publicity both in domestic and overseas countries. To achieve positive response from the national and global market, the Assam Tourism Department participated in different tourism fairs to showcase the tourism product in the national and international market so as to attract domestic and foreign tourists to the region. Accordingly, the Assam Tourism Department participated in the national level tourism fairs like Rath Yatra Festival at Puri, TTF Kolkata, Travel India, Kolkata, Surajkund Craft Mela, Buddhist Conclave, IITF New Delhi etc. In addition, the Assam Tourism Department too participated in several international tourism fairs as a part of publicity campaign and to draw tourists. The electronic and print media are also been extensively utilized for publicity and marketing campaign. The Assam Tourism Department has also started intensive media campaign through Domestic and National Level electronic media. Efforts have been made to establish linkages with the neighbouring North-eastern States and South East Asian countries as a regional tourism hub.

The Assam Tourism Department has prioritized infrastructure development of Rural Tourism for women to showcase the rural tourism products, rural lifestyle, culture, handicrafts etc., for unique visitor community as well as income and employment generation of rural women.

In addition, special attention has been given to upgrade existing facilities in wildlife parks, sanctuaries to accommodate more tourists.

\* \* \* \*

## APPENDIX – 11.1

## TOTAL NUMBER OF REGISTERED MSME UNITS AND TOTAL NUMBER OF WORKERS IN ASSAM

Sl. No.	District	Unit Registration During the year			Total Workers		
		2013-14	2014-15	2015-16	2013-14	2014-15	2015-16
1	2	3	4	5	6	7	8
1.	Kokrajhar	5	9	10	25	206	61
2.	Dhubri	83	139	29	414	740	192
3.	Goalpara	89	77	59	494	532	303
4.	Bongaigaon	36	167	33	222	994	324
5.	Barpeta	59	122	202	371	818	1411
6.	Kamrup & Kamrup (M)	283	R-171 M-206	K-58 K(M)-115	2381	R-1138 M-1783	K-877 K(M)-681
7.	Nalbari	78	100	128	375	577	768
8.	Darrang	107	120	54	452	436	251
9..	Morigaon	22	53	16	171	380	119
10.	Nagaon	180	213	89	1286	1276	559
11.	Sonitpur	89	135	60	532	916	576
12.	Lakhimpur	53	52	35	475	880	357
13.	Dhemaji	39	11	5	156	81	24
14.	Tinsukia	98	119	56	649	747	359
15.	Dibrugarh	154	180	139	1705	1480	1099
16.	Sivasagar	100	282	313	632	2389	2399
17.	Jorhat	86	141	71	471	866	472
18.	Golaghat	63	112	230	609	825	1823
19.	K. Anglong	15	17	13	154	96	121
20.	Dima-Hasao	2	17	2	16	86	7
21.	Cachar	72	40	27	494	221	165
22.	Karimganj	24	38	44	184	239	203
23.	Hailakandi	47	34	30	263	165	151
24.	Chirang	41	55	54	246	363	350
25.	Baska	32	6	1	166	54	7
26.	Udalguri	3	13	25	28	2208	189
Total		1860	2629	1898	12971	20496	13848

MSME- Micro, Small, Medium Enterprises

Source: Commissionerate of Industries and Commerce, Assam.

## APPENDIX – 11.2

DISTRICTWISE NUMBER REGISTERED MSME IN ASSAM DURING THE YEAR  
2015-16

Sl. No.	District	Unit Registration during the year 2015-16			
		Micro	Small	Medium	Total
1	2	3	4	5	6
1	Kokrajhar	10	0	0	10
2	Dhubri	29	0	0	29
3	Goalpara	56	3	0	59
4	Barpeta	200	2	0	202
5	Morigaon	15	1	0	16
6	Nagaon	79	10	0	89
7	Sonitpur	52	7	1	60
8	Lakhimpur	32	3	0	35
9	Dhemaji	5	0	0	5
10	Tinsukia	46	10	0	56
11	Dibrugarh	119	20	0	139
12	Sivasagar	272	37	4	313
13	Jorhat	66	4	1	71
14	Golaghat	210	20	0	230
15	Karbi-Anglong	9	4	0	13
16	Dima-Hasao	2	0	0	2
17	Cachar	23	4	0	27
18	Karimganj	42	2	0	44
19	Hailakandi	27	3	0	30
20	Bongaigaon	29	4	0	33
21	Chirang	49	4	1	54
22	Kamrup	46	12	0	58
23	Kamrup (M)	96	19	0	115
24	Nalbari	126	2	0	128
25	Baksa	1	0	0	1
26	Darrang	50	4	0	54
27	Udalguri	22	3	0	25
ASSAM		1713	178	7	1898
MSME-Micro, Small, Medium Enterprises					

Source: Commissionerate of Industries and Commerce, Assam.

## APPENDIX – 11.3

INDEX NUMBER OF INDUSTRIAL PRODUCTION OF ASSAM  
(Base : 2004-2005 = 100)  
Manufacturing (Registered) Sector [2-digit (division) level]

2-digit NIC 2004	Industry Division	Index Number				
		2011-12	2012-13	2013-14	2014-15	2015-16
1	2	3	4	5	6	7
15	Manufacturing of food products and beverages	117.47	136.7	146.37	143.76	151.43
16	Manufacture of tobacco products	176.66	193.53	204.25	224.58	235.93
17	Manufacturing of Textiles	158.59	178.21	195.52	186.17	203
21	Manufacturing of paper & paper products	117.84	135.63	154.99	151.21	154.9
22	Publishing, Printing & reproduction of recorded media	221.94	254.69	289.2	289.6	312
23	Manufacturing of Coke, refined petroleum products & nuclear fuel	166.56	161.95	163.29	163.263	144.35
24	Manufacturing of Chemical & Chemical Products	178.52	217.53	236.44	237.27	254.8
25	Manufacturing of rubber & Plastic Products	188.65	211.37	226.86	231.46	250.33
26	Manufacturing of other non-metallic mineral products	146.3	175.88	187.43	191.71	208.02
27	Manufacturing of basic metals	148.99	196.32	190.8	190.73	197.93
28	Manufacturing of fabricated metal products, except machinery & equipments	171.01	208.45	252.67	243.56	268.14
29	Manufacturing of machinery & equipments n.e.c.	202.03	258.55	291.36	284.08	313.46
31	Manufacturing of electrical machinery and apparatus n.e.c.	236.24	256.36	274.55	261.54	271.87
32	Manufacture of Radio, television and communication equipment and apparatus	126.48	134.61	142.25	129.43	131.4
33	Manufacture of medical, precision and optical instruments, watches and clocks	143.22	164.86	195.06	203.45	217.76
34	Manufacturing of motor vehicles, trailers and Semi trailers.	133.55	223.66	225.81	209.25	214.84
36	Manufacturing of furniture, Manufacturing n.e.c.	134.58	156.95	179.55	184.7	191.13
TOTAL		159.67	170.48	178.13	178.37	174.27
10-14	Mining and Quarrying	108.35	105.15	102.48	98.20	98.96
15-36	Total Manufacturing	159.67	170.48	178.13	178.37	174.27
40	Electricity	133.42	123.00	130.79	125.54	128.25
GRAND TOTAL		132.68	135.06	137.69	135.30	134.09

Source : Directorate of Economics and Statistics, Assam.

## APPENDIX- 11.4

## DISTRICTWISE DISTRIBUTION OF REGISTERED FACTORIES AND WORKERS IN ASSAM, 2015 (As per NIC, 2008)

Sl. No.	District	Factories	Workers
1	2	3	4
1.	Kokrajhar	42	1812
2.	Dhubri	95	2762
3.	Goalpara	23	598
4.	Barpeta	71	2069
5.	Morigaon	64	2352
6.	Nagaon	373	16920
7.	Sonitpur	475	19567
8.	Lakhimpur	70	2148
9.	Dhemaji	8	124
10.	Tinsukia	641	25192
11.	Dibrugarh	495	28495
12.	Sivasagar	388	13639
13.	Jorhat	348	9483
14.	Golaghat	317	8185
15.	Karbi-Anglong	40	1254
16.	Dima-Hasao	27	591
17.	Cachar	343	11808
18.	Karimganj	121	3950
19.	Hailakandi	50	3450
20.	Bongaigaon	67	5559
21.	Chirang	21	1139
22.	Kamrup	1505	50673
23.	Kamrup (M)	-	-
24.	Nalbari	33	1086
25.	Baksa	16	1047
26.	Darrang	92	2773
27.	Udalguri	74	3227
ASSAM		5799	219903

Source: Chief Inspector of Factories, Assam

## APPENDIX-11.5

SELECTED INDICATORS OF DIFFERENT STATES /UNION TERRITORIES OF INDIA  
(Annual Survey of Industries, 2012-13)

Sl. No.	State/ Union Territory	No. of Factories	No. of Factories in Operation	Total No. of Workers
1	2	3	4	5
1	Andaman & Nicobar Islands	24	19	398
2	Andhra Pradesh	15358	12503	406048
3	Arunachal Pradesh	NA	NA	NA
4	Assam	3303	2902	140896
5	Bihar	3345	2944	100512
6	Chandigarh	297	280	8315
7	Chattisgarh	2441	2143	137950
8	Dadra & Nagar Haveli	1413	1021	76279
9	Daman & Diu	1885	1303	97567
10	Delhi	3958	2863	78510
11	Goa	597	538	37338
12	Gujrat	22587	18175	1046462
13	Haryana	6163	4889	431425
14	Himachal Pradesh	2654	2395	133727
15	Jammu & Kashmir	955	838	49050
16	Jharkhand	2697	2127	127287
17	Karnataka	11753	9730	665597
18	Kerala	7129	6333	319582
19	Lakshadweep	NA	NA	NA
20	Madhya Pradesh	4206	3412	223790
21	Maharashtra	28949	23068	1233341
22	Manipur	128	121	5213
23	Meghalaya	116	102	9483
24	Mizoram	NA	NA	NA
25	Nagaland	106	104	2677
26	Orissa	2854	2434	213079
27	Puducherry	911	671	36945
28	Punjab	12427	10064	468127
29	Rajasthan	8782	7935	3397700
30	Sikkim	65	62	8052
31	Tamil Nadu	36869	26739	1602447
32	Telangana	13656	11371	585728
33	Tripura	534	530	25793
34	Uttar Pradesh	14440	11641	635759
35	Uttarakhand	2911	2468	267268
36	West Bengal	8607	7387	537284
	ALL INDIA	222120	179102	10051626

Source: Central Statistical Organisation (Industrial Statistical Wing), Govt. of India

## CHAPTER –XII

## POWER

In view of the rapid urbanisation, followed by infrastructure development and industrial growth, there is consistent demand for augmentation for augmentation of electricity in the country. In the total electricity consumption, a sizeable part is from domestic and commercial categories. Therefore, electricity consumption, and its growth trends, reflects and helps to know as a vital input the priorities set thereby. As per the Central Electricity Authority statistics, Northeast part of India, has a hydro power potential of 63,257 MW, which is about 43 percent of the total assured hydro power of the country, as a whole Assam, among the North-Eastern states has a capacity to produce 680 MW of hydro power.

In pursuance, of the Indian Electricity Act 2003, and as a part of the programme of Assam Power Sector Development, Government of Assam has unbundled the Assam State Electricity Board (ASEB) in the year 2004, into three government companies namely:

1. The Assam Power Generation Corporation Limited (APGCL),
2. The Assam Electricity Grid Corporation Limited (AEGCL), and
3. The Assam Power Distribution Company Limited (APDCL)

All these initiatives, were taken up by the electricity sector in the state, in the interest of its stakeholders, namely consumers, shareholders, suppliers, creditors, infrastructure builders and the Government of Assam. However, schemes like externally aided projects, rural electrification, accelerated power development and reform programmes (APDRP) are still executed under ASEB.

The Assam Power Generation Corporation Ltd. (APGCL) was constituted after unbundling of ASEB in Dec 2004 through State Power Sector Reforms Programme under the provision of Electricity Act'2003. The final transfer scheme was implemented since Aug' 2005 . The company is mainly responsible for maximum energy generation to meet up the energy demand in the state.

The present total installed Capacity of APGCL is 379.7 MW, of which

1) Namrup Thermal Power Station (NTPS)	= 119.5 MW
2) Lakwa Thermal Power Station (LTPS)	= 157.2 MW,
3) Karbi Langpi Hydro Electric Project (KLHEP)	= 100 MW
4) Myntriang Hydro Electric Project St-II (M. SHEP St-II)	= 3 MW

The 18<sup>th</sup> Electric Power Survey of India was undertaken by Central Electricity Authority (CEA) to forecast Electric Energy Requirement, Electric Load and Power Station Bus Bars (Utilities only) for Twelfth Five Year Plan (2012-13 to 2016-17) for all States and Union Territories of India. As per the survey report by the end of 12<sup>th</sup> plan period, the projected energy requirements for Assam will be 8947 MU and peak Electric Load 1817 MW (Source: Press Information Bureau, Govt. of India, published in connection with the information given by MOS (I/C) Power, Shri Jyotiaditya Scindia in the Lok Shaba on 2.5.2013).



TABLE-12.1

## LONG TERM FORECAST OF ELECTRICAL ENERGY REQUIREMENTS AT POWER STATIONS BUS BAR MW (UTILITIES ONLY)

State	2011-12	2016-17	2021-22
Assam	1257	1817	2534
India	124995	199540	283470

Source: 18<sup>th</sup> Electric Power Survey Report.

To meet this project peak energy demand of 1817 MW by the end of 12<sup>th</sup> five year plan period, ASEB has given emphasis on development of power projects based on coal and natural gas, along with steps taken on the following:

- (1) Development of new projects on hydro energy
- (2) A distributed growth of small hydro projects
- (3) R & M of old power stations
- (4) Upgradation of Infrastructure related to distribution, for reducing transmission and distribution losses thereby which will lead to an added capacity of 1452 MUA
- (5) Introduction of Sub-station automation and reliable communication system for reducing system down time and
- (6) Identification and construction of New Transmission and Transformation Network, etc.
- (7) Transmission capacity expansion for evacuation of power from central sector generating stations for distribution network. Transmission line capacity addition of length 614 CKM and MVA addition of 1310 MVA is expected and
- (8) To become less dependent on power purchased from outside the state.

#### I. INSTALLED CAPACITY AND GENERATION OF POWER:

The noticeable feature of installed generation capacity should be higher growth rates, with the inclusion of renewable energy sources in comparison to fossil fuels. At present, the installed capacity of generating plants in the state is 379.7 MW, which includes Coal, Hydel and Gas plants of the State.

Regarding the status of power generation in the state is not at all satisfactory, from the point of view of power requirements in general and also in terms of consumer demand, in particular. There has always been a shortage of power supply in the state, due to less generation of power in comparison to requirements of consumers. The ASEB, has been trying to meet power shortages and additional requirements, by importing power from the Central Government and private foreign sources. However, gross power generation in the State, during 2014-15 and 2015-16 has shown some improvement by generating 1894.7 MU and 1851.1 MU respectively in comparison to gross power generated in its previous year 2013-14 [1845.3 MU]

The installed capacity of various generating plants and the generation of power in the state during the last six years is shown in the Table 12.2.

TABLE – 12.2

## INSTALLED CAPACITY AND GENERATION OF ELECTRICITY IN ASSAM

Installed Capacity of Generating Plant (MW)		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	
Hydel	KLHEP	100	100	100	100	100	100	
	M. SHEP St-II					3	3	
Gas	LTPS	120	120	120	120	120	120	
	NTPS	97	97	97	97	97	97	
Waste Heat Recovery Unit	LTPS WHRU	-	37.2	37.2	37.2	37.2	37.2	
	NTPS WHRU	22.5	22.5	22.5	22.5	22.5	22.5	
Total	APGCL	339.5	376.7	376.7	376.7	379.7	379.7	
Gross Unit Generation (MU)								
Hydel	KLHEP	409.5	454.9	344.0	422.5	367.0	396.3	
	M. SHEP St-II					0.71	0.38	
Gas	LTPS	767.8	751.7	888.1	896.2	935.3	946.7	
	NTPS	530.5	565.7	533.2	526.6	591.7	507.5	
Total	APGCL	1707.7	1772.3	1765.3	1845.3	1894.7	1851.1	
AUX Consumption(MU)								
Hydel	KLHEP	2.1	2.3	1.7	2.1	1.8	1.9	
	M. SHEP St-II					0.013	0.008	
Gas	LTPS	66.9	71.9	101.9	78.7	80.0	76.5	
	NTPS	23.8	26.1	30.0	31.6	34.1	27.7	
Total	APGCL	92.8	100.3	133.6	112.4	115.9	106.2	
Net Unit Generation (MU)								
Hydel	KLHEP	407.4	452.7	342.3	420.4	365.1	394.3	
	M. SHEP St-II					0.697	0.375	
Gas	LTPS	700.9	679.7	786.2	817.5	855.3	870.2	
	NTPS	506.7	539.6	503.2	495.0	557.6	479.8	
Total	APGCL	1615	1672	1631.7	1732.8	1778.7	1744.8	

Source: Assam Power Generation Company Ltd.

## POWER SUPPLY POSITION:

The energy requirements in the State has been worked out at 7857 Million Units (MU) during the year 2015-16 as against 9104 Million Units in the previous year 2014-15, but the availability of energy during the periods was 7571 MU and 7165 MU respectively. However, the power generation was 1851 MU and 1894 MU during the years 2015-16 and 2014-15 respectively. The peak demand of electricity in the state has increased from 1423 MW in 2014-15 to 1526 MW during 2015-16, though shortage of power has come down from 229 MW in 2014-15 to 76 MW in 2015-16, the shortage in percentage being 16.09% in 2014-15 and 5% in 2015-16 respectively.

TABLE – 12.3  
PER CAPITA AVAILABILITY STATUS

Year	Electrical Energy (million unit)		Population	Per capita Requirement (Kwh)	Per Capita Availability (Kwh)
	Requirement	Availability			
2001-02	3415	3302	*26655528	128	124
2005-06	4216	3536	#28506000	150	124
2006-07	4585	3826	#28896000	159	132
2007-08	4621	4018	#29282000	158	138
2008-09	5039	4270	#29660000	170	144
2009-10	5049	4590	#30037000	168	153
2010-11	5403	5031	#30413000	180	165
2011-12	5877	5700	*31205576	188	183
2012-13	6392	5895	\$31676000	205	186
2013-14	7434	6965	\$32153000	231	217
2014-15	9104	7165	\$32637000	279	219
2015-16	7857	7571	\$33129000	237	228

\* Population as per Census 2001 and 2011

# Projected population as per 2001 Census

\$ Projected Population Estimated by DES based on 2011 Census.

Note : Figures for 2015-16 are provisional

Source: Commercial Wing of ASEB.

TABLE – 12.4  
REQUIREMENT AND SHORTAGE OF ELECTRICITY IN ASSAM

Item	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Peak Demand(MW)	1065	1135	1286	1362	1423	1526
Peak Demand MET AT THAT TIME (MW)	947	1060	1068	1218	1194	1450
Shortage(MW)	118	75	218	144	229	76
Shortage (in %)	11.08	6.61	16.95	11.0	16.09	5

Note : Figures for 2015-16 are provisional

#### TRANSMISSION AND DISTRIBUTION LOSSES:

Power, which and when supplied to various categories of consumers passes through various stages from transformation to higher voltage level to final distribution in the premises of the consumers, involves energy losses during the process, known as Transmission and Distribution losses. The Table 12.5, reveals that aggregate transmission and commercial losses in the State, is gradually coming down from 21.13 percent in 2014-15 to 18.12 percent in 2015-16. The situation though gradually improving, power loss through transmission is however an important area of concern, specially for power deficit states like Assam. In order to bring down the T & D losses and AT & C Losses to 19.49 percent and 21.34 percent respectively by the end of Twelfth Five Year Plan period, following measures are taken up to reduce T & D loss and they are as follows:

- 1) Energy accounting and electricity live ring fencing under R-APDRP.
  - 2) R & M and Re-conducting of 33 KV, 11 KV & LT lines.
  - 3) Changing of E & M and Stopped Meter with Electronic Meter.
  - 4) Establishment of Police stations in different circles for theft detection.
  - 5) Energy Bill Payment through Net Banking
- In Assam, the transmission and distribution losses, during the last six years is evident from Table- 12.5 below:

TABLE – 12.5  
TRANSMISSION & DISTRIBUTION (T&D) LOSSES AND  
Item TRANSMISSION & COMMERCIAL (AT&C) LOSSES

Item	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Energy Input (MU) (at APDCL end Available)	4972	5684	5871	6462	6955	7571
Energy Billed (MU)	3535	3969	4205	4763	5485	6199
T&D Losses (MU)	1437	1715	1666	1699	1470	1372
T&D Losses (%)	28.90	30.17	23.38	26.29	21.13	18.12
Amount Billed (Rupees in lakh)	158457	201265	227501	273980	303699	380798.8
Amount Realized (Rupees in lakh)	148942	190666	218035	265405	292441	360589.2
Collection Efficiency (%)	94.00	94.73	95.84	96.87	96.00	94.69
Overall Efficiency (Percentage)	70.09	69.52	71.06	71.40	76.00	77.53
AT&C Losses (Percentage)	29.91	30.48	28.94	28.60	24.00	22.47

T&D losses: Transmission and Distribution losses;

AT&C losses: Aggregate Transmission and Commercial Losses.

Source: Assam Power Distribution Company Ltd.

#### NUMBER OF ELECTRICITY CONSUMERS:

As per 2011, 37.0 percent households in Assam, use electricity as a source of lighting compared to 67.0 percent households at All-India level. The rural-urban difference in use of electricity as a source of light is very high in Assam. Only 28.0 percent of rural households use electricity for lighting purposes in comparison to 84.1 percent urban households in Assam.

TABLE-12.6  
HOUSEHOLDS USING ELECTRICITY AS SOURCE OF LIGHTING

Item	Assam			India		
	Rural	Urban	Total	Rural	Urban	Total
Total	53,74,553	9,92,742	63,67,295	16,78,26,730	7,88,65,937	24,66,92,667
Electricity	15,24,221	8,34,679	23,58,900	9,28,08,038	7,30,89,256	16,58,97,294
Households using electricity (%)	28.0	84.1	37.0	55.0	93.0	67.0

Source: Annual Report, 2013-14 (Power and Energy Division), Planning Commission, India

According to the Assam Power Distribution Company Limited, the total number of consumers in the State has increased by 17.0 percent in 2015-16 as compared to 2014-15. The growth in domestic consumers during the same period was 18.0 percent. The numbers of electricity consumers in Assam during the last six years are shown in Table-12.7 below:

TABLE- 12.7  
TOTAL NUMBER OF CONSUMERS

Year	Domestic	Commercial	Total
2010-11	1655207	166399	1821606
2011-12	1811129	172310	2036429
2012-13	2130992	181781	2312773
2013-14	2640938	188801	2829739
2014-15	2945360	196287	3141647
2015-16 (P)	3468173	205080	3673253

Note: Provisional

Source; Assam Power Distribution Company Ltd. Commercial Wing.

In order to meet the shortage of electricity generated from its own sources and also to meet the growing demand of consumers in the State, the power distribution company has been purchasing electricity from different sources/agencies, which may be evident from the Table -12.8.

TABLE-12.8  
ELECTRICITY PURCHASED BY ASSAM FROM DIFFERENT SOURCES/AGENCIES  
(Unit- MU)

Year	Sources/Agencies									Total
	Central Sector	APGCL	OTPC	DLF	Maghalaya Electricity Corpn. Ltd.	Non-Conv. & Others	IOCL (AOD)	UI/Deviations Mech.	Trading Purchase	
2011-12	3530.21	1690.03		58.49	19.1	6.79	15.33	72.88	572.38	5965.21
2012-13	3464.87	1631.6		28.84	19.07	8.34	23.45		864.02	6040.19
2013-14	3633.87	1728.31	202.63		20.22	37.08	25.04	239.42	1078.46	6965.03
2014-15	4468.2	1781.77			17.79	17.82	28.73	295.47	218.63	6828.42

Source: Assam Power Distribution Company Ltd.

#### RURAL ELECTRIFICATION:

The Power Department has taken up a number of initiatives to electrify the rural areas of the State under the flagship programme of Rajiv Gandhi Gramin Vaidyutikaran Yojana (RGGVY) and Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY)

#### Rajiv Gandhi Gramin Vaidyutikaran Yojana (RGGVY):

The Rajiv Gandhi Gramin Vaidyutikaran Yojana (RGGVY) is a scheme for attaching the goal of providing access to electricity to 8406 nos. of Un-Electrified (EU) villages and provide BPL connection to around 10 lakh consumers in 13081 nos of Already Electrified (AE) villages in the State. In Assam, RGGVY was implemented from April 2007. Under this programme, 90% grant is provided by Government of India and 10% as loan by Rural Electrification Corporation (REC) to the State government. Rural Electrification Corporation (REC) is the nodal agency for the programme. Under RGGVY, electrification works of 8348 nos. of un-electrified villages completed, 12841 nos. of partially electrified villages completed, electricity connections to 1214398 nos. of BPL household are released at free of cost

**Deendayal Upadhyaya Gram Jyoti Yojana-DDUGJY:**

Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) announced in the budget 2014-15 envisages feeder separation, strengthening of sub-transmission & distribution network including metering at all levels for the rural areas. The major components of the scheme are: feeder separation, strengthening of sub-transmission and distribution network, metering at all levels, including input points, feeders and distribution transformers, micro grid and off grid distribution network and rural electrification to complete already sanctioned projects. This scheme will help in round the clock power to rural households and adequate power to agricultural consumers.

GOI has sanctioned 11 districts for electrification of 602 nos. of un-electrified villages and 37 nos. of SAGY villages under DDUGJY. The total project cost sanctioned is Rs.317.86 Cr. Under which Electrification in 75 nos. of un-electrified (UE) villages is completed

**INITIATIVES ON SOLER POWER GENERATION IN ASSAM:**

Solar power has become a key strategic choice for high growth economies. Renewable energy is no longer considered an “alternate energy” source, but has increasingly become a key part, of the solution to meet a nation’s growing energy needs. The demand for electricity in Assam, is constantly on the rise, with the increase in the population and the growth of infrastructure. It is also seen, that there is a steady rise in the numbers of commercial, industrial, educational, institutional, and residential establishments, triggered by rising population and diversified economic activities. In Assam, the demand for electricity exceeds the supply of the same, resulting in power unavailability and crises situation arising.

**INITIATIVES TAKEN UP BY APDCL FOR PROMOTION OF RENEWABLE ENERGY:**

Special attention has been given to the development of the State, through a separate budget allocation granted by GOA, under various renewable energy programmes over and above receipt of CFA from the Ministry of New and Renewable Energy. Government of Assam, has allocated budgetary support for the deployment of community based rural electrification model through mini/micro solar power plants for providing basic lighting facilities to the inhabitants of un-electrified villages and un-electrified hamlets of electrified villages. In most North Eastern States, remote villages are typified by widely dispersed households, small population, and many times, large distances from motorable roads. In addition, many villages in Assam are located in Char Areas of the Brahmaputra River, which has to be frequently shifted, due to annual inundation. In such circumstances, good lightning facilities can not only provide basic comforts to the householders but also improve safety from wild animals, etc. Solar photovoltaic based home lighting systems have been providing, a welcome relief, to people living in such remote villages.

Hybrid Solar and wind lighting prototypes is another promising applications related to renewable energy based favourable combination of two or more energy sources within the same system, such as wind and solar ones. The hilly slopes of the territories in Assam are ideal for putting up wind generated power stations.

Grid interactive solar photovoltaic power plan on the roof top terrace of buildings is a viable option of solar energy application. It has been proposed to set up grid connected solar photovoltaic power plant on the roof terrace of buildings or ground based projects with provision for net-metering. The scheme targets large area roofs or vacant land of Government/Semi Government Offices, hospitals, educations institutions. Implementation of the projects would

meet partial load of the building during working days and contribute the surplus power available to the Grid during week ends and holidays.

APDCL has also been taking initiative to make use of solar energy and energy efficiency measures in public street lighting as part of smart street lighting solutions.

#### EXTERNALLY AIDED PROJECTS (EAP): (APSEIP):

In 2009, Govt. of India approved ADB Assistance \$ 200 million USD on 90:10 basis, with counterpart fund of 114.6 million USD in respect of Assam's Power Sector Enhancement Investment Programme (APSEIP) to partly finance Govt. of Assam's investment programme. ADB Assistance is being given in 3 tranches Loan Agreement of all the 3 tranches has been signed and all counterpart packages have been awarded.

TABLE-12.10  
FUNDS RECEIVED FROM ASSAM DEVELOPMENT BANK FOR THE FINANCIAL  
YEAR 2015-16

Name of the Project	Estimated Cost	ADB Amount tie-up	Year	Fund Received	Fund Utilised
70 MW Lakwa Replacement Power Project	263.56 Cr.	233.10 Cr.	2015-16	23.57 Cr.	23.57 Cr.
Consultancy services for Accounting	0.71 Cr.	0.71 Cr.	2015-16	0.33 Cr.	0.33 Cr.
Consultancy service for Capacity Building & Human Resource Development	(APGCL, APDCL & AEGCL as a whole) USD 1.06 Million + INR 0.41 Cr.	USD 1.06 Million + INR 0.41 Cr	2015-16	0.24 Cr.	0.24 Cr.
Consultancy Service for ERP Based IT solutions for APGCL	USD 0.27 Million	USD 0.27 Million	2015-16	0.83 Cr.	0.83 Cr.
Scheme Implemented with NABARD Assistance (Under RIDF) 13.5 MW Myntriang Stage & Small Hydro Electricity Project	145.95 Cr.	46.14 NABARD Amount	2013-14 2015-16	3.30 Cr. Nil	3.30 Cr. Nil

#### ONGOING & UPCOMING PROJECTS:

APGCL is in the process of enhancing the Power supply position to meet up the increasing Power demand of the state. Following are the Ongoing & Upcoming Projects

##### a) Ongoing Project :

Sl. No.	Project Name	Capacity (MW)	Energy Source	Expected Commissioning
1	Namrup Replacement Power Project (NRPP)	100	Gas	63 MW Open Cycle: Aug'2016 37 MW Combined Cycle: Mar'2017
2	Lakwa Replacement Power Project (LRPP)	70	Gas	March'2018
3	Myntriang Small Hydro Electric Project (MSHEP)	10.5	Hydro	December'2016

## b) Project in the Pipeline :

1. Silchar Power Project (SPP) ---- 30 MW
2. Margherita Thermal Power Project ---- 660 MW
3. Hydro Electric Project in Borpani River Basin
  - o Borpani Middle I HEP - 21 MW
  - o Borpani Middle II HEP - 24 MW
4. Lungnit (Longnit) Small Hydro Electric Project ---- 6 MW
5. Lower Kopili Hydro Electric Project ---- 120 MW

## FINANCIAL YEAR 2016-17 (ANNUAL PLAN):

A total outlay of Rs. 2032 lakhs was approved under General Area Plan of APGCL, for execution of various works/Projects as detailed below:

Sl. No.	Name of the Schemes	Approved Outlay (Rs. In Lakh)
	6801- Loan for Power Project	
(A)	Works under Lakwa Thermal Power Station (LTPS):	
1.	Procurement of spares for Gas Compressor & air compressor of Phase-II at LTPS	70.00
(B)	Works under Namrup Thermal Power Station (NTPS):	
2.	Procurement & renovation of cooling tower of Steam Turbine unit-5 at NTPS	148.00
3.	Procurement & renovation of cooling tower of Steam Turbine unit-6 at NTPS	109.00
4.	Construction of security barrack at NTPS	40.00
(C)	Works under Karbi Langpi Hydro Electric Project (KLHEP)	
5.	Procurement & replacement of Shaft Seal KLHEP Hydro turbine	23.00
6.	Procurement for renovation of 33 kv 8 (Eight) units indoor Control/Relay panel having 2 nos. Incomer & 6 nos. out going panel at KLHEP	50.00
7.	Improvement of power evacuation system at KLHEP	178.25
8.	Bank (downstream side) and protection works at the top of landslide zone of Dam site at Hatidubi Dam, Karbi Langpi Slop stabilization works at the Right Hydro Electric Project	74.75
9.	Development of existing water supply system at KLHEP	10.00
10.	Boulder pitching at upstream side of right bank and left bank and downstream side of right bank at Hatidubi Dam including	50.00
(D)	Ongoing Scheme:	
11.	Construction of a new water intake pump house at Dilli river for consumptive water requirement of existing plant and Namrup Replacement Project. (Total cost of the work is Rs. 22.0 Crore, out of which Rs. 5.0 Crore and 3.0 Crore already received in 2013-14 & 2015-16 respectively. Rs. 8.0 Crore is proposed from Annual Plan 2016-17 and another Rs. 6.0 Crore will be proposed in	800.00
(E)	New Scheme	
12.	Implementation of 2 MW Solar Power Project at NTPS.	404.00
13.	Payment to APPDCL for preparation of DPRs for various projects	75.00
	Total	2032.00





The table 13.2 shows the road length network maintained by the State PWD.

TABLE – 13.2  
ROAD NETWORK IN ASSAM

Item	(in Km.)				
	2011-12	2012-13	2013-14	2014-15	2015-16
Surfaced Road*	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

\*Excluding National Highways

Source: Office of the Chief Engineer PWD (Roads), Assam.

The surfaced road kilometer [excluding NH Way] constitutes almost 57 percent of the total road length in the State as on March 2016. This indicates that compared to total road length availability [including NH Way and Project roads] of about 62.12 Km. per 100 Sq.Km. and about 156.14 Km. per lakh of population [2011 Census] as on March 2016 availability of surface road calculated at 32.5 Km. per 100 Sq.Km. of geographical area and about 81.8 Km. per lakh of population [2011 Census] in the State during the same period.

#### NATIONAL HIGHWAY DEVELOPMENT PROJECT:

The National Highways are very important as even though these comprise about 7.0% of the road network but are carrying about 40% of the total road traffic. The Ministry of Road Transport & Highways is responsible for the development and maintenance of National Highways.

Out of the total 100087 Km. length of NH in the country, Assam shares only 3.8 percent. Compared to 30.44 Km. NH length per thousand Sq. Km. geographical areas and 8.26 Km. NH length per lakh of population (2011 Census) of the country as a whole, Assam has 49.24 Km. per thousand Sq. Km. geographical area and 12.38 Km. NH per lakh of population in the State.

The Government of India has also proposed to construct/improve roads connecting Doboka (Assam) to Dimapur (Nagaland Border), Baihata-Chariali to Banadardewa, Bandardewa (Assam) to Arunachal Border, Assam/Meghalaya Border to Assam Tripura Border and Silchar (Assam) to Mizoram Border under NHDP Phase-II.

The Government of India has approved implementation of 4 laning of NH-37 on Nagaon-Jorhat-Dibrugarh stretch from Numaligarh to Dibrugarh (201 Km.) along with construction of 4-lane Bridge over river Brahmaputra connecting Numaligarh and Gohpur.

In addition, construction works of Dhola-Sadiya 2-lane Bridge (bridge length 9.3 Km.) connecting Dhola & Sadiya Ghats upto Islampur (NH 37 extension) at the cost of Rs. 876 crore is in progress and expected to be complete in a year. This project will not only save about 4 hours travel time between Assam and Arunachal Pradesh, but will also promote socio-economic activity around the area.

Government of India has approved implementation of Arunachal Pradesh Package of Roads & Highways covering 2319 Km. of roads at an estimated cost of Rs. 11703 crore. Out of 2319 Km., 139 Km. falls in Assam.

The Govt. of India has also approved the following three major long-pending road infrastructure projects for Assam worth over Rs. 1,933 crore (excluding land acquisition and other pre-construction activities) with a view to expedite the improvement of infrastructure in Assam and reduce travel time and cost of travel for traffic, particularly heavy traffic, plying between Guwahati and Dibrugarh and beyond. These projects would also increase the employment potential for local labourers for project activities. The project covered the districts of Golaghat, Jorhat, Sivasagar, Dibrugarh and passes through the towns of Numaligarh, Dergaon, Jorhat, Jhanji, Gaurisagar, Sivasagar, Demow, Sepon, Moran and Dibrugarh.

- Four-laning of the Demow-Bogibil junction section of National Highway-37 under the Special Accelerated Road Development Programme in North Eastern Region (SARDP-NE) on Design, Build, Finance, Operate and Transfer (DBFOT) basis in Build-Operate-Transfer (BOT) (Annuity) mode of delivery. The cost is estimated to be Rs. 473.45 crore. The length of the road will be approximately 46 Km.
- The second project is four laning of the 'Jorhat-Demow' section of National Highway-37 under SARDP-NE Phase 'A' on Design, Build, Finance, Operate and Transfer (DBFOT) basis in Build-Operate-Transfer (BOT) (Annuity) mode of delivery. The cost is estimated to be Rs. 874.69 crore. The length of the road will be approximately 80 Km.
- The third project is of four-laning of the 'Numaligarh-Jorhat' section of National Highway-37 also under SARDP-NE Phase 'A' on Design, Build, Finance, Operate and Transfer (DBFOT) basis in Build-Operate-Transfer (BOT) (Annuity) mode of delivery. The cost is estimated to be Rs. 584.68 crore. The length of road will be approximately 51 Km.

#### IMPLEMENTATION OF FLAGSHIP PROGRAMME FOR DEVELOPMENT OF ROAD INFRASTRUCTURE:

The PMGSY has been implemented with the objective of connecting rural habitations with all-weather roads in order of priority. Till end of March 2016, 9478 villages have been covered under rural connectivity programme. Out of the total 9478 villages, 5303 villages having 1000 or more habitations, 2320 villages with 500 or more habitations and 1855 villages having habitations from less than 250 habitations to below 500 habitations.

#### ROAD TRANSPORT:

Road transport is considered to be vital to economic development and social integration of the country. Road transport is also one of the most cost effective and preferred mode of transport, both for freight and passengers, keeping in view its level of penetration into populated areas. Easy availability, adaptability to individual needs and the cost savings are some of the factors which go in favour of road transport. Road transport also acts as a feeder service to railway, shipping and air traffic.

#### MOTOR VEHICLES:

The rapid increase of the number of motor vehicles on road in Assam has been observed over the past few years. The on road vehicle population in the State has reached

2666589 as on March 2016 compared to 2384576 as on March 2015. An additional of 282013 or 11.8 percent on road motor vehicles was added during the year 2015-16 over 2014-15. Out of the total 2666589 motor vehicles during on road about 61.2 percent vehicles were two wheelers.

According to the Motor vehicle registering authority of the State as many as 290874 new motor vehicles were registered during the year 2015-16 in the State which is 8.5 percent more than that of the previous year. Out of the total registered motor vehicle more than 70.8 percent were two wheelers.

The total number of Motor vehicles on road in the State was recorded about 11.8 percent growth as on March 2016 compared to 20.1 percent growth as on March 2015(2384576) which shows declining trend.

The density of motor vehicles in Assam was 34.9 per Sq. Km. during the year 2015-16 as against 30.4 vehicles per Sq. Km. during the year 2014-15. During the year 2000-01, density of motor vehicles in Assam was only 6.8 per Sq. Km.

The increase in the number of Motor vehicles registered as well as Motor vehicles on road in the State over the years may be evident from the Table -13.3.

TABLE – 13.3  
NUMBER OF MOTOR VEHICLE REGISTERED AND  
MOTOR VEHICLE ON-ROAD IN ASSAM

Year	No. of Motor Vehicle Registered	No. of Registered Motor Vehicle per		No. of Motor Vehicle on road	No. of Motor Vehicle on road per	
		100 Sq.Km.	Lakh of Population		100 Sq. Km.	Lakh of Population
2000-01	52518	67	198	534885	682	2017
2010-11	199076	253	655	1363625	1738	4484
2011-12	226010	288	725	1528269	1948	4903
2012-13	227367	290	729	1725222	2199	5528
2013-14	249564	318	799	1984880	2530	6360
2014-15	267900	341	858	2384576	3040	7641
2015-16	290874	370	932	2666589	3400	8545

Source: Office of the Commissioner of Transport, Assam and Directorate of Economics and Statistics, Assam.

With the increasing growth of motor vehicles the number of road accidents in the State is also increasing. During the year 2015-16, the number of road accidents reported in the State was 6959 which was calculated 2.5 percent less over the previous year. During the year 2014-15, number of road accidents reported 7143. The number of persons killed and injured as a result of road accidents during 2015-16 were 2397 and 7068 respectively compared to 2465 and 6499 number of persons killed and injured respectively during 2014-15. The number of persons killed and injured in 2015-16 recorded 2.7 percent less and 8.7 percent more compared to the number of persons killed and injured reported during the year 2014-15. However, the number of persons killed per 100 accidents recorded 34.4 during 2015-16 compared to 34.5 during 2014-15 showing a negligible decline.

The Road accidents severity in Assam may be evident from the Table-13.4 below.

TABLE – 13.4

## NUMBER OF ROAD ACCIDENTS AND PERSONS INVOLVED IN ASSAM

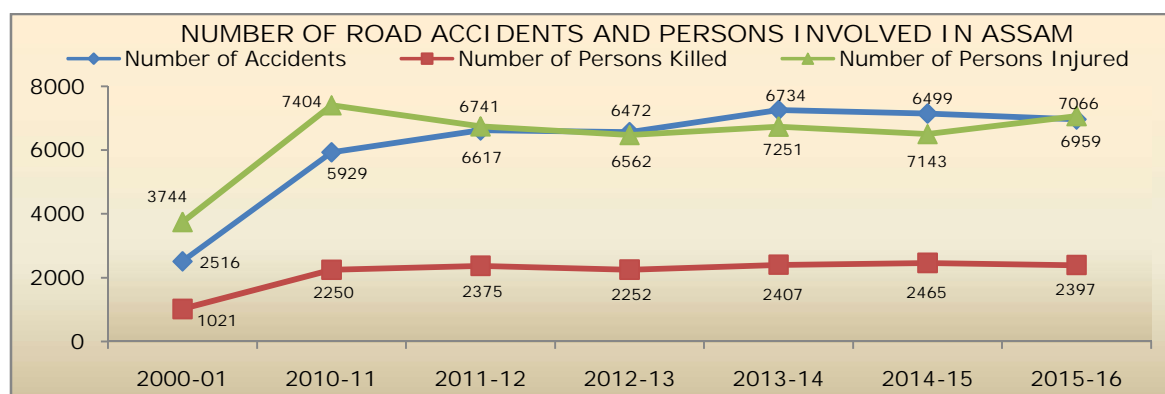
Year	Number of Accidents	Number of Persons		Accident Severity*
		Killed	Injured	
2000-01	2516	1021	3744	40.6
2010-11	5929	2250	7404	38.0
2011-12	6617	2375	6741	35.9
2012-13	6562	2252	6472	34.3
2013-14	7251	2407	6734	33.2
2014-15	7143	2465	6499	34.5
2015-16	6959	2397	7066	34.4

\*Accident Severity: Number of persons killed per 100 Accidents.

Source: Office of the Additional Director General of Police, Criminal Investigation Department, Assam.

The Commissionerate of Transport has laid special emphasis for promotion of Road safety through Education and Enforcement during the 12<sup>th</sup> Five Year plan period. The education component comprises to impress on spreading awareness on Road Safety and for enforcement. The Enforcement Staff will be trained on the legal front and will be provided with latest equipments and mobility to prevent traffic offences and accidents. The Commissionerate of Transport has also given stress to construct driving track and vehicle inspection ground in every district in a phased manner in order to have a sound Transport System to check road accidents throughout the State.

Apart from providing fast and comfortable services to the commuters as well as to create self-employment avenues among the unemployed youths, Trekkers services, post-paid City Taxi services have been introduced in the State, which became not only very popular in the greater Guwahati and in adjoining areas but also in various parts of the State.



The collection of transport revenue by the Department of Transport during the year 2015-16 was Rs. 453.93 crore as against Rs. 378.98 crore in 2014-15. The collection of transport revenue during the year 2015-16 was 19.7 percent more than that of 2014-15.

#### ASSAM STATE TRANSPORT CORPORATION:

The public Road Transport is the most important means of communication for the movement of goods as well as passengers traffic in the State. In the road transport system of the State, both public and private sector operators are playing equally important role. Earlier, the Assam State Transport Corporation (ASTC), a State Government undertaking and one of the premier public enterprises of the State with its headquarter in Guwahati, is mainly concerned with the movement of passenger traffic on the nationalized routes of the State, while the private sector road transport operators are

involved in the Intra-State movement of both goods and passenger traffic throughout the State. With the changing scenario, both the ASTC and private operators are providing transport services equally in the interest of passenger traffic. The ASTC has been providing efficient, safe, reliable, economic and dedicated services to the people especially in the rural and other backward areas since its inception and have earned the appreciation of the people of the State. ASTC has luxury and regular buses for normal bus routes and special mini buses for hill routes. ASTC operates Night Super deluxe, Executive class; air conditioned class and Volvo coach buses providing affordable fares and reliable road transport to passengers. Besides providing online ticket booking facility to passengers, ASTC also provides courier services, cargo services.

To sustain its services it is felt necessary to improve infrastructural facilities like well-developed station buildings and to have well equipped maintenance workshops. As a step towards improvement of passenger amenities the State Government has already constructed two Inter-State Bus Terminus (ISBT) one at Guwahati and the other at Silchar to facilitate Inter-State transportation of passengers. At present, both the Inter-State Bus Terminuses are fully functional. Inter-State Bus Terminuses have also been constructed at Jorhat, Dibrugarh and Sivasagar by the ASTC with all modern facilities for passengers and bus operators. For providing better passenger amenities, the ASTC has taken initiative to construct new Bus Terminuses at Guwahati City (City Service), Bongaigaon, Halflong, North Lakhimpur and Nalbari. The ASTC has also proposed to construct a modern Inter-State Bus Terminus at Adabari to cater to the demands of the increased number of buses and passengers and to reconstruct/improve the present status of 100 numbers of Station buildings, both major & minor, spread all over the State during 12<sup>TH</sup> Five Year Plan. The ASTC has also set up a multistoried car parking building at Guwahati City to ease out shortage of car parking space within the market locality at Paltan bazar.

To improve its performance and for better transport connectivity, as a part of the Public Transport Policy of the Govt. of India, the ASTC needs to purchase new Buses every year for replacing the old and over-aged ones as well as to augment its fleet position to provide its services to every nook and corner of the State as well as to mobilize its earnings. During the 11<sup>TH</sup> Five Year Plan (2007-2012) period, ASTC acquired as many as 448 new vehicles and planned to procure additional 140 buses under "Assam Bikash Yojana".

The performance of ASTC during the period 2011-12 to 2015-16 may be evident from the Table-13.5.

TABLE – 13.5  
PERFORMANCE OF ASSAM STATE TRANSPORT CORPORATION (ASTC)

Year	Average No. of own vehicle held	Average No. of own Vehicle on road	Fleet utilisation (%)	Total km operated during the year (in lakh)	Monthly Av. Net income from own buses (Rs. In lakh)	Staff-Bus ratio	No of Private Buses operated under ASTC	Monthly Average Income from Privately operated buses (Rs. in lakh)
2010-11	357	299	84	159.45	85.30	6:01	1189	95.12
2011-12	538	441	82	222.36	123.61	5:01	1170	92.25
2012-13	665	540	81	248.48	136.64	4:01	1344	76.31
2013-14	751	559	74	279.30	138.32	4:01	1300	72.52
2014-15	815	570	69.88	284.45	148.40	6:01	1112	61.31
2015-16	1090	668	61.28	300.69	244.69	6:01	1009	56.82

Source: Assam State Transport Corporation.

The Rural Connectivity Scheme has become very popular with the masses and there is huge demand for economically viable transportation system. As the private bus operators are reluctant to operate in the rural and interior areas of the State, ASTC with its social service oriented motive planned to provide more bus services in these areas so that the rural masses may have easy transport accessibility in reaching nearest towns or District/Sub-Division Head Quarters.

To cater the transportation needs of the ever increasing population in both the urban and rural areas of the State, the ASTC has planned to acquire 1550 buses [@ 330 buses per year] by the end of the Twelfth Five Year Plan. ASTC has received 182 buses under the JNNURM scheme. With the augmentation of fleet, the procurement of bus chassis will increase which will assist the small scale industries engaged in fabrication of bus bodies and ancillary business to boost their business as well as help in employment generation. Moreover, the ASTC is having a substantial area of un-utilised land within its Station Complexes spread all over the State and these properties can be utilised for commercial purposes, such as, construction of market complexes, parking yard for small segment vehicles etc., which can be let-out to educated un-employed youth of the State, thereby, generating employment opportunity as well garnering additional revenue for the Corporation. For creating the necessary infrastructure the ASTC has planned to invest Rs.100.00 lakh during the 12<sup>TH</sup> Five Year Plan period.

The ASTC is implementing Dharmajyoti Scheme under which 50 percent bus fare is charged from the pilgrims visiting religious places within and outside the State of Assam. The Scheme has become very popular and more than 2(two) lakh pilgrims have availed the facility.

#### RAILWAYS:

As per information available from the N.F. Railway, Headquarters, Maligaon, Guwahati, Assam has total railway route length 2442.57 Km. at present. This 2442.57 Km. comprising of 2400.85 Km. under Broad Gauge and 41.72 Km. Meter Gauge. The proportion of Broad Gauge railway route length in the State, although, is 98.29 percent, it shares only 3.69 percent of the country's total broad gauge railway route length. As per Indian Railway Statistical Publication 2014-15, the total Railway Route length of India as on 31<sup>st</sup> March, 2015 is 66030 Km. out of which Electrified Route length is 22224 Km. Assam shares 3.7 percent of the total Railway Route length of the country. The total number of passengers carried by N.F. Railway is 112 Million Nos. and the total Cargo carried is 31.555 Million Tonnes during 2015-16. The revenue generated from this goods carried is Rs. 1794.74 Crores.

The Ministry of Railways has undertaken various developmental activities in the Railway Sector in the State including extension of railways line to link the other States of North-Eastern States Meghalaya, Arunachal Pradesh, and Mizoram through Assam. The ongoing railway projects, Bogibeel rail cum Road Bridge is under progress and gauge conversion of Lumding – Silchar – Jiribamhas been completed. Badarpur to Baraigram – Kumarghat, Rangia – Murkongselek, Bhairabi – Sairang projects are declared as national projects and the works are on progress. The construction of 19.75 Km. railway stretch connecting Dudhnoi (Assam) – Mendipathar (Meghalaya) and construction of new Broad Gauge lines connecting Harmuti (Assam) and Naharlagun (Arunachal Pradesh) – 20 Km has been completed and New Mainaguri to Jogighopa (257 Km.), New Jalpaiguri – Siliguri – New Bongaigaon (433 Km.) are under progress.

The Bogibeel rail-cum-road bridge, India's longest bridge coming up across the mighty Brahmaputra and the fourth bridge across the Brahmaputra River is expected to be not

only the lifeline for the Northeast but will also strengthen the country's security. The project of 4.94 Km. rail cum road bridge is implemented by the North East Frontier Railway is scheduled to be completed in 2017 which will connect two existing railway networks running at north bank and south bank of the river and will provide connectivity to around five million people residing in upper Assam and Arunachal Pradesh. It starts from Chaulkhowa station and Moranhat Station at south bank and joins between Sisibargaon and Siripani station of Rangia – Murkonselek section in north bank.

The Railways run a number of inter-State trains linking Guwahati and Dibrugarh with other important places of the country, such as Delhi, Kolkata, Mumbai, Chennai, Tiruvantapuram, Bangalore, Cochin, and Jammu etc.

#### AIR TRANSPORT:

Assam is well connected with the rest of the country through Air Transport. The State has the highest numbers of operational civil airports in the North-East and these are located at Guwahati, Tezpur, Jorhat, Dibrugarh, North Lakhimpur and Silchar. In addition, one more civil airport located at Dhubri (Rupshi) district of Assam is lying closed and non-functional for long time. The State Govt. has demanded to reopen the airport for passenger traffic for the benefit of the State which will further benefit the people of Meghalaya. All major airlines including private commercial airlines viz., Indian Airlines, Spice jet, Indigo, Go-air etc. are operating their flights to and from Guwahati and intra-state air services regularly. In addition to these civil airports, small private airstrips in the interior areas are present in large numbers. Some small and remote airstrips are being operated under private operators like tea gardens and PSUs.

In the Guwahati sector movement of air traffic as well as passenger traffic [both domestic and international] has been increasing rapidly since 2004-05. However, as per available records, air traffic movement and passenger traffic (only for LGBI Airport, Guwahati and Mohanbari Airport, Dibrugarh published by the DGCA) has gone down by 19.7 percent and up by 21.6 percent respectively during 2015-16 compared to the previous year. Similarly average number of flights handled by these two airports per day has gone down to 67 in 2015-16 from 83 in 2014-15. In respect of handling of freights, the growth was calculated at 10 percent in 2015-16 over the previous year.

TABLE – 13.6  
AIR TRANSPORT STATISTICS OF ASSAM

Year	Air Traffic Movement (No.)	Passenger Handled (No.)	Freight loaded /Unloaded (Tonne)	Mail loaded/unloaded (Tonne)	Average number of flight per day	Average number of passenger handled per day	Average Cargo Handled per day (Tonne)
2004-05	20334	828640	5199	1320	57	2270	18
2011-12*	35022	2685871	8601	N.A.	96	7359	24
2012-13*	33535	2526434	6668	N.A.	92	6922	18
2013-14*	29426	2442613	8124	N.A.	81	6692	22
2014-15*	30363	2552861	10796	N.A.	83	6994	30
2015-16*	24392	3103961	11976	N.A.	67	8504	33

\* Figures excluding Lakhimpur, Tezpur and Jorhat Airport.

Source: Directorate General of Civil Aviation Statistical Division, New Delhi.



The Lokapriya Gopinath Bordoloi International Airport, Guwahati is the only International Airport in the North-East India.

The number of aircraft movement, passengers as well as freight handled in the LGB International airport during the period from 2007-08 to 2014-15 is detailed in the Table-13.7.

TABLE – 13.7

## AIR TRANSPORT STATISTICS OF L.G.B. INTERNATIONAL AIRPORT, GUWAHATI

Year	Aircraft Movement	Passenger handle (No)		Freight loaded/ unloaded (Tonne)
		Embark/ Disembark	Transit	
2007-08	98	2044	1393	6
2008-09	100	7282	0	2
2009-10	46	5421	0	0
2010-11	226	14523	NA	0
2011-12	452	26864	NA	0
2012-13	416	21810	NA	94
2013-14	494	24633	NA	36
2014-15	474	27564	NA	15

Source: Directorate General of Civil Aviation Statistical Division, New Delhi.

## INLAND WATER TRANSPORT:

Inland water transport is generally accepted as the most efficient mode of transportation from the point of energy consumption. It is also considered as the cheapest mode of transportation as well as labour intensive and environment friendly in nature. Assam is a riverine State. As much as 32 percent of the water resource of the country flow down through the river Brahmaputra, Barak and their myriad tributaries weave a vast network of waterways in the State. The Brahmaputra has 891 Km. navigable length of water ways from Sadiya to Dhubri while the Barak has 121 Km. length of navigable waterways. The Sadiya – Dhubri stretch (891 Km.) of the Brahmaputra River has been declared as the 2<sup>ND</sup> National waterways of the country in the year 1988 and afterwards the proposals to activate the Commercial Service have been moved for overall economic development of the North-eastern Region. The [Lakhipur](#) - [Bhanga](#) stretch of 121 Km. of the [Barak River](#) is also declared by the Union Govt. as the 6th National Waterway in January 2013 for unified development of the waterways for shipping and navigation and transportation of cargo to the North Eastern Region particularly in the states of Assam, Nagaland, Mizoram, Manipur, Tripura and Arunachal Pradesh.

For effective exploitation of the waterways, being the cheapest mode of transport and in order to cater to the growing need for goods and passenger movement, two Government owned organisations of Assam viz, Central Inland Waterways Corporation and Directorate of Inland Water Transport (IWT), are operating the water transport services on the river Brahmaputra and Barak on commercial basis and have been trying to improve the water transport system in the region. The Brahmaputra has several small river ports. In addition, there are more than thirty pairs of ferry ghats on the Brahmaputra transporting both passengers and cargo. But due to scarcity of serviceable vessels under the department most of the ferry services often suffer problems in their smooth operation. However, there is need to augment the IWT fleet by suitable type of vessels to ensure adequate cargo support.

At present the Directorate of Inland Water Transport is operating 85 (eighty five) ferry services under 3(three) IWT Divisions on the river Barak, Brahmaputra and its tributaries

for the purpose of public utility. The IWT Department has introduced 54 nos. of cargo cum passenger service also in Assam for transportation of commuters throughout the nook and corner of the State where no road communications are available. The total number of passengers carried is 9561285 and the total amount of goods carried is 1095516 qtls. in 2015-16. The revenue earned by the IWT department during the same period is Rs. 5.5 crore. At present the IWT department has possessed 211 vessels of different capacity and proposed to add a good number of vessels during the 12<sup>th</sup> Five Year plan period. Besides these Government owned organisations, large number of private owners conducted ferry services [including commonly known Bhoot-bhooty services] to transport goods and passengers to the remotest hinterlands under un-organised sector. It is worth mentioning here that, IWT, Assam will complete construction and commission of 7 (seven) vesels out of 15 (fifteen) within 2016-17.

#### OTHER ACTIVITIES:

The IWT department has introduced Air-conditioned long distance river cruise service for the development for river tourism. The department has leased out a vessel M. K. Charaidew to private entrepreneur on hire basis. The department has also introduced two luxurious A/C cruise vessels on the river Brahmaputra and they are being operated by the department itself at Guwahati.

The IWT department has also constructed a RCC jetty on the 11 nos. of floating restaurants (A/C & Non A/C) on board of IWT vessels and three river cruise services on the river Brahmaputra. The department has also constructed 7 nos. of 25m long single Decker floating terminal at north bank and 2 nos. of 28m long double Decker floating terminal at the south bank of the Brahmaputra at Guwahati under centrally Sponsored scheme.

#### COMMUNICATION:

##### POSTAL COMMUNICATION:

The Assam Postal Circle has a network of 4011 Post Offices and 12300 nos. of Letter Boxes [as on March 2016] out of which 3725 post offices are located in rural areas. On an average, each Post Office serves a population of 22577 persons and covers 19.54 Sq.Km. areas. There are 3 Night Post Offices also functioning in the State located at Guwahati GPO, Dibrugarh HO and Silchar HO for convenience of the people. In addition, there are 625 modernised post offices and 625 computerised post offices in the State. Apart from the above, there are 4 National Speed Post Centre and 16 Speed Post Centre in the State and Postal Mail Conveyance covers 4428 railway kilo metre.

The Assam Postal Circle has taken initiative to start Core Banking Solution (CBS) in 12 selected post offices of Assam under Pilot Project to bring the postal customers under postal banking coverage so that the customers can access their savings bank accounts from any of the above selected post office. Assam is among the six states across India selected for the Pilot. After successful implementation of CBS in these pilot offices, other post offices will be brought under coverage of CBS in a phased manner. In addition; Assam State has also been selected for the Rural-ICT project for computerisation and networking of rural post offices (also called Branch Post Offices). A total of 375 Branch Post Offices of Sivasagar Postal Division comprising of three districts –Sivasagar, Jorhat and Golaghat are the pilot offices covered under Rural-ICT project for Assam Circle.

The Circle is utilising services of Indian Airlines & Jet Airways for transmitting outward airmails from all the Air Centres of the region. From Guwahati, outward airmails are transmitted in direct flight for Kolkata by Indian Airlines and for Delhi Sector by Jet Airways. For mail transmission in the North East Region freighter air craft service has been used which is running in the Kolkata- Guwahati-Imphal- Agartala Sector. The service of ASTC and Private Night Super Buses are also utilised for transmission of local mails to all District Headquarters except Morigaon and Dhemaji.

#### TELECOMMUNICATION:

Assam Telecom Circle of Bharat Sanchar Nigam Limited (BSNL) is the largest telecom operator in Assam which was formed in 1987, providing comprehensive range of telecom services in the State. BSNL is reaching the nook and corner of Assam with focused development thrust. At present 577 telephone exchanges are functioning in the State (as on March 2016).

It is evident from the status of telecom facilities in Assam shown in the Table 13.8 that the overall tele-density (Telephone per 100 of population) of the State as on March 2015 was 53.95 as against the national average 79.36. While the urban tele-density of Assam stood at 132.26 as on March 2015 compared to 129.05 as on March 2014, the rural tele-density was only 39.18 as on March 2015 and seems to be slightly higher over the previous year (37.41). However, in respect of overall tele-density as well as urban tele density the position of Assam stood far below the national average [overall 79.36 and urban 149.04 as on March 2015. In respect of rural segments also tele-density of Assam was considerably below the national average.(rural-48.04) during the same period.

TABLE – 13.8  
TELECOM FACILITIES IN ASSAM

Item	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Direct Exchange Lines	1449647	1739591	1492608	1430077	1463773	1427318	1503449
Rural Telephone Connections	481092	594291	491881	445399	459014	449347	482397
Village Public Telephones (VPTs)	23992	24196	24415	24688	24692	24692	24663
Total Telephones	9064392	11928394	14437929	14582059	15462192	16611629	17318325
A)Wire line Phones=Fixed DELs	308339	257683	229854	194395	183984	178191	167434
Ai)PSU Operators	307725	255584	227229	193915	182904	176841	165994
Aii)Private Operators	614	2099	2625	480	1080	1350	1440
B)Wireless Phones (GSM+CDMA)	8756053	11670711	14208075	14387664	15278208	16433438	17150891
Bi) PSUs Operators	1141922	1484007	1265379	1236162	1280869	1276828	1261324
Bii)Private Operators	7614131	10186704	12942696	13151502	13997339	15156610	15889567
Tele-density [%] (Phones Per 100 of Persons)	29.99 Urban-96.54 Rural-18.49	38.98 Urban-124.45 Rural-23.93	46.61 Urban-148.54 Rural-28.35	46.51 Urban-130.92 Rural-31.13	48.74 Urban-126.27 Rural-34.36	51.90 Urban-129.05 Rural-37.41	53.95 Urban-132.26 Rural-39.18
Public Call Offices [Local+STD+Highway]	33862	27380	19307	11929	11207	10350	8909

Source: Annual Reports- 2015-16 of Department of Telecommunication, Govt. of India.

The subscriber base basic services provided by the BSNL in the State were 1503449 as on March 2015 which show a growth of 5.3 percent over the previous year. The total number of telephone connections as on March 2015 was 4.5 percent more than that of March 2014. Private operators also provided 1440 wire-line phones to its subscribers till March 2015 in Assam.

In respect of wireless phone [mobile segment] connections, there were 1.72 crore mobile subscribers in Assam as on March 2015. BSNL alone provides around 8.6 percent of the total mobile connections in the State till March 2015. The private mobile service operators, on the other hand, provided about 1.58 crore mobile connections as on March 2015. Thus, the share of mobile connections provided by the private operators has marginally decreased from 92.2 percent as on March 2014 to 91.7 percent as on March 2015. Bharati Televentures (Airtel), Disnet Wireless (Aircel), Reliance and Vodafone are the main private mobile service provider companies operating in Assam.

According to the Annual Report 2015-16 of the Department of Telecommunications, Govt. of India, there were 17318325 telephones in Assam out of which 2.79 percent were rural. Moreover, the total telephones in Assam as on March 2015 share only 1.79 percent of total telephones in the Country. BSNL also provided Village Public Telephones (VPTs) to 24663 inhabited villages of Assam till March 2016.

TABLE – 13.9  
MAJOR GROUP-WISE WIRELESS SUBSCRIBER IN ASSAM  
(As on March 2015)

Circle	Wireless Subscriber Group						Total
	Bharati	Reliance	Vodaphone	Idea	Aircel	BSNL	
Assam	5943777	1337953	3649556	1175401	5109583	1316094	18532364
India	251237263	102408072	197946755	175074042	87086612	86345709	1033630825

Source: Annual Report 2015-16, Department of Telecommunications, GOI.

\* \* \* \*

## APPENDIX-13.1

DISTRICT-WISE LENGTH OF PWD ROADS BY TYPE  
AS ON 31<sup>ST</sup> MARCH' 2016 IN ASSAM  
(in Km.)

Sl. No.	District	Black Topped	Earthen/ Gravelled	Total
1	2	3	4	5
1.	Kokrajhar	1067	735	1802
2.	Dhubri	862	291	1153
3.	Goalpara	860	689	1549
4.	Barpeta	1130	655	1785
5.	Morigaon	621	521	1142
6.	Nagaon	2086	997	3083
7.	Sonitpur	1546	1103	2649
8.	Lakhimpur	892	198	1090
9.	Dhemaji	853	488	1341
10.	Tinsukia	1105	638	1743
11.	Dibrugarh	1099	593	1692
12.	Sivasagar	1181	1694	2875
13.	Jorhat	990	1026	2016
14.	Golaghat	1366	1115	2481
15.	Karbi-Anglong	1065	3135	4200
16.	Dima-Hasao	484	1235	1719
17.	Cachar	1020	142	1162
18.	Karimganj	510	425	935
19.	Hailakandi	269	204	473
20.	Bongaigaon	729	76	805
21.	Chirang	554	72	626
22.	Kamrup	2171	1027	3198
23.	Kamrup (M)	423	35	458
24.	Nalbari	658	258	916
25.	Baksa	814	259	1073
26.	Darrang	660	407	1067
27.	Udalguri	531	1298	1829
ASSAM		25546	19316	44862

Source: Chief Engineer, P.W.D. (Roads) Assam

## APPENDIX- 13.2

DISTRICT-WISE LENGTH OF ROADS ACCORDING TO  
DIFFERENT CLASSES UNDER PWD IN ASSAM, AS ON 31<sup>ST</sup> MARCH'2016

(in Km.)

Sl. No.	District	State Highway	Major District Road	Rural Road	Urban Road	Total
1	2	3	4	5	6	7
1.	Kokrajhar	23	131	1632	16	1802
2.	Dhubri	55	53	1007	38	1153
3.	Goalpara	137	48	1354	10	1549
4.	Barpeta	120	171	1463	31	1785
5.	Morigaon	134	86	909	13	1142
6.	Nagaon	260	326	2409	88	3083
7.	Sonitpur	55	402	2133	59	2649
8.	Lakhimpur	121	97	828	44	1090
9.	Dhemaji	45	42	1168	86	1341
10.	Tinsukia	41	171	1479	52	1743
11.	Dibrugarh	109	163	1357	63	1692
12.	Sivasagar	100	310	2425	40	2875
13.	Jorhat	127	89	1714	86	2016
14.	Golaghat	160	157	2131	33	2481
15.	Karbi-Anglong	228	561	3341	70	4200
16.	Dima-Hasao	223	199	1237	60	1719
17.	Cachar	107	165	848	42	1162
18.	Karimganj	35	342	539	19	935
19.	Hailakandi	17	99	351	6	473
20.	Bongaigaon	41	16	712	36	805
21.	Chirang	0	189	429	8	626
22.	Kamrup	52	230	2916	0	3198
23.	Kamrup (M)	0	0	0	458	458
24.	Nalbari	70	45	779	22	916
25.	Baksa	71	43	959	0	1073
26.	Darrang	143	119	785	20	1067
27.	Udalguri	56	125	1639	9	1829
	ASSAM	2530	4379	36544	1409	44862

Source: Chief Engineer, P.W.D. (Roads) Assam.

## APPENDIX-13.3

LENGTH OF ROADS PER LAKH OF POPULATION AND  
PER 00 SQ. KM. AREA IN ASSAM AS ON 31 MARCH 2016

(in Km.)

District	Total Road length	Population	Road Length per lakh of population	Area (In Sq. Km.)	Road Length per '00 Sq. Km. of Geographical Area
1	2	3	4	5	6
Kokrajhar	1905.75	887142	214.82	3296	57.82
Dhubri	1337.55	1949258	68.62	2176	61.47
Goalpara	1647.70	1008183	163.43	1824	90.33
Barpeta	1888.29	1693622	111.49	2282	82.75
Morigaon	1240.50	957423	129.57	1551	79.98
Nagaon	3356.92	2823768	118.88	3973	84.49
Sonitpur	2864.17	1924110	148.86	5204	55.04
Lakhimpur	1190.00	1042137	114.19	2277	52.26
Dhemaji	1484.35	686133	216.34	3237	45.86
Tinsukia	1959.43	1327929	147.56	3790	51.70
Dibrugarh	1888.19	1326335	142.36	3381	55.85
Sivasagar	3053.45	1151050	265.28	2668	114.45
Jorhat	2115.62	1092256	193.69	2851	74.21
Golaghat	2608.52	1066888	244.5	3502	74.49
Karbi-Anglong	4471.28	956313	467.55	10434	42.85
Dima-Hasao	2048.82	214102	956.94	4888	41.92
Cachar	1356.83	1736617	78.13	3786	35.84
Karimganj	1049.16	1228686	85.39	1809	58.00
Hailakandi	572.99	659296	86.91	1327	43.18
Bongaigaon	884.86	738804	119.77	1093	80.96
Chirang	689.00	482162	142.9	1923	35.83
Kamrup	3359.92	1517542	221.41	3105	108.21
Kamrup (M)	528.00	1253938	42.11	955	55.29
Nalbari	983.79	771639	127.49	1052	93.52
Baksa	1174.45	950075	123.62	2457	47.80
Darrang	1144.00	928500	123.21	1585	72.18
Udalguri	1921.00	831668	230.98	2012	95.48
ASSAM	48724.54	31205576	156.14	78438	62.12

N. B.: Figures include National Highways.

Source: Chief Engineer, P.W.D. (Roads) Assam.

## APPENDIX- 13.4

COLLECTION OF REVENUE AND TARGET OF THE DEPARTMENT OF TRANSPORT,  
ASSAM

(Rupees in crore)

SL. No.	Name of D.T.O & Check Gate	2012-13	2013-14	2014-15	2015-16	
		Revenue Realised	Revenue Realised	Revenue Realised	Target	Revenue Realised
1	2	3	4	5	6	7
1.	Kamrup (R & L)	102.08	104.78	110.19	149.03	129.57
2.	Kamrup (R.T.A)	0.70	0.59	0.76	0.96	1.52
3.	Kamrup(Enforcement)	1.82	1.70	1.84	2.40	2.46
4.	Kamrup (Rural)	5.88	6.45	8.24	11.10	12.72
4.	Barpeta	7.37	8.12	8.42	11.13	9.34
5.	Nalbari	4.52	4.97	5.70	7.47	7.48
6.	Goalpara	6.62	6.72	5.95	7.85	7.29
7.	Dhubri	6.95	7.34	7.91	10.42	9.65
8.	Sonitpur	14.00	14.97	15.24	20.57	20.28
9.	Mangaldoi (Darrang)	4.10	4.72	5.33	7.02	6.07
10.	Lakhimpur	8.54	9.64	10.90	14.33	13.03
11.	Dibrugarh	18.74	19.68	21.23	28.66	25.21
12.	Tinsukia	17.17	18.57	19.67	26.53	20.66
13.	Dhemaji	3.08	3.69	3.91	5.15	4.69
14.	Sivasagar	16.78	18.48	20.16	27.23	23.94
15.	Jorhat	16.96	18.10	18.57	25.30	24.10
16.	Golaghat	6.63	8.41	8.68	11.41	11.65
17.	Nagaon	15.97	17.82	19.01	25.64	22.63
18.	Morigaon	4.67	4.69	4.42	5.76	4.84
19.	Dima Hasao	0.87	0.72	0.80	1.02	0.71
20.	Karbi-Anglong	4.74	4.94	5.01	6.59	6.44
21.	Karimganj	3.98	4.05	3.63	4.60	4.41
22.	Hailakandi	3.22	3.30	3.35	4.40	3.93
23.	Cachar	15.35	16.54	17.39	23.42	20.62
24.	Srirampur M.V. Check gate	3.15	3.31	2.01	4.00	1.27
25.	Boxirhat M.V. Check gate	3.57	3.36	2.95	4.00	2.60
26.	Kokrajhar	5.89	6.09	6.38	8.36	7.33
27.	Bongaigaon	9.09	10.01	9.10	12.26	12.53
28.	S.T.A.	24.23	22.13	23.21	30.25	26.42
29.	Digharkhal M.V. Check gate	1.00	1.01	1.23	3.00	1.20
30.	Udalguri	2.28	2.61	2.79	3.88	3.49
31.	Chirang	2.55	2.45	3.26	4.24	3.62
32.	Baksa	1.88	1.58	1.56	2.02	2.23
	A SSAM	344.38	361.54	378.98	510.00	453.93

Source: Office of the Commissioner of Transport, Assam.



## APPENDIX- 13.5

## DISTRICT-WISE NUMBER OF MOTOR VEHICLE REGISTERED IN ASSAM

Sl. No	District	Total Number of Vehicles Registered					
		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
1	2	3	4	5	6	7	8
1.	Dhubri	4884	5803	5575	5895	6765	9810
2.	Kokrajhar	4242	4953	4040	4589	5045	6531
3.	Bongaigaon	6430	6863	8060	7749	7966	10735
4.	Goalpara	3478	4729	9527	4417	3922	4469
5.	Barpeta	8410	10087	8128	9869	7834	9999
6.	Nalbari	2864	2930	4323	5275	6553	8496
7.	Kamrup (M)	57509	64815	58638	66941	66691	71906
8.	Darrang	4472	4840	5095	5546	5595	7241
9.	Sonitpur	10041	11681	10742	12974	14174	17439
10.	Lakhimpur	7250	8524	7265	9808	11299	12725
11.	Dhemaji	3664	3784	4084	2990	4229	4186
12.	Morigaon	2980	3193	3375	3129	4531	5278
13.	Nagaon	12156	13966	13687	15961	18382	19017
14.	Golaghat	4342	4693	4697	6419	6089	1913
15.	Jorhat	14576	14279	13166	15146	14672	11939
16.	Sivasagar	8654	9327	11439	12955	13653	12878
17.	Dibrugarh	11434	14866	12782	13358	14978	15376
18.	Tinsukia	10375	10882	11046	12571	14847	14437
19.	Karbi-Anglong	4154	4211	4461	4918	4847	3188
20.	Dima-Hasao	229	411	349	483	439	661
21.	Karimganj	1814	1954	2650	2753	2732	3228
22.	Hailakandi	2018	2209	2098	2262	2618	2461
23.	Cachar	6599	9314	9164	10103	9760	10166
24.	Baksa	2095	2468	1827	1436	1388	2327
25.	Chirang	2442	2631	2214	2307	2952	2334
26.	Udalguri	1964	2597	2400	2677	2858	3347
27.	Kamrup			6535	7033	13081	18787
	ASSAM	241247	199076	226010	227367	249564	290874

Source: Office of the Commissioner of Transport, Assam.

## APPENDIX – 13.6

## DISTRICT-WISE NUMBERS OF MOTOR VEHICLE ON ROAD IN ASSAM

Sl. No.	District	Total No. of Vehicles on Road					
		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
1	2	3	4	5	6	7	8
1.	Dhubri	18443	23329	24011	29906	31928	49620
2.	Kokrajhar	5520	6739	10556	15611	32778	40248
3.	Bongaigaon	32573	37511	44711	53593	61486	72221
4.	Goalpara	19992	24692	36439	34494	38396	47094
5.	Barpeta	36263	44562	54651	62766	71211	81040
6.	Nalbari	23609	28611	32934	49304	61524	68662
7.	Kamrup (M)	532933(p)	584217	645131	709103	770041	852522
8.	Darrang	34489	34191	34549	37076	32729	33660
9.	Sonitpur	18736	21693	22387	35361	112438	129392
10.	Lakhimpur	43868	49597	63583	73028	85628	100746
11.	Dhemaji	5036 (p)	16947	17615	29117	33260	41847
12.	Morigaon	16023	16733	20597	23731	28232	28959
13.	Nagaon	80044	85063	98406	115395	142302	150657
14.	Golaghat	10167	6872	19769	26188	27295	33320
15.	Jorhat	131467	145667	158874	174077	187096	201204
16.	Sivasagar	89084	98127	97800	110735	199087	166854
17.	Dibrugarh	91770	107057	108419	126458	141168	157520
18.	Tinsukia	66314	71526	77753	86508	97527	147510
19.	Karbi-Anglong	18787	21703	21963	26964	31779	35149
20.	Dima-Hasao	5079	5405	5416	5899	5329	5346
21.	Karimganj	12725	13248	16611	19338	22102	25251
22.	Hailakandi	9006	10905	15477	17815	20386	22692
23.	Cachar	47121	53960	62657	70202	78685	77743
24.	Baksa	3255 (p)	3483	6412	7812	9177	10512
25.	Chirang	6284	8808	9096	14688	17618	20135
26.	Udalguri	5037	7623	10046	12744	15479	19373
27.	Kamrup (R)			9359	16967	29895	47312
A S S A M		1320867	1363625	1528269	1725222	1984880	2666589

Source: Office of the Commissioner of Transport, Assam.

## CHAPTER – XIV

### INSTITUTIONAL FINANCE

#### BANKING:

The financial system of a country is of immense use and plays a vital role in shaping the economic development for a nation. A well structured and efficient network of financial institutions give rise to economic growth. Banks are playing an important role in sustaining economic development by mobilizing deposits and credits. With the objective to bring more and more people within the institutional finance coverage, the banking network has been increased by opening new branches in the State. As a result, the number of reporting Bank Offices of all Scheduled Commercial Banks in Assam has been increased from 1262 as on March 2007 to 2177 as on March 2016. With the increase in the bank networking, the dependence per bank offices in Assam has been considerably decreased over the years and reduced from 62.15 Sq.km as on March 2007 to 36.03 Sq.km as on March 2016. However, average population covered per bank branch office in Assam was calculated at 14.33 thousand (based on Population Census 2011) as on March, 2016 compared to All India average of 9.1 thousand during the same period. The table 14.1 shows the number of Scheduled Commercial Bank Offices in Assam as well as in India and the trend of deposits and credit over the period of past ten years.

Banking sector comprises of Scheduled and non-scheduled banks. Scheduled banks are of two types viz. Scheduled Commercial Banks and Scheduled Cooperative Banks. Scheduled Commercial banks are classified into five types –State bank of India & its associates, Nationalized Banks, Private sector Banks, Regional Rural Banks and Others (Foreign Banks). At the end of March, 2016, there were 2177 bank offices, of which, 48.0 percent bank offices were located in rural, 29.0 percent were in semi-urban and 23.0 percent were in urban areas. At the end of March 2016, growth of aggregate deposits in the State was 6.6 percent compared to 14.5 percent growth in the previous year. Growth of bank credit, on the other hand, was calculated at 18.8 percent during the year ending March 2016 compared to 13.2 percent growth of aggregate credit in the previous year.

TABLE – 14.1  
GROWTH OF SCHEDULED COMMERCIAL BANKS IN ASSAM AND INDIA  
(at the end of March)

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

\*Reporting Offices only.

Source: Quarterly Statistics on Deposits and Credit of Scheduled Commercial Banks, March 2007 to March 2016 of RBI.

A comparative status of performance of the Bank Groups in Assam up to March, 2016 may be evident from the Table 14.2.

TABLE -14.2  
BANK GROUP WISE SCHEDULED COMMERCIAL BANKS IN ASSAM

(Upto March, 2016)

Bank Group	No. of offices	Deposits (Rs. in Crore)	Credit (Rs. in Crore)
State Bank of India and its Associates	344	39693	14754
Nationalized Banks	1101	47409	16769
Foreign Banks	2	168	107
Regional Rural Banks	465	7932	4446
Private Sector Banks	265	8592	6595
All Scheduled Commercial Banks	2177	103794	42671

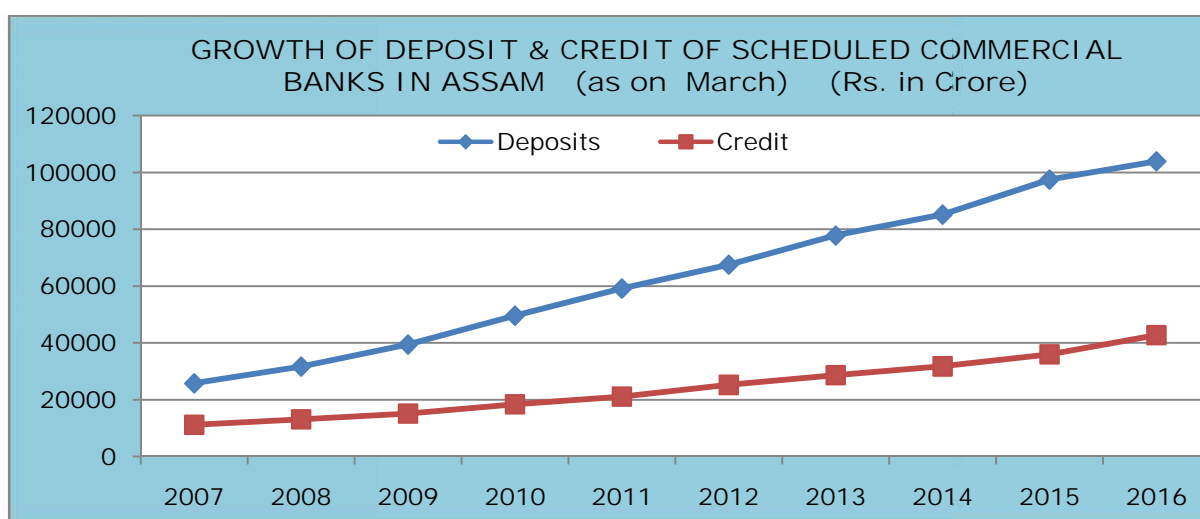
\*Reporting Offices only: Total may not be equal due to rounding off.

Source: Reserve Bank of India.

#### GROWTH OF DEPOSITS AND CREDIT:

The expansion of banking facilities in the State over the years has resulted in increase of volume of deposits and also disbursement of credit. The aggregate deposit with Scheduled Commercial Banks in Assam, which was Rs. 97378 crore in March 2015, has increased to Rs.103794 crore in March 2016. The volume of deposits has been increased by 6.6 percent in March 2016 over the previous year. The per capita deposit in the State has also been increased from Rs. 31211 in March 2015 to Rs. 33267 in March 2016. Thus, the per capita deposit in the State has recorded 6.6 percent increase over the previous year.

Like deposits, disbursement of credit by Scheduled Commercial Banks also recorded an impressive growth in Assam. The total volume of credit disbursed by the banks has been increased to Rs.42671 crore in March 2016 from Rs.35911 crore in March 2015 thereby recorded an impressive growth of 18.82 percent. However, the credit disbursement by the Scheduled Commercial banks in Assam shared only 0.57 percent of the total credit disbursed in the country as a whole during March 2016. The per capita credit has been increased to Rs.13677 in March 2016 compared to Rs.11510 in March, 2015.



#### CREDIT – DEPOSIT RATIO:

The Credit-Deposit ratio of all Scheduled Commercial Banks in Assam remained higher with 41.1 percent in 2015-16 (ending March 2016) compared to 36.9 percent during the

year 2014-15. The credit-deposit ratio of all Scheduled Commercial banks was highest with 43.3 percent in 2007 (ending March, 2007).

The Credit –Deposit Ratio of all Scheduled Commercial Banks in Assam, however, remained far below when compared with the All India ratio. During the year 2015-16 (ending March) the Credit-Deposit Ratio of all Scheduled Commercial Banks in India was 77.9 percent compared to 77.4 percent during 2014-15 (ending March).

Table 14.3 shows the Credit - Deposit ratio of all scheduled commercial banks in Assam and India from 2007 to 2016. Table-14.4 shows the status of Credit-Deposit ratio in the districts of Assam.

TABLE – 14.3  
CREDIT DEPOSIT RATIO OF ALL SCHEDULES  
COMMERCIAL BANKS IN ASSAM AND INDIA

(as on March)

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Assam	43.3	41.2	38.3	37.0	35.6	37.3	36.8	37.3	36.9	41.1
India	75.0	74.2	72.6	72.7	75.1	77.5	78.1	78.0	77.4	77.9

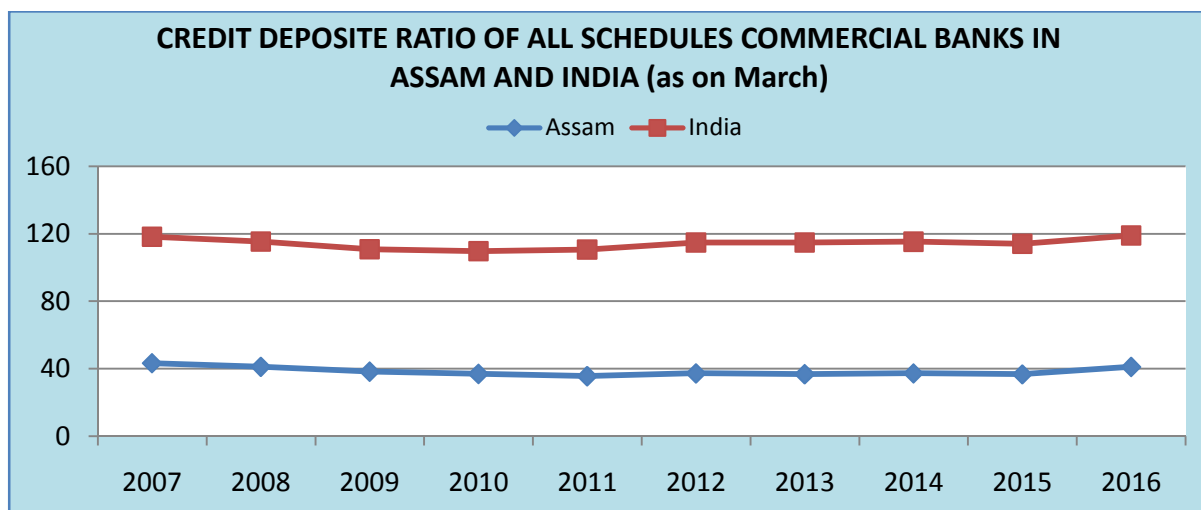
Source: (i) Basic Statistical Return of Scheduled Commercial Banks (2001-2006); and  
(ii) Quarterly Statistics on Deposits and Credit of Scheduled Commercial Banks,  
March 2007 to March 2016, Reserve Bank of India

TABLE-14.4  
DISTRICTWISE CREDIT DEPOSIT RATIO IN ASSAM  
(As on March)

(Figure in %)

DISTRICT	2012	2013	2014	2015	2016	DISTRICT	2012	2013	2014	2015	2016
Kamrup	49.9	44.8	42.0	48.2	72.2	Nagaon	43.8	41.5	41.7	38.2	42.0
Bongaigaon	32.5	34.7	37.5	37.0	41.2	Tinsukia	34.3	35.2	36.2	35.4	36.6
Goalpara	42.4	39.2	38.7	36.4	40.8	Karbi Anglong	37.3	32.2	28.7	30.5	40.0
Hailakandi	34.0	35.4	34.3	32.7	36.5	Karimganj	32.9	32.5	30.0	27.2	29.6
Morigaon	56.3	56.5	60.0	57.0	66.5	Dima Hasao	25.2	21.1	20.6	19.6	22.6
Sonitpur	47.6	47.5	48.1	46.7	48.3	Dhubri	41.2	39.0	36.8	34.6	42.8
Darrang	52.5	53.8	53.8	48.7	56.3	Kokrajhar	30.4	26.7	26.9	27.1	27.9
Nalbari	50.6	47.6	49.5	47.0	49.9	Barpeta	43.5	44.2	45.2	44.9	51.8
Dibrugarh	27.1	25.0	32.0	30.0	31.1	Cachar	33.8	33.2	35.0	31.5	33.7
Lakhimpur	61.6	62.1	61.7	59.0	67.0	Kamrup(M)	34.0	34.4	33.4	35.3	39.7
Jorhat	40.5	39.2	43.5	36.0	42.3	Chirang	35.4	39.5	29.6	27.8	32.8
Sivasagar	43.1	41.8	44.4	42.4	39.2	Baksa	49.0	50.2	41.0	41.3	48.1
Golaghat	49.4	46.2	47.0	37.7	43.7	Udalguri	64.8	67.5	64.6	67.6	70.2
Dhemaji	60.9	65.4	65.0	55.8	62.3	Assam	37.3	36.8	37.3	36.9	41.1

Source: Quarterly Statistics on Deposits and Credit of Scheduled Commercial Banks,  
Reserve Bank of India



#### PRIORITY SECTOR ADVANCES:

The outstanding priority-sector advances showed a growth of 26.69 percent at the end of March 2016 over the end of March 2015 according to the State Level Bankers' Committee reports. The agriculture and allied sector was disbursed Rs.11910.33 crore in 2015-16 of which Scheduled Commercial Banks shared 73.46 percent, Regional Rural Banks 16.1 percent and Co-operative Banks 0.59 percent. Remaining 9.85 percent was disbursed under various schemes of NEDFi, NABARD (RIDF), MIDC and SIDBI. The Agriculture and allied sector credit during the period was disbursed to 30.29 lakh accounts. The disbursement of advances to agriculture & allied activities has steadily increased from Rs. 8878.37 crore [20.58%] in 2014-15 to 11910.33 crore (34.15%) in 2015-16.

The per capita priority sector advances has been significantly increased from Rs.7367.81 in 2014-15 to Rs. 9333.46 in 2015-16 (26.68 percent increase)

TABLE – 14.5  
ADVANCES OUTSTANDING UNDER PRIORITY SECTOR

(Rupees in Crore)

Sectors	2012-13	2013-14	2014-15	2015-16
Aggregate Advances	32825.11	37902.92	43142.92	54371.52
Total Priority Sector Advance	19429.10 [59.19]	21645.83 [57.11]	22987.58 [53.28]	29120.39 [53.56]
Agriculture & Allied Activities	6614.39 [20.15]	7497.58 [19.78]	8878.37 [20.58]	11910.33 [21.90]
Industries	4326.50 [13.18]	5158.53 [13.61]	5465.16 [12.67]	8673.42 [15.95]
Per capita Priority Sector Advances [Figure in Rupees]	6227	6937	7368	9333

\* Figure within bracket indicates percentage share to Aggregate Advances.

❖ Per Capita Priority Sector Advances calculation based on the Population Census 2011.

Source: Various Reports of State Level Bankers Committee, Assam.

**REGIONAL RURAL BANKS:**

Regional Rural Banks [RRBs] were established under the Regional Rural Banks Act, 1976 with an objective to give a boost to rural economy by providing rural credit to farmers, agricultural labourers, artisans and small entrepreneurs etc.

At present, there are two RRBs in the State - Assam Gramin Vikash Bank [AGVB] and Langpi Dehangi Rural Bank [LDRB]. While the Assam Gramin Vikash Bank is operating both in the Brahmaputra Valley and Barak Valley covering all the districts with 410 branches, the service area of the Langpi Dehangi Rural Bank is confined within the hill districts of Assam with 58 bank branches as on March 2016.

Out of the total branch network of the Assam Gramin Vikash Bank, 309 branches located in rural areas, 83 branches in semi-urban areas and 18 branches in urban areas. In respect of Langpi Dehangi Rural Bank, 51 branches located in rural areas and 7 branches located in semi-urban areas.

The aggregate deposits of RRBs was Rs.7950.43 crore at the end of March 2016 compared to Rs.7882.96 crore at the end of March 2015. The growth of aggregate deposits of RRBs was calculated at 0.86 percent at the end of March 2016 over March ending 2015. The aggregate volume of credit disbursed by these banks was also increased to Rs.4581.04 crore at the end of March 2016 from Rs.4161.72 crore as on March 2015 indicating an increase of 10.07 percent. Credit-Deposit ratio of these banks has reached 57.62 at the end of March, 2016 compared to 57.79 as on March 2015. The performance of Regional Rural Banks is presented in the Table- 14.6.

TABLE – 14.6  
ACHIEVEMENTS OF REGIONAL RURAL BANKS IN ASSAM

(Rupees in lakh)

Period (as on)	Achievements under Annual Credit Plan			Credit - Deposit Ratio (%)	
	Annual Target for All Banks	Achievement of All Banks	Achievement of RRBs	All Banks	RRBs
31.3.2008	175518.40	155511.33	32211.73 (20.71)	50.48*	52.64
31.3.2009	221924.24	150226.67	37082.91 (24.68)	45.85*	49.62
31.3.2010	257892.21	250725.49	52181.55 (20.81)	42.05*	47.50
31.3.2011	354847.18	289468.82	70261.61 (24.27)	39.71*	47.94
31.3.2012	449985.62	458541.64	76721.43 (16.73)	44.64*	53.75
31.3.2013	642041.89	463765.9	61755.56 (13.32)	43.56*	56.28
31.3.2014	1067096.67	647419.05	78707.27(12.16)	43.48*	55.88
31.3.2015	1001174.85	612794.07	86143.45(46.37)	42.79	52.79
31.3.2016	779300.00	894483.19	71248.25 (38.47)	50.36	57.62

Figure in bracket shows the percentage share of achievements of RRBs to All Banks.

\*Lending by NEDFi and under RIDF by NABARD has been incorporated as priority sector advances. Hence C.D ratio figure is different from the figure shown in the Table-14.4.

Source: State Level Bankers Committee reports of various years.

**PRIME MINISTER'S JAN DHAN YOJANA (PMJDY):**

The scheme has been started with a target to provide 'universal access to banking facilities' starting with "Basic Banking Accounts" with overdraft facility of Rs.

5000.00 after six months and RuPay Debit card with inbuilt accident insurance cover of Rs.1.00 lakh and RuPay Kisan Card.

Under the scheme:

1. Account holders will be provided zero-balance bank account with RuPay debit card, in addition to accidental insurance cover of Rs.1.00 lakh (to be given by 'HDFC Ergo').
2. Those who open accounts by January 26,2015 over and above the Rs.1.00 lakh accident, they will be given life insurance cover of Rs.30, 000.00 (to be given by LIC).
3. After Six months of opening of the bank account, holders can avail Rs.5,000 overdrafts from the bank.
4. With the introduction of new technology introduced by National Payments Corporation of India (NPCI), a person can transfer funds, check balance through a normal phone which was earlier limited only to smart phones so far.
5. Mobile banking for the poor would be available through National Unified USSD Platform (NUUP) for which all banks and mobile companies have come together.

Under the scheme 63,30,558 accounts have been opened in Assam as on 31<sup>st</sup> March, 2016 as per SLBC report for quarter ending March, 2016.

#### AGRICULTURAL CREDIT:

Credit is an essential requirement for revitalizing agriculture sector. Within the priority sector, the share of agriculture advances in the State has increased from 34.6 percent in 2013-14 to 38.6 percent in 2014-15 which was 34.04 percent in 2012-13. On the other hand, the agricultural credit constitutes 20.58% to the total bank credit as on March, 2015 which was 19.78 percent as on March 2014 [according to the figures published by the State Level Bankers' Committee Assam]. According to the State Level Bankers' Committee Report, banks operating in the State could disburse agricultural credit of Rs.3901.29 crore during the year 2015-16 as against the annual commitment of Rs.3636.00 crore. During the year 2014-15, total agricultural credit disbursed in the State was Rs. 2492.60 crore against the annual commitment of Rs.5176.00 crore.

TABLE – 14.7  
TREND OF CREDIT FLOW TO AGRICULTURE AND ALLIED  
ACTIVITIES UNDER ANNUAL CREDIT PLAN

Year	Advance to Agriculture & Allied Activities (Rs. in crore)	Crop Loans (Rs. in crore)	% Share of crop Loan to Total Agricultural Advances	Per Capita Crop Loan (Rupees)	Crop Loan per farmer family# (Rupees)
2009-10	814.69	359.39	44	134.82	*1307
2010-11	876.76	373.63	43	139.94	*1359
2011-12	2002.47	1082.03	54	346.80	*3935
2012-13	1851.01	908.28	49	291.11	*3303
2013-14	2756.66	1460.02	53	468.00	#5368
2014-15	2492.60	1599.75	64	513.00	#5881
2015-16	3901.29	2080.00	53	667.00	#7647
(%) Growth 2015-16 over 2014-15	56.51	30.02	-	30.01	30.03

\* Total Farmer Family =27.50 lakh as per Agriculture Census 2005-06.

#Total Farmer Family = 27.20 lakh as per Agriculture Census 2010-11

Source: Reports of State Level Bankers Committee, Assam.



It is observed that the annual growth of advances to agriculture & allied activities during the year 2015-16 was increased by 56.51 percent compared to 2014-15 which was - 9.58 percent over 2013-14.

#### FINANCING UNDER KISHAN CREDIT CARD SCHEME:

Like other states of the Country, the banks operating in Assam have been extending timely, cost effective and hassle free credit support to the farmers of the State through Kishan Credit Card [KCC] Scheme which was introduced in 1998-99. Kishan Credit Card scheme has facilitated in augmenting credit flow for agricultural activities. The scope of the KCC has been broad-based to include term credit and consumption needs. During the year 2015-16, 2.17 lakh KCC were issued to the farmers of the State and sanctioned Rs.1084.10 crore compared to 2.82 lakh KCC issued and sanctioned Rs.1331.36 crore in 2014-15.

Cumulatively about 17.07 lakh KCCs have been issued in the State up to March 2016 since introduction of the scheme. The Scheme, thus, covered around 62.76 percent of the total farmer family (there are 27.20 lakh farmer families as per Agriculture Census 2010-11) of the State at the end of March 2016.

TABLE – 14.8  
ADVANCES UNDER KISHAN CREDIT CARD SCHEME

(Rupees in lakh)

Year	Annual Achievement		Cumulative Achievement	
	Card Issued (No.)	Amount	Card Issued (No.)	Amount
2006-07	50067	7862.03	359395	40580.52
2007-08	62132	16365.83	329932	67908.97
2008-09	103361	37589.23	480393	104682.06
2009-10	149822	43055.94	630070	158372.04
2010-11	163063	50495.87	793801	209071.23
2011-12	371474	130329.35	967220	307834.01
2012-13	265797	93219.58	1329203	393538.41
2013-14	308306	150567.42	1586687	1551091.21
2014-15	281889	133136.24	1809898	629941.72
2015-16	217460	108409.61	1706822	691273.68

Source: Reports of State Level Bankers Committee, Assam.

#### MICRO-FINANCE:

The Micro Finance Scheme is an effective instrument for financial inclusion which was launched to meet the financial demands of small entrepreneurs and regarded as an effective programme for poverty alleviation and also empowerment of the poor. The micro-finance programme of NABARD, which began in 1992 with formation of 500 Self Help Groups (SHGs), has emerged as the largest micro-finance programme in the world. The Self-Help Group – Bank linkage programme, the main micro-finance model and institutional finance mechanism to provide financial credit support to the micro-entrepreneurs (including farmers) in the country as a whole, has been proved to be the most cost effective credit delivery system in India. The programme has also helped in providing banking services to the uncovered rural poor.

The Self Help Groups movement started picking up in Assam in the recent years. The programme has gathered momentum from the year 2001-02 onwards. Till the end of March 2016 all total 541292 SHGs have been bank linked in the State out of which 224707 SHGs were credit linked.

Cumulative position of bank linked SHGs presented in the Table –14.9.

TABLE – 14.9  
SELF-HELP GROUPS FINANCED BY BANKS

(Rupees in lakh)

Year	Total bank linked SHGs		Deposit linked		Credit Linked	
	Number	Amount	Number	Amount	Number	Amount
2006-07	230902	58040.52	121474	5261.61	109428	52778.91
2007-08	257863	57417.70	142147	6044.72	115716	51372.98
2008-09	305132	77365.49	166740	7485.51	138392	69879.98
2009-10	374745	92724.79	210890	9123.46	163855	83601.33
2010-11	433954	118051.17	240032	11195.29	193922	106855.88
2011-12	499183	139741.00	272822	10928.00	226361	128813.00
2012-13	540566	164138.86	281018	12228.9	259548	151909.96
2013-14	589268	175686.05	319417	15092.27	269851	160593.78
2014-15	568225	157395.13	319423	13487.17	248802	143907.76
2015-16	541292	131002.38	316585	10254.68	224707	120747.70

Source: Reports of State Level Bankers Committee, Assam.

#### SHG-BANK LINKAGE UNDER SGSY:

Swarnajayanti Gram Swarojgar Yojana is the mother programme of all poverty alleviation programmes. The objective of the programme is to uplift economic status of the rural people living below the poverty line by providing sustainable economic activities with bank loan and Government subsidy.

Up to the end of March 2016, about 2.25 lakh SHGs have been covered under the ambit of bank credit in the State out of which 1.13 lakh SHGs have been covered SGSY programme. Cumulative progress of SHG-Bank linkage programme under SGSY shown in the Table -14.10

TABLE – 14.10  
SHG-BANK LINKAGE UNDER SGSY

(Rupees in lakh)

Year	Total Credit Linked SHGs		Credit linked SHGs under SGSY	
	Number	Amount	Number	Amount
2006-07	109428	52778.91	54735	36549.70
2007-08	115716	51372.98	54790	31006.57
2008-09	138392	69879.98	69144	45898.88
2009-10	163855	83601.33	84678	55161.36
2010-11	193922	106855.88	102166	74784.79
2011-12	226361	128813.00	123473	94423.5
2012-13	259548	151909.96	134107	106687.46
2013-14	269851	160593.78	139340	105503.75
2014-15	248802	143907.96	123055	92746.31
2015-16	224707	120747.70	112806	78666.13

Source: Reports of State Level Bankers Committee, Assam.

## NATIONAL BANK FOR AGRICULTURE AND RURAL DEVELOPMENT (NABARD):

During 2015-16, the NABARD disbursed refinance to banks in the State to the tune of Rs.189.76 crore compared to Rs.245.85 crore in 2014-15. Agency wise, purpose wise and activity wise refinance disbursed by the NABARD are shown in the Table-14.11.

TABLE – 14.11  
AGENCY WISE, PURPOSE WISE AND ACTIVITY WISE  
REFINANCE DISBURSED BY NABARD

(Rupees in lakh)

Purpose	2014-15			2015-16		
	Commercial Banks	RRBs	Total	Commercial Banks	RRBs	Total
Minor Irrigation	0.000	15.510	15.510	-	-	-
Land Development	0.000	0.000	0.000	-	-	-
Farm Mechanization	0.000	1183.970	1183.970	-	792.41	792.41
Plantation & Horticulture	200.480	55.630	256.110	-	914.71	914.71
Animal Husbandry (Dairy, Poultry, Sheep, Goat & Piggery)	0.000	1898.160	1898.160	-	2338.67	2338.67
Fisheries	0.000	132.830	132.830	-	569.09	569.09
Forestry	0.000	3082.710	3082.710	-	-	-
RNFS (i/c Rural Housing)	0.000	104.730	104.730	2740.01	-	2740.01
Agro processing	7366.319	0.000	7366.319	-	-	-
SC/ST Action Plan	0.000	10518.450	10518.450	-	-	-
SHG	-	-	-	-	8121.00	8121.00
Others (2 wheelers, SHG, SRT0-Truck etc.)	0.000	26.460	26.460	-	3500.36	3500.36
Total	7566.799	17018.450	24585.249	2740.01	16236.24	18976.25

Source: National Bank for Agriculture and Rural Development.

## INFRASTRUCTURE SUPPORT UNDER RURAL:

## INFRASTRUCTURE DEVELOPMENT FUND (RIDF):

To meet the major infrastructure gaps, the Government of Assam has taken initiative for development of infrastructure in rural areas with the financial assistance from NABARD under RIDF. As on 31<sup>st</sup> March, 2016, NABARD has sanctioned 3035 projects involving RIDF loan of Rs.4283.73 crore, since inception. Out of the total loan sanctioned Rs.4283.73 crore, Rs. 2509.41 crore has been disbursed to the State Government as on 31<sup>st</sup> March, 2016. As against 3035 projects sanctioned 1122 projects have been completed and remaining projects are under various stages of implementation.

The activity wise number of projects and amount sanctioned including amount released under RIDF are given below:

**TABLE – 14.12**  
**ACTIVITY WISE PROJECT WISE INFRASTRUCTURE DEVELOPMENT LOANS**  
**SANCTIONED AND DISBURSED BY NABARD UNDER RIDF (Up to 31-03-2016)**  
 (Rupees in crore)

Activity	No. of Projects	Loan sanctioned	Loan disbursed
Rural Bridges	1408	1503.24	1252.52
Rural Roads	519	871.45	464.94
Irrigation	199	601.77	225.99
Flood Control	146	705.63	392.58
Animal Husbandry & Vety. Projects and Modern Abattoir (MA & AH Project)	311	205.61	47.38
Small Hydel Project	2	46.14	46.14
Marketing Infrastructure	14	90.86	30.95
Beel Fisheries Projects	87	59.93	17.26
Pay & use toilets	21	8.30	2.49
Meat Processing	1	3.92	3.91
Revitalisation of sericulture Farms	40	23.04	6.23
Rural Godowns	252	97.04	8.02
Cattle Feed Plant	1	4.73	1.00
Soil Conservation	33	51.33	9.99
Handloom Silk Dying	1	10.74	0.00
Total	3035	4283.73	2509.41

Source: NABARD Regional Office, Guwahati.

#### NORTH EASTERN DEVELOPMENT FINANCE CORPORATION LTD [NEDFI]:

NEDFi, since its inception has been playing a crucial role in catalyzing the development of economy of the Northeast India. NEDFi has been instrumental for identifying, financing and nurturing eco-friendly and commercially viable industries, infrastructure and agro-horticultural projects in the region. NEDFi is also giving special emphasis to cover small enterprises and micro finance to the needy at the grassroots in the region.

During the year 2015-16, the Corporation sanctioned Rs.361.86 crore and disbursed Rs.302.99 crore in the Region. The sanction and disbursement in the State of Assam during 2015-16 was Rs.246.55 crore and Rs.172.78 crore respectively.

#### MICRO FINANCE SCHEME:

NEDFi's Micro Finance Scheme has proved to be an effective instrument for financial inclusion where credit is routed to SHGs/JLGs and individuals through established and good Non-Government Organizations (NGO)/Micro Finance Institutions (MFIs) to meet the needs of smaller entrepreneurs (preferably Self-Help Group or individual) of the

region for taking up productive activities in the field of agriculture, micro industries and service sectors including transportation, etc.

Till the end of March 2016, the Corporation has sanctioned Rs.489.50 crore and disbursed Rs.485.37 crore, through which NEDFi has been able to reach out to more than 5.00 lakhs beneficiaries in the NE Region.

TABLE – 14.13  
SUMMARY OF AMOUNT SANCTIONED AND AMOUNT DISBURSED  
UNDER MICRO FINANCE IN ASSAM (as on March, 2016)

(Amount Rupees in Lakh)

Item	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Amount Sanctioned	1344	1196	3031	4743	3691	5520	5275	5635
Amount Disbursed	1120	1490	3346	3908	3866	5570	5848	5885

Source: Annual Reports of NEDFi various years.

#### DISBURSEMENT OF CENTRAL SUBSIDIES:

The Corporation is a nodal agency for disbursement of Central Subsidies under NEIP 1997 & NEIIP 2007, which is administered by the Department of Industrial Policy and Promotion, Ministry of Commerce, Govt. of India. The Corporation is thus facilitating disbursement of Central subsidies to various industrial units in the region. The details of disbursement under various schemes during the financial year 2015-16 may be evident from the table below.

TABLE – 14.14  
SCHEMEWISE DISBURSEMENT OF SUBSIDIES BY NEDFi

(Rs. in Crore)

Scheme	2014-15	2015-16	Cumulative as on 31-03-2016
Central Transport Subsidy (CTS)	107.57	56.50	2617.92
Central Capital Investment Subsidy(CCIS)	152.69	238.08	853.94
Central Interest Subsidy(CIS)	25.95	0.01	191.22
Central Comprehensive Insurance Subsidy	1.88	0.02	13.43
Total	288.09	294.61	3676.51

#### NEDFi'S PERFORMANCE IN ASSAM AND NER:

The slowdown in the national economy coupled with slowdown in the investment cycle, high inflation and volatile currency and interest rates the economy of the NE States got affected and therefore there was hardly any investment in the region. Loans sanctioned by NEDFi for the entire NE region was increased by 16 percent and that for Assam was increased by 64 percent during 2015-16 compared to the previous year. While loan disbursed by NEDFi for the entire NE region was decreased by 22 percent and that for

Assam was decreased by 17 percent during 2015-16 compared to the previous year. Loan sanctioned and disbursed by the NEDFi to the North-Eastern States including Assam may be evident from the Table-14.15.

TABLE – 14.15  
YEAR-WISE LOAN SANCTIONS AND DISBURSEMENTS BY NEDFi  
(As on March 2015)

(Rupees in lakh)

Year	Sanctions		Disbursements	
	Total NER	Assam	Total NER	Assam
2008-09	26689	21351	18409	13071
2009-10	33341	22370	20808	13512
2010-11	42138	33135	28138	19963
2011-12	43223	26544	33456	23854
2012-13	45349	26047	34873	20842
2013-14	45751	25684	36469	18488
2014-15	31203	15070	38720	20726
2015-16	36186	24655	30299	17278

Source: NEDFi

TABLE – 14.16  
YEAR-WISE NUMBER OF PROJECTS SANCTIONED (AS ON MARCH 2016)

States	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Assam	73	72	72	95	145	109	69	66
NER	173	211	198	253	535	543	428	422

Source: NEDFi

#### ASSAM FINANCIAL CORPORATION:

The Assam Financial Corporation has significant contribution towards the industrial development of the region. The Corporation has been persistently working to improve its performance. On the sanction and disbursement front, in spite of various constraints, the Corporation is continuing its lending operations. At present the Corporation has 2 numbers of DGM level branches, 3 numbers of Senior Manager level branches, 5 numbers of Assistant Manager level branches, 2 numbers Field Offices and one Satellite Office to provide need based customer service.

The Corporation has been able to maintain its profit trend for 10<sup>th</sup> consecutive year by earning a profit of Rs. 8.90 lakhs during 2015-16 compared to the previous year profit of Rs. 2.31 lakhs. During the financial year 2015-16, total loan sanctioned amounted to Rs.2087.08 lakhs and total disbursement amounted to Rs.1514.89 lakhs compared to Rs.1273.36 lakhs and Rs.1618.58 lakhs respectively in the financial year 2014-15.

The total recovery of loan increased to Rs. 2087.08 during 2015-16 from Rs.1514.89 lakhs in the previous year.

The total income of the Corporation during 2015-16 recorded at Rs. 1142.10 lakhs as against Rs. 1170.39 lakhs in 2014-15. On the expenditure side, the total expenditure decreased to Rs. 1133.19 lakhs during the year 2015-16 from Rs. 1168.08 lakhs in the previous year.

During the year 2015-16, the corporation has launched new micro finance scheme in the name of "KANAKLATA MICRO FINANCE SCHEME". Under the scheme the corporation has sanctioned an amount of Rs. 300.00 lakhs during 2015-16. The corporation has however stopped its assistance under the prestigious "Chief Minister's Micro Finance Scheme" since the corpus received from the Govt. of Assam has been exhausted. Mention may be made that during 2014-15 the corporation sanctioned and disbursed Rs. 227.76 lakhs and Rs. 282.76 lakhs respectively under the "Chief Minister's Micro Finance Scheme". Meanwhile, about 2300 women beneficiaries have got assistance under the Chief Minister's Micro Finance Scheme as on 31-03-2016.

\* \* \* \* \*

## CHAPTER-XV

### CO-OPERATION

The main task of the Co-operation Sector is to facilitate the formation and working of Co-operative Societies in the State for the purpose of promoting self-help and mutual aid among agriculturalists, artisans and other persons with common economic needs so as to bring about a higher standard of living, better business, better method of production and equitable distribution. The Co-operative institutions have advantage in tackling the problems of poverty alleviation, food security and employment generation and considered as a potential instruction for delivery of goods and services. This delivery mechanism of goods and services to the people through cooperative window is considered to be the best as it associates with the target group in its process implementation.

Since the Assam economy is predominantly rural in character, an extensive network of sound and viable co-operatives can help tremendously in giving right shape to the socio-economic structure of Rural Assam in particular and for achieving the much needed overall economic growth and social transformation of the State. But, the co-operative sector failed to achieve its desired objective due to existence of good number of uneconomic and dormant cooperatives. Therefore, to strengthen the role of existing Cooperative Societies towards socio-economic development as well as their impact on poverty reduction, employment generation and social integration the Assam Cooperative Act, 2007 has been enacted to give renewed fillip to the effort of the State Government to promote voluntary formation, autonomous functioning, democratic control and professionalism to the cooperative societies.

This act is amended by the Assam Legislative Assembly as "The Assam Co-operative Society (Amendment) Act 2012 with effect from 5<sup>th</sup> February 2013 with insertion of separate Chapter for Cooperative Credit Society" as per MOU signed by the State Government with Central Government and NABARD in the year 2012 for revival of short Term Cooperative Credit Structure (STCCS).

However, setting up of the Assam Rajiv Gandhi University of Cooperative Management under the academic guidance of Indian Institute of Management, Ahmedabad with the State Government initiative brings some hope to the cooperative sector to achieve professionalism and quality performance of various societies in the State as envisaged.

The cooperative Department of Assam has given special thrust in certain areas at present for revival of the cooperatives structure in the state so as to attain the objective of upliftment of the economic conditions of the poor people of the society by providing low cost credit to the farmers and employment generation programmes. The Government of Assam proposed to strengthen the cooperative societies by giving logistic support in terms of better regulation, better facilitation and by closing the sick cooperatives and nurturing the good and economically viable cooperatives

TABLE – 15.1  
STATISTICS OF CO-OPERATIVE SOCIETIES IN ASSAM

Year	Number of Societies	Membership (in '000 nos)	Share Capital (Rs. in Crore)	Working Capital (Rs. in Crore)
2010-11	7906	4612	107.36	2724.29
2011-12	8006	4600	98.35	2806.09
2012-13	8422	4592	102.07	2812.66
2013-14	8835	4513	103.23	3171.31
2014-15	9222	4416	84.37	3279.71

Source: Registrar of Co-operative Societies, Assam.



At present there are 9222 nos. of different types of Cooperative Societies in the State including State Level Cooperative societies such as ASCARD Bank, APEX Bank, APOL, HOUSEFED, and FISHFED. Various types of Primary Cooperative Societies like Gaon Panchayat level Cooperatives (GPSS), women Cooperatives, Housing Cooperatives, Fishery & Pisciculture cooperatives, Farming Cooperatives, Consumer Cooperatives, Tourism Cooperatives, handloom Cooperatives, Dairy Cooperatives etc are also organized for specific purposes and performing various economic activities.

#### STRATEGY FOR TWELFTH FIVE YEAR PLAN:

The aim of the 12<sup>th</sup> Five year plan is inclusive growth having Agriculture and allied activities, Education, Health Care, social welfare and development of Rural Infrastructure as an thrust area with an object to employment generation and improve quality of life especially of the downtrodden strata of the society, the Department has given emphasis to attain the goal through special focus on the trust areas like

- Micro Finance-Financial inclusion.
- Implementation of ICDP under central sector scheme.
- Revamping of GPSS and women Multipurpose Cooperative Societies
- Organization of a state Level Consumer Marketing Federation.
- Diversification of new areas and activities like Health Care, Education, Cold Storage, Food Processing.
- Dairy and Fishery
- Rehabilitation of potentially viable weak cooperatives.
- Administrative reforms etc.

#### MICRO FINANCE:

It is proposed to provide soft loan to the needy poor in cooperative fold by linking SHG-Cooperative Credit Institutions during the 12<sup>th</sup> Five Year Plan period under National Rural Livelihood Mission (NRLM) with a view to facilitate a platform to reach the poor people into formal banking system for their financial need. It will generate employment, women employment and will contribute towards State GDP in a modest way.

#### IMPLEMENTATION OF ICDP UNDER CENTRAL SECTOR SCHEME:

Integrated Cooperative Development Project (ICDP) stands for creation of Rural Infrastructure, employment generation, enhancement of farm production that is the thrust areas of 12<sup>th</sup> Five Year Plan. It is proposed to cover all the 27<sup>th</sup> Districts of Assam during the 12<sup>th</sup> Five Year Plan.

#### REVAMPING OF PACS:

The Gaon panchayat Samabai Samiti (GPSS) were organised in 1973 to function in the plain districts of the state. The GPSS were organised mainly for issue of Agriculture credit and distribution of essential commodities. On the other-hand, Agricultural credit in the two hill districts of the state are routed through Large Area Multipurpose Cooperative societies (LAMPS). The primary Agriculture Credit societies (PACS) are the backbone of the cooperative movement which measures the development of Rural India. It is felt that the PACS need to be re-oriented for dealing in fertilizer, pesticides, farm mechanization, agriculture credit through KCC. PACS are mainly operating in the village areas. There are 2044 Nos. of new GPSS have been registered in addition to the earlier existing 709 Nos. of GPSS in the state that deals in production, procurement and distribution of essential commodities. The process of creating of new PACS co-terminus with the existing Gaon

panchayat of the state is likely to be completed by providing them adequate supply of infrastructure development during the 12<sup>th</sup> Five year plan period.

#### WOMEN COOPERATIVE SOCIETIES:

There are more than 2700 woman cooperative societies including 2486 number of Gaon panchayat level Multipurpose women cooperatives in Assam. These cooperatives are exclusively confine to women, which are organized for involvement of women in various economic activity and with a view to improving the socio-economic status of women by harnessing their talent and individual skill. But due to financial constrains, these societies could not render services to the members providing facilities and gainful employment. Considering such aspects, Govt. has been providing financial assistance to these cooperatives in a phased manner.

#### ADMINISTRATIVE REFORMS:

Cooperative should be free from the Government Control or in other word cooperatives are given more democracy by making law in the light of Vaidyanathan Committee's recommendation. The Assam cooperative Societies Act 2007 is amended in the year 2013 in priority with the 97<sup>th</sup> Constitution amendment. Participation of women in the management is ensured. Provision is made for inclusion of professionals in the management of the cooperatives.

#### REVIVAL OF VARIOUS COOPERATIVE SOCIETIES:

The co-operation Department has taken various schematic Programmes for revival of various sick co-operatives in the state.

#### PROCESSING CO-OPERATIVES:

A large number of processing units have been setup in the state under co-operative sector comprising of Rice and Oil Mill, Mustard oil Mill, Jute Mill, etc. These Cooperative are helping local producers in procuring their raw materials and get profitable markets for their finished products. The Eastern Agro processing and Tea Warehousing Co-operative Society Ltd is one of such kind of co-operative Societies and one of the prestigious organizations under the Co-operative sector in the state. The society is running the business of tea warehousing, mustard oil packating, grinding of spices etc. the brand name of packed mustard oil is "NIVAJ" which is very popular in the market. This society is functioning without any financial assistance from the Government and is performing well and earning continuing profits. The Society has earned net profits to the tune of Rs.182.08 lakhs during the year 2015-16.

#### CREDIT CO-OPERATIVES:

The main motive of the credit cooperative is to provide credit to local entrepreneur for undertaking various types of business activities. It works on the principle of self help through mutual Co-operation of member. The credit Co-operative are being formal to provide financial help to its member through loan at low interest rate. These credits are being carried out through three types of Co-operative banks viz 1) APEX 2) ASCARD and 3) Urban Co-operative Bank. The state government has already taken several steps to implement the scheme of revival package of short term Co-operative credit structure (STCCS) through APEX Bank and Long Term Co-operative credit structure (LTCCS) through ASCARD Bank.

**HOUSING CO-OPERATIVE:**

The Housing Co-operative Movement in state has been able to achieve a noticeable performance during the last couple of years. There are more than 220 numbers of primary housing Co-operative with one Apex level Society, HOUSEFED, Assam is rendering service to its members. The main business of this federation society is to provide housing loans to the primary housing Co-operative societies and individuals. HOUSEFED also construct dwelling houses and flats for sale, purchase land and sale it after development. HOUSEFED is also leasing houses on rent for office accommodation to different central and state Government offices.

**CONSUMER CO-OPERATIVE:**

Consumer Co-operative are enterprises owned by consumers and managed democratically, which objects are to fulfil the needs and aspirations of their members. They co-operate within the market system. Independently of the state, as a form of mutual aid, oriented towards service rather than pecuniary profit. There are 36 urban consumer store with more than 250 affiliated primary consumer store and 640 tea Garden Consumer store in the state. These Co-operative societies extends yeoman service to the urban people and in maintaining the price line. The wholesale consumer Co-operative Societies (WCCS) are involved in procuring and selling of essential commodities and other products at subsidized rates. These procured essential item required scientific storage for their proper safe keeping for long periods.

**REVIVAL OF DAIRY CO-OPERATIVES:**

Primary Milk Cooperatives are village level cooperatives. There are 439 Nos. of primary Milk Dairy Co-operative societies in the State. There are three Regional Level Milk Cooperative union viz- The west Assam Milk producers Co-operative Union Ltd. (WAMUL), The East Assam Milk Producer Cooperative union Ltd (EAMUL) and the The Cachar and Karimganj District Milk producer Cooperative union Ltd. (CAMUL) and out of these CAMUL is in a defunct stage. After handing over the management of WAMUL to National Dairy Development Board (NDDB), New DELHI, WAMUL markets its products under the brand Purabi, which has become a household name plans to double its packaged liquid milk production in the coming year. Starting from a production of 500 litre per day eight years back, at present the Milk Union is selling a daily average quantity of over 50,000 litre of packaged liquid milk, and 7000 litre worth of milk products in Guwahati, Nalbari, Rangiya, Nagaon, Tezpur and Jorhat.

Similarly with a view to revive EAMUL and CAMUL, the management of the two Cooperatives were recently handed over to the National Dairy Development Board (NDDB). As a part of the revival, a processing plant is expected to come up at Jorhat. For the development of dairy cooperative, a proposal of 30.00 lakhs has been submitted to Government for financial assistance to Sita Jakhala Dugdha Utpadak Samabai Samiti (SJDUSS) Ltd during the year 2016-17.

**FISHERY SECTOR:**

The fishery society is organized to help the poor fisherman community who are economically backward scheduled caste people for their socio-economic development. Scheduled caste and backward communities are direct beneficiaries of fishery sector. And is taking place as most remunerative commercial venture for all unemployed irrespective of caste and creed. Fishery sector has a higher growth rate than other agricultural and allied sectors and could play a pivotal role in the socio-economic

development and employment generation in the state. The Apex body, FISHFED has been responsibility to take up steps for coordinated development of primary fishery co-operative societies including production, marketing, processing of fish and provide technical guidance etc. Presently there are more than 450 Nos. of primary fishery Co-operatives in the State. FISHFED is one of the running businesses of fresh fish marketing in hygienic manners and for this purpose FISHFED has acquired four refrigerated vans. These vehicles are engaged in fresh fish marketing in different parts of Guwahati City. The State Government has sanctioned an amount of Rs.25.00 lakh as financial assistance to FISHFED during the year 2016-17.

The Board of Directors (BOD) of the FISHFED has decided to take up the business of imported sea fishes and fresh fishes. For, this purpose FISHFED has already applied for import license and is negotiating with outside sources of India.

#### OTHER CO-OPERATIVES:

In addition to the above mentioned cooperative societies, there is a large number of cooperatives like poultry, piggery, Duckery, Goatery, Pisciculture, Cane and Bamboo Industries , Brick Industries , Transport and Communication, Rickshaw Puller, Bee Keeping , Blacksmith, Carpentry, Bell Metal Utensil Manufacturing , Tourism etc in the state. The Financial assistance to theses societies will go along way in enabling economically weaker section of the society to achieve their economic upliftment. The state Government provide financial assistance to such cooperatives societies from time to time.

#### INFRASTRUCTURE SUPPORT:

##### UNDER RURAL INFRASTRUCTURE DEVELOPMENT FUND(RIDF):

The state cooperative Department has initiated the boosting of Rural storage Infrastructure by construction of rural Godowns, in various (Gaon Panchayat Samabay Samiti) GPSS/Large Area Multipurpose Cooperative Societies (LAMPS)/ other Cooperative societies with the help of the National Bank for Agriculture and Rural development (NABARD) sponsored RIDF –XVIII scheme.

The Government has released mobilization advance for an amount of Rs.[(233.46 Lakh + 544.74 Lakh)]= Rs.778.20 Lakhs for construction of 244 Nos. of Rural Godowns under RIDF in the year 2015-16 and 2016-17 respectively . NABARD has sanctioned a sum of Rs.1710.80 lakhs and released the fund to the Government during the year 2016-17. Moreover, proposal for the amount of Rs.123.25 lakhs as state share for construction of 224 Nos. of Godowns by GPSS/LAMS has also been submitted to Government for sanction. As on 31 December 2016, out of 244 Godowns, construction of 88 Godowns have been completed and the remaining are in progress.

#### PERFORMANCE OF STATE LEVEL COOPERATIVE SOCIETIES:

The performance of some of the state level credit and Non credit Co-operative institutions is elaborated below:

##### ASSAM STATE COOPERATIVE APEX BANK LIMITED:

The Assam state Co-operative Apex Bank Limited is a pioneer Co-operative institution in channelizing credit for agricultural operation to boost up the development process of the rural economy as well as financing other urban business and industrial activities through Co-operative channel in the state. The bank, registered in the year 1948, has 68 branches in the state at present.

Generally, this Co-operative Bank lend agricultural loans to the farmers through primary Agricultural credit societies (PACS). Presently the Bank is implementing the package of short term Co-operative credit structure (STCCS). On receiving of revival assistance from the Government of Indian and the state Government, the financial position of the bank has been improved and has earned profit. The bank has earned net profits of Rs.774.59 lakhs during the year 2014-15. As per guideline of the R.B.I all the branches of the Apex Bank have been computerized and it has implemented core Banking solution. Like other Nationalized and commercial Banks the Apex Bank has also operated RTGS / NEFT. The Capital to Risk weighted Assets Ratio of the Bank has achieved 10.65% which can be taken as a good Condition of assets to be compared with other state cooperative Banks in the country. The management of the Bank is thinking of ATM to facilitate the customer as well as to compare with other Bank in the banking business. As per available information, the membership of the bank has increased from 78 thousand in 2010-11 to 92 thousand in 2015-16. The share capital has increased to 11.75 crore in 2015-16 from Rs.8.13 crore in 2010-11. The working Capital is also increased to Rs.1921.94 crore from Rs.1775.03 crore in 2010-11.

The Performance of the Assam state Co-operative Apex Bank during the last six years may be evident from the Table-15.2 below:

TABLE-15.2  
PERFORMANCE OF ASSAM STATE CO-OPERATIVE APEX BANK LTD.

Particulars	Units	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Bank Branches	No	68	67	67	68	67	68
Members	'000' NO	78	82	91	93	94	92
Paid up share Capital	Rs.Crore	8.13	8.84	9.13	9.74	10.84	11.75
Reserve	do	96.84	22.15	33.69	30.08	43.03	51.76
Deposits	do	1544.51	1559.47	1500.63	1950.92	1888.50	2039.81
Working Capital	do	1775.03	1777.40	1687.60	2032.21	2079.81	1921.94
Borrowing Outstanding	do	Nil	7.0	6.45	7.37	4.87	7.46
Investments	do	1144.95	1019.56	987.10	1268.28	1028.60	1079.15
Loan Advances	do	215.50	419.58	125.29	358.77	287.95	278.57
Loan outstanding	do	313.44	504.84	483.71	686.36	787.33	879.27
Loan Overdue	do	99.83	98.98	98.38	135.31	88.06	95.83

Source: Registrar of Co-operative Societies, Assam

#### ASSAM STATE COOPERATIVE AGRICULTURE AND RURAL DEVELOPMENT BANK LTD. (ASCARD):

The Assam State Cooperative Agriculture Rural Development Bank Ltd.(ASCARD) was registered during the year 1955-56. It is a land mortgage Bank. This Bank is not a Bank under the Banking Regulation Act but the Bank is regulated under the Assam Cooperative Land Mortgage Bank Act, 1960 and the Assam Cooperative Land Mortgage Bank Rules, 1961.

While the Cooperative Credit structure is mainly providing short term agriculture loans, the ASCARD bank was providing medium and long term agricultural loans. The ASCARD bank has 28 Nos. of Branches throughout the state with more than 47 thousand members. Formerly, the primary Land Mortgage Bank (PLMB) in the District level and later on the PLMB's were reformed as primary Agriculture Co-operative Bank which were finally merged with the ASCARD Bank Ltd.

At Present, these Primary Agricultural Co-operative Banks are functioning as Branches of the ASCARD Bank Ltd. Present financial position of the ASCARD Bank is precarious. Performance of the Bank is almost deplorable due to mismanagement. The Government has taken steps for revival of short term cooperative credit structure (STCCS) as per the recommendation of Vaidyanathan Committee Report –I (VCR-I). But the Government has yet to take proper steps for revival of Long Term Cooperative Credit Structure (LTCCS) as recommended by VCR-II. Yet the management of the ASCARD Bank with assistance from the Govt. has prepared a revival scheme by engaging the IIBM, Guwahati With a target amount of Rs.100.00 crore. In the light of the revival plan a development Action plan has been submitted before the Government for necessary approval.

As per available information, the working capital decreased from Rs.17.02 crore in 2010-11 to Rs.13.31 crore in 2015-16. The Deposits has increased to Rs.1.05 crore in 2015-16 from Rs. 0.30 crore in 2010-11. The loans and advances issued by Bank has shown improvement in the year 2015-16 and increased to 0.43 crore compared to 0.36 crore in 2014-15. The loan outstanding with the bank recorded continuous fall from Rs. 9.22 crore in 2010-11 to 8.42 crore in 2015-16.

The data containing important indicators of bank performance are presented in the table below:

TABLE-15.3  
PERFORMANCE OF A.S.C.A.R.D. BANK

Particulars	Unit	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Bank Branches	NO	28	28	28	28	28	28
Membership	No	30056	39106	44332	45886	46771	47610
Paid up Share Capital	Rs. Crore	6.36	6.33	6.33	6.36	6.36	6.37
Working Capital	do	17.02	16.41	13.22	13.07	12.41	13.31
Deposits	do	0.30	0.20	0.18	0.73	0.95	1.05
Loans and Advances	do	0.056	0.043	0.18	0.82	0.36	0.43
Loan outstanding	do	9.22	8.77	8.42	8.65	8.46	8.42

Source: Registrar of Co-operative Societies, Assam

#### URBAN COOPERATIVE BANK:

The state has at present of 25 numbers of functioning Urban Co-operative Banks (UCBS). Multiplicity of command, absence of clear –cut demarcation between the functions of state Government and RBI, led to operational difficulties in implementing regulatory and supervisory measures pertaining to UCBS. To sort out the difficulty, a Memorandum of understanding (MoU) between RBI and Government of Assam was signed in connection with regulatory control of RBI over UCBS during the year 2008 so that functioning of such banks can be improved and confidence of depositors can be restored.

As per available report, total membership of the functioning UCBS are more than 32 thousand in 2015-16. As against 29 thousand in 2012-13. The paid up share capital of UCBS has been increased to Rs. 13.18 Crore in 2015-16 from Rs. 7.36 Crore in 2014-15. The Working capital of the banks on the other hand increased to Rs. 723.69 Crore in 2015-16 from Rs. 513.98 Crore in 2010-11. The loans and advances issued by banks has also increased to Rs.259.87 Crore in 2015-16 from Rs.217.71 Crore during the previous

year. During the year 2015-16, loan overdue remains higher with Rs. 26.76 Crore compared to the previous year.

TABLE-15.4  
STATISTICS RELATED TO PERFORMANCE OF URBAN COOPERATIVE BANKS

Particulars	Unit	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Bank Branches	NO	22	23	23	24	25	25
Membership	'000' No.	28	29	29	31	30	32
Paid up Capital	Rs. In Crore	4.89	5.65	6.53	6.89	7.36	13.18
Working capital	do	513.98	574.16	595.15	616.00	687.97	723.69
Deposits	do	446.31	492.28	522.49	602.92	604.89	479.48
Loans advances	do	393.85	307.38	199.59	233.04	217.71	259.87
Loan Outstanding	do	179.85	223.98	239.45	239.10	236.24	257.24
Loan overdue	do	10.43	16.80	13.89	18.07	21.00	26.76

Source: Registrar of Co-operative Societies, Assam

#### STATE LEVEL NON-CREDIT COOPERATIVE SOCIETIES :

There are a few state level Non-credit cooperative societies functioning in the state. The performance of these societies are presented in the Table below:

Statistics Related to state level Non-Credit Cooperative societies in Assam.

Name of Societies	Year	No. of Societies	No. of Members	Rupees in Lakh		
				Paid up share Capital	Paid up working capital	Values of sales
Assam Cooperative Jute Mill Ltd.	2011-12	1	1816	333.02	1006.80	3169.18
	2012-13	1	1826	325.79	1119.86	3598.09
	2013-14	1	1825	325.79	1237.92	3811.42
	2014-15	1	659	323.93	929.34	4510.55
	2015-16	1	659	323.93	942.38	4244.15
FISHFED	2011-12	1	225	24.20	97163.00	20135.64
	2012-13	1	225	287.99	342.52	-
	2013-14	1	239	343.00	407.00	18.87
	2014-15	1	246	343.04	411.95	74.49
	2015-16	-	-	-	-	-
HOUSEFED	2011-12	1	418 Member Societies	1547.84	13152.31	85 Houses
	2012-13	1	418 Member societies	1647.00	14882.00	-
	2013-14	1	418 Member Societies	1663.55	15294.24	-
	2014-15	1	418	1653.21	15050.69	-
	2015-16	1	418	1642.51	-	-
Eastern Agro Processing & Tea Warehousing Cooperative Society Ltd.	2011-12	1	505	97.98	2187.02	2138.01
	2012-13	1	492	97.98	3071.45	2128.09
	2013-14	1	493	97.98	1889.00	1655.00
	2014-15	1	504	98.08	1850.00	1611.00
	2015-16	1	503	98.13	2107.00	1384.00
Assam Polyester Cooperative Society Ltd.	2011-12	1	-	1628.11	171.01	1710.10
	2012-13	1	4618	1628.05	248.36	1886.89
	2013-14	26 Societies	4618	1628.00	89.80	1885.24
	2014-15	37	4589	1648.05	(-)175.78	1135.34
	2015-16	37	4579	1648.12	(-)395.63	1655.26

Source: Registrar of Co-operative Societies, Assam

**SITAJAKHALA DUGDHA UTPADAK SAMABAI SAMITTEE LTD. (SJDUSS):**

Sitajakhala Dugdha Utpadak Samabai Samittee Ltd. (SJDUSS) came into inception the year 1958 and registered under Societies Act Vide No.67/58-59 at Amlighat Jagirod. It is one of the oldest diary Cooperative Societies of Assam. In terms of performance, it is the most successful dairy Cooperative Society in North-East. This Society which started with 15 nos. of pourer members is now proudly supported by 550 members with active participation from all groups / castes including women. The present membership composition is 10 % Women, 10% SC, 8% ST, 25% OBC and 47% others. The Society provides self employment to about 1800 families spread across Kamrup, Nagaon and Morigaon Districts covering the dairy clusters of Amlighat, Jagirod, Nellie, Topatoli, Bhurakuchi, Kahikuchi, Dhorbum, Khetri etc. At present the Society has been procuring 8000-10000 litres of milk per day with an annual turn over of Rs.11.8 Crores.

However, the total milk production is to the tune of 10000 to 120000 litres per day. This untapped potential of milk is due to the lack of dairy infrastructure in the region. In recognition of its significant achievement it was conferred with the 'NCDC Award' in the year 2006.

In spite of all these achievements, its marketing is mostly traditional. It has been selling milk to private, Government and Cooperative dairies apart from selling to hotels/ restaurants and local traders. Besides these, the samittee has been playing an active role in welfare of the society. They have played the key role in establishment of Jagirod College and Sita Jakhola High School. They have also contributed substantially in establishment and running of few primary and secondary schools.

SJDUSS Ltd. has been providing financial assistance to the poor and talented students from the locality. They have also been organizing various cultural programme, sports events and seminar-cum-training programmers in the field of Animal Husbandry and Dairy Development in association with the Government of Assam.

**NEW INITIATIVES TAKEN BY THE DEPARTMENT:**

The Cooperation Department of Assam has proposed a scheme for awarding the best performing cooperative societies for excellence and cooperative performance. This scheme may be called "Awards for the best performing cooperative societies."

The aim of the scheme is to motivate and to offer incentive to the cooperative societies operating at different levels for encouraging excellence in business performance focused on employment generation.

The objective of the scheme is to select three (3) best performing cooperative societies every year in an open and transparent manner on the basis of objective criteria in six (6) categories, namely (1) Primary Agriculture credit societies (PACS), (2) Women Cooperatives (3) Dairy Cooperatives, (4) Consumer's Cooperative (5) Cooperative Banks and (6) All other cooperatives. The selected best performing cooperative societies are proposed to be awarded with cash prizes in the ceremonial functions held on Republic day in the concerned District and Sub-Divisions of the Societies.

The amounts of the cash awards shall be determined every year with the approval of the Government to the cooperation Department and in accordance with the available budget provision for the purpose. The available Budget provision for the current year 2016-17 being Rs.1 crore.

The Registrar of the Cooperative Societies shall be the implementation authority for the scheme.



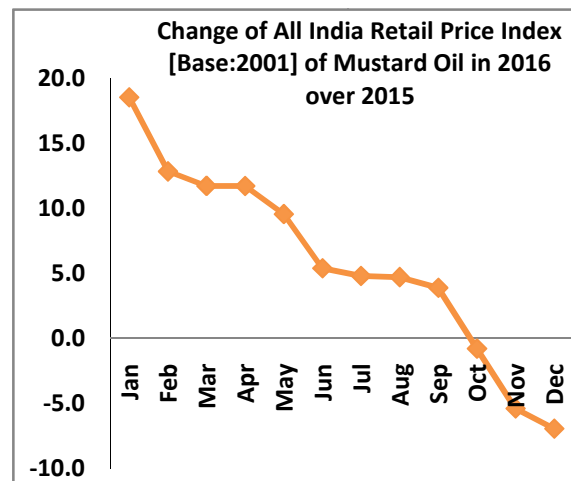
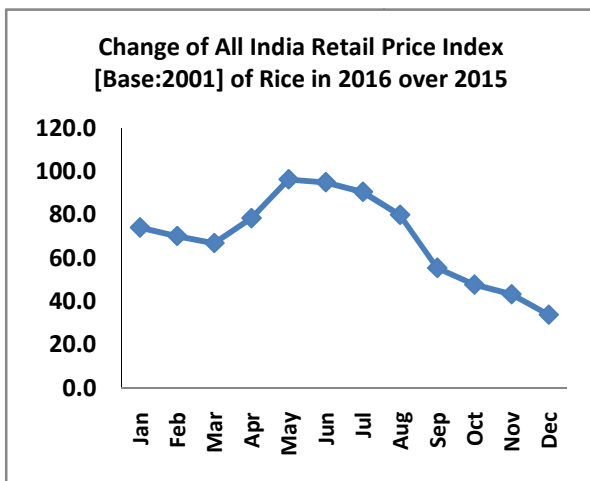
CHAPTER – XVI

PRICES AND PUBLIC DISTRIBUTION SYSEM

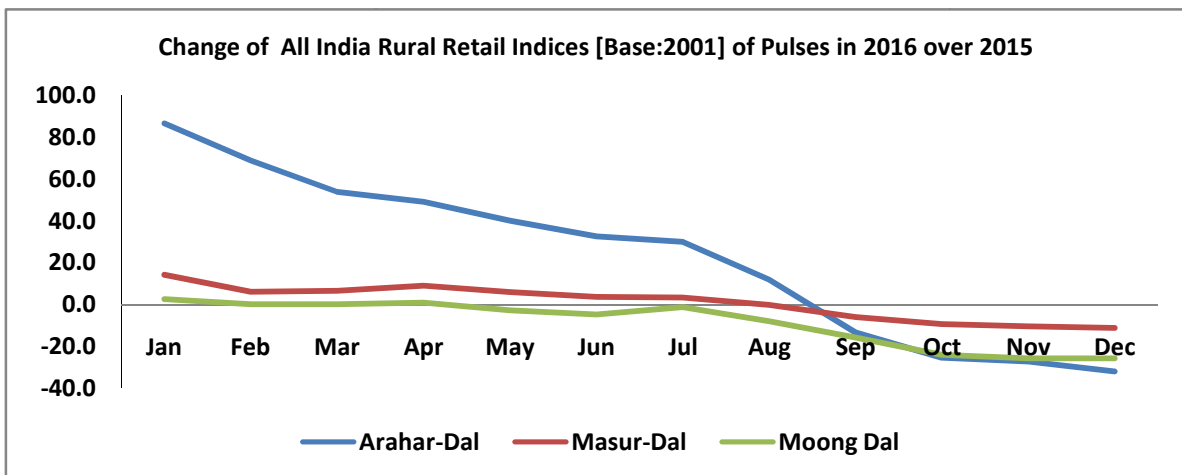
The economic activities as well as the purchasing power of the people of a country are greatly influenced by the changes in commodity prices. Rising prices leads to increase in income inequality and also affects the fixed income groups of a country. It is crucial to have a continuous watch on the price behavior to regulate economic policies. The State of Assam in particular and the Country as a whole is experiencing price rise in varying degree in the last few years. The country is going through high inflation, at times hovering around the double digit forcing the Government to take various controlling measures. Inflation is measured by taking into account of the Wholesale Price Index (WPI) based on the prices in wholesale markets and the Consumer Price Index (CPI) based on the prices the consumer purchases from the retail trade market.

PRICE SITUATION IN THE COUNTRY:

The graph given below shows the change of prices of some essential commodities during 2016 in the country. It is seen that of the cereals, price of rice was on a decreasing trend during the first five months of 2016 and thereafter went on a decreasing trend. The price of mustard oil started with a high increase but gradually went on a decreasing trend ending with a sharp fall during the last three months of 2016.

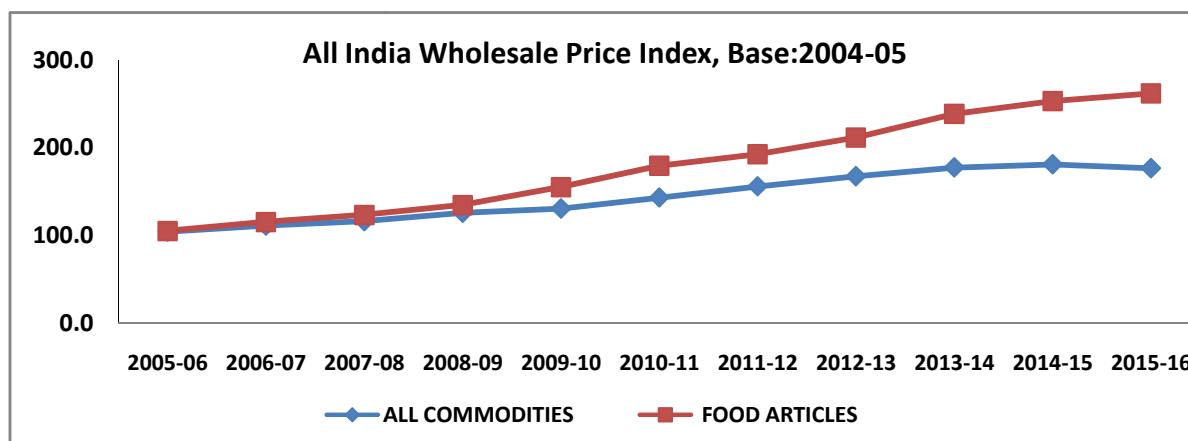


The rise of prices of pulses showed a decreasing trend during the year. It is seen that the price of Arhar was on the higher side up to August 2016 and thereafter the index abruptly slid down ending at (-) 32 percent during the month of December, 2016.

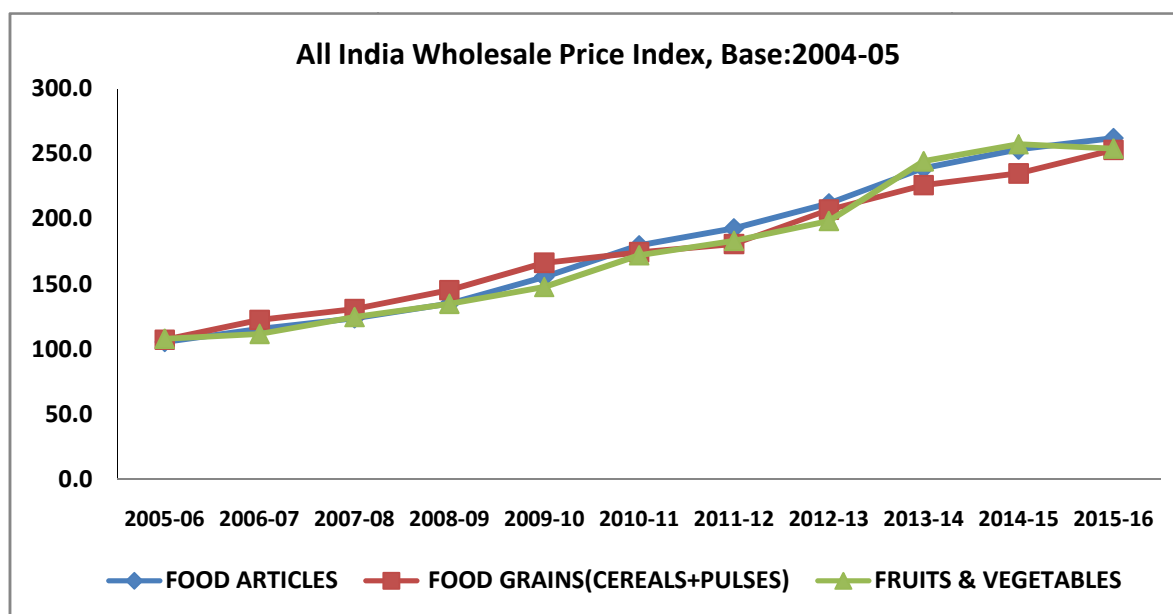


### WHOLESALE PRICE INDEX (WPI):

The All India WPI for all commodities (Base: 2004-05) during 2015-16 was 176.7, showing a decrease of 2.5 percent over 181.2 in 2014-15 against an increase of 2.0 percent in 2014-15 over 2013-14. The WPI for food articles was 262.1 percent in 2015-16, an increase of 3.4 percent over 253.4 in 2014-15 as against an increase of 6.1 percent in 2014-15 over the previous year.



WPI for cereals during 2015-16 was 235.2, an increase of 0.7 percent over 2014-15 as against an increase of 3.6 percent in 2014-15 over the previous year. During 2015-16, the WPI on pulses was 336.7, showing a steep increase of 39.5 percent over 2014-15 against an increase of 5.9 percent during 2014-15 over the previous year. The Wholesale Price Index on vegetables depicted a decline of 2.9 percent during 2015-16 over 2014-15 against a decline of 6.06 percent during 2014-15 over 2013-14. The following graphs depict the trend of Wholesale Price Index of food grains and fruits and vegetables from 2005-06 to 2015-16.

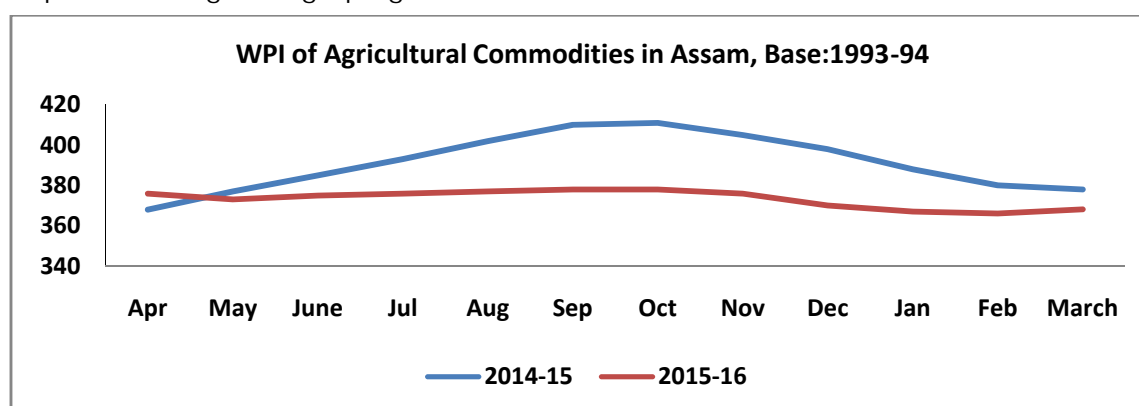


The Directorate of Economics and Statistics, Assam compiles the Wholesale Price Index of Agricultural Commodities with base 1993-94=100 in Assam. The WPI of agricultural commodities during 2015-16 was 373 as compared to 391 in 2014-15 showing a decrease of 4.6 percent against an increase of 16.4 percent in 2014-15 over the previous year. The table 16.1 depicts the Index from 2005-06 to 2015-16 and the percentage change of prices over the previous year.

Year	Index	Price Change over the year (in percentage)
2005-06	176	3.53
2006-07	185	5.11
2007-08	204	10.27
2008-09	221	8.33
2009-10	249	12.67
2010-11	272	9.24
2011-12	287	5.51
2012-13	296	3.14
2013-14	336	13.51
2014-15	391	16.37
2015-16	373	(-)4.60

Source: Directorate of Economics and Statistics, Assam.

The month to month trend of Wholesale Price Index of agricultural commodities in Assam is depicted through the graph given below:



#### CONSUMER PRICE INDEX (CPI):

The analysis of different Consumer Price Indices is presented in the paragraphs given below.

#### CONSUMER PRICE INDEX NUMBER (GENERAL) FOR RURAL, URBAN AND COMBINED:

The Central Statistics Office (CSO), Ministry of Statistics and Programme Implementation publish Consumer Price Indices (CPI) on base 2010=100 for all-India and States/UTs separately for rural, urban and combined with effect from January, 2011. The base period has been changed to 2012 and accordingly Indices on the new base is being published for the year 2013 and onwards.

The annual average Consumer Price (General) Index on Base: 2012=100 of Assam for Rural, Urban and Combined in 2015 is calculated at 122.8, 121.1 and 122.4 against the National average of 124.3, 121.7 and 123.1 respectively. The increase in General Index for Rural, Urban and Combined in Assam during 2015 over 2014 is 4.42 percent, 3.15 percent and 4.17 percent respectively against an increase of 7.59 percent, 8.30 percent and 7.70 percent in 2014 respectively over the previous year. The table below shows the month wise Consumer Price Index (General) for rural, urban and combined in Assam.

TABLE – 16.2  
CONSUMER PRICE INDEX (GENERAL) FOR RURAL, URBAN AND COMBINED IN  
ASSAM

(Base 2012=100)

Month	Rural	Urban	Combined	Rural	Urban	Combined
	2015			2016		
January	117.3	117.8	117.4	128.1	124.2	126.3
February	118.4	117.2	118.2	127.9	123.8	126.0
March	118.6	118.0	118.5	128.0	123.8	126.0
April	120.0	118.5	119.7	129.0	125.3	127.3
May	121.8	119.2	121.3	130.3	126.6	128.6
June	123.1	119.9	122.4	131.9	128.1	130.1
July	123.2	121.4	122.8	133.0	129.0	131.1
August	124.4	122.7	124.0	133.5	128.4	131.1
September	126.1	124.4	125.7	133.4	128.0	130.9
October	127.1	125.0	126.7	133.8	128.6	131.4
November	127.2	125.1	126.8	133.6	128.5	131.2
December	126.2	123.7	125.7	-	-	-
Annual average	122.8	121.1	122.4	-	-	-

Source: Central Statistics Office, MOSPI, Govt. of India.

## CONSUMER PRICE INDEX FOR WORKING CLASS POPULATION:

The Consumer Price index number with base 2001=100 for working class population for the State is compiled by the Directorate of Economics and Statistics, Assam taking into account the weighted average of the indices of the three centres viz. Guwahati, Silchar and Tinsukia. The annual average of Consumer price Index for Working Class Population (Base 2001=100) in Assam increased by 9.42 percent in 2015 over 2014 as compared to 13.20 percent in 2014 over 2013. During 2015, the Centre-wise increase is comparatively high in Tinsukia (13.15%) followed by Silchar (4.12%) and Guwahati (11.68%).

TABLE – 16.3

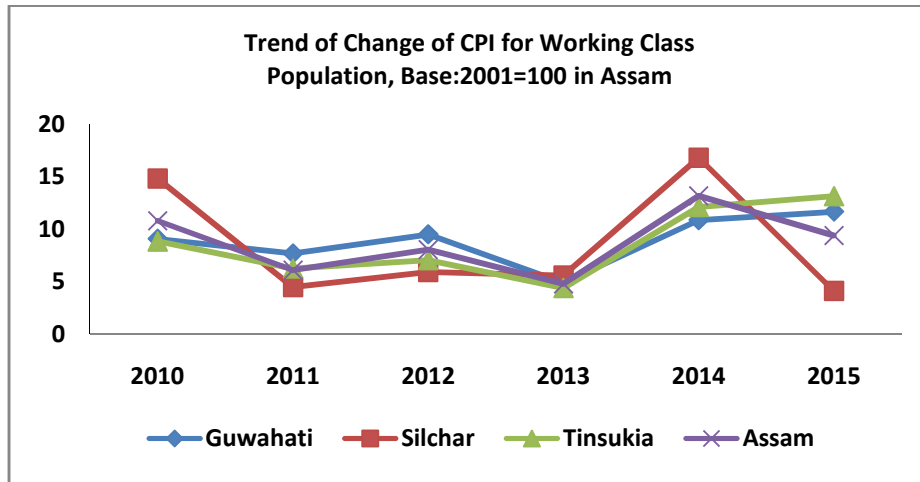
CONSUMER PRICE INDEX NUMBER FOR WORKING CLASS POPULATION IN ASSAM  
(Base: 2001=100)

Year	Guwahati	Silchar	Tinsukia	Assam
2008	128 (6.67)	143 (10.00)	133 (6.40)	134 (7.20)
2009	143 (11.72)	155 (8.39)	147 (10.53)	148 (10.45)
2010	156 (9.09)	178 (14.84)	160 (8.84)	164 (10.81)
2011	168 (7.69)	186 (4.49)	170 (6.25)	174 (6.10)
2012	184 (9.52)	197 (5.91)	182 (7.06)	188 (8.05)
2013	193 (4.89)	208 (5.58)	190 (4.40)	197 (4.79)
2014	214 (10.88)	243 (16.83)	213 (12.11)	223 (13.20)
2015	239 (11.68)	253 (4.12)	241 (13.15)	244 (9.42)

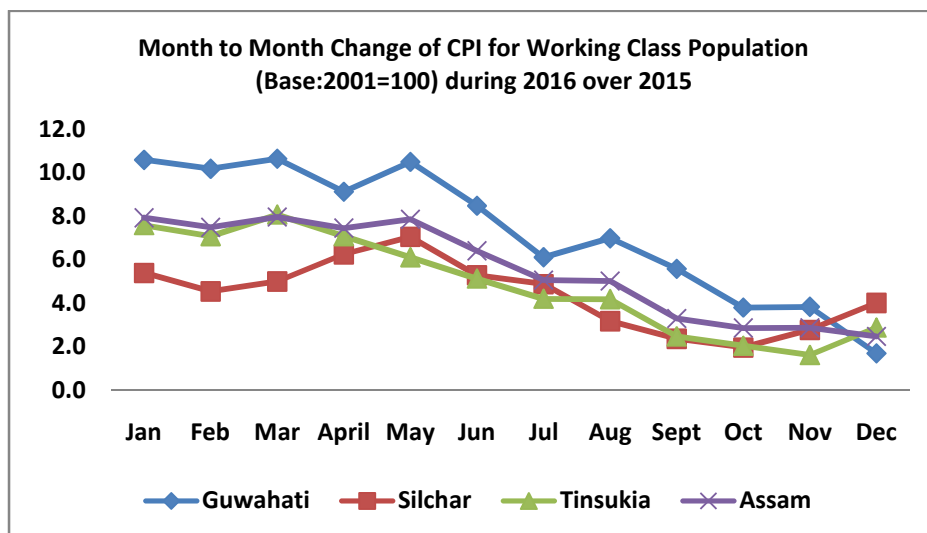
(Figures in bracket indicate the percentage change over the previous year)

Source: Directorate of Economics and Statistics, Assam

The figure depicts the trend of consumer price index for working class population for the centres Guwahati, Silchar, Tinsukia and the State as a whole of Base: 2001=100 from 2010 to 2015.



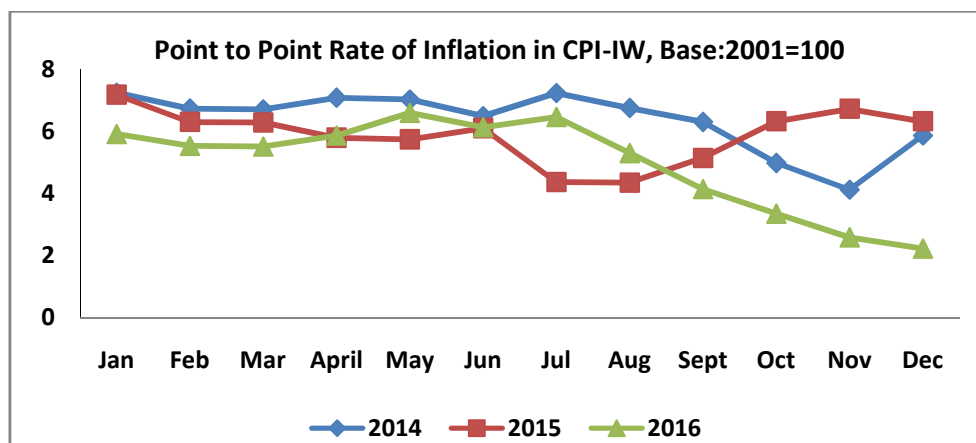
The graph given below depicts month to month change of consumer price index (Base:2001=100) for working class population in various centres of the State during 2016 over 2015.



**CONSUMER PRICE INDEX FOR INDUSTRIAL WORKERS (CPI-IW):**

CPI-IW is mainly used for the determination of Dearness Allowance (DA) and Variable Dearness Allowance (VDA) being paid to millions of public sector employees besides fixation and revision of minimum wages in scheduled private sector employees respectively. The CPI-IW is calculated based on the retail prices of essential commodities and services in industrially developed 78 selected centres in the country. In Assam, the Consumer Price Index for Industrial Workers with Base 2001=100 is constructed and compiled by taking weighted average of the indices for the five centres, namely Guwahati, Doomdooma (Tinsukia), Labac (Silchar), Morioni (Jorhat) and Rangapara (Tezpur).

The All-India Consumer Price Index (IW) with base: 2001 during 2015 is 268 compared to 247 in 2014 and 232 in 2013. The graph below depicts point to point rate of inflation in CPI-IW (Base: 2001=100) at all-India level.



During the year 2015, the CPI for Industrial Workers in Assam increased by 9.1 percent as against 8.5 percent at all India level over 2014. This increase during 2014 over the previous year in the State was 11.11 percent as against 6.47 percent at all India level. The rate of increase of the Index in different centres in 2015 over the previous year was recorded highest in Doomdooma (13.15%) followed by Guwahati (11.68%), Mariani (9.68%), Rangapara (8.45%), and Labac (4.12%).

The annual average Consumer Price Index for Industrial Workers from 2006 to 2015 is given in the table 16.4.

TABLE – 16.4  
CONSUMER PRICE INDEX NUMBER FOR  
INDUSTRIAL WORKERS IN ASSAM AND INDIA

(Base 2001=100)

Year	Guwahati	Morioni	Doomdooma	Labac	Rangapara	Assam	All India
2006	115	116	116	121	114	116	123
2007	120	127	125	130	126	125	131
2008	128	133	133	143	131	133	142
2009	143	147	147	155	144	147	157
2010	156	158	160	178	154	161	176
2011	168	171	170	186	163	174	192
2012	184	185	182	197	171	184	209
2013	198	195	196	216	186	198	232
2014	214	217	213	243	213	220	247
2015	239	238	241	253	231	240	268

Source: Directorate of Economics and Statistics, Assam and Labour Bureau, Govt. of India.

#### CONSUMER PRICE INDEX FOR AGRICULTURAL LABOUR (CPI-AL) AND RURAL LABOUR (CPI-RL):

The Consumer Price Index number for Agricultural and Rural Labour with base 1986-87 is compiled by the Labour Bureau, Government of India. During 2015, the annual average CPI-AL in Assam was 796 as against 776 in 2014, showing an increase of 2.58 percent against 9.6 percent increase during 2014 over 2013 in the General category. The CPI-AL (Food) during 2015 was 780 with an increase of 1.3 percent over 770 in 2014. The increase CPI-AL (Food) during 2014 was 9.1 over the previous year.

The Consumer Price Index number (General) for Rural Labourers during the agricultural year, 2015 was 804 showing an increase of 2.8 percent over 782 in 2014 and CPI-RL (Food) during 2015 was 794 showing an increase of 1.7 percent over 781 in 2014.

#### CONSUMER PRICE INDEX FOR RURAL POPULATION IN ASSAM:

The Consumer Price Index number for Rural Population in Assam (Plain Districts) with base 1999-2000 during 2015-16 was calculated at 318 showing an increase of 6.7 percent over 298 in 2014-15 compared to 11.19 percent increase during 2014-15 over the previous year.

#### PUBLIC DISTRIBUTION SYSTEM:

Public Distribution System is a major instrument of the Government's economic policy for ensuring availability of food grains at affordable prices as well as to provide food security to the poor. It is an important component for poverty eradication and is intended to serve the poor who are nutritionally at risk. Public Distribution System with a network of about 5.07 lakh fair price shop in the country is perhaps the largest distribution system of its type in the world.

Public Distribution System is operated under the joint responsibility of the Central and the State governments. The Central Government has taken the responsibility for procurement, storage, transportation and bulk allocation of food grains etc. The responsibility of distribution food articles to the consumers through the network of fair price shop rests with the State governments. In Assam, the Food and Civil Supplies Department looks after the allocation and distribution of food grains, identification of families below poverty line, issue of ration cards and supervision and monitoring of stock position and distribution of food articles etc. by the fair price shops. The department is also entrusted with the responsibility of procurement of paddy and rice under 'Minimum Support Price' scheme under the 'The Food Management Policy' of the Ministry of Food and Public Distribution of Govt. of India to ensure remunerative price to the producers for their agricultural produce and to provide the procured food grains to the consumers fairly at reasonable and affordable price.

#### NATIONAL FOOD SECURITY ACT 2013 (NFSA'13):

The Government of Assam has implemented the NFSA'13 in the state from December 2015. Under NFSA, 2.52 crore people covering 84.17 percent of rural areas and 60.35 percent of urban areas of the state are being covered for distribution of food grains at highly subsidized rate. The AAY beneficiaries of the previous TPDS have been included as AAY categories of beneficiaries under NFSA'13. The eligible families from the earlier BPL, APL, Mukhya Mantrir Anna Suraksha Yojana (MMASY) card holders have been included as Priority Household families under NFSA'13. The selected AAY families are getting 35 kg of rice per Ration Card per month while the selected Priority Household families are getting 5 kg of rice per member of the family per month.

#### AAMAR DUKAN:

At present 5623 numbers of AAMAR DUKAN shops are functioning in the State that provides 23 essential commodities at much lesser price than the printed MRP. Out of the 23 items, 22 are non-PDS items and one is PDS item i.e. iodized salt. Govt. has provided financial assistance to the tune of Rs.66,225.00 to the "AAMAR DUKAN" holder for development of infrastructure.

**CREATION OF ASSAM FOOD AND CIVIL SUPPLIES CORPORATION LTD.:**

To streamline the Public Distribution System, effective computerization of PDS network, conduct of effective procurement of paddy and restoration of the distribution sugar under PDS, the State Govt. has created the "Assam Food and Civil Supplies Corporation Ltd." Under Company Act, 2013. The company has been registered with the Registrar of Co-operative Societies and has started functioning.

**CONSUMER COURTS:**

Under the provisions of Consumer Protection Act 1986, the Food and Civil Supplies Department being the State Nodal Centre has one State level Consumer Redressal Forum at Guwahati and 23 District level Consumer Redressal Forums.

To create consumer awareness among the masses, the department has undertaken various activities such as advertisements through the print and electronic media, distribution of pamphlets, leaflets, organizing painting and essay competition among children and observance of National Consumers Day on 24<sup>th</sup> December and World Consumer Day on 15<sup>th</sup> March.

Under Confonet scheme, internet connectivity to the 23 District Consumer Fora and State Level Consumer Forum has been provided for easy access of case tests, judgements and to know the status of the cases.

**TPDS COMPUTERISATION:**

Data of all the selected beneficiaries and GPSS/ Fair Price Shop have been digitized as a part of end to end computerization of supply chain management under NFSA, 2013. Internet connectivity is being provided up to GPSS level as part of Component-1 of the end to end computerization of TPDS. The State Transparency Portal [www.fcs.assam.gov.in](http://www.fcs.assam.gov.in) has been developed for the purpose.

**ONLINE GRIEVANCE REDRESSAL SYSTEM:**

For redressing the grievances of common consumers, online Grievance Redressal System headed by an Additional Deputy Commissioner in each district of the State is being set up for speedy redressal of the grievances of the public.

**MEASURES TAKEN UP TO CHECK PRICE RISE OF ESSENTIAL COMMODITIES:**

The State Administration along with District and Sub-Division holds regular meetings with trading community and also holds monthly coordination meetings with the FCI, Railways, IOC, trade and public bodies to have information on availability of stock and price. The price of essential commodities is monitored on daily basis by reviewing the daily price bulletins. Steps are also taken to ensure home delivery of LPG cylinders and to reduce the margin of Wholesale and the retail prices of commodities by monitoring the prices of essential commodities collected from the major Indian Cities. To check price rise Vigilance and Monitoring Committees has been constituted at the District, Sub-Divisions and District Council level.

\*\*\*\*



## APPENDIX – 16.1

CONSUMER PRICE INDEX NUMBER FOR WORKING CLASS POPULATION IN  
ASSAM  
(Base 1982 = 100)

Sl. No.	Period	Guwahati	Silchar	Tinsukia	Assam
1	2	3	4	5	6
1	1992 Annual Average	235	217	216	224
2	1993 Annual Average	252	233	233	241
3	1994 Annual Average	280	251	255	264
4	1995 Annual Average	312	274	281	291
5	2000 Annual Average	460	370	389	412
6	2001 Annual Average	471	372	384	415
7	2002 Annual Average	480	374	398	424
8	2003 Annual Average	496	383	416	439
9	2004 Annual Average	516	411	430	459
10	2005 Annual Average	531	415	450	473
11	2006 Annual Average	551	442	470	495
12	2007 Annual Average	575	476	504	525
13	2008 Annual Average	615	521	536	554
14	2009 Annual Average	684	565	592	621
15	2010 Annual Average	748	648	644	686
16	2011 Annual Average	808	678	687	732
17	2012 Annual Average	883	719	735	789
18	2013 Annual Average	952	789	791	854
19	2014 Annual Average	1025	886	861	932
20	2015 Annual Average	1084	900	948	989
21	2016 January	1152	927	974	1032
22	2016 February	1142	923	978	1028
23	2016 March	1147	920	974	1028
24	2016 April	1147	931	978	1032
25	2016 May	1162	942	982	1042
26	2016 June	1166	945	994	1049
27	2016 July	1166	942	1002	1051
28	2016 August	1176	949	1006	1058

## APPENDIX – 16.2

CONSUMER PRICE INDEX NUMBER FOR WORKING CLASS POPULATION IN  
ASSAM

(Base 2001 = 100)

Sl. No.	Period	Guwahati	Silchar	Tinsukia	Assam
1	2	3	4	5	6
1	2008 Annual Average	128	143	133	134
2	2009 Annual Average	143	155	147	148
3	2010 Annual Average	156	178	160	164
4	2011 Annual Average	168	186	170	174
5	2012 Annual Average	184	197	182	188
6	2013 Annual Average	193	208	190	197
7	2014 Annual Average	214	243	213	223
8	2015 Annual Average	239	253	241	244
9	2016 January	240	254	241	245
10	2016 February	238	253	242	244
11	2016 March	239	252	241	244
12	2016 April	239	255	242	245
13	2016 May	242	258	243	247
14	2016 June	243	259	246	249
15	2016 July	243	258	248	249
16	2016 August	245	260	249	251

Source : Directorate of Economics and Statistics, Assam

## APPENDIX – 16.3

## CONSUMER PRICE INDEX NUMBER FOR INDUSTRIAL WORKERS IN ASSAM AND INDIA

Sl. No.	Period	Base 1982 = 100						
		Guwahati	Doom-Dooma	Labac	Rangapara	Mariani	Assam	All India
1	2	3	4	5	6	7	8	9
1	1991 Annual Average	208	195	193	209	205	203	212
2	1995 Annual Average	312	281	274	295	296	293	306
3	2000 Annual Average	460	389	370	408	418	412	441
4	2005 Annual Average	531	450	415	439	449	461	536
5	2006 Annual Average	551	470	442	476	464	485	569
6	2007 Annual Average	575	504	476	526	509	522	605
7	2008 Annual Average	615	536	521	548	532	554	656
8	2009 Annual Average	684	592	565	600	591	611	727
9	2010, Annual Average	748	644	648	643	635	667	815
10	2011, Annual Average	808	687	678	678	685	732	887
11	2012, Annual Average	884	735	719	715	740	764	969
12	2013, Annual Average	950	789	786	774	781	822	1071
13	2014, Annual Average	1025	861	886	890	871	783	1143
14	2015, Annual Average	1157	986	935	985	964	989	1265
15	2016 January	1152	974	927	967	950	805	1245
16	2015 February	1142	978	923	963	954	1000	1236
17	2015 March	1147	974	920	963	954	1001	1241
18	2015 April	1147	978	931	992	962	1010	1255
19	2015 May	1162	982	942	992	966	1017	1273
20	2015 June	1166	994	945	997	970	1021	1283
21	2015 July	1166	1002	942	1001	970	1024	1296
22	2015 August	1176	1006	949	1005	982	1032	1287

Source : Directorate of Economics and Statistics, Assam

## APPENDIX-16.4

## CONSUMER PRICE INDEX NUMBER FOR INDUSTRIAL WORKERS IN ASSAM AND INDIA

Sl. No.	Period	Base 2001 = 100						
		Guwahati	Doom-Dooma	Labac	Ranga-para	Mariani	Assam	All India
1	2	3	4	5	6	7	8	9
1.	2007 Annual Average	120	125	130	126	127	125	131
2.	2008 Annual Average	128	133	143	131	133	133	142
3.	2009 Annual Average	143	147	155	144	147	147	157
4.	2010 Annual Average	156	160	178	154	158	161	176
5.	2011 Annual Average	168	170	186	163	171	174	192
6.	2012 Annual Average	184	182	197	171	185	184	209
7.	2013 Annual Average	198	196	216	186	195	198	232
8.	2014 Annual Average	214	213	243	213	217	220	247
9.	2015 Annual Average	239	241	253	231	238	240	268
10.	2016 January	240	241	254	232	237	241	269
11.	2016 February	238	242	253	231	238	240	267
12.	2016 March	239	241	252	231	238	240	268
13.	2016 April	239	242	255	238	240	243	271
14.	2016 May	242	243	258	238	241	244	275
15.	2016 June	243	246	259	239	242	246	277
16.	2016 July	243	248	258	240	242	246	280
17.	2016 August	245	249	260	241	245	248	278

Source : Directorate of Economics and Statistics, Assam.

## APPENDIX – 16.5

CONSUMER PRICE INDEX NUMBER FOR RURAL POPULATION IN ASSAM  
(Plain Districts)

Sl. No.	Period	Consumer Price Index Number (Base 1944=100)
1	2	3
1.	1991 Annual Average	1735
2.	1992 Annual Average	1962
3.	1993 Annual Average	2112
4.	1994 Annual Average	2309
5.	1995 Annual Average	2505
6.	1996 Annual Average	2709
7.	1997 Annual Average	2748
8.	1998 Annual Average	3046
9.	1999 Annual Average	3278

Sl. No.	Period	Consumer Price Index Number (New Base 1999-2000=100)
1	2	3
1.	2000-01 Annual Average	104
2.	2008-09 Annual Average	177
3.	2009-10 Annual Average	194
4.	2010-11 Annual Average	205
5.	2011-12 Annual Average	220
6.	2012-13 Annual Average	243
7.	2013-14 Annual average	268
8.	2014-15 Annual average	298
2014-15		
1.	April	283
2.	May	287
3.	June	291
4.	July	296
5.	August	300
6.	September	303
7.	October	303
8.	November	302
9.	December	298
10.	January	301
11.	February	302
12.	March	304

Source: Directorate of Economics and Statistics, Assam

## APPENDIX -16.6

CONSUMER PRICE INDEX NUMBER FOR AGRICULTURAL AND RURAL  
LABOURERS

(Base 1986-87=100)

MONTH / YEAR	AGRICULTURAL LABOURERS		RURAL LABOURERS	
	General	Food	General	Food
2011 Annual average	600	602	603	609
2012 Annual average	654	653	657	661
2013 Annual average	708	706	713	716
2014 Annual average	776	770	782	781
2015 Annual Average	796	780	804	794
January 2016	804	784	813	800
February 2016	796	771	805	787
March 2016	785	756	795	774
April 2016	785	756	796	775
May 2016	795	768	807	788
June 2016	801	776	813	797

\* \* \* \* \*

## CHAPTER – XVII

## LABOUR, EMPLOYMENT AND WAGES

The objective of economic policy planning in India is to achieve high rates of growth of economy and sustained improvement in the standards of living of people. To achieve the objective, it is essential to absorb the growing labour force to generate productive and gainful employment, on a sufficient scale.

The State Government besides implementing various national employment programmes has initiated various programmes to lessen the burden of unemployment by creating and utilizing the potential employment avenues available in the state. The population censuses, different quinquennial rounds of National sample Survey on employment data, Employment and Unemployment Surveys conducted by the Labour Bureau and Economic Census provides data on employment structure and workforce as well as involvement of human resources in economic activity, employment etc. On the other hand, the data available from the Employment Exchanges does not give a clear picture on unemployment as a large number of unemployed people either did not register their names with Employment Exchanges or those who secure employment through other channels do not delete their names from the records of Employment Exchanges.

## EMPLOYMENT SCENARIO:

The Census of India defines all persons engaged in 'work' as participation in any economically productive activity with or without compensation, wages or profits are workers. The year preceding the date of enumeration is taken as the reference period for determining a person as worker or non-worker. The Census of India collects information on economic activity of an individual and classifies workers into two groups namely, Main workers who had worked for the major part of the reference period i.e. 6 months or more and Marginal workers who had worked less than six months. The table below shows the trend of Main workers, Marginal workers and Non-workers in Assam as per the last three censuses.

TABLE 17.1  
DISTRIBUTION OF TOTAL WORKERS, MAIN WORKERS,  
MARGINAL WORKERS AND NON-WORKERS IN ASSAM

Year	Population	Total Workers	Main Workers				Marginal Workers	Non-Workers	
			Total	Cultivators	Agricultural Labours	Household Industry Workers			Other Workers
1991	22414322	8088935	6992056	3559117	844964	61455	2526520	1096879	14325387
2001	26655528	9538591	7114097	2680092	636351	178082	3619572	2424494	17116937
2011	31205576	11969690	8687123	3138554	903294	242071	4403204	3282567	19235886

The Fig.1 shows that proportion of main workers to total population in Assam has decreased from 31 percent in 1991 to 28 percent in 2011 although the figures in absolute number has increased by 24 percent between the period 1991 to 2011. On the other hand, the proportion of marginal workers shows an increasing trend both in percentage share and absolute number during the period. The proportion of non-workers to total population although remained more or less at the same level (about 64 percent) in 1991 and 2001, it showed a slight decline in 2011.

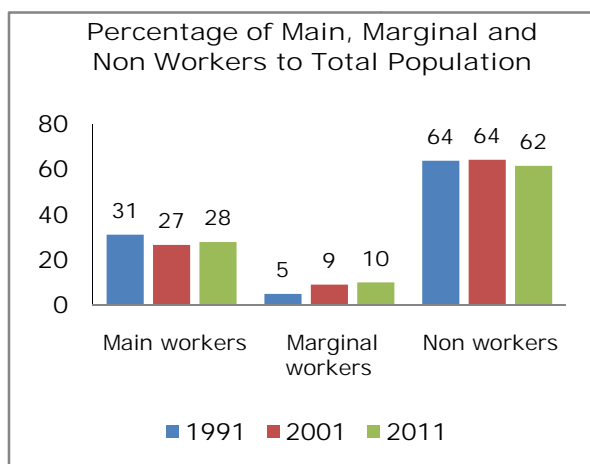


Fig. I

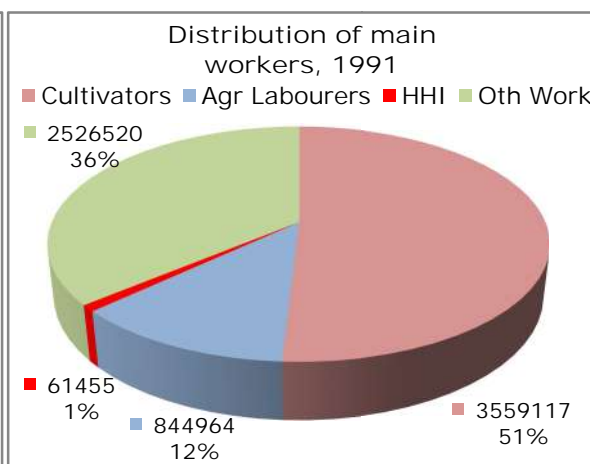


Fig. II

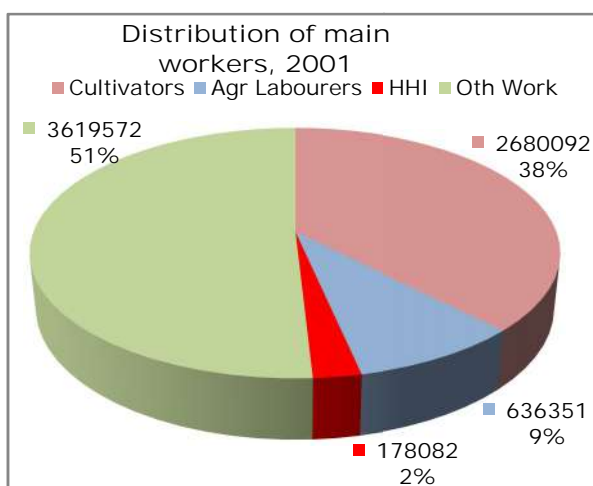


Fig.III

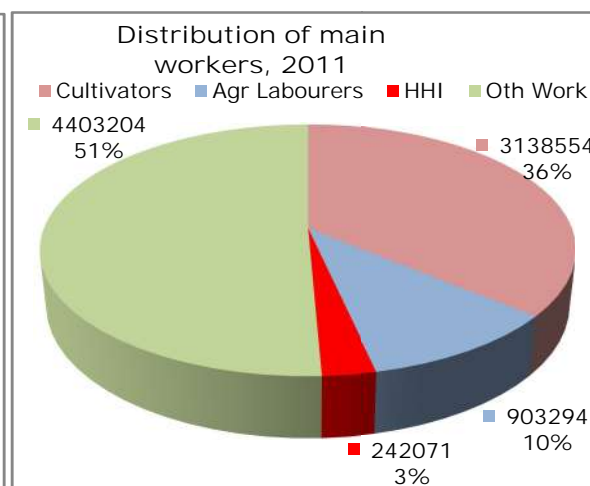
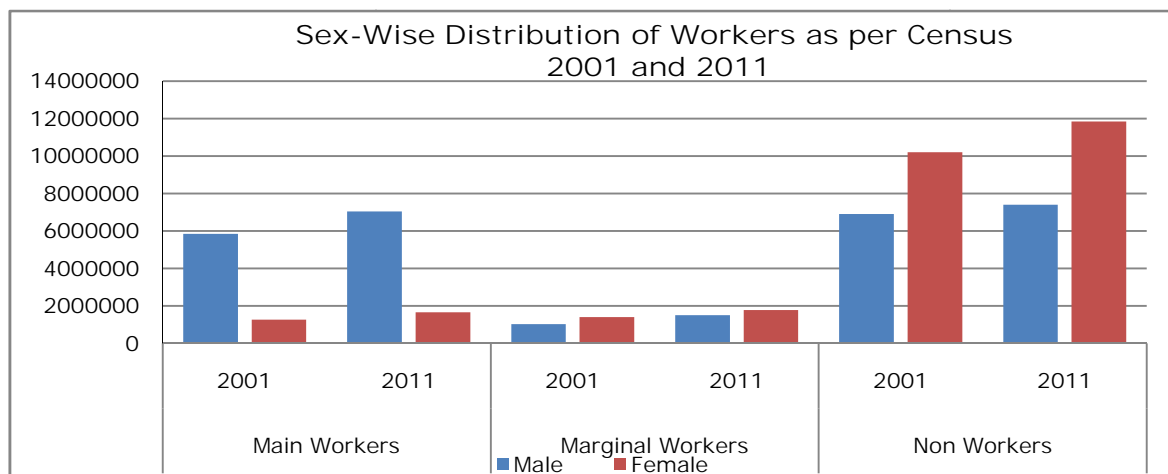


Fig. IV

The Fig.II, Fig.III and Fig.IV, shows that there is a shift in the composition of total main workers from agricultural sector to non-agricultural sector. During 2001 and 2011, of the total main workers, proportion of workers in agricultural sector was 46 percent as against 62 percent in 1991. On the other hand, the proportion of other workers to total main workers depicts an increasing trend from 36 percent in 1991 to 51 percent in 2011 and proportion of workforce engaged in household industry increased from 1 percent in 1991 to 3 percent in 2011.

The sex-wise distribution of main workers, marginal workers and non-workers is depicted in the figures given below:





The percentage share of male and female main workers is 44 percent and 11 percent respectively as per Census 2011 shows a slight increase over the composition of male (42%) and female (10%) main workers as per Census 2001.

#### RESULTS OF FIFTH ANNUAL EMPLOYMENT-UNEMPLOYMENT SURVEY, 2015-16:

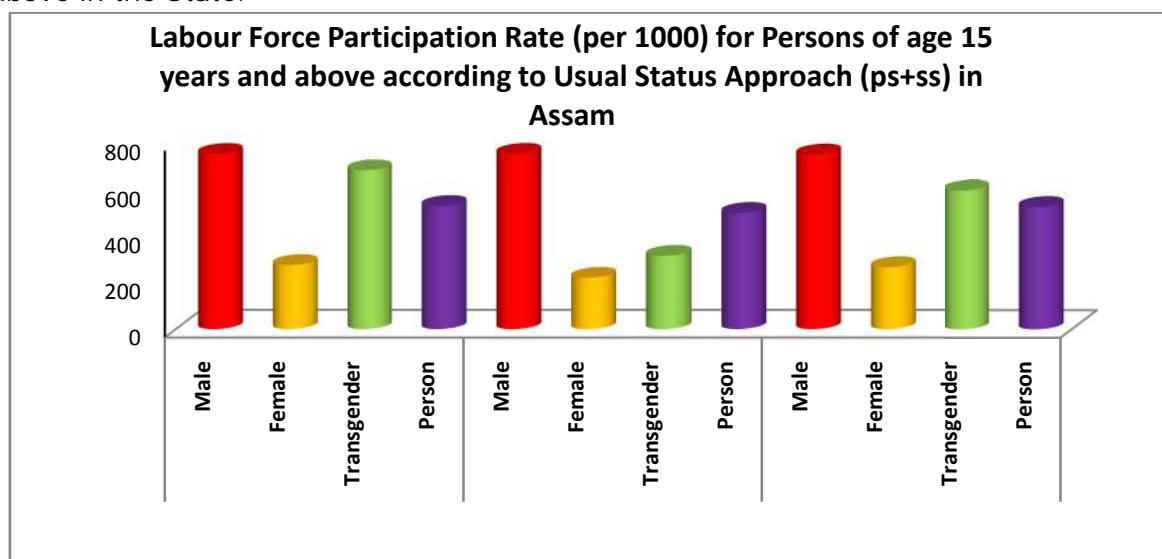
The Ministry of Labour and Employment, Govt. of India has entrusted the task of conducting Employment and Unemployment surveys on regular basis to the Labour Bureau, Govt. of India. The Fifth annual Employment and Unemployment survey was conducted throughout the country during the period April, 2015 to December, 2015. A brief analysis on the estimates of some labour parameters in the context of Assam State is discussed in the paragraphs below.

The study reveals that out of the employed persons aged 15 years and above according to Usual Principal and Subsidiary status approach (ps+ss) 52.9 percent are self employed, 19.4 percent are wage or salaried employee, 1.7 percent are contract workers and 25.9 percent are casual workers in the State as against 47.2 percent, 16.2 percent, 3.5 percent and 33.1 percent respectively at the All India level. This breakup in the rural areas of the State are 53.5 percent self employed, 17.0 percent wage or salaried employee, 1.4 percent contract workers and 28.2 percent casual labour against 49.1 percent, 10.7 percent, 2.9 percent and 37.4 percent respectively at the National level. The urban breakup at the State level is 49.0 percent, 36.1 percent, 3.8 percent and 11.1 percent as against 41.2 percent, 34.3 percent, 5.7 percent and 18.7 percent respectively at all India level.

The report further shows that out of the total male employed persons in the State, 54.9 percent are self employed, 19.6 percent are wage or salaried employee, 1.5 percent are contract workers and 24.0 percent are casual workers. The distribution of female employed persons in the State is 45.9 percent self employed, 19.0 percent wage or salaried employee, 2.1 percent contract workers and 32.9 percent casual workers.

#### LABOUR FORCE PARTICIPATION RATE:

The result of the Fifth Annual Employment Unemployment Survey, 2015-16 conducted by the Labour Bureau reveals that the Labour Force Participation rate in respect of the age-group 15 years and above according to usual status approach for both principal status (ps) and subsidiary status (ss) in Assam is 53 percent in rural areas, 50 percent in urban areas and 53 percent taking urban and rural areas as a whole against the all India rate of 56 percent, 44 percent and 52 percent respectively. The figure given below shows the Labour Force Participation Rate (per 1000) for persons aged 15 years and above in the State.

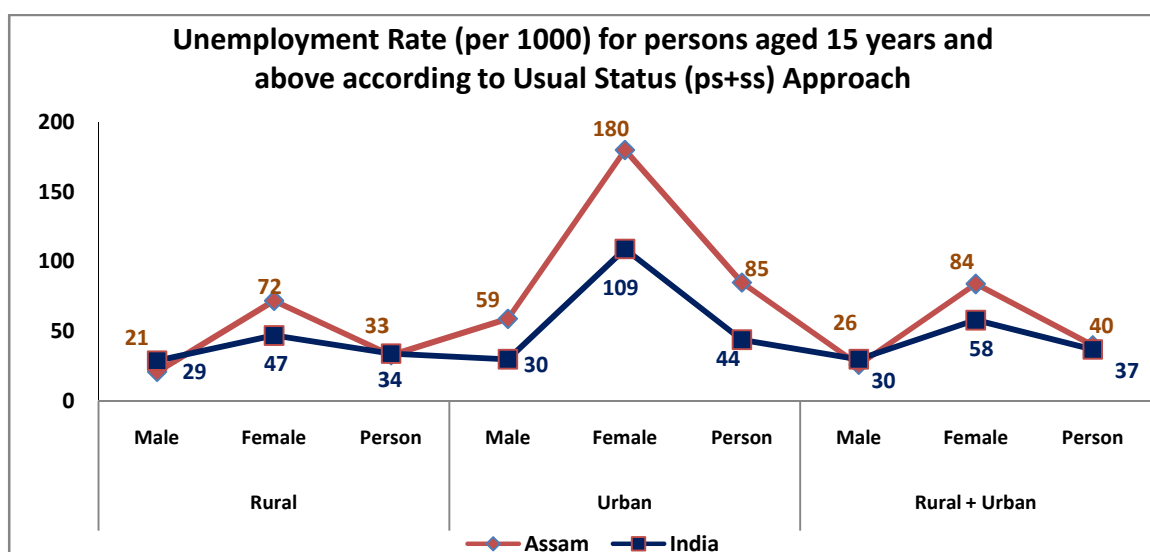


Source: 5<sup>th</sup> Employment Unemployment Report, 2015-16, Labour Bureau, Govt. of India.

## UNEMPLOYMENT RATE:

The Unemployment Rate is estimated to be 4.0 percent in the State under the usual principal and subsidiary status or about 4 percent of the persons aged 15 years and above who were available for work could not get work during the reference period. In rural areas the unemployment rate is 3.3 percent whereas in urban areas the unemployment rate is 8.5 percent under the same approach. The unemployment rate at all India level under the same approach is 3.7 percent in both rural and urban, 3.4 percent in rural areas and 4.4 percent in urban areas. In the State, the female unemployment rate is 8.4 percent which is almost 6 percent higher than the male rate of 2.6 percent.

The study reveals that the female unemployment rate in urban areas of the State under the usual principal and subsidiary status approach during the reference period is 18 percent which is significantly higher than the unemployment rate of 7.2 percent in rural areas.



Source: 5th Employment Unemployment Report-Vol.I, 2015-16, Labour Bureau, Govt. of India.

## DISTRIBUTION OF WORKERS ACCORDING TO ACTIVITY:

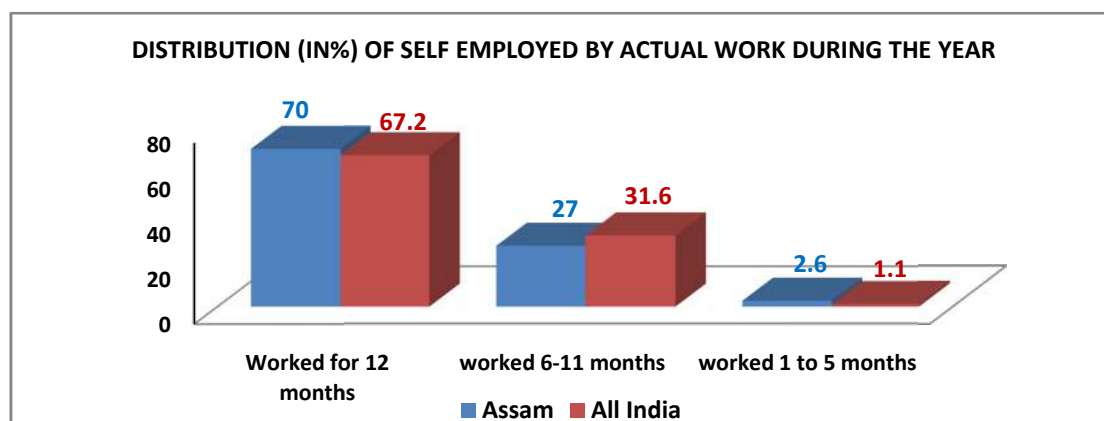
The table given below shows per 1000 distribution of workers aged 15 years and above by broad activity according to Usual Principal and Subsidiary status approach for Assam and All India.

TABLE-17.2

CATEGORY OF EMPLOYEE		Self Employed	Wage/Salaried Employee	Contract Worker	Casual Labour	
Assam	Rural	535	170	14	282	
	Urban	490	361	38	111	
	Total	Male	549	196	15	240
		Female	459	190	21	329
All India	Rural	491	107	29	374	
	Urban	412	343	57	187	
	Total	Male	486	174	38	302
		Female	429	125	27	419

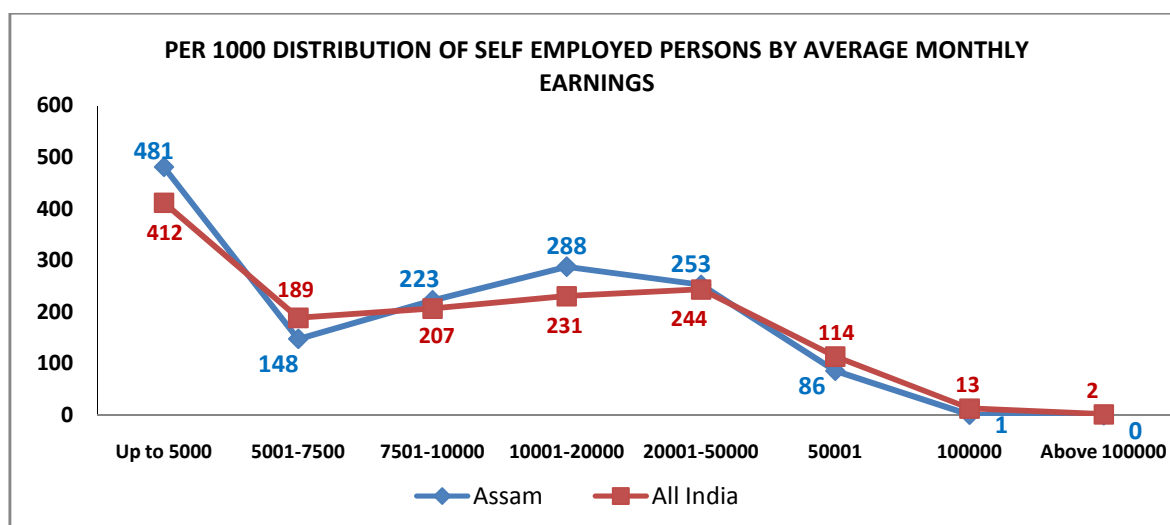
It is seen that 55 percent males and 46 percent females are self employed in the State compared to 49 percent males and 43 percent females respectively at the All India level. Further, the report reveals that regarding wage/ salaried persons, the gender gap is much less in the State compared to a high difference at the All India level. The number of self employed in the rural areas of the State is 54 percent which is higher by 5 percent than that of urban areas whereas in case of wage or salaried persons it is much higher in urban areas by 19 percent than that of rural areas.

The report also published information about self employed persons who were available for 12 months but actually worked during the year. The graph below shows the distribution of self employed aged 15 years and above available for 12 months but actually worked according to Usual Principal and Subsidiary Status approach (ps+ss). The graph shows that in Assam more self employed persons worked for 12 months than that of All India level. However percentage of self employed persons who actually worked between 1 to 5 months is higher in Assam compared to the figure at all India level.



**SELF EMPLOYED PERSONS BY AVERAGE MONTHLY EARNINGS:**

The report also published information on Average Monthly Households Earnings of self-employed persons. The report reveals that in Assam there are 481 self employed persons per 1000 persons in the labour force against 412 at all-India level. The distribution of these numbers of self employed persons in the State and at All India level by their average monthly earnings according to Usual Principal Status Approach (ps) is presented below.



## EMPLOYMENT IN SHOPS AND COMMERCIAL ESTABLISHMENTS:

The Labour Bureau, Ministry of Labour and Employment, Govt. of India publishes report on employment in shops and commercial establishments covered by the various Central and State Acts on the basis of returns or reports submitted by the States and Union Territories. The report on Shops and establishment in Assam is prepared on the areas covered under the Assam Shops and Establishment Act, 1971. The report published by the Labour Bureau shows that the total number of establishments in Assam covered under the Act and persons employed therein during 2013 were 84 thousand and 1.16 lakh respectively. Out of these 84 thousand establishment, 68 thousand (81 percent) were shops, 12 thousand (14 percent) were commercial establishments and 4 thousand (5 percent) were Cinemas, theatres, Hotels and Restaurants that employed 56 thousand (48 percent), 43 thousand (37 percent) and 16 thousand (14 percent) persons respectively. A comparison of number of shops and establishment in Assam during 2008, 2009, 2010, 2011, 2012 and 2013 is shown in Table 17.5.

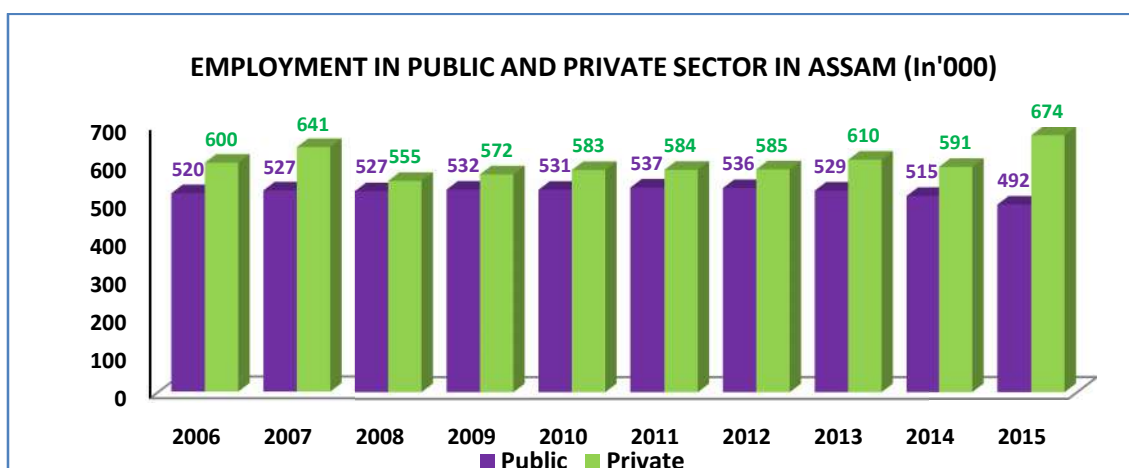
TABLE – 17.3  
EMPLOYMENT IN SHOPS AND COMMERCIAL ESTABLISHMENTS IN ASSAM  
(‘000 number)

Year	Shops		Commercial Establishment		Restaurants, Theatres etc.		All Establishment	
	Number	Workers	Number	Workers	Number	Workers	Number	Workers
2008	61	55	10	29	5	14	76	98
2009	57	53	10	30	4	13	71	96
2010	61	57	10	32	4	14	75	102
2011	56	57	11	33	4	14	71	104
2012	70	65	13	39	5	17	88	120
2013	68	56	12	43	4	16	84	116

Source: Statistical Year Book, 2016, MOSPI, Govt. of India.

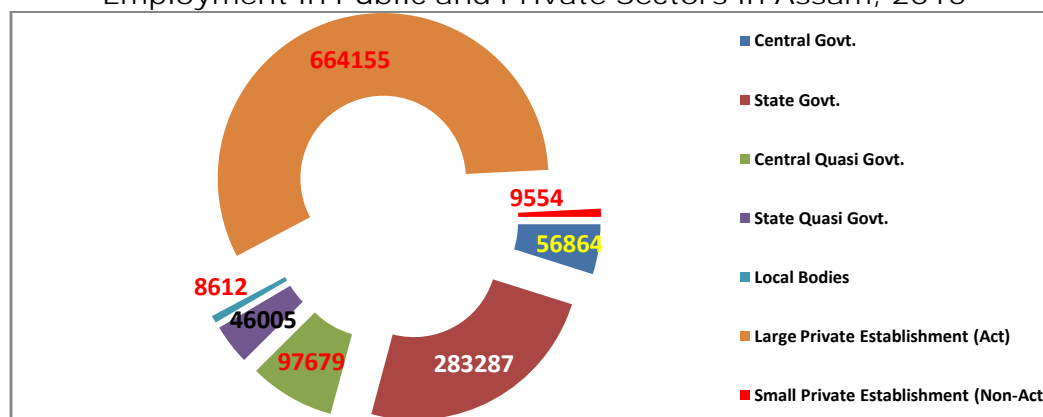
## EMPLOYMENT MARKET INFORMATION (EMI) PROGRAMME:

The EMI programme gives information about the level of employment in the organised sector of the economy, which covers all establishments in the public sector and non-agricultural establishments employing 10 or more persons in the private sector. Collection of data under the EMI programme is reported through an ‘Establishment Reporting System’. The trend of employment in public and private sector from 2006 to 2015 as per data collected through Employment Market Information Programme is shown below.



The total employment in the public and private sector establishments under EMI programme in 2015 was 11.66 lakh (in public sector 4.92 lakh and in private sector 6.74 lakh) compared to 11.06 lakh (in public sector 5.15 lakh and in private sector 5.91 lakh) in 2014 and thus increased by 5.42 percent in 2015 over 2014. During 2015, female employment was 34 percent of the total employment. Out of the total 4.92 lakh employment in public sector, share of local bodies was 1.75 percent and share of State Quasi Government was 9.34 percent during the year. The pie, given below shows the composition of public and private sector employment in Assam during 2015.

Employment in Public and Private Sectors in Assam, 2015



#### WOMEN EMPLOYMENT IN ORGANISED SECTOR:

The employment of women in organized sector of the State was 383 thousand during 2014 which is 34.6 percent of the total employment. During the same year, percentage share of women employees in public sector and private sector to the total employment was 8.5 percent and 26.1 percent respectively.

TABLE – 17.4  
EMPLOYMENT OF WOMEN IN ORGANISED SECTOR

(In thousand nos.)

Year	Public Sector		Private Sector		Public and Private Sector		Percentage Share of Women in Organised sector
	Women	Total	Women	Total	Women	Total	
2003	77.4	528.0	241.1	551.1	318.5	1079.2	30.0
2004	77.3	525.1	255.6	572.0	332.9	1097.2	30.0
2005	81.5	524.5	268.4	605.2	350.0	1140.0	30.7
2006	81.8	519.7	299.0	599.7	380.7	1119.4	34.0
2007	84.9	527.0	310.8	640.5	395.7	1167.5	33.9
2008	85.6	527.3	266.5	554.6	352.1	1081.9	32.5
2009	87.3	531.7	273.0	571.7	360.3	1103.4	32.7
2010	87.0	531.1	279.7	583.0	366.7	1114.1	32.9
2011	89.0	537.0	279.9	583.5	369.0	1120.6	32.9
2012	90.1	535.7	280.5	584.8	371.0	1120.5	33.1
2013	90.5	529.3	294.9	609.5	385.4	1138.8	33.8
2014	94.4	515.2	288.8	590.8	383.2	1106.0	34.6
2015	89.7	492.4	304.1	673.7	393.8	1166.2	33.8

Source: Directorate of Employment and Craftsmen Training, Assam.

#### UN-EMPLOYMENT SCENARIO IN THE STATE:

The State has 53 employment exchanges comprising of 49 general, 1(one) special and 3 Employment Information and Guidance Bureau. Moreover, there are 28 Employment

Information and Assistance Bureau to guide the unemployed youths for employment. Two Districts of BTAD, Baksa and Chirang have no Employment exchange. The table below shows that the number of unemployed as per Live Register increased by 9.7 percent in 2014 over 2013. During 2014, total placement was 39 percent against the number of notified vacancies through Employment Exchanges.

TABLE – 17.5  
EMPLOYMENT THROUGH EMPLOYMENT EXCHANGES

YEAR	No. in Live Register	Percentage increase in Live register	No. of Vacancies Notified	No. of Placement Against Vacancies
2005	1763430	8.01	2380	148
2006	1827149	3.61	3170	551
2007	1921563	5.17	2023	540
2008	2006389	4.41	2383	628
2009	2079558	3.65	2506	501
2010	1911431	(-)0.08	2606	455
2011	1729029	(-)9.54	1401	436
2012	1622729	(-)6.15	2632	394
2013	1677192	3.36	4204	745
2014	1746520	4.13	2829	1099
2015	1915886	9.70	2672	1028

Source: Directorate of Employment and Craftsmen training, Assam.

The size of the educated job seekers is considerably high, which is a challenge before the growing economy of the State. From the records of the live register of Employment Exchanges, the registered educated job seekers stood at 1523531 during 2015 against 1387465 during 2014 thereby showing an increase of 9.81 percent during 2015. The percentage of educated job seekers constitutes about 80 percent of the total job-seekers.

The overall registration of educated job seekers as per record of Employment Exchanges has decreased by 29 percent in 2015 over the previous year. During 2015, there is a decline in registration of Engineering and Medical Graduates over the previous year. Decline of registration is also noticed of Graduates, HSSLC and HSLC over the previous year. One reason for decrease in registration of HSSLC and HSLC passed may be attributed to pursuing further studies. The year, 2015 depicts an increase in registration of Agriculture Graduates (100%), Veterinary Graduates (367%), ITI passed (273%), Post Graduates (91%), Diploma holders(22%) and Others (157%). The detail distributions of the educated job seekers are shown in the table below.

TABLE – 17.6  
DISTRIBUTION OF EDUCATED JOB-SEEKERS

Level of Education	Registration		Percentage Increase/ Decrease in Registration	Placement		Numbers in live register	
	2014	2015		2014	2015	2014	2015
Engineering Graduate	898	681	(-)24.16	45	32	7333	7909
Medical Graduate	76	30	(-)60.53	5	15	279	340
Agriculture Graduate	5	10	100	2	0	245	267
Veterinary Graduate	3	14	366.67	2	0	289	222
Passed out Trainees (ITI)	2929	10921	272.86	87	7	24919	19066
Post Graduates	982	1878	91.24	24	83	11465	27808
Graduates	43108	19249	(-)55.35	116	63	261490	247741
H.S.S.L.C.	64478	51684	(-)19.84	63	114	533901	611302
H.S.L.C.	59955	36585	(-)38.98	738	132	529739	576634
Diploma Holders(Eng.)	664	812	22.29	9	4	8216	9500
Others	567	1455	156.61	8	20	9589	22742
Total	173665	123319	(-)28.99	1099	470	1387465	1523531

Source: Directorate of Employment and Craftsmen Training, Assam.

**ASSAM GOVT. EMPLOYEES CENSUS:**

The Assam Govt. Employees Census is conducted quinquennially by the Directorate of Economics and Statistics, Assam. The last census was conducted with reference year 2009 and the report has been published. The table below shows the trend of sex-wise distribution of Assam Govt. Employees as per the last four consecutive censuses.

TABLE-17.7  
SEX-WISE DISTRIBUTION OF ASSAM GOVT. EMPLOYEES

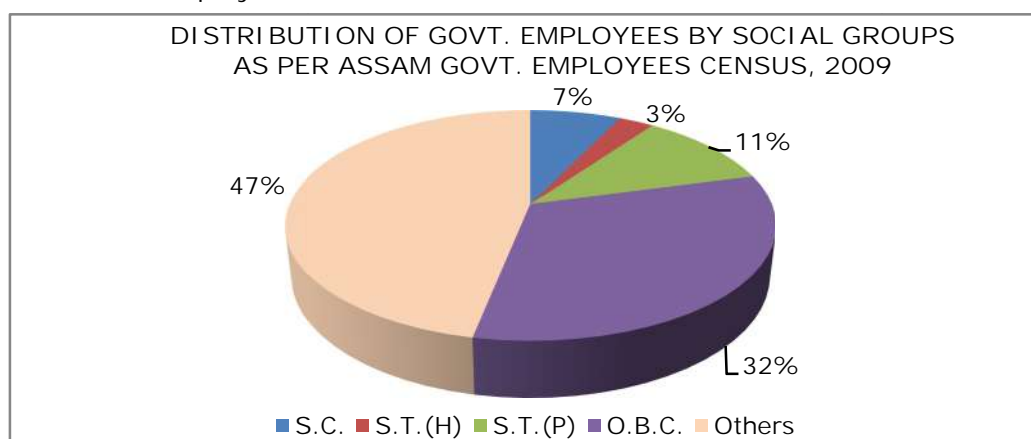
Year	Male	Female	Total
1989	239117	31822	270939
1994	259141	45694	304835
1999	269555	56516	326071
2004	264924	59254	324178
2009	318457	74508	392965

Source: Assam Govt. Employees Census, 2009, Directorate of Economics and Statistics, Assam.

The Assam Govt. Employees Census, 2009 report reveals that the total Govt. employees has increased by 21.22 percent over the census figure of 2004 wherein number of male employees have increased by 20.21 percent and number of female employees have increased by 25.74 percent compared to a decrease of total employees by 0.58 percent in 2004 where number of male employees have decreased by 1.72 percent whereas number of female employees increased by 4.84 percent over the census figure of 1999.

The census report shows that the total number of Govt. employees in 2009 comprises of 18.96 percent female employees and 81.04 percent male employees. The male and female Govt. employees as per Census, 1989 was 88.25 percent and 11.75 percent respectively.

The distribution of Assam Govt. employees as per Census, 2009 shows that there are 4.28 percent Class-1 employees, 2.15 percent Class-II employees, 69.43 percent Class-III employees, 19.69 percent Class-IV employees and 4.45 percent are employees with fixed or consolidated pay. The graph below depicts the composition of social group wise number of Govt. employees in the State.

**AVERAGE DAILY WAGE RATE IN RURAL AREAS:**

As per data collected by the Directorate of Economics and Statistics, Assam, the Average Daily Wage Rate of skilled, unskilled and other agricultural labours shows a more or less steady upward trend. The wage rate in rural areas shows that under skilled labour, wage rate of Carpenter and Blacksmith increased by 7 percent and 14 percent respectively during 2015-16 over 2014-15 and under unskilled labour, wage rate of male ploughman,

herdsman and Reaper and Harvester increased by 7 percent, 4 percent and 7 percent respectively during 2015-16 over 2014-15. During 2015-16, the female wage rate for Reaper and Harvester increased by 5 percent over the previous year. The wage rate (other agricultural labour) for male and female increased by 2 percent and 4 percent respectively during 2015-16 over the previous year.

TABLE – 17.8

## AVERAGE DAILY WAGE RATE IN RURAL AREAS IN ASSAM (in Rupees)

Year	Skilled Labour Wage		Un-skilled Labour Wage				Other Agricultural Labour	
	Carpenter	Black-smith	Ploughman	Herdsman	Reaper and Harvester		Man	Women
	Man	Man			Man	Women		
2004-05	109	88	62	55	64	49	59	49
2005-06	114	95	64	63	65	49	61	48
2006-07	121	101	71	63	68	53	65	54
2007-08	124	97	76	72	74	60	72	58
2008-09	134	105	85	83	83	67	83	67
2009-10	147	121	93	92	93	74	103	87
2010-11	150	131	120	117	112	87	137	92
2011-12	155	133	125	120	119	93	137	98
2012-13	196	189	18	164	164	135	169	126
2013-14	220	217	220	172	204	173	206	174
2014-15	305	249	244	196	225	189	234	188
2015-16	325	283	260	203	241	198	239	196

Source: Directorate of Economics and Statistics, Assam.

## EMPLOYMENT GENERATION PROGRAMME:

Our economy is developing at a fast pace but still a major part of the population who are poverty ridden, illiterate and lack of skill needs support to earn. Keeping this in mind the Central Government and the State Government has initiated and implemented many programmes for self and wage employment generation as well as for creation of production of assets through various organisations like, the Panchayat and Rural Development Department, Directorate of Industries and Commerce, Agriculture Department, etc. The achievements of some of these programmes are briefly discussed as follows:

## NATIONAL RURAL LIVELIHOOD MISSION:

The Ministry of Rural Development, Govt. of India has launched National Rural Livelihood Mission (NRLM) by restructuring the SGSY scheme and started its effective implementation in the State since 1<sup>st</sup> April, 2013. One of the important components of NRLM is interest subvention to the women SHGs. NRLM is a flagship program of Govt. of India for promoting poverty reduction through building strong institutions of the poor, particularly women, and enabling these institutions to access a range of financial services and livelihood services. During 2015-16, number of women SHG formed was 8540 against the target of 8014 SHGs and 6330 SHGs received revolving fund during the year against the target of 6419. During 2014-15, 5195 women SHGs were formed and 6920 SHGs were provided with revolving fund. Number of village organizations formed during 2015-16 is 420 against 515 village organizations formed during 2014-15. During 2015-16, 3270 village organizations received community investment fund against the target of 2782.



National Rural Livelihood Project (NRLP) under National Rural Livelihood Mission (NRLM) is an intensive strategy with investment support from the World Bank. Under the project, 5142 numbers of women SHGs were formed during 2015-16 against 5340 numbers in 2014-15. During 2015-16, number of SHGs provided with revolving fund was 6968 against 9345 in 2014-15. Under NRLP, 445 village organizations were formed during 2015-16 and 5350 numbers received community investment fund during the same year.

#### MAHATMA GANDHI NATIONAL EMPLOYMENT GUARANTEE ACT (MGNREGA):

The Mahatma Gandhi National Employment Guarantee Programme was introduced during the 11<sup>th</sup> five year Plan for giving wage employment opportunities to the rural poor during the lean agricultural season when they require wage employment for boosting their purchasing power to supplement their income requirement for livelihood. The other objective of the Act is to create durable community assets for development of rural infrastructure for upliftment of quality of the rural people.

During the year 2015-16, a total of 486 lakh mandays were generated against 210.95 lakh mandays in 2014-15 and 299.16 lakh mandays in 2013-14. Since inception up to March 2016, more than 45.88 lakh numbers of rural households have been provided with job card as compared to the cumulative total of 42.02 lakh during 2014-15 and 41.48 lakh in 2013-14. Out of the total, 36 percent of jobs were provided to women during 2015-16 against 32 percent and 29 percent during 2014-15 and 2013-14 respectively. During 2015-16, 3734 numbers of physically challenged persons from BPL households were provided with employment. An amount of Rs.621.02 crores have been utilized during 2015-16 compared to Rs,500.00 crore in 2014-15 and Rs.700.70 crore in 2013-14.

#### PRIME MINISTER EMPLOYMENT GENERATION PROGRAMME (PMEGP):

The Prime Minister Employment Generation Program (PMEGP) has been introduced by merging the PMRY and REGP with the objective of providing employment to the educated unemployed youth. The scheme facilitates self-employment through setting up of industries/service and business ventures with a limited amount of Bank loan with subsidy on the recommendation of Task Force Committees constituted for the purpose. The KVIC is the nodal agency for implementing the PMEGP scheme at the national level and at the State level the scheme is implemented by the state KVIC Directorate, State KVIB and the District Industries and Commerce Centers and Banks. The Government subsidy under the scheme is being routed through the KVIC to the identified Banks. The target and achievement under PMEGP from 2008-09 to 2015-16 is reflected in the table below.

TABLE – 17.9  
TARGET AND ACHIEVEMENT OF PMEGP DURING THE YEAR 2008-09 TO 2015-16

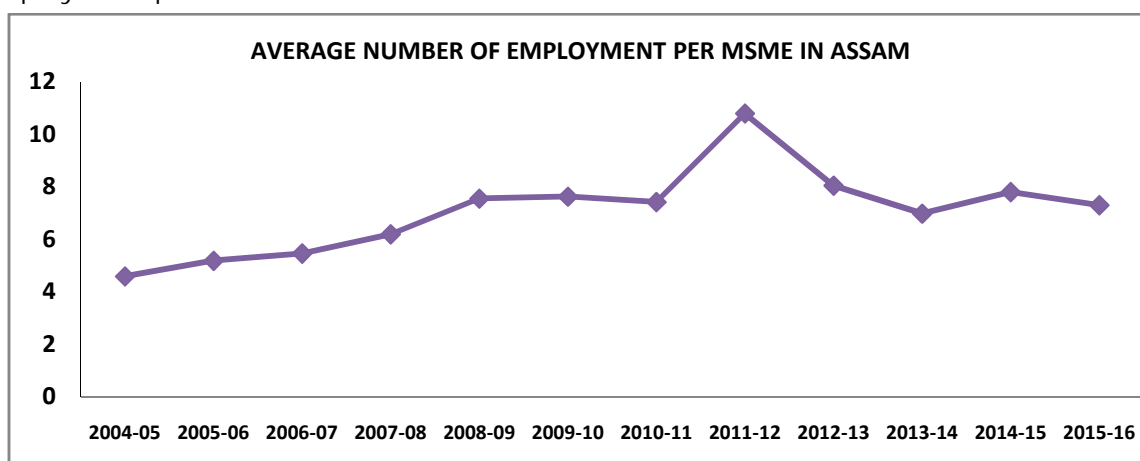
Year	Physical target (In nos.)	Financial Target (margin Money) (Rs. in Lakh)	Total Cases sanctioned (In nos.)	Physical achievement (In no.)	Financial achievement (Rs. in lakh.)	P.C. of Physical achievement
2008-09	685	820.22	861	617	676.95	90
2009-10	1292	1550.00	2440	2440	1899.71	189
2010-11	3193	4469.66	4756	4756	4801.10	149
2011-12	5047	7065.80	5280	5280	5544.99	105
2012-13	4644	6500.20	7336	7336	5801.15	158
2013-14	4588	6210.97	8049	8049	7219.90	175
2014-15	5101	7238.82	5584	5584	5042.41	109
2015-16	1913	-	3382	3382	2793.39	177

Source: Directorate of Industries and Commerce, Assam.

**SMALL SCALE INDUSTRIES/MICRO, SMALL AND MEDIUM ENTERPRISE (MSME):**

The small scale industries sectors have a major contribution towards creating employment in the State. Presently the small-scale industries have been sub-divided into Micro, Small and Medium Enterprise under the Micro, Small and Medium Enterprises Development (MSMED) Act 2006. There are 43332 numbers of SSI/ MSME units in Assam providing employment to 249145 numbers of persons till the end of 2015-16 compared to 41434 units giving employment to 225297 persons in 2014-15. The graph below depicts the average number of employment per SSI/MSME unit.

Year	No. of SSI/MSME Unit	Employment
Upto March/2010	32993	167271
2010-11	1214	9002
2011-12	1287	13886
2012-13	1451	11671
2013-14	1860	12971
2014-15	2629	20496
2015-16	1898	13848



Source: Directorate of Industries and Commerce, Assam.

**FACTORY EMPLOYMENT:**

During 2015, there were 5799 number of factories (registered under Factory Act, 1948) employing 219903 number of persons in the State showing an increase of 5 percent in the number of factories employing 5 percent more than that of 2014. The maximum number of workers were engaged in manufacturing of food products (34%) followed by manufacturing of other non-metallic mineral products (32%), manufacturing of coke and refined petroleum products (5%) and the rest distributed amongst of factories as per NIC-2008.

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## APPENDIX-17.1

## DISTRICT-WISE NUMBER OF EMPLOYMENT EXCHANGES IN ASSAM, 2015

Sl. No.	District	General	Special	Employment Information and Guidance Bureau (UEI & GB)	Employment Information and Assistance Bureau (EI & AB)	Total
1	2	3	4	5	5	6
1	Kokrajhar	2				2
2	Dhubri	2			1	3
3	Goalpara	1			1	2
4	Barpeta	1			1	2
5	Morigaon	2			1	3
6	Nagaon	3			1	4
7	Sonitpur	2			1	3
8	Lakhimpur	1			2	3
9	Dhemaji	2				2
10	Tinsukia	4				4
11	Dibrugarh	3	1	1	1	6
12	Sivasagar	4			2	6
13	Jorhat	2		1	2	5
14	Golaghat	2			2	4
15	Karbi-Anglong	3			2	5
16	Dima-Hasao	2			3	5
17	Cachar	1			2	3
18	Karimganj	2			1	3
19	Hailakandi	1				1
20	Bongaigaon	1			1	2
21	Chirang					
22	Kamrup	5		1	1	7
23	Kamrup (M)					
24	Nalbari	1			2	3
25	Baksa					
26	Darrang	1			1	2
27	Udalguri	1				1
	ASSAM	49	1	3	28	81

Note: Baksa and Chirang have no Employment Exchange

Source: Directorate of Employment and Craftsmen Training, Assam

## APPENDIX-17.2

## EMPLOYMENT THROUGH EMPLOYMENT EXCHANGE IN ASSAM, 2015

Sl. No.	District	No. Registration	No. in Live Register	No. of Vacancies Notified	No. of Placement
1	2	3	4	5	6
1	Kokrajhar	9967	59095	0	0
2	Dhubri	8956	81652	5	10
3	Goalpara	6559	51180	21	14
4	Barpeta	9218	90102	451	7
5	Morigaon	8832	49135	0	0
6	Nagaon	11196	139009	132	10
7	Sonitpur	10917	91720	65	46
8	Lakhimpur	8195	55290	15	10
9	Dhemaji	7965	42573	0	10
10	Tinsukia	9898	51076	72	15
11	Dibrugarh	14292	131527	313	56
12	Sivasagar	13031	131944	54	13
13	Jorhat	15243	93165	34	22
14	Golaghat	8362	70707	29	17
15	Karbi-Anglong	9215	59483	72	4
16	Dima-Hasao	2342	35403	0	5
17	Cachar	9308	75126	27	5
18	Karimganj	7086	32649	51	6
19	Hailakandi	2462	24844	115	1
20	Bongaigaon	6073	47349	116	12
21	Chirang				
22	Kamrup	39506	377591	1018	735
23	Kamrup (M)				
24	Nalbari	21172	53066	23	30
25	Baksa				
26	Darrang	9177	55357	16	0
27	Udalguri	2464	16843	43	0
	ASSAM	251436	1915886	2672	1028

Note: Baksa and Chirang have no Employment Exchange

Source: Directorate of Employment and Craftsmen Training, Assam

## APPENDIX-17.3

## NUMBER OF REGISTRATION, PLACEMENT AND NUMBER IN LIVE REGISTRAR BY LEVEL OF EDUCATION IN ASSAM, 2015

Sl. No.	Level of Education	No. of Registration	No. of Placement	Live Register
1	2	3	4	5
1	Engineering Graduate	681	32	7909
2	Medical Graduate	30	15	340
3	Agricultural Graduate	10	0	267
4	Veterinary Graduate	14	0	222
5	Passed out I. T. I. Trainees (Total)			
	(a) Engg. Trade			
	(b) Non. Engg. Trade	10921	7	19066
6	Post Graduate	1878	83	27808
7	Graduate	19249	63	247741
8	HSSLC/PU	51684	114	611302
9	HSLC/ Matric	36585	132	576634
10	Diploma holder (Engineering)	812	4	9500
11	Others	1455	20	22742
Grand Total		123319	470	1523531

Source: Directorate of Employment and Craftsmen Training, Assam

## APPENDIX-17.4

## OCCUPATIONAL DISTRIBUTION OF APPLICANTS IN LIVE REGISTER OF EMPLOYMENT EXCHANGE IN ASSAM, 2015

Sl No.	Occupation	Live Register
1	Occupational Break up of L/R (Total)	1915886
1	Technical and Associate Professional	85321
2	Professional	36601
3	Legislators Senior Officials and Manager	22776
4	Clerks	63341
5	Service workers and Shop and Market	23918
6	Skilled Agricultural and Fishery Workers	17560
7	Crafts and related Trade Workers	63506
8	Plant and Machine Operators and Assemblers	22936
9	Elementary Occupation	14851
10	Workers not classified by occupation	1565076

Source: Directorate of Employment and Craftsmen Training, Assam

## CHAPTER – XVIII

## PANCHAYAT AND RURAL DEVELOPMENT

The responsibility of the Panchayat and Rural Development Department includes alleviation of rural poverty, enhancement of rural livelihoods by providing self-employment to the people living below poverty line as defined by the Planning Commission from time to time through implementing variety of programmes and to strengthen the Panchayati Raj Institution (PRI). The Department is concerned to empower PRIs increase the capability of poor through self employment programme and by developing the critical infrastructures in the rural areas. At present, there are 21 Zila Parisads, 189 Anchalik Parisads and 2202 Gram Panchayats in the State under three tier PRI systems in 21 plain districts excluding the 6<sup>th</sup> Scheduled districts viz., 2 Hill districts - Karbi-Anglong, Dima-Hasao and 4 BTAD districts under BTC where PRI system is not in existence. Moreover, there are District Rural Development Agency one in each district and 219 Community Development Blocks to look after the implementation of the programmes/schemes of the Department.

**SCHEMES IMPLEMENTED BY THE PANCHAYAT AND RURAL DEVELOPMENT DEPARTMENT:**

Department is implementing MGNREGA, Indira Awas Yojana (IAY) National Social Assistance Programme (NSAP) District Development Plan, 13<sup>th</sup> Finance Commission Grant, 4<sup>th</sup> State Finance Commission etc.

(COST SHARING BASIS WITH THE CENTRAL AND STATE GOVERNMENT 90:10)

**MAHATMA GANDHI NATIONAL RURAL EMPLOYMENT GUARANTEE ACT (MGNREGA):**

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) has been implemented since February, 2006. This programme were covered to all Districts from 2008-09. MGNREGA is a Primary Flagship Programme of Ministry of Rural development. The Primary objectives of the programme is to provide at least 100 days employment Guarantee to the job Card Holders demanding for work and creation of permanent assets. The programme provides employment to the adult members of a family having a job card volunteer. For the current financial year (2015-16) wage rate of Job Card holders has been enhanced to Rs. 182/- per day to do unskilled manual labour in every financial year. The other objective of the act to create durable community assets for development of rural infrastructure for upliftment of quality of life of the rural people. In Assam, MGNREGA has been empowered millions of lives in Assam penetrating even in inaccessible and difficult areas. The enhanced income help the rural poor to come out from the vicious cycle of poverty and able to afford better education and health care for their children and families.

At present, the convergence of MGNREGA work has been taken up with the line Departments like Water Resources, PWD, Irrigation, Sericulture, Handloom and Textile, Agriculture etc. in Assam. Further, the department has started implementation of few schemes like Dr. Bhupen Hazarika Open stage and Garden, Pt. Jawaharlal Neheru Gramin Sports Complex, Indira Gandhi Adarsha Gramin Paki Path, Sishu Seuj Prakalpa under CM's Dream Project in MGNREGA. During the current year, five number of focus areas have been indentified i. e. plantation, construction of Anganwadi Centres, Fishponds, Vermi Compost and individual household latrines. Emphasis is being given to create durable assets.

During the period 2015-16, more than 486 lakh mandays have been generated as against 210.95 lakh mandays during 2014-15 and 299.16 lakh mandays in 2013-14. More than 45.88 lakh (cumulative) nos. of rural households have been provided job cards during 2015-16 as compared to 42.02 lakh during 2014-15 and 41.48 lakh in 2013-14. Similarly, 3734 nos. of disabled person from BPL households have been provided employment during the year under reference in comparison to 1452 nos. of 2014-15 and 2372 nos. of 2013-14. An amount of Rs.621.02 crore have been utilised during 2015-16 and as compared to the utilisation of Rs.500 crore during 2014-15 and Rs.700.70 crore during 2013-14. Transparency is the core concept of the programme. All the details about beneficiaries, schemes, vouchers etc. are uploaded on the MIS which can be accepted by any one from the website.

Assam has become pioneer to roll out mobile based software for capturing demand, recording attendance, taking photographs, muster roll etc. and updating this information on the national server of MGNREGA through mobile network. Moreover, during the financial year 2014-15, e-FMS has been rolled out in the State and 530 dongles have been issued to all DC (DPC), PD and BDO and almost 25 lakh transactions of about Rs.507.00 crore was made through e-FMS. Under this programme, out of the job provided, more than 36 percent have gone to women during 2015-16 while it was 32 percent and 29 percent during the year 2014-15 and 2013-14 respectively.

#### INDIRA AWAS YOJANA (IAY):

The programme is basically implemented for providing dwelling houses to the houseless and shelter less people living below the poverty line in the rural areas.

Under IAY (PMAY-G) programme, about 123713 nos. of houses were sanctioned in 2015-16. The schemes were brought under PFMS. About 160834 nos. of houses have been sanctioned and the Department has completed 72364 nos. of houses during 2014-15 against the annual target of 183171 nos. Similarly, the department has completed 58139 nos. of houses during 2013-14 against the annual target of 138695 nos.

During the year 2013-14, an amount of Rs.985.91 crore has been received and utilised the full amount. Similarly, Rs.937.45 crore has been received and the equal amount has also been utilised during 2014-15 while an amount of Rs.1104.13 crore has been received during the year 2015-16 and the entire amount has been released to the District for implementation of the IAY Programme.

This programme now has been restructured as PMAY-G (Pradhan Mantri Awas Yojana-Gramin) and the selection of beneficiaries are being done as per the Report of socio-economic and Caste Census., 2011. The unit cost of the scheme has also been enhanced to Rs.1.30 lakh from Rs.75,000.00. There is an additional provision of Rs.12,000.00 for toilets and Rs.17,290.00 for 95 days of work under MGNREGA to the beneficiaries. Moreover, under IAY (PMAY-G), State share has been proposed to be provided for an amount of Rs.22205.91 lakh while the Central Share allocation anticipated is Rs.199853.19 lakh.

#### NATIONAL SOCIAL ASSISTANCE PROGRAMME (NSAP):

Article 41 of the constitution of India directs the states to provide public assistance to all citizens. National Social Assistance Programme (NSAP) is a social welfare programme for BPL people. Economic assistance is given to socially disadvantaged people of BPL families. It consists of five sub components viz. IGNOAPS (Indira Gandhi National Old Age Pension Scheme), IGWPS (Indira Gandhi National Widow Pension Scheme),

IGNDPS (Indira Gandhi National Disabled Pension Scheme), NFBS (National Family Benefit Scheme) and Annapurna. In case of unemployment, old age, sickness and disablement and in other cases of undeserved want within the limit of its economic capability and development. It is in accordance with these noble principles that the GOI on 15<sup>th</sup> Aug., 1995 included the National Social assistance programme in the Central Budget from 1995-96, which was implemented by the state Social Welfare Department and from 2003-04 implemented by the State Panchayat and Rural Development Department. It comprises of five components- Indira Gandhi National Old Age Pension (IGNOAPS), Indira Gandhi National Widows Pension Scheme (IGNWPS), Indira Gandhi National Disable Pension Scheme (IGNDPS), National Family Benefit Scheme (NFBS) and Annapurna. These Components were meant for providing social assistance benefit to the aged, the BPL households in the case of death of the primary bread earner and for maternity. Under the Annapurna component, 10 Kg. of foodgrains/ rice per month are provided free of cost to those beneficiaries who attain 60 years and above but not covered under IGNOAPS.

The financial entitlement of various benefits are such that under IGNOAPS, the beneficiaries at the age group of 60-79 years and 80 years and above are provided @ Rs.200/- p. m. (ACA) and Rs.500/- p. m. (ACA) with Rs.50/- p. m. as Minimum Mandatory Provision (MMP) provided from the State Government respectively. Accordingly, 785836 no. of beneficiaries covering both the categories were benefitted during the year 2015-16 as against 772714 nos. and 750501 nos during 2014-15 and 2013-14 respectively. Similarly, 111477 nos. of widow beneficiaries were covered during 2015-16 as against 1,11,325 nos. and 64686 nos. during 2014-15 and 2013-14 respectively under the IGNWPS were 42264 as against 42264 nos. and 24383 nos. during 2014-15 and 2013-14 respectively across the State. Similarly, about 11954 nos. of BPL families have been provided one time financial assistance @Rs.20,000/- during 2015-16 as against 7458 nos. and 1344 nos. during 2014-15 and 2013-14 respectively. During 2013-14, as Ministry of Rural Development, Government of India has not released allocation of Annapurna rice yet as such no physical and financial achievement could record for the time.

Under this programme, an amount of Rs.205.82 crore has been received and the entire amount has been utilised during 2013-14 and Rs.248.48 crore has been received and utilised in the year 2014-15. Similarly, during the year 2015-16, an amount of Rs.197.81 crore has been received and equal amount has been utilised accordingly.

#### NATIONAL RURAL LIVELIHOOD MISSION (NRLM):

The Swarnjayanti Gram Swarozgar Yojana- a holistic self employment programme for the rural poor is now being restructured and renamed as National Rural Livelihoods Mission(NRLM).The restructured programme is being implemented in a mission mode approach with a time bound and outcome based approach. The Poverty is multi-dimensional thus a multi pronged approach is required to tackle this issue. NRLM has been addressing the needs of rural poor by adopting a multi pronged strategy for poverty eradication through building and nurturing organizations of the poor.

NRLM's core belief is that poor extremely capable, they want to come out of poverty and enjoy and enjoy a decent quality of life. Their capabilities are suppressed by a variety of obstacles psychological, economic, social, religious and political. Their intrinsic capabilities are unleashed only when they are organized into institutions that they truly own.



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**SALIENT FEATURES/APPROACHES UNDER NRLM:**


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- **Universal Social Mobilization:**  
 Universal Social Mobilization through formation of SHGs under NRLM: This will ensure that at least one member of each rural BPL household, preferably a woman member of the household, is brought under the Self Help Group(SHG) net. This has been focusing on the most vulnerable households SC/ST, single women, minorities, persons with disabilities, etc.
- **Promotion of Institutions of the poor:**  
 With a view to form strong Peoples Institutions, NRLM focus on setting up of federations of SHGs from village panchayat to district levels. In addition, other grassroots organizations such as livelihoods groups, producer companies, etc are being encouraged.
- **Universal Financial Inclusion:**  
 The goal of universal financial will be furthered not only through opening accounts of all beneficiaries but also securing credit for them from banking sector. Building and nurturing SHGs, enabling them to access finance from financial institutions will enabling them to:
  - Come out the high cost debt trap(debt swapping)
  - Meet their consumption needs food, health, education, etc.
  - Acquire assets for income generation
- **Capacity Building and Training:**  
 Capacity building and training of the beneficiaries as well as other stakeholder is one of the important aspects of SGSY.
- **Revolving Fund and Capital Subsidy:**  
 Subsidy would be available in the form of revolving fund and capital subsidy. The Revolving Fund would be provided to the SHGs as an incentive to inculcate the habit of thrift and accumulate their own funds towards meeting their credit needs in the long-run and immediate consumption needs in the short-run. Subsidy would be a corpus and used for meeting the members' credit needs directly and as catalytic capital for leveraging repeat bank finance. Capital Subsidy fund would be given directly to the SHGs or would be routed to the SHGs through the federations, wherever the SHGs desire such an arrangement. The key to coming out of poverty is continuous and easy access to finance, at reasonable rates, till they accumulate their own funds in large measure.
- **Provision of Interest Subsidy:**  
 The rural poor need credit at low rate of interest and in multiple doses to make their ventures economically viable. In order to ensure affordable credit, NRLM has a provision for subsidy on interest rate above 7% per annum for all eligible SHGs, who have availed loans from mainstream financial institutions, based on prompt loan repayment.
- **Livelihoods:**  
 Poor have multiple livelihoods as a coping mechanism for survival. Their existing major livelihoods are: wage labour, small and marginal holding cultivation, cattle rearing, forest produce, fishing, and traditional non-farm occupations. The net incomes and employment days from the current livelihoods are not adequate to

meet their expenditures. NRLM would look at the entire portfolio of livelihoods of each poor household, and work towards stabilizing and enhancing the existing livelihoods and subsequently diversifying their livelihoods.

- **Infrastructure creation and Marketing support:**

NRLM would seek to ensure that the infrastructure needs for the major livelihoods activities of the poor are met with. It would also provide support for marketing to the institutions of the poor. The range of activities in marketing support includes market research, market intelligence, technology extension, developing backward and forward linkages, building livelihoods collectives and supporting their business plans. NRLM would encourage and support partnerships with public and private organizations and their networks/associations for these activities, particularly for market linkages. Rural Haats would also be encouraged to directly link producer groups (SHGs) and individual producers with urban and peri-urban markets through a well developed system of continuous identification and rotation of beneficiaries.

- **Skills and Placement Projects:**

NRLM would scale up the existing skill and Placement projects through partnership mode as one of the best investments in youth, and provide impetus to livelihoods opportunities in emerging markets. For strengthening this, various models of partnerships with public, private, non-government and community organizations would be developed. A strong relationship would also be developed with industry associations and sector specific employers' associations. National Skill Development Corporation (NSDC) would be one of the leading partners in this effort. 15% of the central allocation under NRLM is earmarked for this purpose.

- **Rural Self Employment Training Institutes (RSETIs):**

In order to ensure institutional arrangement for skill development for self employment and wage employment, dedicated training institute for rural BPL youth i.e Rural Self Employment Training Institutes(RSETIs) are being set up with the aim of having at least one such district of the country

In Assam during 2015-16 the nos. of Self-Help group formed is 13682 against the target of 11305. While 2014-15 the achievement was 10535 against the target of 8450. The number of SHGs provided with Revolving Fund (RF) during 2015-16 was 13298 against the target of 13550 while in 2014-15 it was 16265 against 7040 number of SHGs. The number of Village Organisation (VO) formed during 2015-16 was 865 against the target of 2045 and the number of VOs provided with Community Investment Fund (CIF) is 8620 against the target of 7569 while during 2014-15 the number of VOs formed was 983 against the target of 1249 and the number of VOs provided CIF was 3854 against the target of 1760. Therefore, more effort is needed to fulfill the target of roll of SHGs and VOs. A sum of Rs. 24.00 crore has been proposed against the state share while anticipated Central share is of Rs. 216.38 crore. [Budget speech of Finance Minister, 2016-17]

#### STATE PLAN SCHEME:

##### DISTRICT DEVELOPMENT PLAN (DDP):

District Development Plan (DDP) is the process for preparing an integrated plan for the local govt. section in the district taking into account the resources (National, Human & Financial) available and covering the sectoral activities and schemes assigned to the district level and below and those implemented through local Govt. in the State. The document that embodied the statement of resources and their allocation for various

purposes is known as District Plan. It has been implemented by the Panchayat and Rural Development Department through PRIs and ULBs since 2007-08. More than Rs. 69.84 crore have been utilised and 2045 number of schemes completed during the year 2013-14 as against the utilisation of amount of ' 113.16 crore in respect of more than 2579 number of schemes during 2012-13.

As such, 2202 GPs, 185 APs and 21 ZPs including the Urban areas in general in the State are being involved in preparation and implementation of the schemes under DDP.

Small nature of schemes under this plan are implemented by the Urban Local Bodies and the Rural Local Bodies in the State. 7598 nos. of schemes have been implemented in the year 2013-14. As regards financial achievement an amount of Rs.122.04 crore has been allocated as budget provision for implementation of the plan during 2014-15 and an amount of Rs.121.79 crore has been received and utilised during 2013-14 and for the year 2014-15, an amount of Rs.122.03 crore has been received and utilised. But for the year 2015-16 no fund has been received.

#### 13<sup>TH</sup> FINANCE COMMISSION AWARD:

Under this programme, an amount of Rs.195.10 crore has been released during 2013-14 to the district and the districts have also started its implementation taking various schemes under performance grants and Basic grants and till date completed 4788 nos. of schemes as against 5399 nos. of schemes taken up across the State. Similarly during the year 2013-14 and 2014-15 about 4788 nos. of schemes and 3798 nos. of schemes have been completed utilising an amount of Rs.167.20 crore and Rs.160.08 crore respectively. It may be mentioned here that the period of the Central Finance Commission was for the period .2010-11 to 2014-15.

#### 4<sup>TH</sup> STATE FINANCE COMMISSION:

The period of this programme is 2011-12 to 2015-16 and funded by the State Government under this programme, the construction of Zilla Parishad Building, multi-purpose hall and office building of Anchalik Panchayats, Gaon Panchayats, residential Quarter of BDOs/EOs/Grade-III, IV- Staff and for Anchalik Panchayat and for Gaon Panchayat Secretaries etc. and followed by the implementation of visible schemes like construction of roads, drains, park etc. are also implemented by the Zilla Parishad of the Districts. Under this programme, an amount of Rs. 298.81 crore has been released as Grants-in-Aid and Non-Salary which is presently under utilisation and more than 1407 nos. of schemes out of 3647 schemes have been taken up and completed during 2014-15.

Similarly, Rs.297.15 crore has been received and the said amount has also been utilised by the Districts across the State during 2015-16.

#### BACKWARD REGION GRANT FUND (BRGF):

Backward Regional Grant Fund (BRGF) is designed to redress regional imbalances in development. The financial resources provided to supplement and converging existing developmental inflows into 13 districts of the state of Assam identified by the Planning Commission, Government of India. It has two funding wings – (1) Development Grant, and (2) Capacity Building. The Govt. of India allocates the fund to the BRGF districts under the components like –

- i) Special component plan for SC (SCPSC);
- ii) Special component plan for ST Sub Plan (STSP); and
- iii) Non SCPSC/STSP category.

During the year 2013-14, an amount of Rs. 131.19 crore has been received and the equal amount has been utilised. Similarly, an amount of Rs.146.10 crore has been received and Rs.146.10 crore has also been utilised. During 2015-16, the programme has been discontinued by the Government of India. During the period, significant numbers of schemes have been implemented in all the 13 BRGF Districts of the State.

#### OTHER STATE PLAN SCHEME:

##### CHIEF MINISTER'S SAMAGRA GRAMYA UNNAYAN YOJANA (CMSGUY):

The new Government has launched this mega mission called "CHIEF MINISTER'S SAMAGRA GRAMYA UNNAYAN YOJANA (CMSGUY)" for five years from 2016-17 and culminating in the year 2021-22. The main objective is to double the farm income. As normal interventions by the Government in this regard would not be adequate to address the problem. It is, therefore, proposed to induct massive investments in rural areas for complete rural empowerment in a period of five years in a focused and concerted manner to realise the dream of doubling the farm income. The focused intervention would be aimed at in nine critical areas (NAVARATNA) and related sub-missions will be – (1) Fishery Mission, (2) Milk Mission, (3) Organic Mission, (4) Land Management and Conservation Mission, (5) Sericulture, Khadi and Cottage Industry Mission, (6) Road and Broadband connectivity, (7) Semi-Processing, Processing and Market linkages, (8) "Youth-Yoga-Sports" Mission and (9) e-gram Mission by Developing village knowledge centre. There are 25,425 villages in Assam. Saturation model demands each and every revenue village is covered by the end of the mission period by covering at least a quarter of them annually for four years. It means that the mission requires to covered about 6356 villages annually from 2017-18 to 2021-22. The planned investment is about Rs. 1.20 crore per revenue village. The total requirement for the mission is Rs.30,000.00 crore over a period of five years. 10 percent of the total proposed investment will be in the form of community resources such as land, mandays and the remaining 90 percent will be from the state resources. [Budget Speech of Finance Minister, 2016-17].

##### SKILL DEVELOPMENT TRAINING/STRENGTHENING OF EXTENSION TRAINING CENTRES PROGRAMME UNDER SIRD:

The State Institute of Rural Development (SIRD), Assam has been organising skill development training programmes on different activities for providing self employment avenues for unemployed youths, farmers, weavers, artisans, entrepreneurs etc., as well as given thrust for upgrading the skill of traditional activities for income generation and livelihood promotion. The Government of India has been providing 100 percent grant for strengthening the infrastructure of SIRD and the State Government also borne its share of 10 percent of total recurring grant. Moreover, the Government of Assam has set up the Resource Centre in IT and Skill Development at Kahikuchi with a view to transfer the benefit of technology development directly to the communities at the grass root level to uplift life and livelihood of rural poor.

Since 2001-2013, the Extension Centre has provided managerial and skill development training to 1.6 lakh persons comprising youths, women, farmers, weavers, artisans etc., for livelihood. During 2015-16 about 4700 persons have to be assisted skill development training on various activities.

The total nos. of training programme conducted by the State Institute of Panchayat and Rural Development, Assam for the year 2014-15 were 2383 which showed as decline to 2133 during 2015-16. During the same period the nos. of participants also decreased to 134215 in 2015-16 from 134985 in 2014-15.

The nos. of training programme conducted for Elected Representatives of PRIs by the State Institute of Panchayat and Rural Development, Assam for the year 2014-15 were 506 and 740 during 2015-16 and the nos. of participants for the corresponding years were 16968 and 26376 respectively.

The State Institute of Rural Development, Assam (SIRD) had implemented a few Employment Generation Programmes whose financial achievements from 2013-14 to 2015-16 is reflected in the Table below.

TABLE 18.1

(Rs. In Crore)

Sl. No.	Financial Year	Target		Achievement	
		No. of Persons to be Assisted	Amount of Credit with 50% Govt. Subsidy to be mobilised	No. of Persons Assisted	Amount of Credit with 50% Govt. Subsidy Mobilised
1	2	3	4	5	6
1	2013-14	15000	65.00	19844	104.35
2	2014-15	20000	123.00	18611	91.16
3	2015-16	18450	74.78	16140	63.34
Total		53450	262.78	54595	258.85

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## APPENDIX 18.1

## DISTRICT WISE PHYSICAL ACHIEVEMENT UNDER MGNREGA IN ASSAM 2015-16

Sl. No.	Name of District	EMPLOYMENT GENERATED (Mandays in nos.)				
		SC	ST	OTHERS	TOTAL	WOMEN
1	2	3	4	5	6	7
1	Kokrajhar	53704	1767319	2151461	3972484	1615042
2	Dhubri	12240	1058	968248	981546	363462
3	Goalpara	16622	114660	470972	602254	214051
4	Barpeta	83751	27136	2372475	2483362	995626
5	Morigaon	278346	289542	2409284	2977172	1008910
6	Nagaon	466807	157152	5802329	6426288	1642250
7	Sonitpur	104416	149823	1354722	1608961	566285
8	Lakhimpur	80354	472884	1250120	1803358	649839
9	Dhemaji	76497	1008334	1278147	2362978	1030969
10	Tinsukia	16730	100544	870123	987397	315537
11	Dibrugarh	47336	143566	1078859	1269761	497484
12	Sivasagar	30137	55332	920877	1006346	352963
13	Jorhat	106645	310176	998380	1415201	463871
14	Golaghat	65598	208574	1524383	1798555	569165
15	Kari-Anglong	26214	815973	180667	1022854	373485
16	Dima Hasao	2963	233003	13433	249399	92234
17	Cachar	186043	34060	3033845	3253948	603355
18	Karimganj	58268	2927	355398	416593	75880
19	Hailakandi	89241	25500	1232513	1347254	255578
20	Bongaigaon	91632	19606	1217569	1328807	500973
21	Chirang	185145	1079302	1304723	2569170	1055441
22	Kamrup	121101	174598	1473302	1769001	579504
23	Kamrup (M)	8694	11519	28340	48553	23254
24	Nalbari	15377	11649	428252	455278	95265
25	Baska	191687	1084766	1240181	2516634	1065100
26	Darrang	52978	9201	2127179	2189358	742483
27	Udalguri	69089	807337	903624	1780050	588236
ASSAM		2537615	9115541	36989406	48642562	16336242

Source: Office of the Commissioner of Panchayat and Rural Development, Assam

## APPENDIX-18.2

DISTRICT-WISE JOB CARDS ISSUED AND EMPLOYMENT PROVIDED IN ASSAM  
IN 2015-16

Sl. No.	District	Total no. of Job Cards Issued	No. of Households demanded Employment	No. of Households provided Employment	No. of Households provided 100 days employment	No. of Disabled persons provided employment
1	2	3	4	5	6	7
1	Kokrajhar	228450	84986	82225	4787	131
2	Dhubri	208365	32547	28729	441	22
3	Goalpara	148291	28599	24232	311	34
4	Barpeta	256846	54528	49286	5343	1242
5	Morigaon	179932	94752	86750	1451	72
6	Nagaon	289090	158747	146063	8745	409
7	Sonitpur	273902	102601	87486	93	516
8	Lakhimpur	170946	56334	51355	1676	103
9	Dhemaji	153939	65757	59460	1933	114
10	Tinsukia	142081	47610	43444	322	25
11	Dibrugarh	157856	73436	66733	319	155
12	Sivasagar	148121	51100	45842	427	157
13	Jorhat	158301	69200	56950	709	27
14	Golaghat	151560	70911	64247	1059	60
15	Karbi-Anglong	220670	71357	68673	103	22
16	Dima-Hasao	41465	9885	9564	86	3
17	Cachar	244231	102056	85358	3452	55
18	Karimganj	176771	16394	15531	231	17
19	Hailakandi	118879	63753	57082	158	60
20	Bongaigaon	118635	47176	41859	1312	119
21	Chirang	103021	60649	56469	3357	38
22	Kamrup	215397	60108	52878	1287	95
23	Kamrup (M)	41127	3955	3621	12	5
24	Nalbari	112676	22575	17943	127	5
25	Baksa	224651	102218	95363	315	135
26	Darrang	167083	61261	53358	3495	88
27	Udalguri	136269	55872	51874	801	25
	ASSAM	4588555	1668367	1502375	42352	3734

Source: Office of the Commissioner of Panchayat and Rural Development, Assam

## APPENDIX-18.3

## DISTRICT WISE TARGET AND PHYSICAL ACHIEVEMENT UNDER NATIONAL SOCIAL ASSISTANCE PROGRAMME IN ASSAM, 2015-16

(Rs. In lakh)

Sl. No.	Indira Gandhi National Old Age Pension Scheme				
	Age Group of 60-79 Years			80 Years and above	
	District	Target	Achievement	Target	Achievement
1	2	3	4	5	6
1.	Kokrajhar	26483	26483	1589	1589
2.	Dhubri	31793	31665	2814	3745
3.	Goalpara	21960	21487	1482	1665
4.	Barpeta	19307	20723	2204	2304
5.	Morigaon	27002	27731	1575	1615
6.	Nagaon	82631	78557	4078	7754
7.	Sonitpur	53279	53068	2644	2855
8.	Lakhimpur	26093	26364	1556	1577
9.	Dhemaji	17031	17031	1088	1088
10.	Tinsukia	23808	24477	1697	1719
1.	Dibrugarh	22403	22451	1433	1411
12.	Sivasagar	30637	30658	2053	2031
13.	Jorhat	41997	42422	1394	1329
14.	Golaghat	22057	22128	1339	1337
15.	Karbi-Anglong	24572	12642	987	501
16.	Dima-Hasao	9511	5968	265	216
17.	Cachar	29263	29265	2463	2462
18.	Karimganj	21122	19884	1687	2781
19.	Hailakandi	19955	18152	1010	1863
20.	Bongaigaon	14119	14119	1057	1057
21.	Chirang	7500	7497	803	806
22.	Kamrup	60568	59230	1839	3161
23.	Kamrup (M)	16475	13623	323	708
24.	Nalbari	33752	33228	1345	1556
25.	Baksa	26118	26049	1577	1510
26.	Darrang	18490	17849	1340	1979
27.	Udalguri	14928	15063	1340	1407
	ASSAM	742854	717814	42982	52026

Source: Office of the Commissioner of Panchayat and Rural Development, Assam



## APPENDIX-18.4

DISTRICTWISE TARGET AND PHYSICAL ACHIEVEMENT UNDER IAY IN ASSAM,  
2015-16 (As on 8<sup>th</sup> December 2016)

District		Annual Target (Nos. of Houses)	House Completed against Target	Under Construction (Sanctioned before 2015-16)
1		2	3	4
1	Kokrajhar	5629	85	5629
2	Dhubri	8128	236	8128
3	Goalpara	3447	0	3447
4	Barpeta	5911	0	5910
5	Morigaon	4979	846	5027
6	Nagaon	11346	0	11324
7	Sonitpur	6806	1	6624
8	Lakhimpur	5070	15	5065
9	Dhemaji	4252	2	4250
10	Tinsukia	1637	5	1631
11	Dibrugarh	3450	3	3450
12	Sivasagar	2895	46	2895
13	Jorhat	3695	85	3653
14	Golaghat	3493	0	3243
15	Kari-Anglong	7150	404	7150
16	Dima Hasao	2029	434	2029
17	Cachar	6312	0	5951
18	Karimganj	4947	8	4865
19	Hailakandi	2694	24	2611
20	Bongaigaon	2115	21	2301
21	Chirang	3081	0	3081
22	Kamrup	5552	880	5552
23	Kamrup (M)	1020	109	1020
24	Nalbari	2771	0	2686
25	Baksa	6463	25	6456
26	Darrang	3209	679	3188
27	Udalguri	5112	1	5400
Assam		123193	3909	122566

Source: Office of the Commissioner of Panchayat and Rural Development, Assam

## APPENDIX-18.5

## DISTRICT-WISE TARGET AND PHYSICAL CHEIVEMENT UNDER NATIONAL SOCIAL ASSI STANCE PROGRAMME IN ASSAM, 2015-16

District		Indira Gandhi national Widow Pension Scheme		National Family benefit Scheme	
		Target	Achievement	Target	Achievement
1		2	3	4	5
1	Kokrajhar	4122	4122	348	398
2	Dhubri	7298	10972	538	538
3	Goalpara	3844	3735	458	458
4	Barpeta	5716	6595	438	438
5	Morigaon	4086	4186	418	418
6	Nagaon	10577	10572	740	740
7	Sonitpur	6857	6857	593	593
8	Lakhimpur	4035	4199	398	398
9	Dhemaji	2821	2821	368	368
10	Tinsukia	4402	4486	418	418
11	Dibrugarh	3716	3674	468	468
12	Sivasagar	5324	5307	518	518
13	Jorhat	3617	3540	567	567
14	Golaghat	3472	3472	438	438
15	Kari-Anglong	2559	2897	271	271
16	Dima Hasao	686	207	148	148
17	Cachar	6389	6389	512	512
18	Karimganj	4374	6652	384	384
19	Hailakandi	2620	2628	388	388
20	Bongaigaon	2742	2742	388	388
21	Chirang	2083	2082	313	313
22	Kamrup	4770	4722	633	633
23	Kamrup (M)	834	714	307	307
24	Nalbari	3489	2310	438	438
25	Baksa	4091	4019	438	438
26	Darrang	3477	3477	458	458
27	Udalguri	3476	4072	418	418
Assam		111477	117449	11804	11854

Source: Office of the Commissioner of Panchayat and Rural Development, Assam

## APPENDIX-18.6

## DISTRICT WISE TARGET AND PHYSICAL ACHIEVEMENT UNDER NATIONAL ASSISTANCE PROGRAMME IN ASSAM, 2015-16

(Rs.in lakh)

Sl. No.	District	Indira Gandhi National Disability Pension	
		Target	Achievement
1	2	3	4
1.	Kokrajhar	1754	1574
2.	Dhubri	2787	2888
3.	Goalpara	1468	1468
4.	Barpeta	2183	2264
5.	Morigaon	1560	1571
6.	Nagaon	4040	4040
7.	Sonitpur	2619	2619
8.	Lakhimpur	1541	1541
9.	Dhemaji	1078	1079
10.	Tinsukia	1709	1709
11.	Dibrugarh	1419	1419
12.	Sivasagar	2033	2033
13.	Jorhat	1381	1381
14.	Golaghat	1326	1326
15.	Karbi-Anglong	977	759
16.	Dima-Hasao	264	174
17.	Cachar	2440	2440
18.	Karimganj	1671	2178
19.	Hailakandi	1001	1001
20.	Bongaigaon	1047	1047
21.	Chirang	796	603
22.	Kamrup	1822	1822
23.	Kamrup (M)	319	319
24.	Nalbari	1332	1332
25.	Baksa	1562	1562
26.	Darrang	1328	1328
27.	Udalguri	1328	1480
ASSAM		42785	42957

Source: Office of the Commissioner of Panchayat and Rural Development, Assam

## CHAPTER – XIX

## SOCIAL SECTOR

In the past few decades the focus of development has shifted from economic growth to human development. World wide development of social sector plays a crucial role for improving human development indicators and attainment of Sustainable Development Goals (SDG). In Assam, social sector development bears the essence of overall economic development and human development in the State. This sector includes the State education, health and family welfare, safe drinking water, sanitation, welfare programme for women, children, SC & ST sub sectors, development of marginalized groups and backward regions etc. Development in these sectors has build up strong edifice of a stimulating economy in terms of rising income and employment opportunities, productivity, technology advancement and finally has enhanced the quality of life in the State. The state Government has been according high priority to these social sectors over the successive plans with positive outcomes thereby.

## EDUCATION:

Education is the mirror which reflects the social and economic status of a State. It strengthens the fabric of all round development, economic, social, technical, environmental and scientific areas in the State. It is a distinctive investment that will ensure better access to a progressive future generation. It will help in creating an environment for improvement of the quality of life.

Education is the key development input, a fundamental requirement for human resource development, not only for an individual in particular, but for the society, nation, as a whole. Education not only removes ignorance, it helps in boosting the moral values of individuals by enhancing their skills, efficiency, productivity and overall quality of life. It provides the skill to become more self-reliance, ability to be better informed, be more responsible, have better ability to exercise wide choices in activities of day to day lives, thereby being more productive and also have better standards of living. Education is very important and has been accepted as one of the most crucial inputs required for nation building. Keeping in view the goal of nation building, India has and is committed for the provision of free and compulsory elementary education to all children. Towards achievement of this end, Indian Parliament has enacted a legislation making education free and compulsory for every child in the age group 6 to 14 years of age, which has come in force since 1<sup>st</sup> April 2010. Rashtriya Madhyamik Siksha Abhiyan has been launched, as a step to universalise secondary education. Simultaneously, efforts are also being made for the creation of a strong and vast system of higher and technical education.

## LITERACY RATE IN ASSAM:

Literacy has both economic and social motives of an individual wellbeing. It improves self esteem, enhances social status, decision making and thereby enhances the confidence level of an individual in the society. It impacts human development outcomes, both as an input and output creating lasting benefits.

Thus literacy rates is the most important indicator that has the ability to reveal the overall human resource quality of a nation. Census data reveals that the literacy rates in Assam has grown encouragingly as per Table-19.1 shown below.

TABLE-I 9.1  
LITERACY RATES, 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

Source : Registrar General of India

As per Census 2011, the literacy rate of Assam is 72.19, with male literacy rate 77.85, which is behind the national rate of 72.99 and male literacy rate of 80.89 respectively. The female literacy rate with 66.27, stood above the national rate of 64.64. The literacy rates for rural and urban areas were calculated at 69.34 percent and 88.47 percent respectively. For the achievement of the goal of Universal Elementary Education, educational programmes of Sarva Siksha Abhijan (SSA) have been implemented along with various innovative schemes by the State Government. The State Government also equally gives emphasis in providing qualitative technical education to build technical skills to cater to the needs of the economy. In view of the importance of education and its impact on socio-economic development, the state government has also been implementing various educational programmes from time to time. Assam ranks 34<sup>th</sup> position in Teacher, 34<sup>th</sup> in infrastructure and 7<sup>th</sup> in access among 36 states in Primary education. The corresponding figures for Upper Primary are 29<sup>th</sup>, 36<sup>th</sup> and 34<sup>th</sup> position respectively.

#### ELEMENTARY EDUCATION:

Universalisation of primary education addresses two major groups, the out of school children during the primary school going age and the children who were forced to drop out even before completion of primary grade classes due to social and economic impediments. As per the provision of free and compulsory education to all children upto the age of 14 years the state Government is implementing the 'Right to Education Act 2009' as "Assam Right of Children to Free and Compulsory Education Rules, 2011" in Assam. The Directorate of Elementary Education (DEE), Assam is functioning under the act to achieve the goal of universalisation of Elementary Education in the State to provide useful and relevant elementary education to all children in the age group of 6-14 years of age. It aims in bridging all gender and social category gaps at primary stage with focus on elementary education of satisfactory quality. All schemes for elementary education are implemented through SSA. The table shows below the numbers of Government/ provisionised schools functioning under DEE.

	Lower Primary	Upper Primary	Upper Primary with high schools
Schools	48529	11410	1302
Teachers	133900	77458	20503

Source: DISE, 2015-16

The State Government in order to provide and promote quality education, to attract children of all social groups, and also see to the implementation of various Central Government schemes and programmes. The Directorate of Elementary Education (DEE) provides the following incentives-

Mid-day Meal for students of primary and upper primary schools.

Teaching Learning materials (TLM) to Government and Provisional Schools.

Provision of free text books upto Class VIII to all categories of schools including institutions not receiving financial assistance.

Provisions of scholarship to SC, ST, disabled children and meritorious students.

Provision of uniform to students upto Class VIII level

Provision of other incentives namely bicycles, umbrella, etc.

Provision of special scholarship to 1 lakh students.

#### OVER VIEW OF 10<sup>TH</sup> AND 11<sup>TH</sup> FIVE YEAR PLAN:

Plan Period	Outlay (Rupees in lakh)	Expenditure (Rupees in lakh)
10 <sup>th</sup> Plan	72852.45	74129.68
11 <sup>th</sup> Plan	66813.00	90997.00

Source: Draft Twelfth Five Year Plan and Annual Plan, 2012-13 (Vol-1),  
Planning and Development Department, Assam.

The Budget Outlay in 11<sup>th</sup> Five year Plan was Rs.66813.00 lakh against which expenditure incurred during the period was Rs. 90997.00 lakh, an excess of Rs. 24184.00 lakh which had been met by re-appropriation from the non-plan head. The major part of expenditure has been incurred for releasing the State share for implementation of SSA and Mid-Day Meal schemes. The major achievement of the 10<sup>th</sup> Five Year Plan is conversion of the liabilities of salaries from plan to non-plan.

#### KEY ACHIEVEMENTS IN ELEMENTARY EDUCATION:

##### DURING 11<sup>TH</sup> FIVE YEAR PLAN (2007-2012):

During the Eleventh Five Year Plan the State has achieved a lot at the lower primary and upper primary level. Some of the key achievements during this period are as follows:

- ❖ During the Plan period, 5015 Education Guarantee Scheme (EGS) centers have been upgraded to Govt. Lower Primary Schools.
- ❖ To make the Elementary Cycle of eight years, Class-V has been amalgamated to Lower Primary and Class-VIII to Upper Primary as like the rest of the Country.
- ❖ State curriculum has been reformed in the light of National Curriculum Framework (NCF), 2005 for class-I to VIII and new text books are introduced accordingly from January, 2011. The NCERT text books for core subjects-Maths, Science, English and Hindi are being introduced in the State.
- ❖ During the period, 135301 girl students were provided Bi-cycle under Chief Minister's Special Scheme, "Assam Bikash Yojana".
- ❖ Free uniform and textbooks were provided to elementary school students.
- ❖ Girl students of Class I and Class II of primary schools in rural areas were provided footwear.
- ❖ 6555 numbers of lower primary and upper primary were provincialised w.e.f 1<sup>st</sup> January 2013.

**DROP-OUT RATES:**

The average annual drop-out rate at Primary level in the State during 2014-15 as per DISE, was 15.36 against the all India drop-out rates of 4.13. At the Upper Primary level the average drop out rate in the State during 2014-15 was 4.20 against the all India rate of 4.03. The drop-out rate at the Elementary Level (Class- I to Class-VIII) in the age group 6 years to 14 years in the State was 13.87 as against the all India rate of 4.10 in 2014-15.

The table below shows the drop-out rates during 2014-15 in the NE States and at all India level.

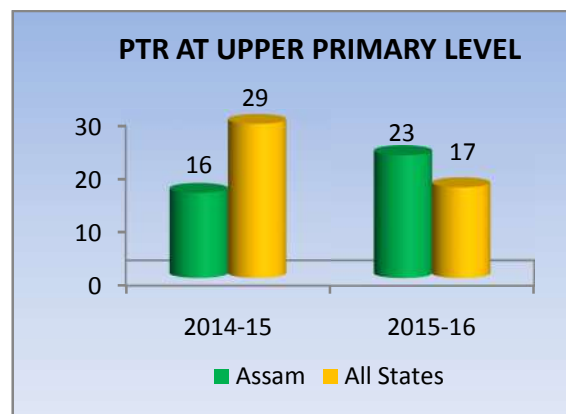
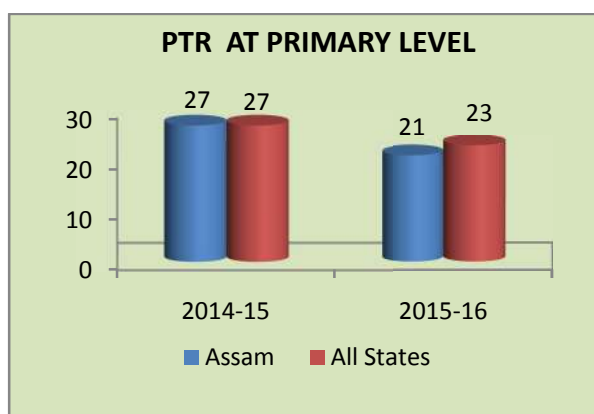
**TABLE-19.2**  
AVERAGE ANNUAL - DROP OUT RATES IN NORTH-  
EASTERN STATES AND ALL INDIA, 2014-15

States	Primary Level	Upper Primary Level	Elementary Level (Class I to Class-VIII)
Arunachal Pradesh	10.82	6.71	9.54
Assam	15.36	10.51	13.87
Manipur	9.66	4.20	8.02
Meghalaya	9.46	6.52	8.61
Mizoram	10.10	4.78	8.39
Nagaland	5.61	7.92	6.35
Sikkim	2.27	1.52	1.99
Tripura	1.28	1.99	1.53
India	4.13	4.03	4.10

Source: Flash Statistics, DISE-2015-16.

**PUPIL-TEACHER RATIO (PTR):**

The Pupil-Teacher Ratio in the Primary and Upper Primary Levels of the State during the year 2015-16 was 21 and 23 respectively as against the all States ratio of 23 and 17 respectively. While during 2014-15 it was 27 and 27 at Primary level against 16 and 29 at Upper Primary level. The graph below is the PTR of Primary and Upper Primary in the State and at All State level during 2014-15 and 2015-16 as per Flash statistics:



**ENROLMENT RATIO:**

The Gross Enrolment Ratio (GER) at Primary Level during 2014-15 and 2015-16 in Assam is 114.96 and 106.11 against 100.08 and 99.21 respectively for all States. The GER at Upper Primary Level during 2014-15 and 2015-16 in Assam was 95.86 and 93.05 compared to 91.24 and 92.81 for all States respectively as per u-DISE-2015-16.

**EDUCATION DEVELOPMENT INDEX:**

The National University of Educational Planning and Administration (NUEPA) and the Ministry of Human Resource and Development (Department of School Education and Literacy), Govt. of India computes the Education Development Index (EDI) for primary and upper primary and composite index for the entire elementary education based on the District Information System for Education (DISE). To compute EDI, 24 indicators are regrouped into four sub groups viz. access, infrastructure, teacher and outcome.

According to DISE 2014-15-Flash Statistics, the State is ranked 35 at primary level, 32 at upper primary level and 33 at composite level with EDI 0.473, 0.511 and 0.492 respectively. The all India ranking of the State as per DISE 2014-15 for access to primary schools is 7, for infrastructure is 32, for teacher is 34 and for outcome is 6. The EDI rank of the State in respect of access, infrastructure, teacher and outcome at upper primary level is 34, 36, 29 and 9 respectively.

**MID DAY MEAL (MDM):**

The Mid Day Meal, a Centrally Sponsored Scheme (CSS) programme has been started in Assam with effect from January 2005 and the State is providing cooked meal to the students of class I to Class VIII since 2005-06 to achieve the objectives like increasing enrolment and regularity of attendance, reducing dropouts and sustaining retention and improving level of learning and self esteem impact on nutrition of students. The total plan fund allocation for the programme in 2015-16 is Rs. 596.83 crore which includes central share and the mandatory state share of 10 percent. The state share for Mid Day Meal for the year 2015-16 is Rs.59.68 crore.

**ANNUAL PLAN 2016-17:**

An amount of Rs. 66362.13 lakh was provided in the State Budget for implementation of various programmes for General Education under Sectoral Allocation for Annual Plan 2016-17. The details allocated amount are Elementary Education=Rs. 25000.00 Lakh, Adult education =Rs.320.00 lakh, Secondary Education = Rs. 30000.00 lakh, Madrassa Education =Rs.300.00 lakh, SCERT=Rs.50.00 lakh (excluding salary and wages of Rs. 42.13 lakh), Higher education=Rs. 8000.00 lakh and Technical Education=Rs. 2500.00 lakh (excluding wages and salary of Rs. 150.00 lakh)

**SECONDARY EDUCATION:**

The secondary education is a crucial stage after passing out the stage of elementary education to prepare the student with higher level of knowledge and skills for higher education. In Assam, Secondary Education covers Class IX to Class X for the age group of 14 years to 16 years and Higher Secondary stage covers Class XI to Class XII for the age group 17 years to 18 years. However, amalgamated Secondary Schools are imparting education from Class VI onwards. During 2015-16, there were 8241 numbers of Secondary Schools and 2075 numbers of Higher Secondary Schools as per flash Statistics, DISE 2015-16. (As on 30<sup>th</sup> Sept/2015)



The State Secondary Report Card, 2015-16 prepared by National University of Educational Planning and Administration (NUEPA) reveals that the ratio of upper Primary Schools to Secondary Schools/sections in the State is 2.11 and the ratio of Secondary schools to Higher Secondary schools/sections is 3.97. The report further shows that the annual average dropout ratio for Secondary level during 2014-15 in Assam was 27.06 of which 24.64 and 29.38 were for Boys and Girls respectively against total average of 17.06 at national level during 2014-15.

TABLE-19.3  
ENROLMENT BY CASTE IN SECONDARY SCHOOLS IN ASSAM  
(IN PERCENTAGE) 2015-16

Caste	Secondary		Higher Secondary	
	Total	Girls	Total	Girls
SC	10.14	51.79	8.46	47.71
ST	17.55	101.51	17.80	49.16
OBC	30.01	28.39	28.48	N.A.
Muslim	25.21	26.96	19.14	19.52

Source: Secondary Education: State Report Cards, NUEPA

#### ACHIEVEMENTS OF ELEVENTH FIVE YEAR PLAN:

The total allocation for improvement of secondary education in the State during the 11<sup>th</sup> Five year Plan was Rs.951.11 crore against which an amount of Rs.892.31 crore has been utilised. The total expenditure during the annual plan 2012-13 was Rs.360.52 lakh against an allocation of Rs.372.63 lakh. Few achievements during the plan period are given as follows.

- Anundoram Baruah Award to 86266 students.
- Financial grant to 36 numbers of Secondary Schools attaining 100 years or above.
- Grant to 166 numbers of Secondary schools for distinguished performance.
- Scholarship to 25113 numbers of BPL students.
- Repair and renovation grant to 1016 numbers of secondary schools at the rate of Rs.5.00 lakh.
- Financial assistance to 2021 numbers of recognized HS and HM, 185 permitted HSS and 199 numbers of Junior colleges receiving Govt. concurrence.
- Launching of Rajiv Gandhi Computer Literacy Programme.
- Study tour to NASA.
- Grant to RMSA for taking innovative schemes under Secondary Education and for providing quality education.
- Grant to Mobile Science Laboratory.
- Vocational Education through National Vocational Education Qualification Framework (NVEQF).
- Establishment of Model schools and Girls' hostel.
- Dropout rate at the Secondary level reduced to a great extent.

**AIMS AND OBJECTIVES FOR TWELFTH FIVE YEAR PLAN:**

The following are the thrust area for development of Secondary education in the State.

- Recruitment of quality teachers through TET examination.
- Engagement and maintenance of contractual teachers.
- Improvement of infrastructure of Secondary Schools.
- Providing scholarship of various kinds to students.
- Running of ICT in Secondary Schools (Rajiv Gandhi Computer Literacy Programme).
- Tour of top position holders to NASA.
- Providing assistance to Secondary Schools for publication of magazines, hoisting of youth festival and sports festival.
- Tour of teachers to places of repute.
- Vocationalisation of secondary education.
- Maintaining the existing vocational stream in secondary schools.
- Establishment of Model Schools and Girls' hostel.
- Implementation of RMSA schemes.
- Establishment of digital rooms in Secondary Schools.
- Reduction of school dropouts in Secondary Schools.
- Improvement in English teaching by introducing spoken English in Secondary Schools.

Total fund allocation for Secondary Education in Assam for the Annual Plan during 2015-16 is Rs. 515.64 crore.

**RASHTRIYA MADHYAMIK SHIKSHA ABHIYAN (RMSA):**

The Rashtriya Madhyamik Shiksha Abhiyan, Assam has taken up various activities such as infrastructure development, teacher's recruitment, establishment of model schools, establishment of girls' hostel and teachers in service training to uplift Secondary Education in Assam. All the scheme of RMSA is centrally sponsored and the State has to provide only 10 percent matching share to the RMSA.

The RMSA has taken up establishment of 24 model schools and will implement the National Vocational Education Qualification Frame Work with 10 percent State share in the State.

**MAJOR ACTIVITIES OF RMSA DURING TWELFTH FIVE YEAR PLAN:**

- Establishment of new school and up gradation of Upper Primary School to Secondary School. The total requirement in the State is 3957 schools of which 2607 already exists.
- Establishment of new Higher Secondary School and up gradation of existing Upper Primary School to Higher Secondary School. The total requirement in the State is 3100 schools of which 645 already exists.
- To establish 23623 Additional Classrooms as per population projection at Secondary level in the State of which 2204 has already been approved by the Govt. of India.

- To establish 19293 Additional Classrooms as per population projection at Higher Secondary level in the State of. The total requirement is 31000 classrooms of which 1887 already exist and 9820 rooms of new school.
  - Integrated Science Laboratory. The total requirement is 2607 of which 149 laboratories exist and 1038 has already been approved by the Govt. of India. The target to achieve is 1420 Science laboratories in the Secondary section.
  - Subject wise 3 Science Laboratory per school for Higher Secondary sections.
  - Lab equipments for all 7057 Secondary and Higher Secondary Schools of which approval for 1038 schools is being granted by the Govt. of India.
  - Construction of Headmaster and Principal room.
- For construction of Model School, Girls' Hostel, NVEQF through RMSA Rs. 52682.77 lakh is proposed for the 12<sup>th</sup> Five Year Plan 2012-17.

#### MADRASSA EDUCATION:

A separate Directorate of Madrassa Education was created in 2005; earlier it was a part of Directorate of Secondary Education. At present, there are as many as 249 pre-senior Madrassas of which 14382 are boys and 13664 are girls, 133 Senior Madrassas of which 12759 are boys and 12323 are girls. Likewise, 4 Arabic Colleges enrolled with 749 boys and 522 girls and 14 Title Madrassas with 1376 boys and 481 girls continuing Madrassa education in the State. Achievements during the Eleventh Five Year Plan were as follows: Establishment of the Directorate of Madrassa Education, 700 Khariji Madrassa have been provided with financial assistance for infrastructure development, the Govt. of India has released an amount of Rs.1498.53 lakh as 100 percent Central assistance under the 'Scheme for Providing Quality Education in Madrassa (SPQEM)', a Centrally Sponsored Scheme. Under the provincialisation Act, 327 venture Madrassa of various categories have been provincialised.

#### NEW INITIATIVES FOR 12<sup>TH</sup> FIVE YEAR PLAN:

- Establishment of Madrassa University and Training College.
- Establishment of six Zonal Offices.
- Construction of Hostel for Boys and Girls.

Both the Central and State Government are equally concerned for upliftment of Madrassa Education in the State. The Govt. of India has taken up the Prime Minister's New 15 Point Programme for the 12<sup>th</sup> Five Year Plan for posting of urdu teachers, modernisation of Madrassa (SPQEM & IDMI) and infrastructure development through Moulana Azad Education Foundation. The total amount of plan proposal for development of Madrassa Education in Assam for the 12<sup>th</sup> Five Year Plan (2012-17) is Rs.71350.00 lakh.

#### ADULT EDUCATION:

Adult Education programme was started all over the nation in the year 1978-79. Subsequently after constitution of National Literacy Mission (NLM) in 1988, the total literacy campaign came into being. During the year 2009 the Sakshar Bharat Mission was launched by the Government of India to achieve 80 percent literacy level by 2012 at national level, by focusing on adult women literacy to reduce the gap between male and female literacy. The mission has four broader objectives, viz. imparting functional system and numeracy to non-literates; acquiring equivalency to formal educational system; imparting relevant skill development programme; and promote a leaning society by providing opportunities for continuing education. The Adult Literacy Programme is

implemented to eradicate illiteracy of the age group 15 years and above in the population.

The strategic primary focus of the programme is on women, Scheduled Castes, Scheduled Tribes, Backward Communities, Char Areas, Hill Areas and Tea Tribes to achieve 80 percent literacy within 2012 as stipulated in Sakshar Bharat Mission. The 11<sup>th</sup> Five Year Plan targeted to cover 12 districts in Slot-I and Slot-II of the programme namely Dhemaji, Sonitpur, Darrang, Bongaigaon, Karbi-Anglong, Dhubri, Kokrajhar, Goalpara, Barpeta, Morigaon, Hailakandi and Tinsukia.

The Twelfth Five Year Plan targets to cover 28.48 lakh non-literates of age 15 years and above and SBM will pursue the literacy movement in the 12 districts having female literacy less than 50 percent. The total fund allocation for the Annual Plan 2015-16 is Rs.12.06 crore.

#### HIGHER EDUCATION:

The Directorate of Higher Education and Directorate of Secondary Education is established to give primary focus on expansion and promotion of Higher Education by granting financial assistance to the needy educational institutions besides implementing various programmes for development of general education and assisting for infrastructure development in general with special focus to rural and backward areas.

The numbers of Higher Educational institutions in Assam is given in Table-19.4 below:

TABLE- 19.4

#### NUMBER OF HIGHER EDUCATIONAL INSTITUTIONS IN ASSAM AS ON 2015-16

Institutions	Numbers
Universities(including private and Deemed University)	12
Government Colleges	6
Provincialised Colleges	295
Non-Govt. Colleges	43
Provincialised Sanskrit & Pali Tols	97
Literary & Voluntary Organisation	19
Govt. Law College	1
Non-Govt Law Colleges	19

Source : Higher Education, Assam, Kahilipara, Guwahati-19

The year wise approved allocation and expenditure for development of higher education during the Eleventh Five Year Plan (2007-12) is as follows-

TABLE-19.5

#### ALLOCATION AND EXPENDITURE DURING 11<sup>TH</sup> FIVE YEAR PLAN

(Rupees in crore)

Year	Allocation	Expenditure
2007-08	15.50	13.79
2008-09	9.90	9.63
2009-10	36.38	34.28
2010-11	90.03	80.33
2011-12	130.77	116.83

Source: Draft Twelfth Five Year Plan and Annual Plan, 2014-15 (Vol-1), Planning and Development Department, Assam.

Few major achievements during 11<sup>th</sup> Five Year Plan:

- Provided Rs. 490.00 lakh for Gauhati University, Rs. 975.00 lakh for Dibrugarh University and Rs. 49.00 lakh for Cotton College for infrastructure development.
- Private University Act and Rules passed.
- Don Bosco University and Down Town University formed.
- Kokrajhar College has been taken over as Govt. College.
- K.K. Handique State Open University established.
- 5 year LLB course in B.R.M. Govt. Law College and 4 whole times and 4 part time lecturer post created.
- The Bodo Land University Act passed.

During the Twelfth Five year Plan (2012-17) an amount of Rs.1031.00 crore is proposed for the development of Higher education. The fund allocation for the year 2015-16 is Rs. 192.79 crore.

#### TECHNICAL EDUCATION:

The Directorate of Technical Education, Assam prepares, supervises and implements the plans and schemes for overall development of Technical Education in the State. A brief review about allocation of fund for State Plan and centrally sponsored schemes during the 11<sup>th</sup> Five Year Plan and physical achievement is presented through the tables below.

TABLE-19.6

#### YEAR WISE APPROVED ALLOCATION OF FUND FOR TECHNICAL EDUCATION DURING THE 11<sup>TH</sup> FIVE YEAR PLAN

(Rupees in crore)

Year	State Plan Fund		Centrally Sponsored Scheme	
	Allocation	Utilisation of fund	Allocation	Utilisation of fund
2007-08	2.00	0.42	0.40	0.40
2008-09	10.78	5.56	0.46	0.46
2009-10	23.38	9.67	1.06	1.06
2010-11	42.92	30.40	9.28	9.28
2011-12	40.19	38.70	15.11	13.97

Source: Draft Twelfth Five Year Plan and Annual Plan, 2014-15 (Vol-1), Planning and Development Department, Assam.

To implement various programmes for overall development of Higher Education in the State an amount of Rs. 434.00 lakh is proposed for the 12<sup>th</sup> Five Year Plan period which includes a proposal of Rs.10000 lakh under the scheme, 'Chief Minister's Mission for Technical Education'. The approved allocation for the Annual Plan 2012-13 under the State Plan was Rs. 39.90 crore of which Rs. 21.07 crore was utilised. During 2013-14, approved allocation of State Plan Fund was Rs. 53.15 crore. The approved allocation of fund for the Centrally Sponsored Schemes for development of higher education in the State during 2012-13 was Rs. 282.30 crore of which an amount of Rs. 1.80 crore was utilised and during 2013-14 the approved allocation was Rs. 285.50 crore.

Few Major Achievements during the Twelfth Five Year Plan including Fund from Non-Plan:

- Construction of new engineering colleges at Kokrajhar, Barak Valley, Golaghat and Dhemaji is going on.
- Permanent campus of Diphu Polytechnic completed.
- Establishment of 21 numbers of new polytechnics under CSS fund is going on.
- Women University Act has been enacted.
- Admission of 1<sup>st</sup> batch of students and starting of classes of Indian Institute of Information and Technology (IIIT), Assam at temporary campus of Assam Textile Institute, Guwahati.

#### MEDICAL EDUCATION:

The Directorate of Medical Education, Assam is entrusted with the task of generating human resources like Doctors, Nurses, Technicians, Physiotherapists, Pharmacists and other Health personnel to meet the growing needs of not only the State but the entire North Eastern region.

The Directorate has a host of institutes under its control that is Assam Medical College(AMC) & Hospital, Gauhati Medical College(GMC) & Hospital, Silchar Medical College (SMC) & Hospital, Jorhat Medical College, Regional Dental College, Guwahati; Regional Nursing College, Guwahati; Govt. Ayurvedic College, Guwahati; S.J.N. Homeopathic Medical College, Guwahati; Dr. J.K. Saikia Homeopathic Medical College, Jorhat; Assam Homeopathic Medical College, Nagaon, three pharmacist institutes associated with AMC, GMC and SMC, Medical Institute at Jorhat and three Institute of Paramedical Sciences at Guwahati, Dibrugarh and Silchar. The Srimanta Sankaradeva University of Health Services, Assam and Jorhat Medical College & Hospital have started functioning from 2009-10.

Besides the above institutes, the State has added three more medical college's viz. Fakaruddin Ali Ahmed Medical College, Barpeta; Tezpur Medical College Tezpur; Assam Hills Medical College and Research Institute, Diphu. Steps have also been taken to establish three more medical colleges at Lakhimpur, Kokrajhar and Dhubri.

#### PHYSICAL ACHIEVEMENT DURING THE 11<sup>TH</sup> FIVE YEAR PLAN (2007-12):

- Jorhat Medical College has started functioning from the session 2010 with an intake capacity of 100 students. Hospital section of Fakaruddin Ali Ahmed Medical College and Hospital started functioning from February 2011.
- The Srimanta Sankaradeva University of Health Science has started functioning fully from 2009-10.
- Three new institutes of Para medical sciences have been established at GMCH, AMCH and SMCH and the courses have already been started from the session 2008.
- A new Directorate of AYUSH has been established during 2010-11.
- Two new Nursing Colleges at AMCH and GMCH has been established.

#### SECTORAL PLAN ALLOCATION:

The new Government has taken various innovative measures for improvement of Medical and Health in the State. In the Annual Plan of 2016-17 an amount of Rs. 30000.00 lakh was allocated to Health and Family Welfare Department (excluding Rs. 14549.09 lakh of salary and wages).

**ACHIEVEMENTS ON STUDENTS AND EDUCATION:**

1. A budgetary provision of Rs. 5777.60 Lakhs under plan for implementation of Anandaram Borooah Award Scheme.
2. For distribution of Free test books from Class I to X, a budgetary allocation of Rs. 5000 lakh during the year 2016-17.
3. Taking the Digital India as an inspiration. The Computer Aided Aearing will be extended to 297 Upper Primary Schools.
4. Exemption of Fee for Poor students during admission is H.S. Ist year in provisionalised/ Government H. S. scholls and Junior Colleges of Assam whose parents Annual income is less than or Rs. 1.00 lakh. This scheme will also cover the CWSN (differently abled) students inrespective of their Annual Income of parents. For this Rs. 5000 lakhs is allocated.
5. 21 new Polytechnics in 21 districts are being established under this Centrally Sponsored scheme. For this a budgetary allocation of Rs. 20,158.17 lakhs is proposed.
6. Three Universities are to be created at Barpeta, Bihupuria and Hojai. Proposed has been made to establish and new DIET at Hojai, South Salmara, West Karbi Anglong, Charaideo, Biswanath Charali, Chirang and Udalguri.
7. The state Govt. is pursuing with the Govt. of India for exemption of another 3 years for TET pass candidates to acquire professional degree so as to fill up another 13,000 vacancies existing under Sarva Shiksha Abhijan (SSA)
8. Adequate budgetary provision has been made for fully functional of Karimganj, Golaghat and Dhemaji Engineering Colleges.
9. Proposed to develop composite School campuses called "SHIKSHA KHETRA" wherever amalgamation is possible and feasible.
10. Budgetary provision has been made under plan to initiate "SAPTADHARA" in schools,

Budget Speech of Finance Minister, 2016-17.

**HEALTH AND FAMILY WELFARE:**

Health care performance in Assam exhibits sustained improvements over the years. These improvements are the outcomes of concentrated and continued efforts of the Government towards establishing an efficient system of health care and family welfare through effective planning, financing, human, resources management, infrastructure and supply chain management. The State Government has taken consistent initiatives to reduce prevailing regional disparities and gaps in the access to safe drinking water, sanitation facilities, public and private health care infrastructure, rural infrastructure, access to preventive and medical care, public hygiene, information system on health care and nutrition, skilled manpower etc.

**GENERAL HEALTH:**

Quality and adequate health care services has lead to better learning ability, nutritional retention, capability enhancement and standard of living of people. It has also helped in limiting family size, improving basic amenities and reducing poverty significantly.

The State health services has always aimed at providing reliable, affordable, accountable and effective primary health care to the people of Assam, with special care provisions from women and children. For the achievement of this goal, the State has been implementing various Central Government schemes, along with its own schemes and programmes for continuously increasing allocation of funds to the Health sector in successive State Plans.

Essentially three categories of health indicators like outcomes Infant Mortality Rate (IMR), process (institutional delivery) and input (infrastructure), public expenditure, National Health Mission (NHM) etc. describe the progress of the health sector in the State. Along with these, important indicators are Infant Mortality Rate (IMR), Maternal Mortality Rate (MMR), Crude Birth Rate (CBR) and Crude Death Rate (CDR) etc.

#### Status of Health Infrastructure in the State.

The status of Health infrastructure in the State is improving over the years.

- At present there are 25 Civil Hospitals, 13 Sub-Divisional Civil Hospitals, 1014 PHCs, 62 FRUs, 151 CHCs and 4621 Sub Centres with 18356 numbers of total beds in the State at the end of 2015.
- The number of Medical and Paramedical staff in the state is 5004 including Ayurvedic and Homeopathic doctors in 2015.

#### CHILD HEALTH INDICATORS IN ASSAM, 2014:

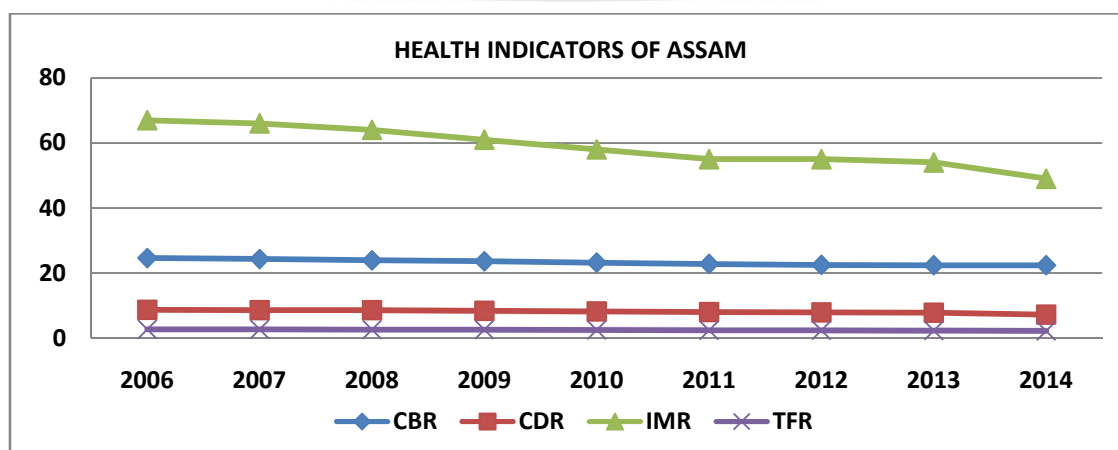
The health indicators released by RGI shows that the Under Five Mortality rate in Assam is very high than the all India rate. The neo natal mortality has decreased during the last few years compared to the all India rate and this is due to the initiatives taken by the State Health Service for maternal and child health. The table below shows a comparison of some health indicators of Assam and India.

Activity	Total		Rural		Urban	
	Assam	India	Assam	India	Assam	India
Crude Birth Rate	22.4	21	23.6	22.7	15.5	17.4
Crude Death Rate	7.2	6.7	7.6	7.3	5.3	5.5
Infant Mortality Rate.	49	39	52	43	27	26
Neo-Natal mortality rate	27	28	29	31	10	15
Under 5 (Five) mortality rate	77	55	71	55	28	29

Source: SRS Bulletin, 2014 and NITI AAYOG

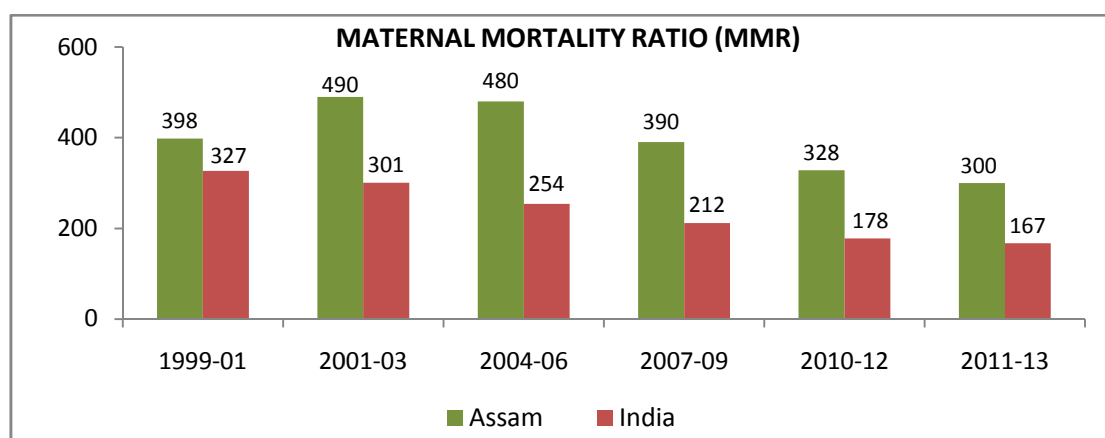
The graph below shows the trend of Crude Birth Rate (CBR), Crude Death Rate (CDR), Infant Mortality Rate (IMR) and Total Fertility Rate (TFR) in Assam since 2006 to 2014. The CBR, CDR, IMR and TFR which was 24.6, 8.7, 67 and 2.7 in 2006 has declined to 22.4, 7.2, 49 and 2.3 in 2014.





#### MATERNAL MORTALITY RATIO (MMR):

Maternal Mortality Ratio (MMR) is the Annual number of Female death per 100,000 live birth from any cause related to or aggravated by pregnancy or its management. The Maternal Mortality Ratio of Assam and India from 1999 to 2013 is presented through the graph given below.



Source: SRS Bulletin, Registrar General of India.

The above graph depicts that there is an overall decline of the Maternal Mortality Rate (MMR) during the period 1999 to 2013. Although the rate is still very high in Assam in comparison to All India rate due to some improvement made and taken up for maternal health at birth in the state, the gap between the relative figures in the State and the Country shows a decline during the period 1999-2013, which has been minimised. Various measures have been taken up for improving MMR for safe delivery under National Health Mission (NHM) in the state. During the period 2011–2013 MMR, of Assam has come down to 300 from 328 while in India it is 167 which has come down from 178. Among the state Kerala has lowest MMR of 61 followed by Maharashtra 68. Significant development in the field of Medical Science and other Health sector has brought down the MMR of the State.

The State is implementing Health Sector Schemes both in the urban and rural areas to provide health care facilities at free or at an affordable cost. Some of the schemes being implemented in the State are as follows.

- ❖ Primary health care both in rural and urban areas.
- ❖ Secondary health care
- ❖ Ayush
- ❖ Control of communicable diseases
- ❖ Non communicable diseases
- ❖ Schemes for food safety measures
- ❖ Public health education
- ❖ School health services
- ❖ Assam Bikash Yojana
- ❖ National Fluorosis Control Programme
- ❖ Pilot project for prevention of burn injuries
- ❖ Indradhanush
- ❖ Atal Amrit Abhiyan- Health Insurance Scheme.

#### TWELFTH FIVE YEAR PLAN:

The Twelfth Five Year Plan was started in Assam with a proposed plan outlay of Rs.1588.68 crore. During 2012-13, the first year of the plan period an amount of Rs.463.84 crore was allocated against which an amount of Rs.421.61 crore was utilised achieving a financial target of 91 percent. The plan allocation for the Annual Plan 2013-14 is Rs.520.30 crore to implement the following schemes during the year.

- An amount of Rs.10.00 crore was allocated to procure surgical and other consumable items, anti cancer medicines and nephrology medicines for civil hospitals, sub divisional civil hospitals, CHCs and PHCs.
- To purchase heart valves and heart valves accessories for BPL families an amount Rs.1.00 crore and Rs.0.50 crore was allocated for the year.
- To procure Pace Makers for BPL families an amount of Rs.0.60 crore was allocated.
- An amount of Rs.3.00 crore was provided to purchase of machineries and equipments for District Hospitals, Sub-Divisional Civil Hospitals, PHCs and CHCs.
- An amount of Rs.10.00 crore was provided for improvement and strengthening of office buildings and hospitals in the State.
- An amount of Rs. 30.00 crore was earmarked for the Chief Minister's Special Scheme-Purchase of Long Lasting Insecticides Treated Bednets (LLIN) for BPL families.

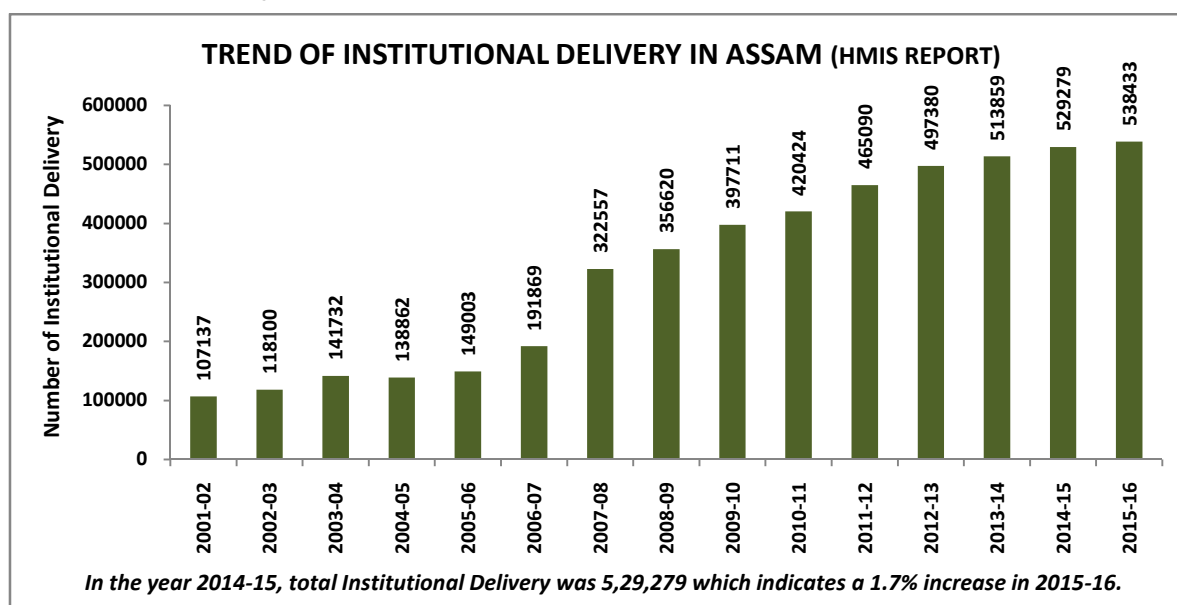
#### NATIONAL HEALTH MISSION:

Govt. of India launched the National Health Mission (NHM) to carry out necessary architectural correction in the basic health care, delivery system. The Mission's approach is relating health to determinants of good health viz. segments of nutrition, sanitation, hygiene and safe drinking water. It also aims at mainstreaming the Indian systems of medicine to facilitate health care. Various measures taken by National Health Mission (NHM) for child and mothers health.

#### INSTITUTIONAL DELIVERY:

The Govt. under NHM has taken various initiatives to increase institutional delivery in Assam. Institutional delivery in Assam till 2006-07 was not so encouraging. During 2007-08 number of institutional delivery in Assam increased by 68 percent and is on an increasing trend resulting in decline of MMR. In the year 2014-15 total Institutional Delivery was 529279 while during 2015-16 the number Institutional delivery increased

to 5,38,433 registering a growth of 1.7 percent. The graph below shows the trend of Institutional delivery in the State since 2001-02.



Source: HMIS Report.

#### JANANI SURAKSHA YOJANA:

Janani Suraksha Yojana (JSY) is a safe motherhood intervention under the National Rural Health Mission (NRHM) being implemented with the objective of reducing maternal and neo-natal mortality by promoting institutional delivery among the poor pregnant women. The Yojana, launched on 12 th April, 2005, by the Hon'ble Prime Minister, is being implemented in all states and UTs with special focus on low performing states.

JSY is a 100% centrally sponsored scheme and it integrates cash assistance with delivery and post delivery care. The success of the scheme would be determined by the increase in institutional delivery among the poor families.

The Yojana has identified ASHA, the accredited social health activist as an effective link between the Government and the poor pregnant women in 10 low performing states, namely the 8 EAG states and Assam and J & K and the remaining NE States. In other eligible states and Uts, wherever, AWW and TBAs or ASHA like activist has been engaged in this purpose, she can be associated with this Yojana for providing the services.

#### 1) Benefit to mother for delivery in Govt. and Accredited Hospitals

- Rs. 1400/- is for women from Rural Area
- Rs. 1000/- is for women from Urban Area

#### 2) Rs. 500/- for Home Delivery for BPL Women (Benefit to mother)

#### 3) Benefit to ASHA

- Rs. 600/- for delivery in Govt. and Accredited Hospitals.

Under the scheme 427557 lakh women have got benefitted in the State till 2015-16.

#### RASHTRIYA BAL SWASTHA KARYAKRAM (RBSK):

Rashtriya Bal Swasthya Karyakram (RBSK) which is an extension of the School Health Programme is a new initiative under NRHM that seeks to put together a systematic approach to child health screening and early intervention. All children in the age group of 0-18 years will be screened across the state under RBSK through a structured screening process by a dedicated mobile health team consisting of a Medical Officer, Dental Surgeon ANM and a pharmacist (Two teams for each Health block).

The children diagnosed with any of the health conditions identified for screening will receive follow-up referral support and treatment including surgical interventions at identified DEICs (District Early Intervention Centres) and appropriate health facilities free of cost.

#### ATAL AMRIT ABHIYAN-HEALTH INSURANCE SCHEME IN ASSAM:

Atal Amrit Abhiyan is a new health insurance scheme announced by the state Government of Assam. Health Minister Himanta Sarma announced the introduction of the new scheme on 20<sup>th</sup> September, 2016. Every member of the household will be insured for a sum of up to Rs. 2 lakh per year.

#### ATAL AMRIT ABHIYAN OBJECTIVES:

Atal Amrit Abhiyan is aimed at providing health insurance coverage of up to Rs. 2 lakh to the state residents. The Atal Amrit Abhiyan health insurance scheme would cover treatment for cancer, kidney disease, brain and heart-related ailments and burn injuries. People suffering from these diseases would be able to get treatment at all govt. and CGHS empaneled hospitals for up to Rs. 2 lakh.

Under the scheme, the government would provide unique identification number and a health card to each beneficiary. The scheme will be free for the BPL families. The smart cards will be distributed by April 1<sup>st</sup>, 2017.

The smart card can be availed by paying just Rs. 100 to avail the scheme benefit. The card will be issued to each individual for the household separately. The annual renewal cost of the smart card would also be Rs. 100.

The state Government would bear an additional burden of Rs. 200 crore to implement the scheme in the state. The Govt. also trying to empanel more hospitals under the scheme so that the residents can avail the treatment without much problem.

The state govt. will provide one time financial assistance of Rs. 1 lakh to the patients suffering from these five diseases till the Atal Amrit Abhiyan is launched. The scheme will be rolled out from April 1 next year and it will be on individual basis.

#### PUBLIC HEALTH (SANITATION & DRINKING WATER):

##### NIRMAL BHARAT ABHIJAN:

The Total Sanitation Campaign (TSC) was launched by Govt. of India with reform initiatives in rural sanitation sector to accelerate the sanitation coverage and eventually to bring about an improvement in the general quality of rural life. The TSC projects have been renamed as Nirmal Bharat Abhijan (NBA) which was restructured as Swachh Bharat Mission (Gramin). launched on 2<sup>nd</sup> October 2014 at Rai Ghat New Delhi, aims to eradicate open defecation by 2019. The target and achievement during the year 2015-16 is presented below.

#### PHYSICAL TARGET AND ACHIEVEMENT UNDER NIRMAL BHARAT ABHIJAN IN ASSAM

Name of the project	Target	Achievement	Percentage of achievement
Individual Household Latrine (IHHL-BPL)	124211	83811	67
Individual Household Latrine (IHHL-APL)	489763	381725	78
School Toilet	NA	NA	NA
Anganwadi Toilet	NA	NA	NA

Source: Chief Engineer (PHE), B&S, Assam.

In the sectoral plan allocation during 2016-17, an amount of Rs. 7831.00 lakh was allocated to Public Health Engineering Department by the Government.

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## APPENDIX-19.1

## NUMBER OF STATE GOVT. HOSPITALS, PRIMARY HEALTH CENTRES, FIRST REFERRAL UNITS, C. H., CETC. IN ASSAM, 2015

Sl.No.	District	CH	SDCH	PHC	FRU	CHC	SC
1	2	3	4	5	6	7	8
1	Kokrajhar	1	1	45	4	4	161
2	Dhubri	1	1	44	1	8	246
3	Goalpara	1	0	41	1	5	151
4	Barpeta	1	1	51	2	6	264
5	Morigaon	1	0	36	2	5	123
6	Nagaon	1	0	80	6	15	354
7	Sonitpur	1	2	58	2	9	275
8	Lakhimpur	1	1	30	2	8	156
9	Dhemaji	1	0	22	2	4	98
10	Tinsukia	1	0	23	3	6	164
11	Dibrugarh	0	0	30	2	7	231
12	Sivasagar	1	2	45	3	4	219
13	Jorhat	0	2	44	3	5	144
14	Golaghat	1	1	40	2	4	144
15	Karbi Anglong	1	1	46	2	6	145
16	Dima-Hasao	1	0	11	2	2	65
17	Cachar	1	0	33	2	5	270
18	Karimganj	1	0	29	2	5	218
19	Hailakandi	1	0	13	2	3	105
20	Bongaigaon	1	0	30	2	3	84
21	Chirang	1	0	25	2	3	86
22	Kamrup	1	1	71	5	11	280
23	Kamrup (M)	1	0	25	1	3	51
24	Nalbari	1	0	47	2	6	121
25	Baksa	1	0	41	2	5	156
26	Darrang	1	0	30	1	6	163
27	Udalguri	1	0	24	2	3	147
ASSAM		25	13	1014	62	151	4621

CH-Civil Hospital, SDCH-Sub-divisional Civil Hospital, PHC- Primary Health Centre, FRU- First referral Unit, CHC- Community Health Centre, SC- Sub Centre

Source: Directorate of Health Services, Assam

## APPENDIX-19.2

## NUMBER OF BEDS IN DIFFERENT TYPES OF HEALTH INSTITUTIONS IN ASSAM AS, 2015

Sl.No.	District	No. of Beds						TOTAL
		CH	BPHC	MPHC	CHC	SDCH	MCH	
1	2	3	4	5	6	7	8	9
1	Kokrajhar	150	24	164	120	75	0	533
2	Dhubri	200	42	148	240	40	0	670
3	Goalpara	150	30	144	150	0	0	474
4	Barpeta	100	54	168	180	30	380	912
5	Morigaon	100	18	132	150	0	0	400
6	Nagaon	190	66	276	450	0	0	982
7	Sonitpur	190	48	200	210	120	0	768
8	Lakhimpur	100	36	68	240	50	0	494
9	Dhemaji	100	30	72	120	0	0	322
10	Tinsukia	100	24	104	180	0	0	408
11	Dibrugarh	0	36	96	210	100	1385	1827
12	Sivasagar	150	48	148	120	100	0	566
13	Jorhat	200	42	148	150	50	410	1000
14	Golaghat	100	30	140	120	50	0	440
15	Karbi Anglong	100	48	152	150	0	0	450
16	Dima-Hasao	100	18	32	60	0	0	210
17	Cachar	50	48	100	150	0	929	1277
18	Karimganj	100	30	96	150	0	0	376
19	Hailakandi	100	24	36	90	0	0	250
20	Bongaigaon	150	36	96	90	0	0	372
21	Chirang	150	0	100	90	0	0	340
22	Kamrup	200	78	232	330	100	0	940
23	Kamrup (M)	350	6	96	90	0	2017	2559
24	Nalbari	100	42	160	270	0	0	572
25	Baksa	150	0	164	150	0	0	464
26	Darrang	100	42	92	180	0	0	414
27	Udalguri	150	0	96	90	0	0	336
	ASSAM	3630	900	3460	4530	715	5121	18356

CH-Civil Hospital, BPHC-Block Primary Health Centre, MPHC-Mini Primary Health Centre

Source: Directorate of Health Services, Assam

## APPENDIX-19.3

## NUMBER OF MEDICAL &amp; PARAMEDICAL STAFFS IN ASSAM, 2015

Post	Position		
	Government	NRHM	Total
1	2	3	4
MBBS Doctors	2264	608	2872
Specialist Doctor	896	191	1087
Ayurvedic Doctor	358	443	801
Dental Surgeon	63	174	237
Homeopathic Doctors	75	247	322
MBBS Doctors for 1 year Rural Posting	0	402	402
ANM	5934	4875	10809
GNM	3100	2960	6060
Pharmacists	1368	684	2052
Laboratory Technician	860	776	1636
Radiographer	91	46	137
Rural Health Practitioner	0	562	562

Source: Directorate of Health Services, Assam, Guwahati-36

## APPENDIX-19.4

## MEDICAL &amp; PARAMEDICAL PERSONNEL REGISTERED IN ASSAM, 2015

Item	Particulars (In Nos.)	
1	2	
Allopathic Practitioners	MBBS	PG
		564
Pharmacists	421	
General Nurses Mid Wives ( GNM)	1116	
Auxiliary nurses Mid Wives (ANM)	1947	
B.Sc. Nurse	249	

Source: Directorate of Health Services, Assam, Guwahati-36

## APPENDIX-19.5

## DISTRICTWISE IMMUNISATION PROGRAMME IN ASSAM 2015-16

Sl. No.	District	TARGET		PERFORMANCE				
		Infant	PW	BCG	DPT-3	OPV-3	MSL	TT (PW) 2+B
1	Barpeta	35913	41759	44352	5369	34608	36014	36980
2	Bongaigaon	14531	16897	16573	3403	14515	14323	12785
3	Baksa	18167	21125	13129	2698	14787	14850	14443
4	Chirang	9392	10921	8892	2132	8024	8521	9538
5	Cachar	45907	53381	41273	7571	34868	37936	40094
6	Darrang	18524	21540	17630	2529	18983	19862	18475
7	Dhemaji	16083	18702	14421	1243	13222	13220	13478
8	Dhubri	43187	50217	53987	13444	46717	47277	57381
9	Dibrugarh	25558	29719	23061	2149	20062	21269	21517
10	Goalpara	22414	26063	23970	4159	23637	23385	26782
11	Golaghat	22471	26129	16773	2008	17170	16872	17746
12	Hailakandi	21178	24626	16870	2386	16191	15977	17093
13	Jorhat	20668	24033	17092	2236	18257	18207	18515
14	Kamrup	27496	31972	28805	3298	30212	30417	30614
15	Kamrup (M)	28154	32738	24999	4295	23763	23272	34374
16	Karbi-Anglong	20447	23775	19936	2951	18192	19182	20882
17	Karimganj	31245	36332	28713	5554	28694	27434	33352
18	Kokrajhar	20263	23561	18694	3952	15173	16336	18469
19	Lakhimpur	24863	28911	20140	1505	18980	19471	19168
20	Morigaon	22444	26098	22748	2123	21862	22237	23897
21	Nagaon	69149	80406	54317	9054	57786	59611	62851
22	Nalbari	14192	16503	14780	2119	13477	13510	14150
23	Dima-Hasao	3900	4535	4756	591	4132	3863	4444
24	Sivasagar	21981	25559	18724	3312	17104	17346	17718
25	Sonitpur	37914	44086	33630	4243	32592	34956	35180
26	Tinsukia	27449	31918	25773	3214	22507	23376	23147
27	Udalguri	17038	19812	12980	2352	13750	13430	13744
	ASSAM	680528	791318	637018	99890	599265	612154	656817

Note: PW- Pregnant Women

Source: Directorate of Health Services (FW), Assam



## APPENDIX-19.6

## DISTRICT WISE BIRTH AND DEATH REGISTRATION DURING 2015

District	Current year Registration		Delayed Registration after one year		Total	
	Birth	Death	Birth	Death	Birth	Death
1	2	3	4	5	6	7
Barpeta	41927	4175	44071	619	85998	4794
Bongaigaon	14774	2444	1714	206	16488	2650
Baksa	14069	1974	13575	616	27644	2590
Chirang	8349	1165	1669	105	10018	1270
Cachar	44433	9606	5869	251	50302	9857
Darrang	16260	1797	3129	162	19389	1959
Dhemaji	17460	1525	9607	256	27067	1781
Dhubri	61899	4486	817	55	62716	4541
Dibrugarh	27452	9401	2366	564	29818	9965
Goalpara	27795	2750	10119	271	37914	3021
Golaghat	17398	3580	3747	273	21145	3853
Hailakandi	15748	2285	2402	46	18150	2331
Jorhat	18893	4190	10992	360	29885	4550
Kamrup	22747	4184	11476	530	34223	4714
Kamrup (M)	36928	11381	6523	445	43451	11826
Karbi-Anglong	21874	1233	21509	730	43383	1963
Karimganj	34434	3934	5631	161	40065	4095
Kokrajhar	16697	2320	16409	645	33106	2965
Lakhimpur	19770	2577	9285	343	29055	2920
Morigaon	28238	2829	17607	207	45845	3036
Nagaon	69153	8583	12658	92	81811	8675
Nalbari	13905	2009	20987	563	34892	2572
Dima Hasao	4051	590	4675	102	8726	692
Sivasagar	12225	3722	23303	982	35528	4704
Sonitpur	45290	6319	6765	1349	52055	7668
Tinsukia	21825	4214	7949	1002	29774	5216
Udalguri	13446	1794	44036	776	57482	2570
ASSAM	687040	105067	318890	11711	1005930	116778

Source: Directorate of Health Services, Assam, Guwahati-36

## APPENDIX-19.7

FAMILY PLANNING PERFORMANCE OF ASSAM DURING 2015-16  
(April 2015 to March 2016)

Sl. No	District	Sterilisation			I. U. D. Insertion			C. C. Users			O. P. Users		
		Target	Achievement	%	Target	Achievement	%	Target	Achievement	%	Target	Achievement	%
1	Kokrajhar	2150	353	16.42	3220	1875	58.23	2800	1398	49.93	2800	5342	190.79
2	Dhubri	3100	1217	39.26	4900	11031	225.12	4700	3996	85.02	4700	11068	235.49
3	Goalpara	3400	1112	32.71	3080	3072	99.74	3700	3580	96.76	3700	6363	171.97
4	Barpeta	4100	930	22.68	5180	3918	75.64	4900	3016	61.55	4900	11196	228.49
5	Morigaon	3100	859	27.71	3300	2100	63.64	2900	1256	43.31	2900	4450	153.45
6	Nagaon	8000	1578	19.73	5770	3190	55.29	5300	2796	52.75	5300	4759	89.79
7	Sonitpur	5000	4449	88.98	5380	1693	31.47	4200	2411	57.40	4200	8796	209.43
8	Lakhimpur	6350	2112	33.26	3550	1502	42.31	3400	1304	38.35	3400	4347	127.85
9	Dhemaji	4300	1859	43.23	2380	7141	300.04	2800	512	18.29	2800	2803	100.11
10	Tinsukia	8400	3580	42.62	3740	4739	126.71	3350	699	20.87	3350	3624	108.18
11	Dibrugarh	8760	4642	52.99	3800	4045	106.45	3400	3062	90.06	3400	4223	124.21
12	Sivasagar	4300	4493	104.49	3950	5150	130.38	3700	4367	118.03	3700	2828	76.43
13	Jorhat	4250	3065	72.12	3410	2526	74.08	3700	3999	108.08	3700	3471	93.81
14	Golaghat	5350	1394	26.06	3390	4994	147.32	3300	2250	68.18	3300	5457	165.36
15	Karbi Anglong	1550	98	6.32	2940	3784	128.71	1785	4509	252.61	1785	4454	249.52
16	Dima-Hasao	500	60	12.00	940	500	53.19	1400	329	23.50	1400	846	60.43
17	Cachar	7800	3757	48.17	4820	2680	55.60	4800	2787	58.06	4800	5725	119.27
18	Karimganj	3100	1112	35.87	3020	1961	64.93	3050	1240	40.66	3050	4170	136.72
19	Hailakandi	3150	319	10.13	2200	2653	120.59	2200	1840	83.64	2200	2802	127.36
20	Bongaigaon	2150	434	20.19	2110	2313	109.62	3200	1250	39.06	3200	3722	116.31
21	Chirang	440	0	0.00	1200	1390	115.83	1900	621	32.68	1900	2085	109.74
22	Kamrup	4850	2288	47.18	4610	6262	135.84	5000	4885	97.70	5000	8174	163.48
23	Kamrup (M)	8000	4367	54.59	3000	9937	331.23	3600	1226	34.06	3600	2177	60.47
24	Nalbari	3200	1505	47.03	3230	2478	76.72	3700	1974	53.35	3700	3724	100.65
25	Baksa	1100	519	47.18	1800	1412	78.44	1200	1883	156.92	1200	4065	338.75
26	Darrang	3400	1276	37.53	3280	3157	96.25	3200	1120	35.00	3200	3060	95.63
27	Udalguri	200	149	74.50	1800	1783	99.06	1800	698	38.78	1800	2492	138.44
	ASSAM	110000	47527	43.21	90000	97286	108.10	88985	59008	66.21	88985	126223	141.85

Source : Directorate of Health Services (FW), Assam, Guwahati-36

## INDICATORS AND TARGETS ADOPTED TO MONITOR PROGRESS OF ACHIEVEMENT OF ASSAM 2030: OUR DREAM OUR COMMITMENT

### Introduction

The Government of Assam set out its long term development vision through the document Assam 2030: *Our Dream, Our Commitment* in July 2016, in line with the global consensus on the Sustainable Development Goals (SDGs). This historic global consensus on the SDGs was reached by heads of governments of all countries including the Prime Minister of India at the United Nations General Assembly Summit Meeting in New York in September 2015. The SDGs which replaced the Millennium Development Goals (MDGs) implemented between 2000 and 2015 are to be achieved within the next fifteen years ending 31 December 2030. The SDGs vastly expand the range of development outcomes – compared to the MDGs and include economic, social and environmental goals. They represent core development outcomes in these three areas that all countries have pledged to achieve. By adopting Assam 2030 in line with the SDGs, the Government of Assam has undertaken to achieve these basic development goals in order to guarantee substantial improvements in the standard and quality of life of all the people of Assam.

Progress on Assam 2030 will be monitored through indicators appropriate for the state. This Chapter of the Assam Economic Survey describes the adopted indicators in detail. It sets out the baselines and targets against which progress will be monitored. It is proposed that eventually the monitoring process will be conducted through real time dashboards – when the data system is upgraded to make this possible – and to report progress in detail annually through this chapter of the Assam Economic Survey.

The indicators chosen for this report of Assam 2030 are based on those for which data was available. It is proposed that in future years these will be further refined and disaggregated to provide a better picture of progress across social, economic and spatial categories of the population.

### Goal 1: NO POVERTY-End poverty in all its forms everywhere

The main indicator being used to monitor progress on this Goal is the poverty head count ratio. The current poverty head count ratio for Assam is estimated at 27.34 % in 2015-16<sup>2</sup>. This may be compared to the All-India average of 20.74 %, which is apparent from the Table 1 below.

**Table 1: Selected poverty indicators for Assam**

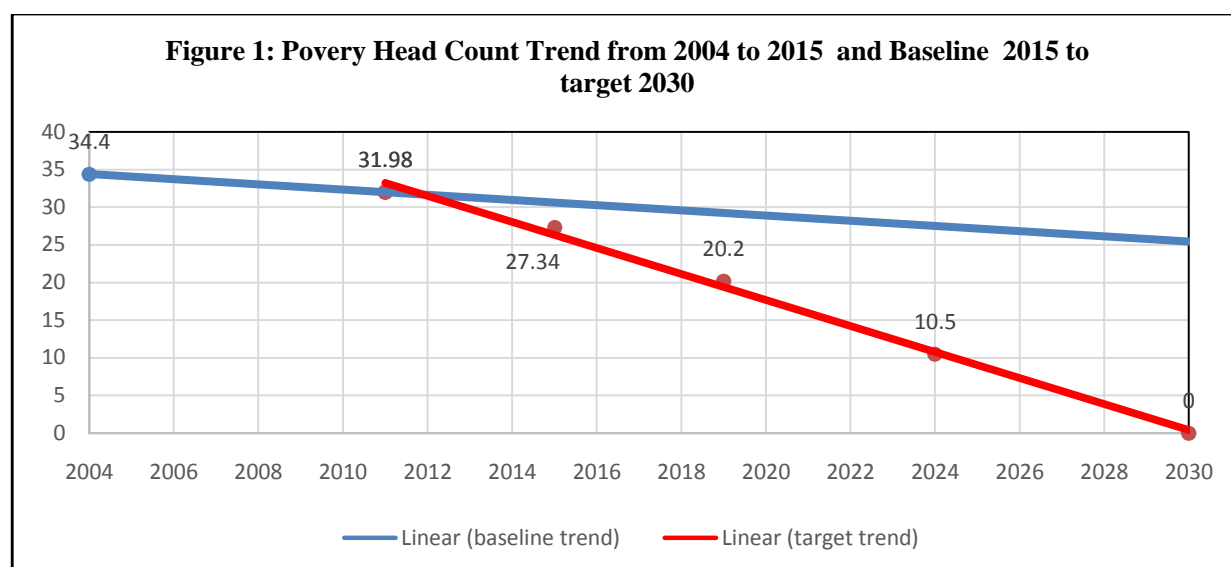
Poverty Head Count Ratio	Assam Baseline (2011-12)	India Baseline (2011-12)	Assam likely achievement (2015)	India Average likely achievement (2015)	Target (2030)	Source of Target
	31.98	21.92	27.34	20.74	0	Assam 2030

Source: Ministry of Statistics and Program Implementation (MOSPI), Millennium Development Goals India Country Report 2015, Table 1.

Vision Assam 2030 which is in line with the internationally agreed Sustainable Development Goals (SDGs) requires that extreme poverty be totally eliminated. This will require that the headcount ratio be brought down to zero by 2030.

In order to appreciate the additional effort this will require compared to the past, Figure 1 below may be referred to. This shows that the rate of improvement in poverty reduction must be substantially stepped up. The poverty headcount ratio should decline 5.26 % annually from the baseline data of 2011-12 to meet the target by 2030 as against the annual decline rate of 1.0 % during the period 2004-05 (34.40) to 2011-12 (31.98).

As per the required trend line, the target achievement levels at different intermediate periods are 20.2 % in 2019 and 10.5 % in 2024.



Source: Data based on MOSPI (2015) Table 1. Projections carried out by Directorate of Economics and Statistics, Government of Assam

## Goal 2: ZERO HUNGER-End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Hunger both in the general population and particularly among children remains a matter of concern in Assam. The proportion of children below 5 years who were reported to be underweight in 2005-06 was 36.4 %<sup>1</sup> while it is estimated to be 29.8% in 2015-16,<sup>2</sup> (Table 2) indicating well over a quarter of all children in the state suffering from malnutrition leading to lower body weight than the norm. This figure is nearly at par with estimates for India as a whole (29.4% in 2013-14) but it is higher than several states in the northeast such as Manipur (13.80 %), Sikkim (14.20 %), and Tripura (24.20 %).

**Table 2: Selected hunger indicators for Assam**

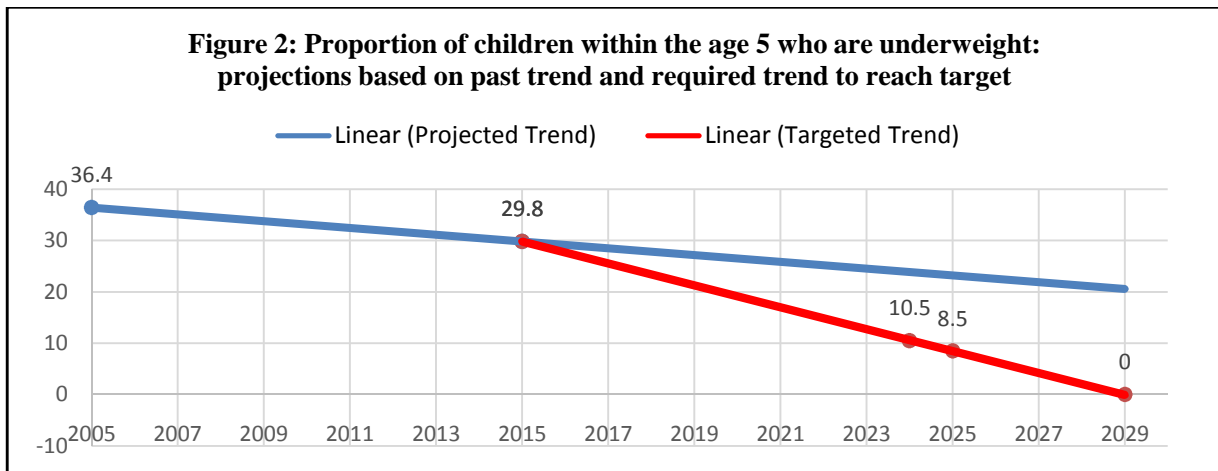
Indicator	Assam Baseline (Latest Year)	India Average (Latest Year)	Target (2030)	Source of Target
2.1 Proportion of children within the age 5 who are underweight (%)	29.8 (2015-16)	29.0 (2013-14)	0	Assam 2030
2.4 Proportion of women within age 15-49 who are anemic (%)	46.0 (2015-16)		0	Assam 2030
2.5 Average Yield of Rice (kg/ha) of land cultivated	2119 (2014-15)	2390 (2014-15)	4238	Assam 2030

*Source:* Underweight children for Assam from NFHS 4, underweight children for India from Rapid Survey of Children and Adolescent Girls (RSOC) 2014-15, Ministry of Women and Child Development; Women with anemia Assam from NFHS 4; rice yield for Assam from Statistical Handbook of Assam 2015; rice yield India from Economic Survey (2015-16), Volume II.

Assam 2030 envisages reducing to zero the proportion of children below 5 years who are underweight by 2030 as part of the drive to end hunger. To consider the extent of challenge this poses, Figure 2 may be referred to. The required rate of decline to reach the target is almost 2.0 percentage points annually from the baseline 2015 (red line); whereas the actual rate of reduction achieved is only 0.6 percentage points annually (blue line).

<sup>1</sup> According to NFHS (2015-16)

<sup>2</sup> Source : NFHS-4 (2015-16) for data on underweight children for Assam and other northeastern states cited; and Rapid Survey of Children and Adolescent Girls (RSOC) 2013-14, Ministry of Women and Child Development for data on India as a whole as this result is not yet available from NFHS-4.



Source: NFHS 3 & 4

Malnutrition among mothers has deleterious effects not only on their own health and welfare, but also on the health and welfare of their children. Anemia in the state among women in the age group 15-49 was estimated at an unacceptably high figure of 46 % in 2015-16 and needs to be reduced rapidly.

A key requirement for ending hunger is ensuring food security. Improving agricultural productivity is a major requirement in this respect. Assam 2030 targets the doubling of agricultural productivity in the state by 2030 from current levels.

The average rice yield in the state, its main staple crop, stood at 2119 kilograms per hectare in 2014-15. A doubling of this by 2030 to 4238 kilograms per hectare is now targeted and is feasible given that countries in Asia have achieved much higher yields. This will require, among others, substantially increasing cropping intensity which will be possible only through enlarging irrigation. The proportion of net area sown covered by assured irrigation is only 31.4% at present<sup>3</sup>, with actual area irrigated much less, which needs to be increased substantially in the years to 2030.

### **Goal 3: GOOD HEALTH AND WELLBEING- Ensure healthy lives and promote well-being for all at all ages**

Health covers a wide area but the focus of the SDGs is on maternal (including reproductive health) and child health; controlling spread of communicable diseases; combating emerging health challenges in the non-communicable diseases area; strengthening efforts to curb substance, narcotics and alcohol abuse; reducing deaths from traffic accidents and from environmental pollutants; and achieving universal health coverage.

<sup>3</sup> Estimated using Department of Irrigation (<http://irrigassam.nic.in/achievement.htm>) data of irrigation potential created by March 2015 at 8.8 lakh hectares and net area sown of 28.1 lakh hectares (Statistical Handbook Assam, 2015)

Assam's current status on some of these critical areas may be seen in Table 3 above. As can be observed from the table, attainments for Assam are poorer compared to the India averages. In the case of maternal mortality, for example, Assam's current level is almost double that of the India average; child mortality is about 50% higher. The number of doctors per one lakh population is less than a quarter of the India average, which itself is half the level needed according to norms set by the High-level Expert Group on Universal Health Coverage for India.

An assessment conducted on feasibility of the targets on maternal mortality and under 5 mortality rates indicates that if the current trend of progress established under the National

**Table 3: Selected health indicators for Assam**

Indicator	Assam Baseline (Latest Year)	India average (Latest year)	Target (2030)	Source of target
3.1 Maternal mortality ratio (deaths per 100,000 live births)	300 (2011-13)	167 (2011-13)	70	Global
3.2 Child (under 5) mortality rate (deaths per 1000 live births)	66 (2014)	42 (2015)	25	Global
3.3 Infant mortality rate (deaths per 1000 live births)	49 (2014)	39 (2014)	18	Based on global target for child mortality
3.4 Proportion of births attended by trained medical personnel (%)	74.3 (2015-16)	77.3 (2015)	100	Assam 2030
3.5 Number of allopathic doctors (Government and NHM) per 100,000 population	12.0 (2014)	51.2 (2011)	100	High-level Expert Group on Universal Health Coverage for India (2011)
3.6 Fatalities from road accidents (per 10,000 km of roads)	84.7 (2013)	317.0 (2013)	42.3 (by 2020)	Global

*Source:* Directorate of Economics and Statistics for Assam data; MOSPI 2015 for India figures on health; Expert Group for data on allopathic doctors for India; and GOI (MRTD) for traffic deaths. IMR data for India based on MOSPI.

Health Mission (NHM) continues, Assam will be able to meet its 2030 targets. This implies, however, that the scale of effort continues unabated throughout the period till 2030. Particular attention must be focused to groups which have fallen behind (such as tea garden labour community) for this to happen.

Much greater effort will be necessary to expand universal health care which will require provision of adequate expansion of medical personnel. As against the norm of 100 allopathic doctors per lakh population, Assam has currently only 12.00. This implies that a large expansion of medical education is necessary in the state.

Although deaths from traffic accidents are low by Indian standards, they are still unacceptably high. The global SDG target requires reduction of deaths by half by 2020, which will require immediate and expanded efforts to tackle.

#### Goal 4: QUALITY EDUCATION-Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

The current status on selected key indicators in Assam on pre-school and school (including vocational) education is presented in Table 4 with comparisons with the All-India averages.

While Assam's enrolment figures are generally better than the India averages, except at the higher secondary level where they are lower, all enrolment figures are significantly below the target of 100 % needed for universalisation of school education. The effort at universalisation will need to be considerably stepped up particularly at the secondary level.

Of greater concern is the quality of education, which the drop-out rates bring out partly. More than a quarter of children at secondary level and nearly a seventh at primary level are currently dropping out of education. These figures are much higher than the all-India

**Table 4: Selected education indicators for Assam**

	Assam Baseline (Latest Year)	India average (Latest year)	Target (2030)	Source of target
Net Enrolment Ratio at primary level (Upper Primary) (%)	77.83 (2015-16)	74.74 (2015-16)	100	Assam 2030
Net Enrolment Ratio at secondary level (%)	55.67 (2015-16)	51.26 (2014-15)	100	Assam 2030
Net Enrolment Ratio at higher secondary level (%)	26.92 (2015-16)	32.30 (2015-16)	100	Assam 2030
Net enrolment rate at pre-primary (ECD) level (%)	49.8 (2008)	42.9 (2013)	100	Assam 2030
Dropout rates at primary level (%)	15.40 (2015-16)	7.40 (2015-16)	0	Assam 2030
Dropout rate at secondary level (%)	27.06 (2014-15)	17.06 (2014-15)	0	Assam 2030
Ratio of vocational enrolment to total secondary enrolment (%)	2.0 (2016)	(Not available)	25	Assam Education Department

*Source.* DISE Flash Statistics U-DISE(2015-16) for school education data. ECD calculated from 12<sup>th</sup> Plan and population figures for India and Department of Social Welfare for Assam<sup>4</sup>

averages. Direct testing data also indicate that learning outcomes remain quite poor.

Greater emphasis also is needed on early (pre-primary) education which is emphasized under SDG 4. There are currently no readily available estimates for Assam. An assessment of ICDS education beneficiaries indicates that at the all-India level, about half of the eligible

<sup>4</sup> The 12<sup>th</sup> Plan document (Chapter 23 Vol.III) states that 3.5 crore children are obtaining early childhood education through ICDS (out of total ICDS beneficiaries of 7.9 crores). Assuming half of the population of children in India 0-6 years from Census data which is 16.4 crores, are in the 3-6 year group, the ECD enrolment for India is worked out. A similar exercise is carried out for Assam using data from Department of Social Welfare website on non-formal pre-school education (<http://socialwelfareassam.com/nfPreSchoolEdn.asp>)



children 3-6 years of age are receiving early pre-primary education from ICDS programs– as in Assam.

Much greater emphasis on vocational education at the secondary level and beyond is also necessary. Only 2% of secondary students in the public school education system in Assam are opting for the vocational stream. The target set by the Department of Education is 25 % by 2030, which will require much more attention to this area.

### **Goal No 5: GENDER EQUALITY- Achieve gender equality and empower all women and girls**

Assam 2030 acknowledges the significance of gender equality in attaining sustainable development and aims at ending all forms of discrimination against women and girls everywhere. Besides, it targets ending all forms of violence against women and girls in every sphere and ensuring full and effective participation and equal opportunities for women for exhibiting leadership at all levels of decision-making in political, economic and public life. Table 5 below presents core indicator values of Assam relating to this Goal in comparison to the national averages.

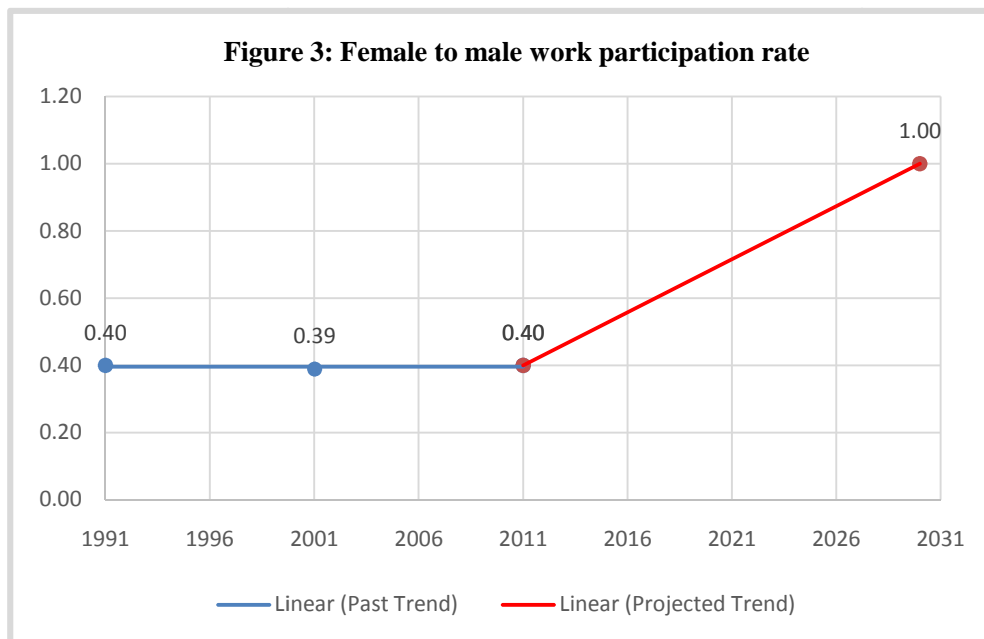
<b>Indicator</b>	<b>Assam baseline (Latest year)</b>	<b>India Average (Latest year)</b>	<b>Target (2030)</b>	<b>Source of Target</b>
5.1 Ratio of female to male literacy (15-24 years)	0.93 (2011)	0.91 (2011)	1.0	Assam 2030
5.2 Ratio of female to male work participation rate	0.40 (2011)	0.45 (2011)	1.0	Assam 2030
5.3 Proportion of seats in the state assembly occupied by women (% to total elected members)	6.35 (2016)	(Not applicable)	33.3	Using norm set by National Bill
5.4 Proportion of women within 20-24 years getting married before the age of 18 (%)	32.6 (2015-16)	47.4 (2005-06)	0.0	National policy
5.5 Proportion of women within 15-19 years who are mothers or pregnant (%)	13.6 (2015-16)	16.0 (2005-06)	halt & reverse	National policy

*Source:* Assam and India data on gender parity in literacy and work participation rate from Census 2011. Assam data on underage marriage and adolescent pregnancy from NFHS-4; corresponding data for India not yet available and so data drawn from NFHS -3.

Several Assam indicators in this Goal are at relatively satisfactory level and compare quite favorably with all-India averages. For example, the ratio of female to male literacy (15-24 years) for Assam is similar to the national average although overall literacy is lower (82.4% compared to 86.1%). Assam also looks likely to achieve the target of total parity with ease.

However, several other indicators point to a still unsatisfactory situation. For example, women's representation in legislative bodies remains low. In Assam's last General Election in 2016, the proportion of seats won by women in the assembly stood at only 6.35%, far below the norm of 33.3% set by the national bill on women's representation to legislative bodies. The proportion of women married before the age of 18; and within 15-19 years who are mothers or pregnant have been identified as key indicators that need to be reduced in order to promote women's empowerment. Both indicators remain high for the state.

An important path to economic empowerment of women is through entering the work force. Assam 2030 envisages raising the female to male work participation rate to 1 by 2030. However, this ratio stands currently at only 0.42 (and is also lower compared to the national figure). The low level of women's work participation indicates that a large section of female population in the state is staying away from productive pursuits. The past trend indicates near stagnancy in this respect, with women's to men's participation ratio remaining almost flat increasing from 0.39 in 2001 to only 0.40 in 2011 (Figure 3). As this Figure indicates, increasing the ratio to 1.00 by 2030 will present a big challenge for the state. The required rate of improvement of the ratio is 7.9% annually from the baseline figure of 2011 to meet the target by 2030; as against virtual stagnation in the recent past.



Source: MoSPI-2011/Census 2011

## Goal 6: CLEAN WATER AND SANITATION-Ensure availability and sustainable management of water and sanitation for all

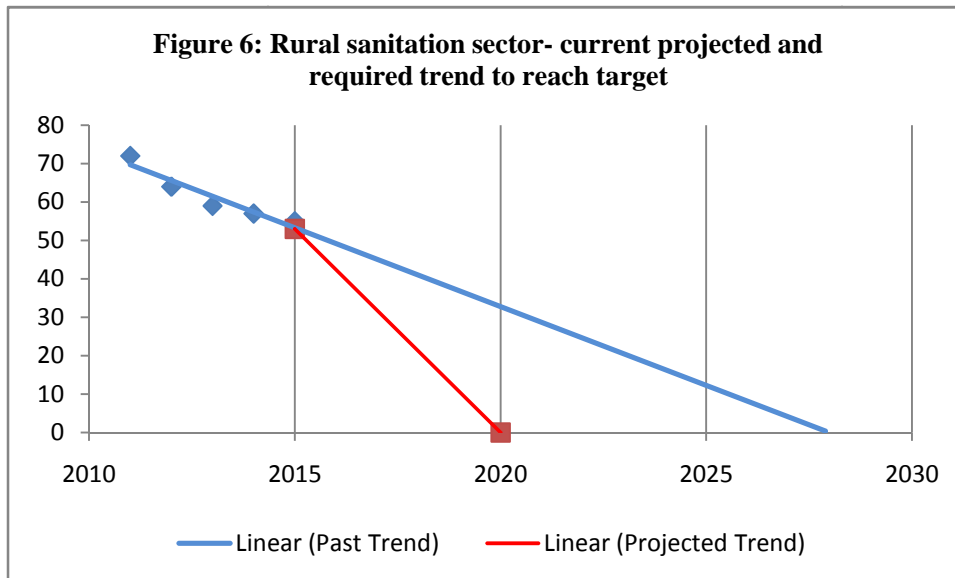
The scarcity of water has become a global issue and is also impacting in our daily life. Absence of safe drinking water and lack of sanitation pose threats to health of households. The proportion of households with access to safe drinking water and proportion without sanitary latrines have therefore been identified as key indicators for this goal (Table 6).

Indicator	Assam Baseline (Latest Year)	India Average (Latest Year)	Target (2030)	Source of Target
6.1 Proportion of households with access to safe drinking water (%)	85.9 (2012)	87.8 (2012)	100	Assam 2030
6.2 Proportion of households without access to sanitation	12.0 (2012)	43.4 (2012)	0.0 (By 2020)	Assam 2030 (National Policy by 2020)

*Source:* NSS 69<sup>th</sup> Round (2012) quoted in MOSPI (2015) Millennium Development Goals India Country Report Tables 7.5 and 7.6.

The latest available data on these indicators indicates that 85.9 % of households have access to safe drinking water in Assam. This is slightly below the overall all-India average which stood at 87.8 %. The still large population without access to safe drinking water suggests an unhealthy state of affairs and its vulnerability to water borne diseases. The target set in Assam: 2030 is to provide safe drinking water to all households which will require considerable efforts to achieve. Under such circumstances, Government has to work out suitable strategies so as to achieve universal availability of safe drinking water by 2030.

Twelve percent of households did not have access to sanitation in the state in 2012. Against this, the national figure was much higher at 43.4 %. Although the state position is much better than the national scenario, the still remaining households without access to sanitation in the state are a concern. Open defecation leads to poor hygienic condition, which invites multiple diseases. As in the case of water, Assam: 2030 set a target for 100% provision of sanitation facilities to all household by 2030. Government of India, under Swachh Bharat Mission has targeted to achieve 100% household sanitation facilities much earlier –by 2019-20. Accordingly, Assam's Public Health Engineering Department has geared up to achieve targets for rural sanitation as shown in Figure 6 below.



Source: Public Health Engineering Department

There have been reports of non-use of sanitary latrines provided to by a section of the population, which defeats the objective of universalization of sanitation. Accordingly, all aspects of the programme: its implementation, monitoring, and post implementation efforts to encourage use need to be carefully assessed and analyzed and corrective measures undertaken to achieve the sanitation target.

### **Goal 7: AFFORDABLE AND CLEAN ENERGY-Ensure access to affordable, reliable, sustainable and modern energy for all**

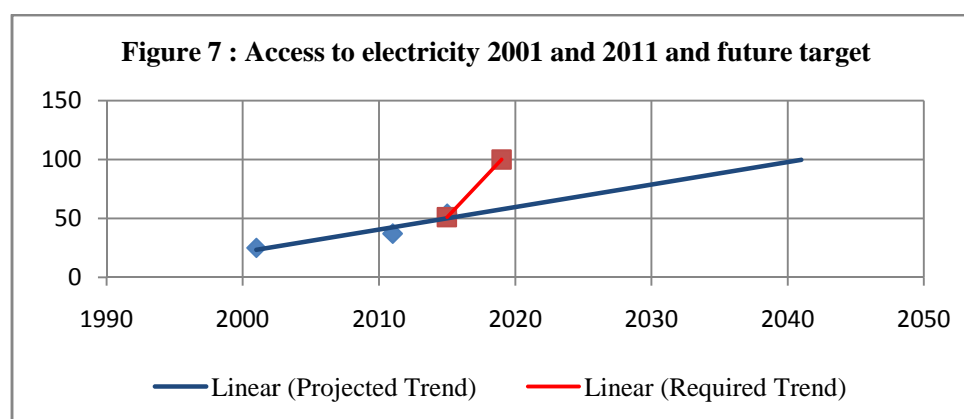
This Goal recognizes the significance of energy choice in promoting sustainable development and, therefore, targets at ensuring affordable, reliable, sustainable and modern energy for all by 2030. Government of Assam, in accordance with this SDG, envisions utilising the full energy potential in the state, prioritizing renewable sources and making the state fully meet future energy needs; working to increase energy efficiency to the maximum; and ensuring access to affordable, reliable, sustainable and modern energy for all households and habitations by 2030

**Table 7: Selected indicators on affordable and clean energy**

Indicator	Assam Baseline (Latest Year)	India Average (Latest Year)	Target (2030)	Source of Target
7.1 Proportion of households using electricity as the primary source of lighting (%)	37.0 (2011)	67.2 (2011)	100 (By 2019)	Assam 2030
7.2 Proportion of renewable energy to total annual energy production by installed capacity (%)	2.5 (2015)	14.2 (2016)	15	In line with international commitments <sup>5</sup>
7.3 Proportion of transmission and distribution loss to total energy produced (%)	21.0 (2014-15)	21.46 (2016)	5.0 <sup>6</sup>	Assam 2030

Source: Households using electricity Assam and India from Census (2011); Proportion of renewable energy Assam and India from CEA; T&D Losses India from CEA. T&D Losses Assam from Statistical Handbook Assam 2015.

The proportion of households using electricity as the primary source of lighting is an important indicator for monitoring achievement under this Goal. Between 2001 and 2011, census data indicates that this proportion increased in Assam from 24.9% to 37.0% (Figure 7). Thus access to electricity remained still low in the state in 2011 and much below the national figure of 67.2%. Assam: 2030 envisages raising this proportion to 100% by 2030 to ensure that all households have full access by that date. The Government of India has, however, moved this target forward for the country as a whole to 2019. As can be seen from the figure the required pace of increase in access will need to be considerably stepped up compared to past trends to achieve this target by 2019.



Source: Past data from Census of India 2001 & 2011

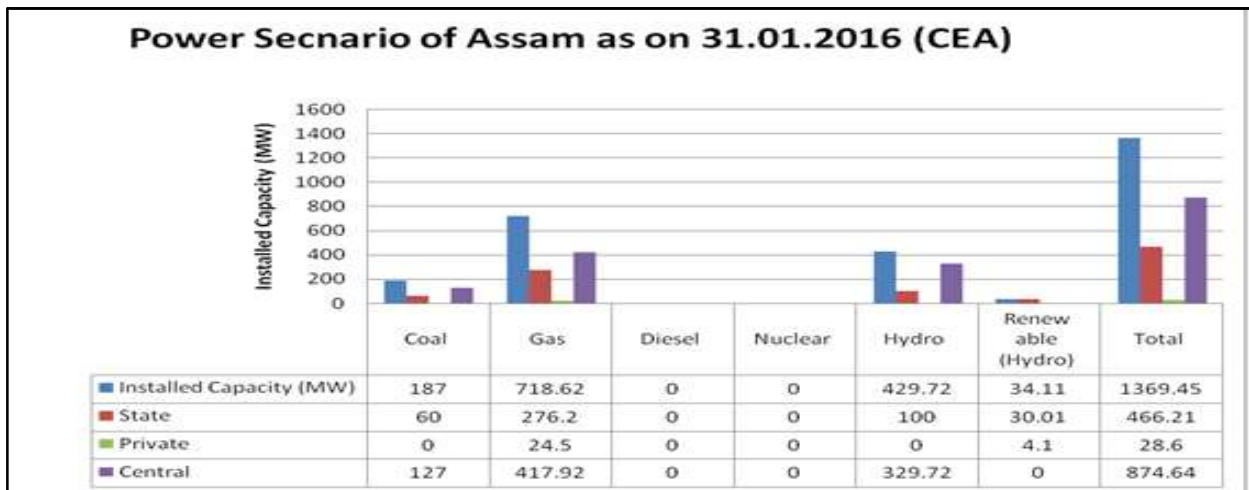
<sup>5</sup> India's international commitment at the international climate negotiations is to increase renewable energy sources to 40% of total energy capacity installed. This requires about a fourfold expansion from the current share of renewable energy. In order for Assam to catch up, more than a four-fold increase is necessary hence target placed at 15% which is a little more than the current all-India proportion and thus attainable.

<sup>6</sup> The target has been set at 5.0% considering Vision Assam 2030 target of "utilizing the full energy potential of the state" and "working to increase energy efficiency to the maximum." As it is not technically feasible to eliminate all T&D losses, however, the target has been set at 5% which is around the best achieved internationally.

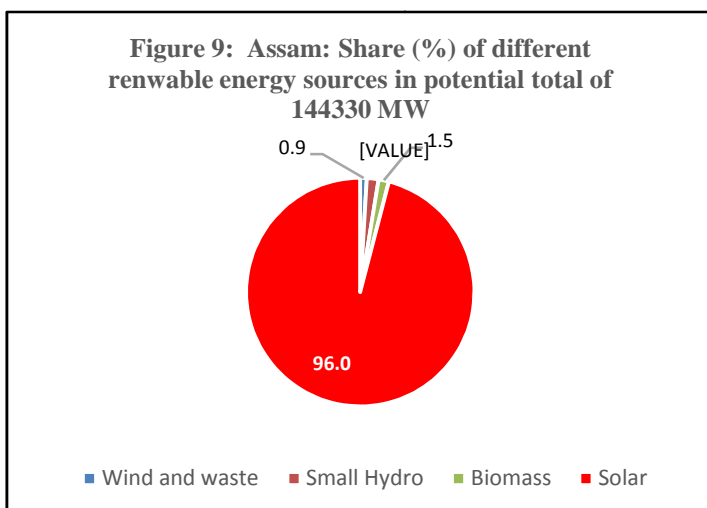
In the past, improvement of access to energy has been quite slow. Between 2001 and 2011, only 1.1% of additional households have gained access to electricity per year. This rate is quite insufficient as it would leave 41% without access to electricity by 2030. Since 2011, however, new programmes<sup>7</sup> provided access to another 10 Lakhs BPL households which is estimated to have improved the proportion with access from 37% to 54% currently. A further step up of the pace of access to achieve the universal access target by 2019 is essential.

An important objective of this Goal is generating energy from renewable sources. Accordingly, the proportion of renewable energy in the total energy produced in the state has been adopted as a key representative indicator to track progress towards this Goal. The Central Electricity Authority (CEA) has estimated that as of 31<sup>st</sup> January 2016, Assam produced only 34.11 MW of energy from sustainable and renewable sources (mainly small hydroelectric plants) out of a total generation of 1369.45 MW or just 2.5%. Renewable energy sources cover solar, photovoltaic, small hydro up to 25 MW, wind, biomass, and waste to energy etc. much of which remains yet to be exploited. The present scenario of the energy mix is presented in Figure 8 below.

**Figure 8: Assam’s energy generation mix**



Source: Central Electricity Authority.



Assam: 2030 aims at raising the proportion of renewable energy in the total energy production to 40% by 2030 (in keeping with the national commitment at the Oct 2015 Paris Climate Change Agreement). As per the CEA, Assam has a renewable

energy potential of 14330 MW, mainly comprising solar energy at 96% (Figure 9). These sources will need to be tapped.

*Source:* Central Electricity Authority.

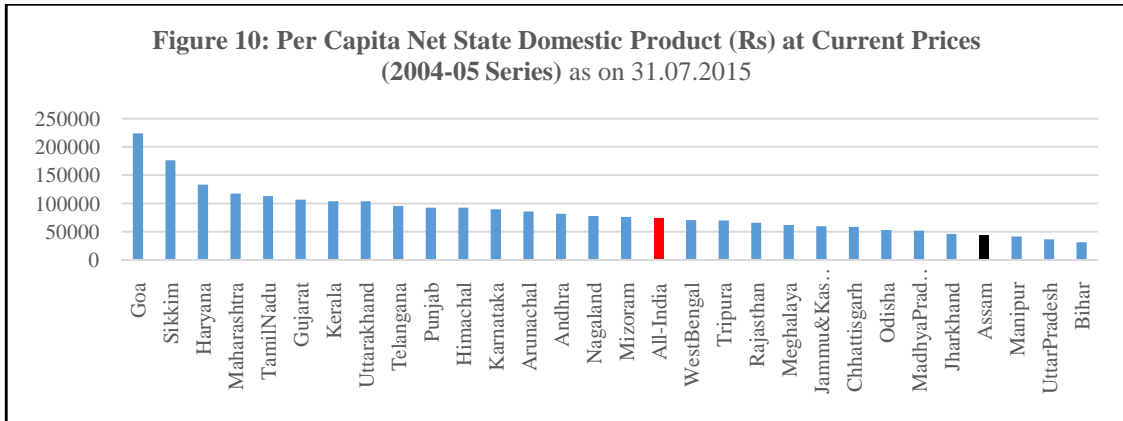
In addition to producing energy sustainably, efforts to reduce waste and conserve energy produced are also critical. An important indicator adopted therefore is proportion of transmission and distribution losses to total energy produced. This stood at a staggering 21% in 2014-15 indicating that more than a fifth of energy produced is lost. The target adopted is to reduce this loss to 5% by 2030.

### **Goal 8: DECENT WORK AND ECONOMIC GROWTH-Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all**

The Government of Assam, in accordance with this Goal, envisions bridging the gap in per capita income between Assam and other states by accelerating the state's pace of economic growth; and eliminating unemployment among all sections, particularly among youth, women, marginalised communities and people with disabilities, by ensuring full and productive employment and decent work for all by 2030. The indicators used to track progress on this Goal are in Table 8 below.

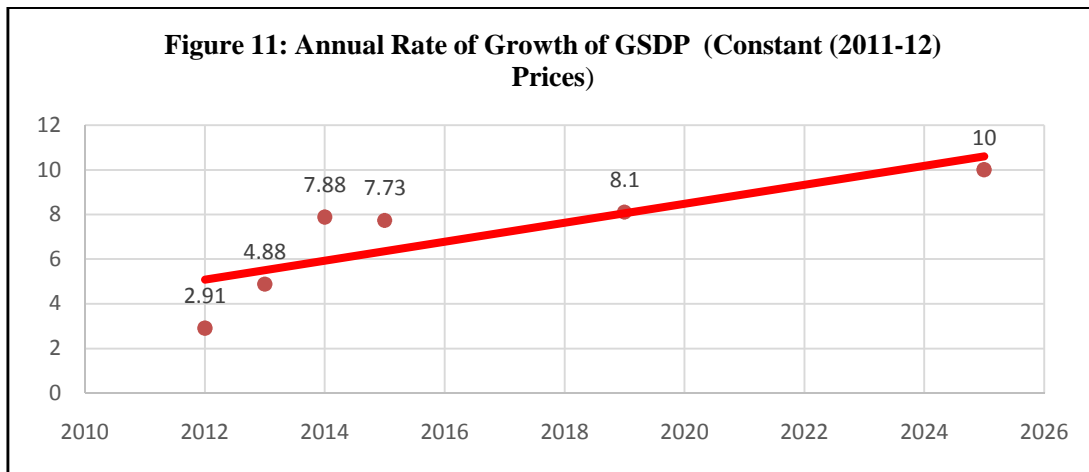
<b>Table 8: Selected Goal 8 indicators</b>				
<b>Indicator</b>	<b>Assam Baseline (Latest Year)</b>	<b>India Average (Latest Year)</b>	<b>Target (2030)</b>	<b>Source of Target</b>
8.1 Annual Rate of Growth of SGDP (constant prices) (%)	7.88 (2014-15)	7.3 (2014-15)	10	Projected on current trends/GoI
8.2 Total Unemployment Rate usual status (ps) (per 1000 population)	61 (2015-16)	50 (2015-16)	20	Projected on current trends
<i>Source:</i> GDP and GSDP growth data from MOSPI; unemployment Assam and India from Ministry of Labour and Employment, Report on Fifth Annual Employment-Unemployment Survey (2015-16)				

The gap between Assam and other states in percapita incomes as of 2013-14 is shown in Figure 10. below. In order to catch up, a target growth rate of GSDP to reach at least to 10% per annum by 2025-26 is envisaged.



Source: Government of India, Economic Survey 2015-16

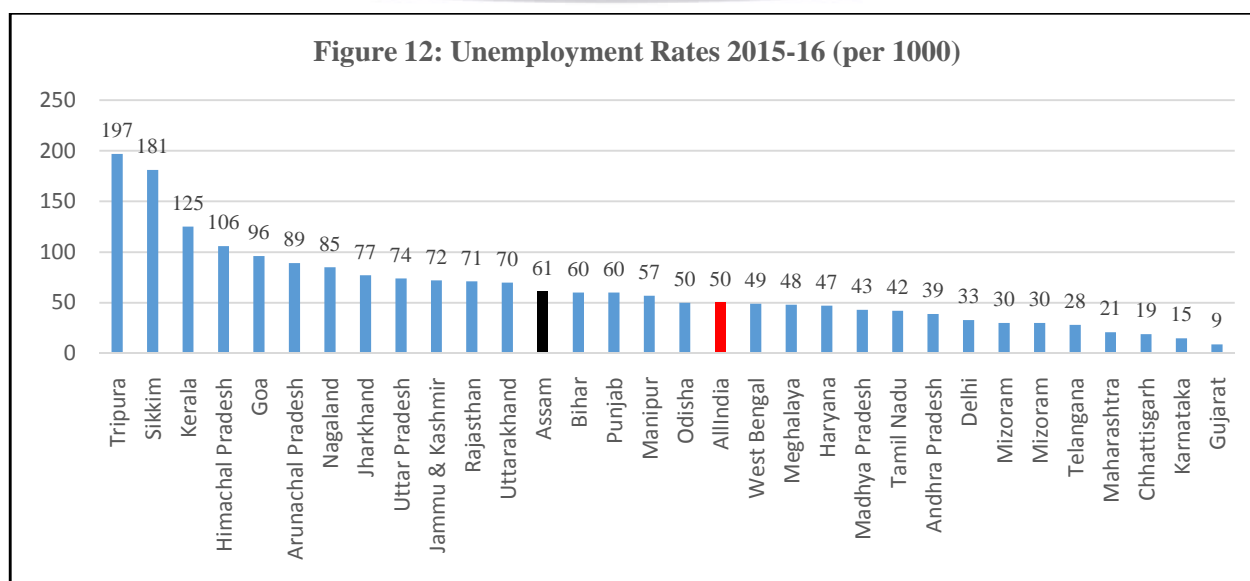
The current annual rate of growth of Assam’s GSDP (constant prices) at 7.88% exceeds the national GDP growth rate of 7.3% (2014-15). In order to achieve the target of 10% by 2025-26, however, continuous effort will be required. Given the trend rate of improvement from the recent past this appears quite feasible as can be observed from Figure 11 below.



Source: DES projections.

Achieving full and decent employment is another key objective under Goal 8. The relevant indicator to measure this is the total unemployment rate at usual status (ps). According to the Fifth Survey of Employment and Unemployment conducted by Ministry of Labour in 2015-16, this unemployment rate stood at 61 per 1000 population (age 15 and above) against the national figure of 50 per 1000 population (Figure 12). The target adopted is to reduce this unemployment rate by two-thirds, i.e., to 20 per 1000 population by 2030. As some states in India (such as Maharashtra, Chhattisgarh, Karnataka and Gujarat) have achieved such levels this targeted rate of unemployment although challenging is feasible.





Source: Government of India, Ministry of Labour and Employment, *Report on Fifth Annual Employment-Unemployment Survey (2015-16)*

### **Goal 9: INDUSTRY, INNOVATION AND INFRASTRUCTURE- Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation**

Considering the poor state of infrastructure and industrial development, the State requires to build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation, which form the core objectives of the Goal 9. The key indicators identified for monitoring progress of the state under this Goal may be seen in Table 9 below.

**Table 9: Selected Goal 9 indicators**

Indicator	Assam Baseline (Latest Year)	India Average (Latest Year)	Target 2030	Source of Target
9.1 Total length of surfaced road (NH, SH and PWD) per 100 sq. km area	35.42 (2015)	35.51 (2013)	Ensure full connectivity	Assam 2030
9.2 Total length of surfaced roads (NH SH & PWD) per 100,000 population	89.03 (2015)	96.45 (2013)	Ensure full connectivity	Assam 2030
9.3 Total (wireless+wireline) telephone connections per 100 population	53.95 (2015)	79.4 (2015)	100	Assam 2030
9.4 Share of manufacturing sector in GSDP (at 2011-12 constant prices, %)	9.0 (2015-16)	16.05 (2015-16)	Triple	Assam 2030
9.5 Share of manufacturing sector employment in total employment (%)	4.8 (2015)	10.5 (2015)	triple	Assam 2030

Source: Assam PWD for Assam surfaced roads; MORTH Roads Statistical Year Book India 2016, for India surfaced roads data; MOSPI Statistical Year Book of India 2016 for telecom data; Share of manufacturing for India from MOSPI, Statistical Yearbook 2016; share of manufacturing Assam from Directorate of Economics & Statistics, Assam; GoI, Min. of Labour & Employment, *Fifth Survey of Employment and Unemployment 2015* for share of manufacturing employment for Assam and India (Table 22) based on NIC2008 according to Usual Principal Status Approach (ps).

The length of surfaced road (NH, SH and PWD) per 100 sq. km area and proportion of NH, SH & PWD roads per 100,000 population are indicators to monitor the extent of access by the population to the road network. Currently while the area density of surfaced roads in Assam is comparable to the national average, the length of surfaced roads per lakh population is lower. The Government of Assam in accordance with the Assam: 2030 will seek to ensure all weather connectivity to all habitations. However, currently, only 8% of existing state highways are of 2-lane and only 2% of the major district roads are of 2-lane. These comprise the vital network for maintaining proper accessibility to smaller urban areas and rural nodes. About 50% of rural roads are still gravel roads. Thus achieving vision of Assam 2030 poses a challenge requiring a major gearing up of effort. In addition to providing road access to the state's population, further efforts are necessary to develop state-of-art road communication facilities with neighboring States and countries to improve connectivity and develop trade.

Apart from roads, improved communications through telephones is essential for growth. Currently, a little over half of the population has access to either a mobile or fixed line telephone (as compared to nearly 80% for India as a whole). The target is to reach universal (100%) connectivity by 2030. Given past trends, this target should not be difficult to achieve.

The share of manufacturing sector in GSDP (at 2011-12 constant prices)<sup>4</sup> in 2015-16 stands at 9% against the National average of 16.05 %. The share of manufacturing sector employment in total employment is very low standing at only 4.8 % against the national average of 10.5% which itself is considered insufficient. As industrial employment offers avenues for higher incomes to the state's population which currently is still engaged predominantly on low productive primary sector activities, Assam 2030 proposes to increase the share of manufacturing in the gross state domestic product by double of the present level by 2030 through promotion of sustainable industrialisation in the state. A corresponding tripling of the share of manufacturing sector employment is also necessary. These goals are well within the grasp of the State which is making efforts to reduce the current over-dependency on the primary sector and strengthening of manufacturing growth and employment along with the "Make in India" and expansion of manufacturing skills initiatives of the country.

### **Goal 10: REDUCE INEQUALITIES- Reduce inequality within and across countries**

The Government of Assam, in accordance with this Goal, envisions reduction of inequality in all possible dimensions in the state by 2030, including, among others, better access to cultivable land and equality of opportunity for all sections of the society, especially the disadvantaged, vulnerable and those living in difficult areas and conditions. The indicators selected for Goal 10 are given in Table 10 below.

**Table 10: Selected Goal 10 indicators**

Indicator	Assam Baseline (Latest Year)	India Average (Latest Year)	Target (2030)	Source of Target
10.1 Ratio of average size of holdings of small and marginal farmers to semi-medium, medium and large farmers (%)	16.1 (2010-11)	14.2 (2010-11)	Increase	Assam 2030
10.2 Gini co-efficient of inter-district DGDP	0.16 (2014)	(not applicable)	Reduce	Assam 2030

*Source:* Landholding data computed from Economic Survey Assam 2014-15 for Assam and Agricultural Census 2010-11 for India. Gini coefficient computed from Assam HDR 2014 and population from Census 2011

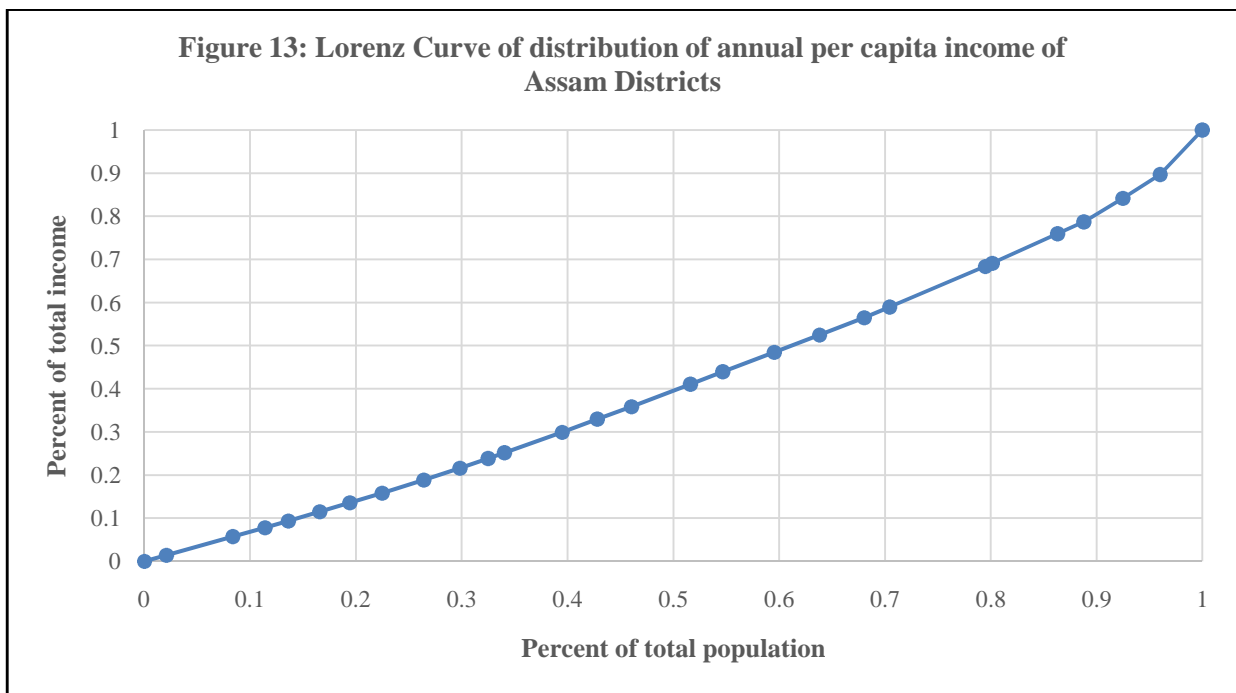
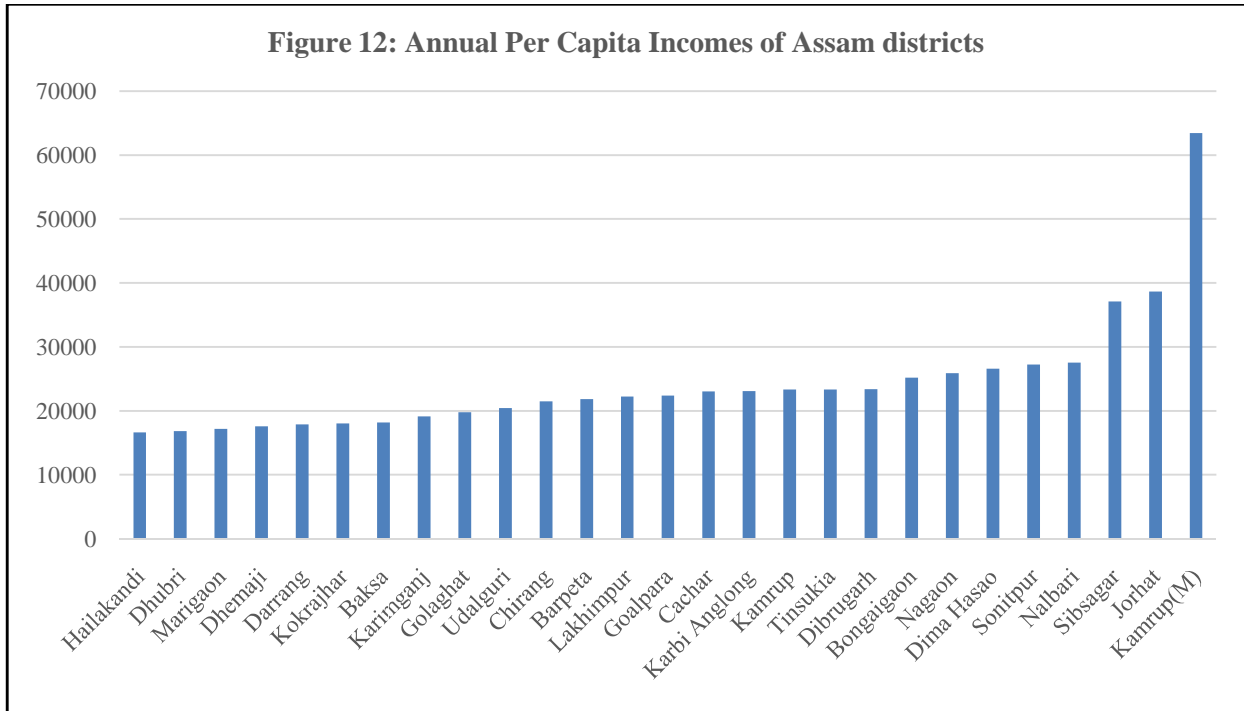
**Table 11: Average holding sizes by size categories of farmers**

Size Classes (hectares)	Average holding size (hectares)
Marginal farmers (below 1.0)	0.4
Small (1.0-2.0)	1.4
Semi medium (2.0-4.0)	2.7
Medium (4.0-10.0)	5.2
Large (10.0 and above)	68.1

Source: Statistical Handbook Assam 2015

The landholding pattern in the state is extremely unequal (Table 11). Small and marginal farmers who comprise the bulk of the rural population experiencing extreme poverty operate on farms whose average size (for both these categories together) is less than one sixth of the size of other larger farmers (i.e. semi-medium, medium and large). The sizes of small and marginal farmers are miniscule compared to large farms.

Another major source of inequality within the state is inequality in the levels of living in different districts of the state. In line with the objective in Assam 2030 of lowering inequality in all possible dimensions, spatial inequality of this nature needs to be reduced too. The ranking of districts by their annual average per capita incomes is shown in Figure 12. The three districts of Kamrup (Metropolitan), Jorhat and Sibsagar stand out from the rest quite significantly. The corresponding Lorenz curve is presented in Figure 13, which yields a Gini inequality coefficient of 0.16. The target is set to bring down this Gini co-efficient over the years to 2030. Considering the existence of different deprived populations with varied socio-economic and geographical conditions in Assam such as Tea Tribe Areas, Char Areas, Border Areas, Forest Villages, and Slum Areas, a major challenge will be to bring them at par with the rest of the state within the medium term.



Source: Based on data from Assam Human Development Report 2014 and Census of India 2011

**Goal 11: SUSTAINABLE CITIES AND COMMUNITIES: Make cities and human settlements inclusive, safe, resilient and sustainable**

Assam 2030 envisions making cities, towns and villages all inclusive, safe, resilient and sustainable with access to adequate, affordable housing, transport system, urban amenities

and clean environment for all. Three critical representative indicators have been adopted to monitor progress towards this Goal in Assam as shown in Table 12 below.

<b>Table 12 Selected Goal 11 indicators</b>				
<b>Indicator</b>	<b>Assam Baseline (Latest Year)</b>	<b>India Average (Latest Year)</b>	<b>Target (2030)</b>	<b>Source of Target</b>
11.1 Proportion of total urban population living in slums (%)	4.48 (2011)	17.36 (2011)	0.0	Assam 2030
11.2 Proportion of municipal solid waste treated to the total municipal solid waste generated in the state (%)	6.3 (2012)	12.5 (2012)	100.0	Assam 2030
11.3 Ambient Air Quality Index of Guwahati (PM10) average for Guwahati monitoring stations (in $\mu\text{g}/\text{m}^3$ )*	257.8 (2013)	(not applicable)	100.0	Assam 2030 & CPCB Air Quality Index Standards
<i>Source:</i> Data on slum populations from Census of India 2011. Data on solid waste generated and treated from Central Pollution Control Board, Status Report on Municipal Solid Waste Management (Annexure C). Air quality data on Assam from Directorate of Economics and Statistics, Assam.				
*NB. In future years, this index will be converted to proportion of days in year exceeding the standard of 100.				

Although the urban slum population in Assam is low by overall Indian standards, creation of sustainable cities will require provision of decent housing for all urban residents as envisaged under Assam 2030. In order to achieve this, the slum population needs to be brought down from 4.48% to zero with all nearly 2.0 lakh slum population that exists in urban areas of the state being provided housing and care taken to see that no new additions to the slum population takes place.

Clean cities will need proper management and disposal of municipal solid wastes. Only about 6% of such solid wastes are now being properly treated and disposed of. Bringing this to full coverage (100%) by 2030 as envisaged under Assam 2030 will require additional waste treatment facility creation at a rapid rate.

The Air Quality Index for the State in general and Guwahati in particular, as per methodology evolved by Central Pollution Control Board, Delhi ranges from moderate to satisfactory during months of December to March and from satisfactory to good and occasionally excellent at certain locations during April to September every year. However, the mean of the range is still very high. Efforts need to be stepped up for regular monitoring of Air Quality and bringing it to “Good to Excellent” levels round the year to make Assam a state with the cleanest air quality.

## **Goal 12: SUSTAINABLE CONSUMPTION AND PRODUCTION-Ensure sustainable consumption and production patterns**

Assam: 2030 targets to expand use of Life Cycle Assessment and Management for encouraging responsible production and consumption. This involves amongst others, the sustainable and efficient use of natural resources, reduction of waste and its recycling and

reuse through environmentally sound industrial processes, and to put in place policy frameworks and statutory provisions for integrating compliance of sustainability principles by companies and industrial houses. No separate indicator is proposed currently under this Goal as several indicators (such as for renewable energy, lowering transmission and distribution losses under Goal 7) are already included under other Goals which support the objectives of Goal 12.

### **Goal 13: CLIMATE ACTION-Take urgent action to combat climate change and its impacts**

Assam can contribute significantly to mitigating climate change through better preservation of its vast forest resources. This is discussed extensively under Goal 15. The major focus of attention under this Goal is on adaptation measures which are important for Assam as it is prone to natural disasters such as floods the severity of which is increasing. Three important indicators have therefore been adopted under this Goal as presented in Table 13.

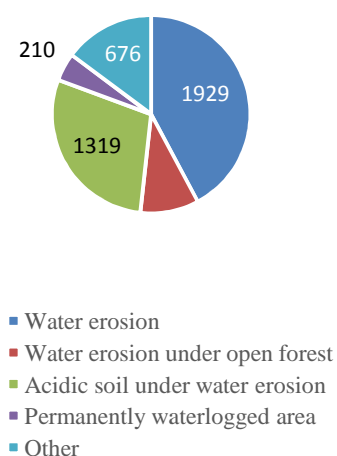
<b>Indicator</b>	<b>Assam Baseline (Latest Year)</b>	<b>India Average (Latest Year)</b>	<b>Target (2030)</b>	<b>Source of Target</b>
13.1 Proportion of cropped area affected by flood to the total cropped area (annual average) (%)	8.1 (2014-15)	(not available)	Halt and reduce	Assam 2030
13.2 Proportion of people affected by flood (annual average) (%)	11.7 (2014-15)	(not available)	0.0	Assam 2030
13.3 Proportion of area degraded and wasteland (%)	5.83 (2010)	3.66 (2010)	Halt and reduce	Assam 2030

*Source:* Directorate of Economics and Statistics, Statistical Handbook Assam 2015 for 13.1 & 13.2. For 13.3 ICAR, *Degraded and Wastelands of India: Status and Spatial Distribution*, Table 10. June 2010.

Assam 2030 emphasizes the welfare of all citizens of the State, especially the most vulnerable. In this category of persons falls those prone to climate and environment related hazards. These include people affected by floods living along river banks, embankments, disaster prone areas and in the vicinity of hazardous waste generating industries.

Floods are a perennial source of grief and hardship to thousands in the state. Thus efforts to halt and reduce the cropped area affected by floods in the State from the present level of 8.1% of the total cropped area; and bringing the proportion of people affected by floods from the present level of 11.7% to zero are major objectives to be achieved by 2030. Given that climate change appears to be increasing the ferocity and impact of floods yearly, these are challenges which will require considerable effort and resources to tackle.

**Figure 14: Area (sq.kms) under different categories of soil degradation in Assam, 2010**



Climate change and environmental damage is also taking a toll on soil quality and leading to soil degradation in a variety of ways. As much as 5.8% of the total land area in Assam has been classified by ICAR as degraded. Assam is particularly vulnerable due to floods and most of the land degradation in the state is the result of water erosion (see Figure 14).<sup>8</sup> Efforts to arrest the rate of degradation and reverse it, is therefore a major objective.

Considering the above, the State Government has prepared a State Climate Change Action Plan (2015-2020) in conformity with National Climate Change Action Plan, which identifies the possible consequences of climate change in the State and also outlines a plan for adaptation and mitigation,

*Source:* ICAR, Degraded and Wastelands of India: Status and Spatial Distribution. Table 10. June 2010.

which focuses on management of water resources, management of flood and erosion, forest and biodiversity and enhancing energy use efficiency.

#### **Goal 14: LIFE BELOW WATER-Conserve and sustainably use the oceans, seas and marine resources for sustainable development**

This Goal aims towards conservation and sustainable use and development of oceans, seas and marine resources. However, as Assam is rich in inland water resources, protecting inland water systems is considered under this Goal.

**Table 14: Mean of range of levels of total Coliform in tributaries of the Brahmaputra and Barak at locations with high concentrations**

Indicator	Assam Baseline (Latest Year)	Target (2030)	Source of Target
14.1 Mean of range of total coliform levels of Dhansiri at Golaghat (MPN/100 ml)	7500 (2013)	Halt and reduce significantly	Assam 2030
14.2 Mean of range of total coliform levels of Bharalu at Guwahati (MPN/100 ml)	121000 (2013)	Halt and reduce significantly	Assam 2030
14.3 Mean of range of total coliform levels of Disang at Dillighat (MPN/100 ml)	10680 (2013)	Halt and reduce significantly	Assam 2030
14.4 Mean of range of total coliform levels of Kharsang before confluence with Buridhing (MPN/100 ml)	120000 (2013)	Halt and reduce significantly	Assam 2030
14.5 Mean of range of total coliform levels of Barak at D/S of Silchar (MPN/100 ml)	11250 (2013)	Halt and reduce significantly	Assam 2030

*Source:* Statistical Handbook of Assam 2014

<sup>8</sup>ICAR, Degraded and Wastelands of India: Status and Spatial Distribution, Table 10. June 2010.

Assam's rivers and inland water bodies are getting increasingly polluted. The indicators in Table 14 measure one representative pollutant, namely Coliform, as an indicator of pollution in the tributaries of the Brahmaputra and Barak, taken from samples with the six highest concentrations of the pollutant in the state. Presence of Coliform bacteria in high concentrations indicates possibility of discharge of human and animal wastes from untreated sewage systems. Such bacteria reduce the levels of oxygen in the water and kills aquatic animal and plant life.

Halting and reversing the increasing trend of Coliform and other pollutants (such as phosphates, nitrates and electrical conductants such as ions and cations from discharge of untreated agricultural, urban and industrial wastes) in the river systems and water bodies of Assam is essential through measures to treat effluents from all sources currently being discharged without adequate treatment. Periodic monitoring of water samples from rivers and water bodies will need to be carried out to observe the extent of success of such measures and to ensure that the target of halting and significantly reducing and ultimately eliminating such pollutants altogether is achieved.

**Goal 15: LIFE ON LAND-Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss**

The focus of this SDG is on protecting, restoring and monitoring sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests and wetlands; promoting sustainable management of all types of forests, halting deforestation, biodiversity loss and strengthening wildlife protection. The indicators to be used for monitoring progress on this Goal are presented in Table 15.

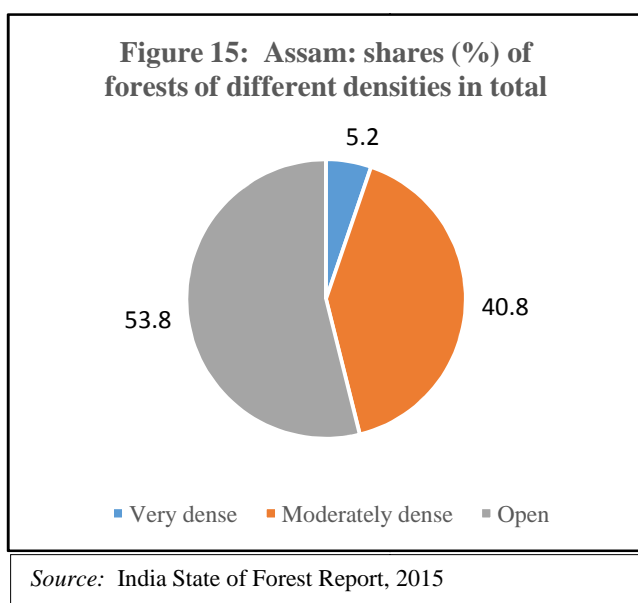
**Table 15: Selected Goal 15 indicators**

Indicator	Assam Baseline (Latest Year)	India (Latest Year)	Target (2030)	Source of Target
15.1 Proportion of area under forest cover (%)	35.22 (2015)	21.34 (2015)	Increase	Assam 2030
15.2 Growing stock of timber in notified forests and trees outside forest (million cubic meters MCuM)	176.7 (2015)	5768.4 (2015)	320.00 <sup>9</sup>	Forest Department, Government of Assam
15.3 Total area protected (national parks and wildlife sanctuaries) (sq. km)	3817.9 (2014)	516584.0 (2014)	Increase	Assam 2030
15.4 Number of tigers in the wild	167 (2014)	2226 (2014)	Increase	Assam 2030

*Sources:* India State of the Forests Report 2015 for 15.1 and 15.2; MoEFCC (cited in MOSPI MDG India Country Report 2015 Table 7.3 for 15.3; Status of Tigers in India 2014, National Tiger Conservation Authority for tiger population.

<sup>9</sup>Target set by Department of Forest, Government of Assam





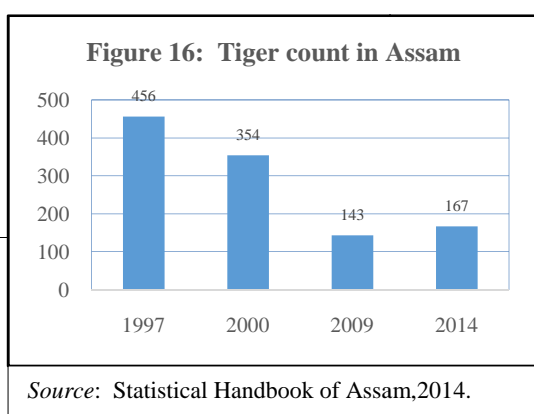
Assam can take a pride in the country with regard to its forest cover. With only 2.39% of the geographical area of the country, the state contributes to 3.27% of the total forest and tree cover of the nation. The area under forest cover is 35.21% of the geographical area of the state. However, not all of this area is of uniform density of forests. The areas under “very dense forest” and “moderately dense forest” constitute only 5.2% and 40.8% respectively of the total forest area and the majority (53.99%) is of “open forest” category which has density in the range of 10-40% only

(Figure 15).

The forests in the state are facing serious challenges from encroachment and unregulated felling. Over 30% of the notified reserve forest area is presently under encroachment. As per State of Forest Report, 2015, Assam lost 48 sq. km of forest cover as compared to the assessment made in 2013. Assam: 2030 seeks a paradigm shift from joint forest management to community ownership of degraded forests, water bodies and wastelands outside notified reserved forests and protected areas for protection from encroachment, enhancing productivity and raising income of village communities. It also lays emphasis on massive afforestation and re-forestation.

Stress needs to be placed on enhancing the quality of the state’s forest cover, too. An indicator to monitor this is the total growing stock which is proposed to be increased from the baseline figure of 143 million cubic meters in 2015 to 320 MCuMs by 2030.

Protection of the state’s biodiversity is another major objective. An indicator to measure progress on this is the total area protected against biodiversity loss. This includes national parks and wildlife sanctuaries. The total area under these two categories was 3817.9 square kilometre in 2014. Assam has managed over the recent past to keep such areas protected with only very minimal loss. Like in the case of forests such areas should continue to be protected and expanded if possible.



Another important objective under this Goal is to expand the stock of wildlife in the state, many of which are under threat. Assam has a rich variety of wildlife such as elephants, rhinos, leopards and tigers, besides many endemic

species of plants and animals. Of these, tigers were under threat of extinction with numbers dwindling. Recently however, there has been an increase due to intensive conservation measures (Figure 16). These efforts need to be further strengthened.

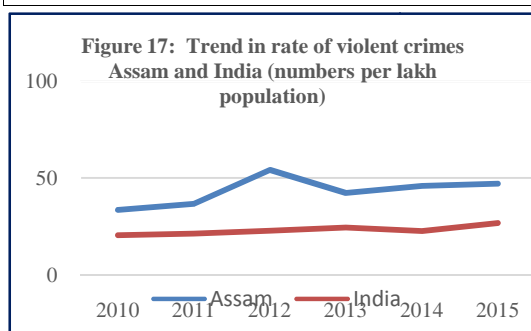
**Goal 16: PEACE, JUSTICE AND STRONG INSTITUTIONS-Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels**

This Goal aspires to promote peaceful and inclusive societies for sustainable development; provide access to justice for all and build effective, accountable and inclusive institutions at all levels. Government of Assam considers these critical, since strong institutions provide the bedrock, and peace and justice the foundation, on which good governance systems are established and free, equitable and just societies prosper. Government of Assam is totally committed to providing corruption free, transparent & accountable governance, sensitive to the needs of the citizen and ever-vigilant to prevent violation of law or ethics. Providing effective, outcome-oriented and future ready governance is a major component of the state's strategic architecture for actualisation of Assam 2030. The indicators employed to monitor progress on this Goal are presented in Table 16 below.

**Table 16: Selected Goal 16 indicators**

Indicator	Assam Baseline (Latest Year)	India Average (Latest Year)	Target (2030)	Source of Target
16.1 Total violent crimes (all forms) per lakh population	47.1 (2015)	26.7 (2015)	Halt and reverse	Assam 2030
16.2 Murders per lakh population	4.2 (2015)	2.55 (2015)	Halt and reverse	Assam 2030
16.3 Cases of human trafficking per lakh population	4.6 (2015)	0.5 (2015)	Halt and reverse	Assam 2030
16.4 Crimes against children (all forms combined) per lakh children	23.8 (2015)	21.1 (2015)	Halt and reverse	Assam 2030
16.5 Cases reported of crimes against women per lakh female population	148.2 (2015)	53.9 (2015)	Halt and reverse	Assam 2030
16.6 Pendency of trials of IPC cases at courts (%) <sup>10</sup>	83.9 (2015)	85.8 (2015)	Reduce	Assam 2030

Source: National Crimes Records Bureau (NCRB) Report 2015



Source: National Crime Records Bureau Reports, 2010-2015

A key measure of the soundness of institutions and the quality of governance is the ability to maintain peace and control all forms of violence, particularly violence against vulnerable sections of the population such as children, and women. The indicators chosen will help in monitoring progress in control of crime in general and specific crimes of particular concern, such as

<sup>10</sup> $[(\text{Cases pending trial at year end})/(\text{cases brought forward from previous year} + \text{new cases brought to trial within the year})] \times 100$

murders, human trafficking, and crimes against children and women.

As Figure 17 shows, incidence of violent crimes in Assam is currently nearly double that of India as a whole and also shows a higher rate of increase since 2010. The aim of the Government is to halt this trend and reverse it and bring it lower than national levels in case of all these five indicators by 2030.

Crime reduction does not involve only the police. Speedy dispensation of justice also plays a crucial role. The last indicator in Table 16 can be used to monitor the pendency of criminal cases in courts. Although Assam has a slightly better pendency situation compared to India as a whole measured by the cases pending at the end of a year as a percentage of the sum of cases brought forward from the previous year and new cases filed, it is behind several states in this regard. Andhra Pradesh for example, leads with a pendency percentage of only 63.7.

### **Goal 17: PARTNERSHIP FOR THE GOALS- Strengthen the means of implementation and revitalize the global partnership for sustainable development**

In order to implement Assam 2030, the means of implementation have to be strengthened. The SDGs have particularly emphasized three areas where national action is also relevant: strengthening financial resources; utilization of science, technology (particularly ICT) and innovation; and capacity building, in particular statistical capacity building, to better monitor and assess progress on the SDGs.

Adequate availability of financial resources is essential to support achievement of the ambitious Goals of Assam 2030. One of the key measures to monitor progress in this area is the state's own tax revenue collection as a ratio of the state's Gross State Domestic Product. In 2013-14, this stood at 5.79 % compared to the All-State average of 7.74 %. An increase in this ratio during the implementation period of Assam 2030 is a major state priority.

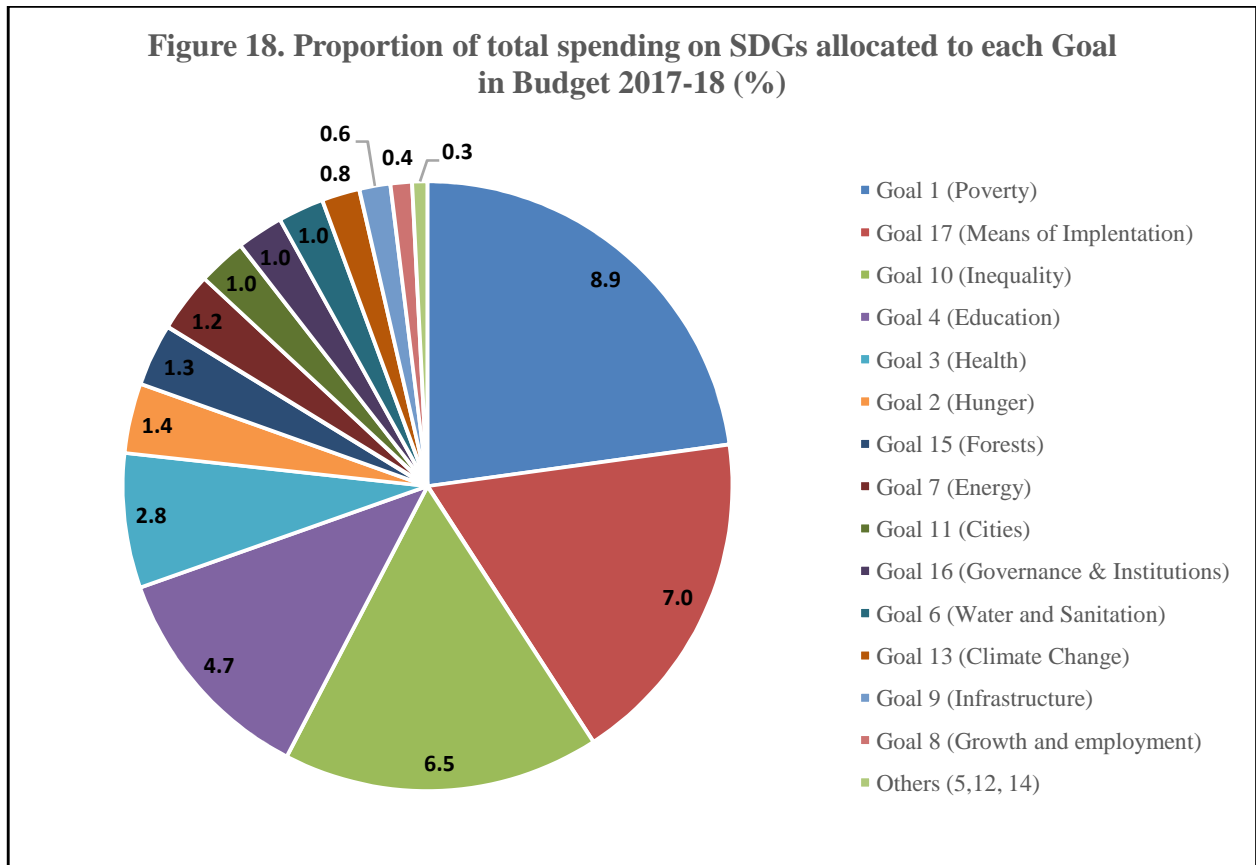
**Table 17 Selected Goal 17 indicators**

<b>Indicator</b>	<b>Assam Baseline (Latest Year)</b>	<b>India Average (Latest Year)</b>	<b>Target (2030)</b>	<b>Source of Target</b>
17.1 State's own tax revenue collection as a ratio of the state's Gross State Domestic Product (%)	5.79 (2013-14)	7.74 (2013-14)	Increase	Assam 2030
17.2 Share of SDG goals 1-17 in total expenditure budget (%)	55.6 (2017-18)	Not Available	Increase	Assam 2030

*Source:* Own tax revenues from Planning Commission data base downloaded from [http://planningcommission.nic.in/data/datatable/data\\_2312/DatabookDec2014%20166.pdf](http://planningcommission.nic.in/data/datatable/data_2312/DatabookDec2014%20166.pdf); Assam Budget 2017-18.

Apart from improving resources, better and more productive utilization of expenditures is crucial. Assam has therefore developed an outcome budget based on linkages to the SDGs with every item of expenditure tagged to the SDGs and their subsidiary targets. Through this exercise, it will be possible to track relative priorities placed on the Goals in the state's budget. For the 2017-18 Budget, 55.6% of the total expenditures were devoted to

supporting the SDGs. The allocation of the total expenditure on the SDGs to each Goal is shown in Figure 18.



Source: Assam Budget 2017-18.

Improved technology (particularly use of ICT) and innovative practices can economize on the use of resources and make public service delivery (such as by introducing virtual classrooms and telemedicine) more efficient and of higher quality. Introduction of technology and innovations, supporting Assam 2030 need to be actively promoted and monitored. A suitable indicator will be developed and included within the core indicators of Assam 2030 to monitor progress on innovations.

Statistical capacity building to improve better information on each of the Goals and targets is essential to see where progress is inadequate and to speed up achievement through provision of resources and changes in policies, institutions and partnerships. It is therefore necessary not only to develop a key set of indicators which can be tracked regularly (at least annually) both at the overall state level as well as at disaggregated levels, disaggregated by (i) districts; (ii) gender; (iii) deprived groups such as SC/ST/OBC, tea garden labor, char area people etc. The earlier this is done, the earlier can effective policies be put in place to speed up implementation of Assam 2030.

### **Conclusions:**

This brief overview of the monitoring framework of Assam 2030: Our Dream, Our Commitment indicates that Assam has adopted an ambitious set of development goals, implementation of which will require preparation of appropriate development strategies, introducing changes to policies and institutions and allocation of adequate resources towards the fulfillment of these Goals both financial and human.

This monitoring framework is one among many crucial steps that the state government has adopted towards results based functioning to achieve Assam 2030. Others such as outcome based budgeting based on Assam 2030 Goals and targets demonstrate its clear commitment to bringing about innovations and changes to achieve a peaceful, prosperous and well-governed state where no one is left behind in the path to progress.

## COMPARISON OF RESULTS OF ECONOMIC CENSUSES 1990, 1998, 2005 AND 2013

The first Economic Census was conducted in 1977 and subsequently 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> Economic Censuses were conducted in 1980, 1990, 1998 and 2005 respectively. The 6<sup>th</sup> Economic Census was the latest held in the year 2013. Many changes have been observed among these censuses in terms of coverage, methodology, geography, economic activities, employment etc.

During the 4<sup>th</sup> and 5<sup>th</sup> Economic Censuses for rural area "village" and for urban area "urban frame sample block" created by NSSO, FOD was taken as primary unit but in the Sixth Economic Census, Enumeration Blocks provided by the office of Registrar General India and Census Commissioner, Ministry of Home Affairs, Govt. of India were taken as primary unit for both rural and urban sectors. The purpose of using the Census EBs is to have a single/uniform maps for lowest geographical units, which would facilitate to synchronizing the Economic Census results with the Population Census 2011

In the 4<sup>th</sup> Economic Census, household approach was adopted by taking 200 households in the rural area and 150 household in the urban area, during the 5<sup>th</sup> Economic Census the approach was same but the number of households were decreased for rural area as 120 households and for urban area it remained same as 150 households. During the fourth and fifth Economic Census, Public Administration was included but under the Sixth Economic Census this part was excluded as detailed information was already available with the Government.

Unlike Fourth Economic Census, a new feature was added during the Fifth Economic Census was canvassing of a separate "Address Slip" among the establishments employing 10 or more workers for compilation of a "Directory of Establishments". Similarly, with few changes a separate schedule (Schedule 6C) was introduced in Sixth Economic Census for collecting information of the establishments employing 8 or more workers for compilation of a Directory of Establishments.

A comparative analysis of the Economic Census results conducted during 1990, 1998, 2005 and 2013 in Assam is given in Table: F-01.

Growth of Establishments:

Table F-01 shows the number of establishments in last four economic censuses and inter-census growth rate of establishments in respect of rural, urban and combined over the periods 1990-1998, 1998-2005 and 2005-2013. According to Third EC -1990, there were around 4.95 lakh establishments in the state which increased to 5.93 lakh establishments in Fourth EC-1998 registering the overall compound annual growth rate (CAGR) of 2.28% during the period 1990-1998. During the period 1998-2005, the overall compound annual growth rate of establishments in the state was 6.42%.

The growth rate of establishments has sharply increased from 5.90% during 1998-2005 to 9.45 % during 2005-2013

Table:F-01

Compound Annual Growth Rate of Establishments in last three Economic Censuses							
Location	Number of Establishment				% increased in Establishments		
	EC1990	EC 1998	EC2005	EC2013	1990-1998	1998-2005	2005-2013
Rural	352591	404279	677331	1441282	1.72	6.66	9.90
Urban	142604	188890	298718	568515	3.58	5.90	8.38
Combined	495195	593169	976049	2009797	2.28	6.42	9.45

The growth rate maintained the increasing trend both in rural and urban areas during the period 2005-2013. Growth rate per annum in rural areas was slightly more than (9.90%) the growth rate (8.83) observed in urban areas during 2005-2013. Rural areas witnessed a significant growth rate of 9.90% in 2005-2013 as compared to the growth rate of 6.66% during 1998-2005. The total growth in number of establishments in the state during 2005-2013 was found about 105.91%.

Table:F-02

Compound Annual Growth Rate of Agricultural Establishments in last three Economic Censuses							
Location	Number of Agricultural Establishment				% increased in Agricultural Establishments		
	EC1990	EC 1998	EC2005	EC2013	1990-1998	1998-2005	2005-2013
Rural	14067	16960	39797	206216	2.37	11.25	22.83
Urban	1999	2529	2669	15704	2.98	0.68	24.80
Combined	16066	19489	42466	221920	2.44	10.23	22.96

It is observed from the Table: F-02 that agricultural establishments in the state increased from 0.16 lakh in Fourth Economic Census-1990 to 0.19 lakh in Fifth Economic Census -1998 registering a compound annual growth rate (CAGR) of 2.44% during 1990-1998.

During the period 1998-2005, the overall CAGR of agricultural establishments in the state was found 10.23%. It is reported that 2.22 lakh establishments were engaged in agricultural activities in the state in Sixth Economic Census, 2013 against 0.42 lakh establishments in Fifth Economic Census, 2005 with increase of compound annual growth rate of 22.96% during the period 2005-2013.

The annual growth rate maintained the increasing trend both in rural and urban areas during the period 2005-2013.

Table:F-03

Compound Annual Growth Rate of Non-Agricultural Establishments in last three Economic Censuses							
Location	Number of Non-Agricultural Establishment				% increased in Non-Agricultural Establishments		
	EC1990	EC 1998	EC2005	EC2013	1990-1998	1998-2005	2005-2013
Rural	338524	387319	637534	1235066	1.70	6.43	8.62
Urban	140605	186361	296049	552811	3.58	5.96	8.12
Combined	479129	573680	933583	1787877	2.28	6.28	8.46

It is observed from the Table F-03 that the overall compound annual growth rate (CAGR) of non-agricultural establishments during the period 1990-1998, 1998-2005 and 2005-2013 was found 2.28%, 6.28% and 8.46% respectively. The total growth in number of non-agricultural establishments in the state was 91.51%.

The growth rate maintained the increasing trend both in rural and urban areas during the period 1990-1998, 1998-2005 and 2005-2013.

Compound annual growth rate of establishments during the period 1990-1998, 1998-2005 and 2005-2013 by setor wise is shown in the following bar diagram.

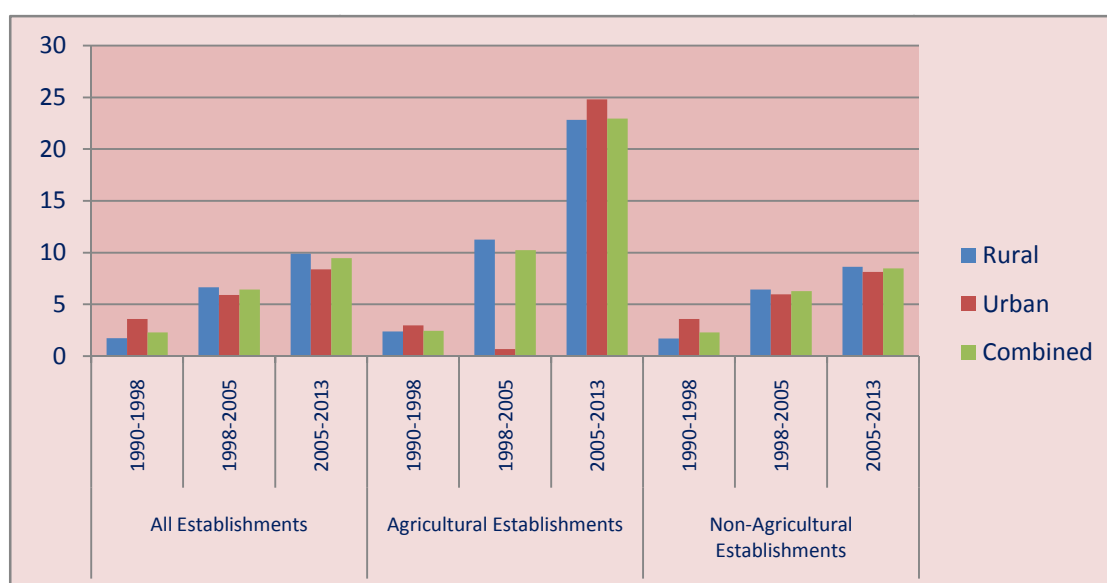




Table:F-04							
Compound Annual Growth Rate of Own Account Establishments in last three Economic Censuses							
Location	Number of Own Account Establishment				% increased in Own Account Establishments		
	EC1990	EC 1998	EC2005	EC2013	1990-1998	1998-2005	2005-2013
Rural	220624	262313	478588	1077588	2.19	7.81	10.68
Urban	76817	110146	158921	365608	4.61	4.69	10.98
Combined	297441	372459	637509	1443196	2.85	6.95	10.75

It is depicted from the Table F-04 that the CAGR of own account establishments in the state had increased from 2.85% during 1990-1998 to 6.95% during 1998-2005. The CAGR of own account establishments in the state has increased sharply from 6.95% during 1998-2005 to 10.75% during 2005-2013.

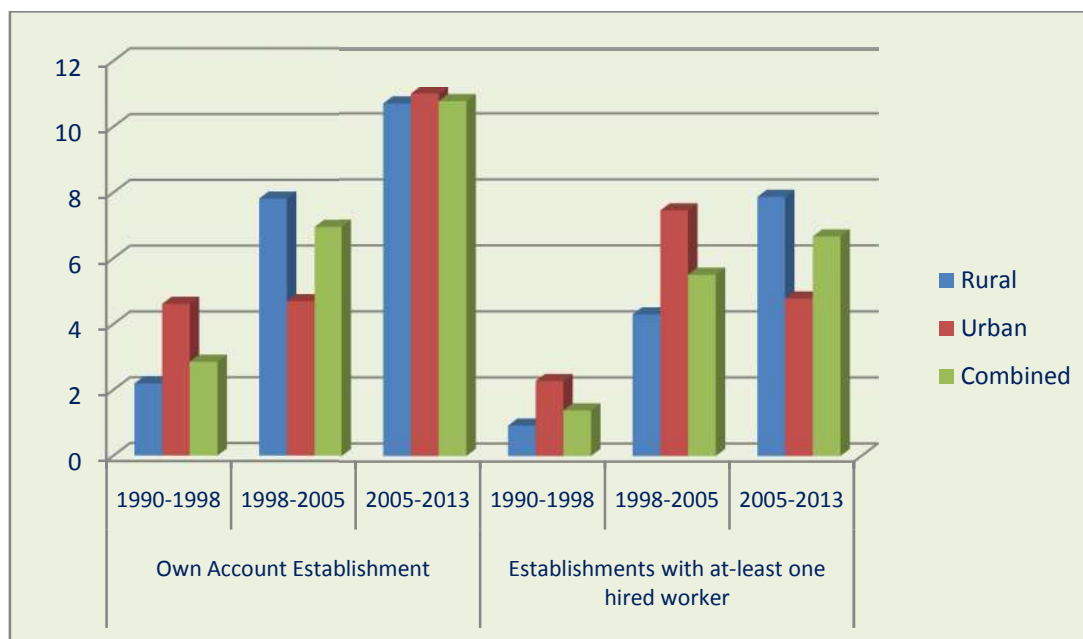
The growth rate maintained the increasing trend both in rural and urban areas during the period 2005-2013

Table:F-05							
Compound Annual Growth Rate of Establishments with at-least one hired worker in last three Economic Censuses							
Location	Establishments with at-least one hired worker				% increased in Establishments with at-least one hired worker		
	EC1990	EC 1998	EC2005	EC2013	1990-1998	1998-2005	2005-2013
Rural	131967	141966	198743	363694	0.92	4.29	7.85
Urban	65787	78744	139797	202907	2.27	7.44	.77
Combined	197754	220710	338540	566601	1.38	5.49	6.65

It has been seen from the Table F-05 that there was an increase of 22.07 establishments with at least one hired worker (excluding public administration, defence and compulsory social security services ) during Fourth Economic Census ,1998 over Third Economic Census, 1990 with an annual compounded growth rate of 1.38%.

The CAGR of establishments with at least one hired worker during 2013 over 2005 was found 6.65% as against 5.49% in 2005 over 1998. The growth rate maintained the increasing trend both in rural and urban areas during the period 2005-2013

The CAGR of Own Account Establishments and Establishments with atleast one hired worker during the period 1990-1998, 1998-2005 and 2005-2013 are shown in the following bar diagram.



#### Number of Employment for Fifth and Sixth Economic Censuses

Sector	Fifth EC-2005	Sixth EC-2013	CAGR (%)	Total Growth (%)
Rural	1323113	2723305	9.4	105.83
Urban	679075	1196065	7.3	76.13
Combined	2002188	3919370	8.8	95.75

As far as employment is concerned, the overall CAGR of 8.8% was observed during 2005-2013. During 2005-2013, the CAGR of 9.4% was observed in rural areas as against 7.3% in urban areas. The total growth in number of persons during 2005-2013 was found about 95.75%.

Districtwise comparison of compound annual growth rate (CAGR) of the establishments during the period 2005-2013 is given in Table: F-07.

The Table F-07 revealed that there were positive growth rates in all the districts in terms of number of establishments. Among the districts, the highest CAGR in terms of

establishments was observed in Dima Hasao (14.51%), followed by Barpeta (14.05%), Karbi Anglong (13.65%) and Jorhat (13.64%). On the other hand, the ACGR was found lowest in Goalpara (5.72%).

During the period 2005-2013, the CAGR of establishments in rural areas was found about 9.90% as against 8.38% in urban areas. Out of 27 districts, the compound annual growth rate of establishment in 9(nine) districts have been found more than the growth rate of the state (9.45%) during the gap of 8 years.

Table:F-07

District wise comparison of compound annual growth rate (CAGR) of Establishments during 2005-2013									
District	Rural			Urban			Combined		
	5 <sup>th</sup> EC	6 <sup>th</sup> EC	ACGR	5 <sup>th</sup> EC	6 <sup>th</sup> EC	ACGR	5 <sup>th</sup> EC	6 <sup>th</sup> EC	ACGR
Kokrajhar	20105	40255	9.07	4795	8029	6.66	24900	48284	8.63
Dhubri	41199	71493	7.13	15484	19359	2.83	56683	90852	6.07
Goalpara	27487	40298	4.90	5264	10799	9.40	32751	51097	5.72
Barpeta	46909	141014	14.75	12615	29367	11.14	59524	170381	14.05
Morigaon	17786	35687	9.09	3756	8094	10.07	21542	43781	9.27
Nagaon	62128	144740	11.15	23748	47974	9.19	85876	192714	10.63
Sonitpur	32947	71786	10.22	11781	19680	6.62	44728	91466	9.35
Lakhimpur	24679	44438	7.63	7093	12130	6.94	31772	56568	7.48
Dhemaji	10801	23909	10.44	2594	4313	6.56	13395	28222	9.76
Tinsukia	19043	41996	10.39	15581	29097	8.12	34624	71093	9.41
Dibrugarh	23061	43931	8.39	16758	24977	5.12	39819	68908	7.10
Sivasagar	29351	54496	8.04	9731	13375	4.06	39082	67871	7.14
Jorhat	20393	62625	15.06	11486	26058	10.78	31879	88683	13.64
Golaghat	25951	52324	9.16	6985	11457	6.38	32936	63781	8.61
Karbi Anglong	13889	44143	15.55	5949	11089	8.10	19838	55232	13.65
Dima Hasao	3918	14290	17.56	2919	5926	9.25	6837	20216	14.51
Cachar	48467	107312	10.45	18881	28565	5.31	67348	135877	9.17
Karimganj	38219	77027	9.16	5882	10363	7.34	44101	87390	8.92
Hailakandi	12005	35016	14.32	3780	6086	6.13	15785	41102	12.71
Bongaigaon	16178	29015	7.58	6838	14679	0.00	23016	43694	8.34
Chirang	7585	14279	8.23	3016	2570	-1.98	10601	16849	5.96
Kamrup	35596	77956	10.30	7957	13771	7.10	43553	91727	9.76
Kamrup Metropolitan	7957	13577	6.91	82295	188308	10.90	90252	201885	10.59
Nalbari	26056	45717	7.28	4910	9368	8.41	30966	55085	7.47
Baksa	24907	46078	7.99	0	1126	0	24907	47204	8.32
Darrang	22040	37286	6.79	4793	7172	5.17	26833	44458	6.51
Udalguri	18693	30594	6.35	3808	4783	2.89	22501	35377	5.82
Total	677350	1441282	9.90	298699	568515	8.38	976049	2009797	9.45

District wise compound annual growth rate of establishments during the period 2005-2013 is shown in the following line diagram.



Comparison of Compound Annual Growth Rate of Employment

Type of Worker	Rural			Urban			Combined		
	5th EC	6th EC	ACGR	5th EC	6th EC	ACGR	5th EC	6th EC	ACGR
Male -Hired	474531	828834	7.2	301126	482018	6.1	775657	1310852	6.8
Male Non-Hired	652107	1326917	9.3	309930	549378	7.4	962037	1876295	8.7
Total Male	1126638	2155751	8.4	611056	1031396	6.8	1737694	3187147	7.9
Female -Hired	133833	285071	9.9	56007	94389	6.7	189840	379460	9.0
Female Non-Hired	62642	282483	20.7	12012	70280	24.7	74654	352763	21.4
Total Female	196475	567554	14.2	68019	164669	11.7	264494	732223	13.6
Total Hired	608364	1113905	7.9	357133	576407	6.2	965497	1690312	7.3
Total Non-hired	714749	1609400	10.7	321942	619658	8.5	1036691	2229058	10.0
Total	1323113	2723305	9.4	679075	1196065	7.3	2002188	3919370	8.8

The Table F-08 revealed that employment grew in the state at the rate of 8.8% per annum during 2005-2013. The CAGR of employment in rural areas was found about 9.4% as against 7.3% in urban areas over the period 2005-2013. During the period 2005-2013, the growth rate of non-hired employees in the state was found about 10%

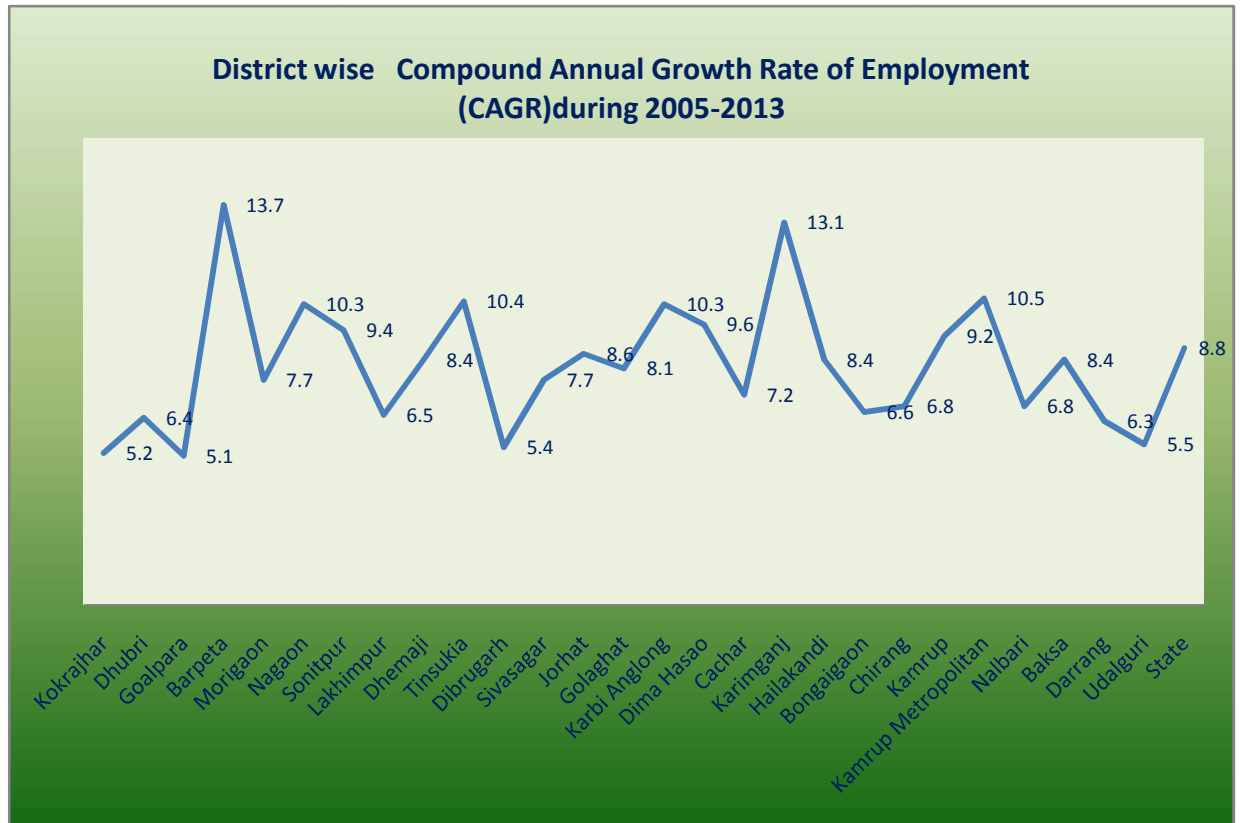
as against 7.3% in hired employees. The growth rate of female employees was found more in comparison of male employees during 2005-2013.

District wise comparison of annual compound growth rate (CAGR) of employment during the period 2005-2013 is given in Table: F-09.

District wise comparison of compound annual growth rate (CAGR) of Employment in Assam									
District	Rural			Urban			Combined		
	5th EC	6th EC	ACGR	5th EC	6th EC	ACGR	5th EC	6th EC	ACGR
Kokrajhar	40214	64486	6.1	13751	16535	2.3	53965	81021	5.2
Dhubri	69285	128471	8.0	31484	36745	2.0	100769	165216	6.4
Goalpara	53369	76466	4.6	12809	21766	6.9	66178	98232	5.1
Barpeta	86443	246528	14.0	23441	60683	12.6	109884	307211	13.7
Morigaon	36220	64522	7.5	9176	17356	8.3	45396	81878	7.7
Nagaon	116385	266432	10.9	50137	97432	8.7	166522	363864	10.3
Sonitpur	64498	139554	10.1	25238	44237	7.3	89736	183791	9.4
Lakhimpur	51482	87485	6.9	17202	26472	5.5	68684	113957	6.5
Dhemaji	22833	46109	9.2	6143	9193	5.2	28976	55302	8.4
Tinsukia	47216	123814	12.8	37422	63335	6.8	84638	187149	10.4
Dibrugarh	60395	95736	5.9	40630	57679	4.5	101025	153415	5.4
Sivasagar	67938	134016	8.9	25627	34780	3.9	93565	168796	7.7
Jorhat	50249	109049	10.2	32127	50737	5.9	82376	159786	8.6
Golaghat	54283	102772	8.3	14289	24879	7.2	68572	127651	8.1
Karbi Anglong	29597	77421	12.8	14920	20434	4.0	44517	97855	10.3
Dima Hasao	7908	22827	14.2	8511	11327	3.6	16419	34154	9.6
Cachar	77531	153899	8.9	37381	46545	2.8	114912	200444	7.2
Karimganj	56609	169499	14.7	13799	19475	4.4	70408	188974	13.1
Hailakandi	24616	55041	10.6	9592	9947	0.5	34208	64988	8.4
Bongaigaon	30582	52519	7.0	19583	30888	5.9	50165	83407	6.6
Chirang	13259	26947	9.3	6032	5806	-0.5	19291	32753	6.8
Kamrup	68361	153597	10.6	23317	31714	3.9	91678	185311	9.2
Kamrup Metropolitan	25690	34883	3.9	175684	412514	11.3	201374	447397	10.5
Nalbari	47269	81189	7.0	12740	20207	5.9	60009	101396	6.8
Baksa	45816	85336	8.1	0	2165	0.0	45816	87501	8.4
Darrang	39636	67872	7.0	10734	14297	3.6	50370	82169	6.3
Udalguri	35429	56835	6.1	7306	8917	2.5	42735	65752	5.5
Total	1323113	2723305	9.4	679075	1196065	7.3	2002188	3919370	8.8

The Table F-09 depicted that there were positive growth rates in all the districts in terms of employment growth. Among the districts, Barpeta district showed the highest growth rate in terms of employment with a combined growth of 13.7%, followed by Karimganj district (13.1%) and Kamrup (Metropolitan) district (10.5%).

Out of 27 districts, the compound annual growth rate of employment in 9(nine) districts have been found more than the growth rate of employment at state level (8.8%) during the gap of 8 years between the two censuses. District wise CAGR of employment during the period 2005-2013 is shown in the following line diagram.



\*\*\*\*