



THE ASSAM GAZETTE

অসাধাৰণ

EXTRAORDINARY

প্ৰাপ্ত কৰ্তৃত্বৰ দ্বাৰা প্ৰকাশিত

PUBLISHED BY THE AUTHORITY

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No. 325 Dispur, Friday, 6th May, 2022, 16th Vaisakha, 1944 (S. E.)

GOVERNMENT OF ASSAM

ORDERS BY THE GOVERNOR

DEPARTMENT OF HOUSING & URBAN AFFAIRS.

NOTIFICATION

The 28th March, 2022

No.UDD(T)63/2022/71– In exercise of the powers conferred by the section 9 and sub-section (1) of section 10 of the Assam Town & Country Planning Act, 1959 (as amended) and (Assam Act II of 1960) read with sub-rule (1) of Rules 3 of the Assam Town & Country Planning (Publication of Master Plan and Zoning Regulations) Rules 1962, the Governor of Assam is pleased to publish the following notice regarding the publication of the Draft Master Plan for Moran.

Notice for publication of the Draft Master Plan for Moran

1. It is notified that the Draft Master Plan for Moran prepared under section 9 of the Assam Town & Country Planning Act, 1959 (as amended) as described in the schedule below is here by published.
2. Any person or persons affected by the Draft Master Plan and the Regulation may submit their objections or opinions in writing to the Director of Town & Country Planning within two months from the date of publication.
3. The Draft Master Plan with all relevant papers and maps may be inspected free of cost during the office hours at the office of Director, Town & Country Planning, Dispur, Guwahati-6. Deputy Director, Town & Country Planning, Dist Office – Sivasagar, office of the Deputy Commissioner, Sivasagar, office of the Chairman, Moran Municipal Board & Moran Circle Office. Copy of the Draft Master Plan is available in the office of the Deputy Director, Town & Country Planning, Dist Office – Sivasagar for sale on payment.

SCHEDULE**A. Situation and Areas :**

District	:	Charaideo/ Dibrugarh
State	:	Assam
Area	:	31.96 sqkm

Circle, Mouza and Villages included in the Master Plan area of Moran.

1. Charaideo District:

<u>Circle</u>	<u>Mouza</u>	<u>Villages</u>
<u>Mahmora</u>	Khaloighugura	Moran Town (1 st , 2 nd , 3 rd) ChutiaGaon MoutGaon KhatKhati Tea Estate, Grant 257/276 Moran ChangmaiGaon
	Mahmora	AmguriGaon (1 st , 2 nd) Khumtai (1 st , 2 nd), Bagicha

2. Dibrugarh

Moran	Moran	Moran Town (1 st , 2 nd & 3 rd) Moran Tea Estate 1 No. Sarupathar 2 No. Sarupathar Hatkhola 1 No. Kawaimari 2 No. Kawaimari 1 & 2 No. Mirihola Bezorchuk Bengali Gaon Tikrai Bengali Gaon PhatikaChowaAhomGaon Khelmati
	Khowang	PhatikaChowaAbhoypuriaGaon Abhoipuria Bengali Gaon

B. Description of boundaries :

WEST	:	Dihajan
EAST	:	Tengakhat, Tinkhang
NORTH	:	Mohanbari
SOUTH	:	Sonari

RAJESH PRASAD,
Principal Secretary to the Government of Assam,
Department of Housing & Urban Affairs.

CHAPTER – 1:
INTRODUCTION TO MASTER PLAN AREA

1.1. LOCATION:-

Moran is an important industrial town in the Indian state of Assam. A part of the town falls in Dibrugarh district and the rest falls in Charaideo District. It has a major Oil field and major Tea producing area. Moran is located at 27.18°N 94.93°E. It has an average elevation of 97 m (318 ft).

The town is surrounded by tea gardens, oil fields, and villages. A unique geographical feature of Moran is its location between two districts—Charaideo and Dibrugarh. The National Highway-37 passes through the heart of Moran. The National Highway acts as the divider, where one side falls under the Charaideo jurisdiction (Moranhat) and the other under the Dibrugarh district (Moran). This town is industrially developed. It is a major tea-producing region in the state and also a major oil field. The nearest railway station is Moranhat and nearest Airport is Mohanbari Airport, which is about 40 km away from the city.

Figure1.1: Map of India Figure1.2: Map of Assam showing location of Moran Town

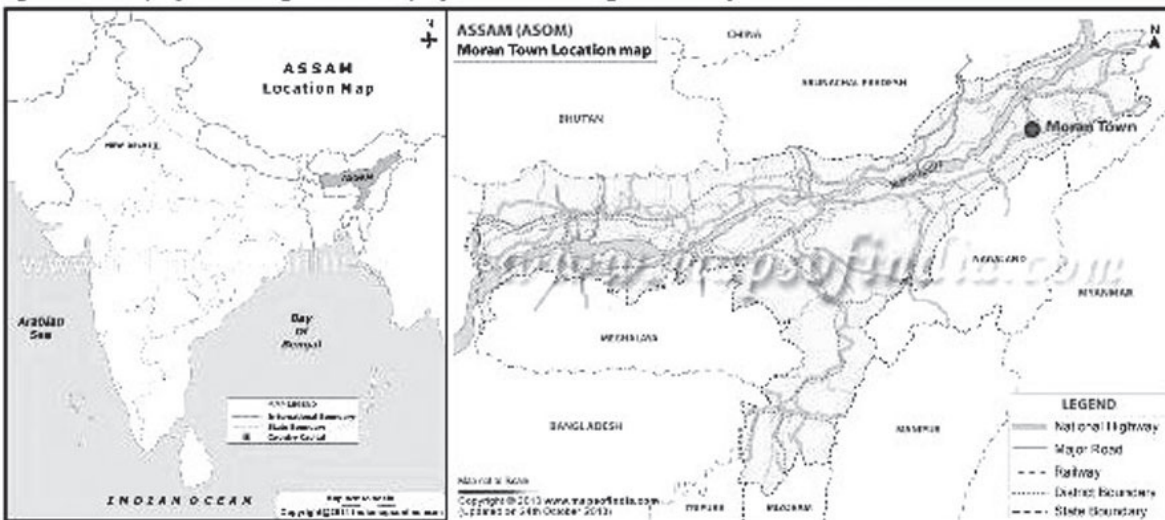
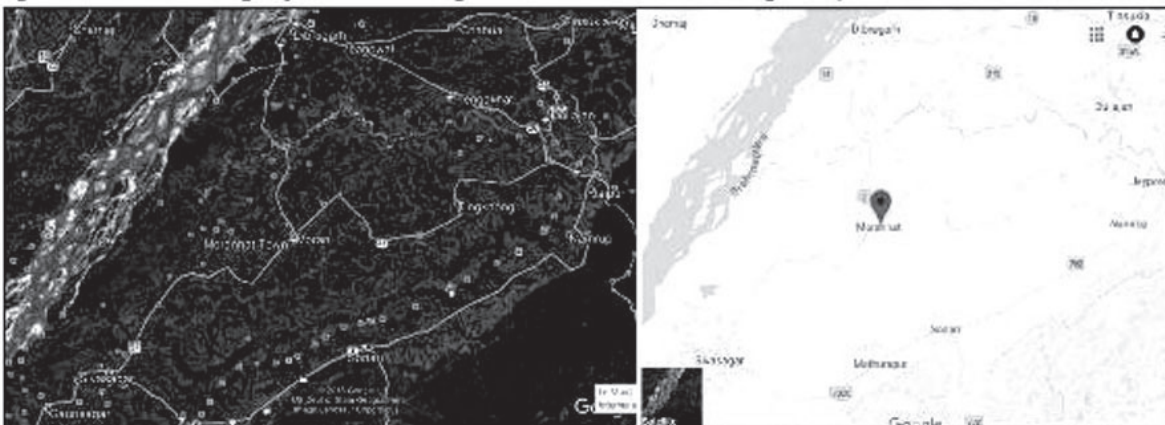


Figure1.3: Satellite Image of Moran Town Figure1.4: Moran Town on Google Map



1.2. REGIONAL SETTINGS:-

It is surrounded by the towns of Dihajan in the West, Tengakhat and Tinkhon in the East, Mohanbari in the North and Salaguri, Moranjan and Sonari in the South. The District head quarter is in Charaideo, which is at a distance of 40 km from Moran Town and connected via roadways.

1.3. BRIEF HISTORY OF THE TOWN AND SURROUNDINGS:-

Moran is a small and peaceful town located in the eastern part of Assam or Upper Assam. It derives its name from the Moran tribe. It is said that prior to the advent of the Ahoms, the Morans had their own independent kingdoms. Baruah (1985 : 222) stated – “Sukapha (the founder of Ahom Kingdom) won over the Morans by diplomatic means. He organized feasts and invited the leading members of the tribe to participate with him and sought their co-operation and friendship with them”. When the political aggrandizement of the Ahom kingdom extended towards the west, many Moran people were appointed to different administrative posts in the military departments. The elephantry was practically monopolized by the Morans because they were expert in catching elephants and training them for war. The section of the Morans who supplied elephants was called Hatichungi and the officer-in-charge of elephantry was called Hati Baruah. These titles still exist among the Morans. In a like way the Moran served in the cavalry department also and the officer who was in charge of it was called Ghora Baruah. Thus they contributed greatly to the building up of the Ahom Army and hence to the establishment and expansion of the Ahom power in Assam.

Towards the end of 18th century due to the Maa-moria war and three consecutive Myanmar attack the place had transformed into a land of no man. But as it came under British rule and tea-gardens were established by them population started to migrate to the place. Labours as well as Businessman started to settle down in Moran town. In 1901 first Post office was established in Moran Khatkhathi and first Primary School in Moran Bordoba. In 1927 the first Railway connection was established between Moran and Sivasagar town.

1.4. CLIMATE:-

Moran belongs to Sub-Tropical Monsoon type of climate. It is characterized by hot humid-rainy summer and dry and cold winter. The weather in Moran is pleasant throughout the year. The monsoon season starts from the month of May and it continues up to October. Generally May, June and July are the hottest months. Cold winter starts from the month of November and continues up to the month of March. December and January are the coldest months. The highest maximum temperature in Moran during summer is 37.0° C and minimum temperature during winter is 6° C. Average annual rainfall is 2150.3 mm (81.6 inches).

1.5. TOPOGRAPHY:-

Moran is located at 27.18°N 94.93°E. It has an average elevation of 97 m (318 ft). Moran town is flat with a gradual slope towards north-west. The Budhi Dihing river is flowing parallel to the town at a distance of 15 km to the north-west of the town.

1.6. SOILCONDITION:-

The Soil of Moran Town is basically the products of the fluvial processes of the Brahmaputra river and its tributaries. It includes plains that are composed of alluvium that are classified as new and old. The new alluvium varies mostly from clayey to sandy loam in texture and is slightly acidic in reaction. The old alluvium on the other hand occurs in the upper and middle parts of the valleys. The region bears texturally three types of soil - sandy loam, loam and clayey loam. These favour the

cultivation of rice, mustard, pea, vegetables, etc. Thus, geographically the soil of Moran Town is considered as favourable for cultivation and plantation.

1.7. CITY INFLUENCE AND ITS CHARACTERISTICS INCLUDING SETTLEMENT PATTERN:-

The settlement pattern of Moran is a mixed one. Due to the presence of teagardens, workers from Bihar and Orissa migrated in to the region. Officials from Tea and Oil industry settled in Moran. The indigenous people of the state live both in urban and rural areas. A good number of Marowari, Bengali, Bihari, Sikh and Muslim people reside in Moran. Population growth has been unusually rapid, mostly due to up gradation of Charaideo sub-division into district and thereby administrative growth of Moran town.

1.8. RURAL-URBAN SCENARIO:-

Both rural as well as urban characteristics can be seen in Moran town and its surroundings. Though people use modern techniques to build their houses but there still exist houses which have been built with older methods. "Saang-ghar" is a good example of it. People of the town still use the practice of building "Saang-ghars" with locally available materials like bamboo, wood, that etc. Many people of the town still use bamboo fence around their house. The Economically weaker section households are easily identified by their poor housing condition. Due to low incomes, their houses are mostly kutcha or semi pucca type and lack basic infrastructure.

1.9. HISTORY OF THE PHYSICAL GROWTH AND EXPANSION OF THE TOWN:-

With the up gradation of Charaideo sub-division into a district on the 15th August, 2015 Moran has become one important town in the district. Govt. offices including Judiciary according to the norms have been established at Moran resulting in to rapid physical growth of the town. The physical growth and expansion of the town has mainly taken place for the tea and oil industry which were developed by the British.

1.10. NEED FOR THE MASTER PLAN:-

A master plan or a development plan or a town plan may be defined as a general plan for the future layout of a city showing both the existing and proposed streets and roads, open spaces, public buildings etc. A master plan is a blueprint for the future.

A Master Plan, also called a comprehensive plan, provides a long-range vision for the built environment of a community. It guides the appropriate use of lands within a municipality in order to protect the public health and safety and to promote general welfare. Among other issues, the Master Plan can identify

- suitable locations for commercial, housing and mixed-use development;
- locations where the city should increase density, use redevelopment, or intervene in other ways;
- opportunities to extend and/or improve open space, recreational areas, and civic facilities;
- strategies from increasing economic development;
- environmental, historic and cultural resources that need conservation; and
- strategies for solving congestion and improving transit services.

As a result, the Master Plan has a direct relationship to its citizens, where we live, work, or own a business in that particular region.

CHAPTER – 2 :**DEMOGRAPHY****2.1. TOTAL POPULATION:-**

Moran Master Plan Area (MMPA) is spanning in both Dibrugarh and Charaideo district. According to census of India 2011, the total population of Moran Master Plan area is 44472 persons out of whom 22920 are male and 21552 are female.

Table 2.1: Urban & Rural Area Population Figure

Name of Master Plan Area	Category of Area	Area in Sqkm	Population in 2011
Moran Master Plan Area	Urban	2.74	14113
	Rural	29.22	30359
Total		31.96	44472

2.2. MALE/FEMALE POPULATION:-

The details of Male and female population for the Moran Master Plan Area (MMPA) is shown in the following table.

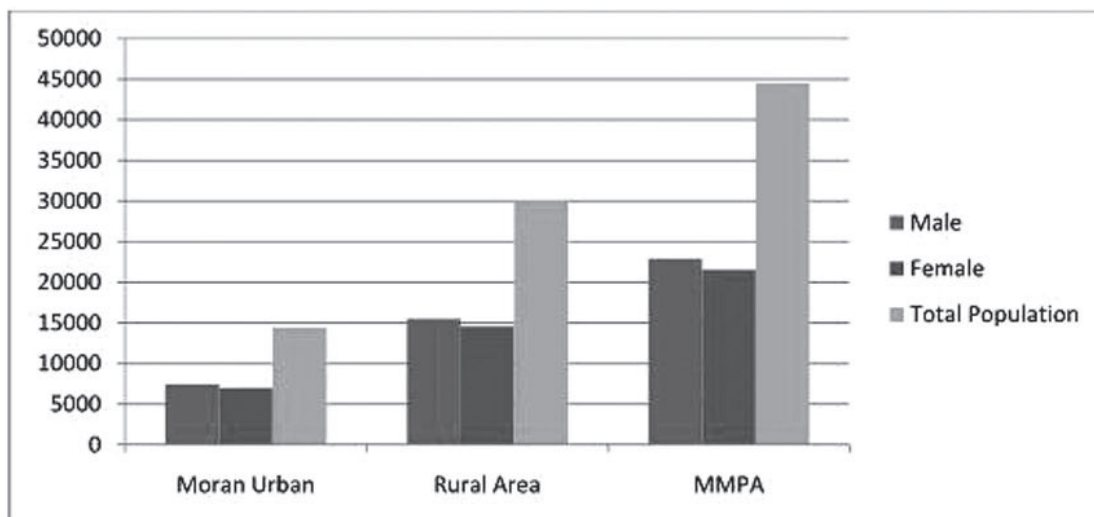
Table 2.2: Male and Female Population of MMPA in 2011**Under Charaideo District Areas / Town and Villages**

Sl. no.	Name	Male	Female	Total Population
1	Moran Town (1 st , 2 nd , 3 rd part)	3071	2938	6009
2	Amguri Gaon (1 st and 2 nd part)	571	517	1088
3	Chutia Gaon	814	796	1610
4	Mout Gaon	600	571	1171
5	Moran Changmai Gaon	1643	1080	2723
6	Khumtai (1 st and 2 nd part), Bagisha	4666	4664	9330
7	Khat Khati Tea State, Grant 257/276	1561	1561	3122

Table 2.3: Male and Female Population of MMPA in 2011
Under Dibrugarh District Areas / Town and Villages

Sl. No.	Name	Male	Female	Total Population
1	Moran Town(1 st ,2 nd ,3 rd part)	4363	4071	8434
2	1 No Sarupather	290	284	574
3	2 No Sarupather	553	590	1143
4	Hatkhola	497	475	972
5	1 No Kawaimari	161	134	295
6	2 No Kawaimari	102	104	206
7	1 No Mirihola	551	506	1057
8	2 No Mirihola	349	309	658
9	Bezarchuk Bengali Gaon	475	429	904
10	Phatika Chowa Ahom Gaon	152	145	297
11	Photika Chowa Abhoypuria Gaon	758	701	1459
12	Abhoypuria Bengali Gaon	671	662	1333
13	Khelmati	601	597	1198
14	Tikrai Bengali Gaon	156	148	304
15	Moran Tea State	315	270	585
	TOTAL (Charaideo & Dibrugarh)	22920	21552	44472

Figure 2.1: Male/Female Population of MMPA



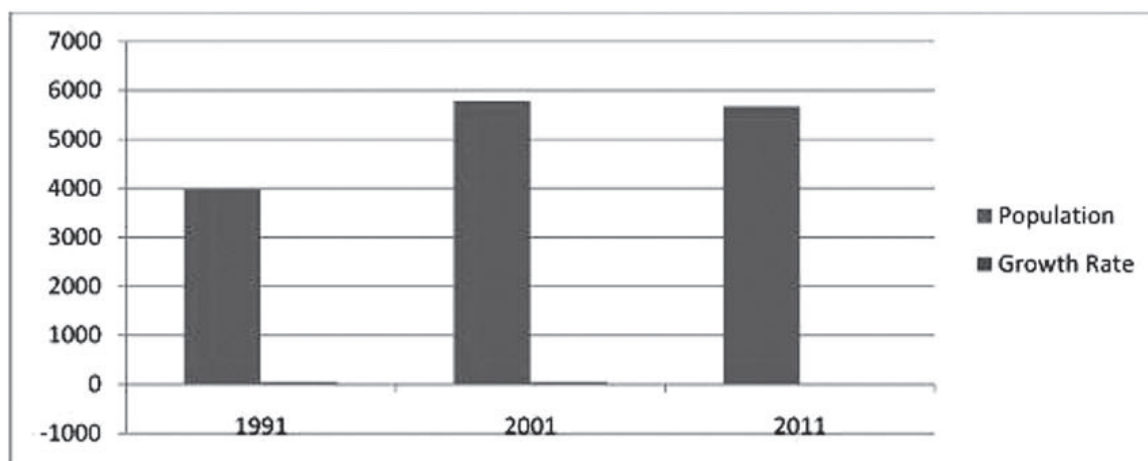
2.3. POPULATION GROWTH RATE:-

After 2011 census, 5 numbers of new wards are included in the Moran Municipal Board. Hence, the total number of wards at present in Moran Municipal Board is 11 having population of 12000 (approx.) as per ULB report.

Table 2.4: Population Growth Rate in Moran Municipal Board

YEAR	POPULATION	(%) INCREASE
1971	2524	-
1981	-	-
1991	3987	57.96
2001	5779	44.95
2011	5679	-1.73

Source: Census of India

Figure 2.2: Population Growth Rate in Moran Municipal Board

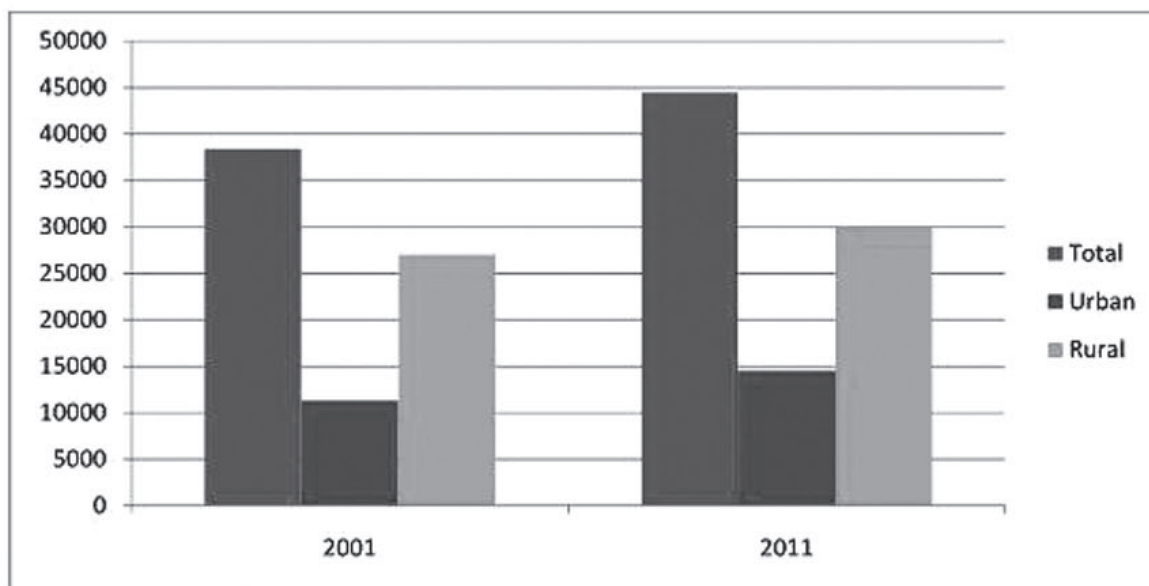
Source: Census of India

The decadal growth of population in the urban and rural areas of Moran Master Plan area from 2001 to 2011 is shown in the following table:-

Table 2.5: Population Growth of Moran Master Plan Area

Zone	Year	Population	Increase in Population	% Increase
Total	2001	38395	-	-
	2011	44472	6077	15.83
Urban	2001	11338	-	-
	2011	14493	3155	27.83
Rural	2001	27057	-	-
	2011	29979	2922	10.80

Figure 2.3: Population Growth of Moran Master Plan Area

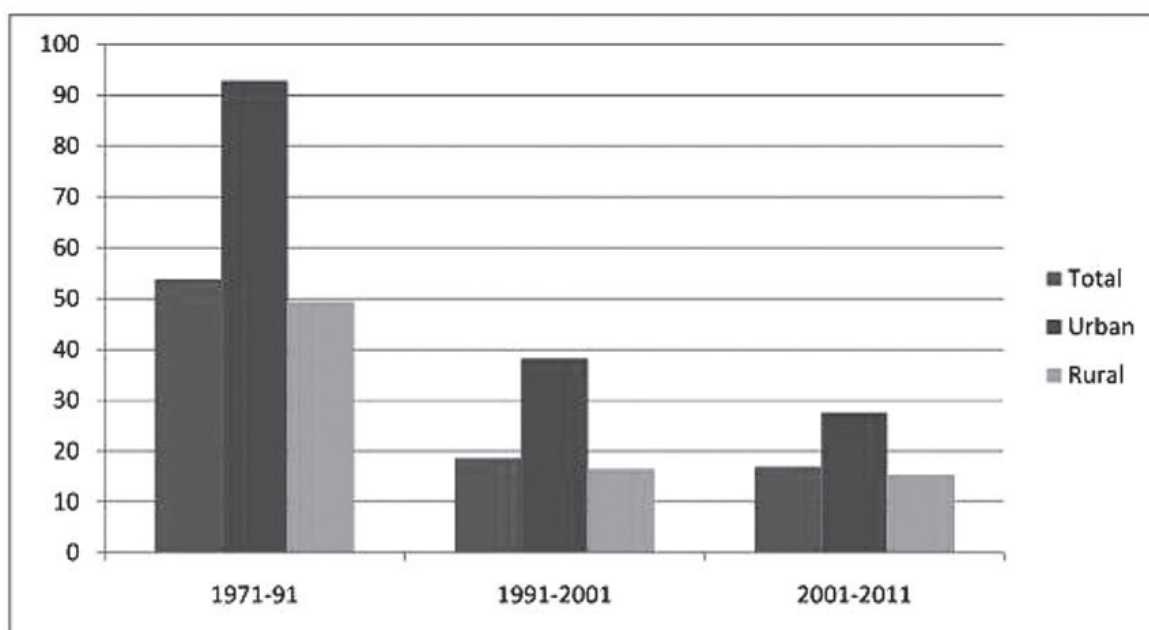


Source: Census of India

Table 2.6: Population Growth and Growth Rate of Assam

	POPULATION				GROWTH RATE (%)		
	1971	1991	2001	2011	1971-91	1991-2001	2001-11
Assam State*							
Total	14.62	22.49	26.66	31.17	53.83	18.54	16.93
Urban	1.29	2.49	3.44	4.39	92.97	38.24	27.61
Rural	13.33	19.93	23.22	26.78	49.42	16.51	15.35
*Population in thousand							

Figure 2.4: Population Growth Rate of Assam: 1971-2011

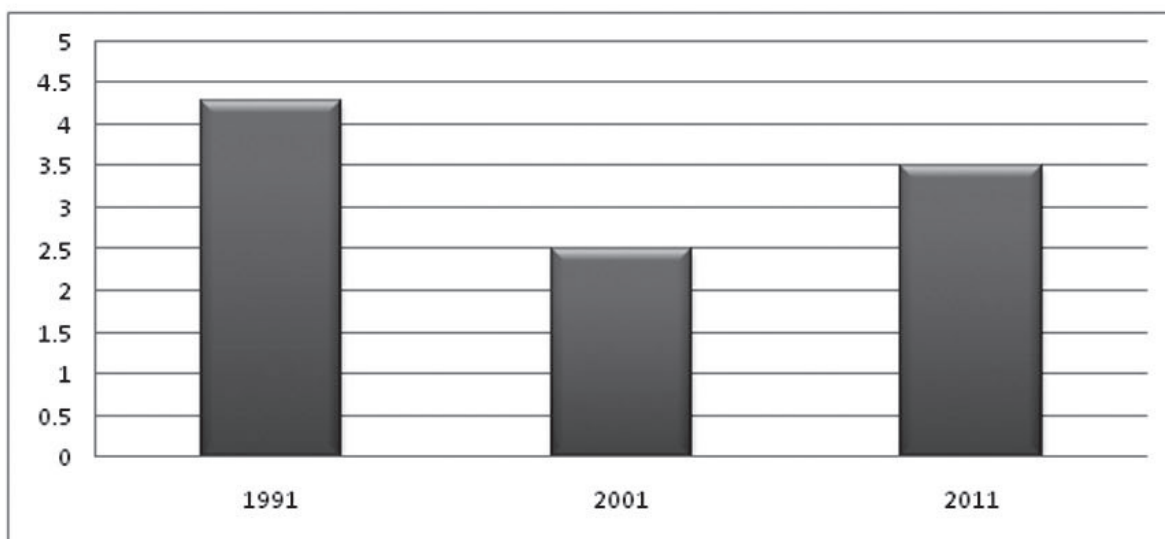


2.4. POPULATION DENSITY:-

As per 2011, the population density of Moran Municipal Board is 3549 person per sqkm and that of Moran Master Plan Area is 1392 person per sqkm.

2.5. SEX RATIO:-

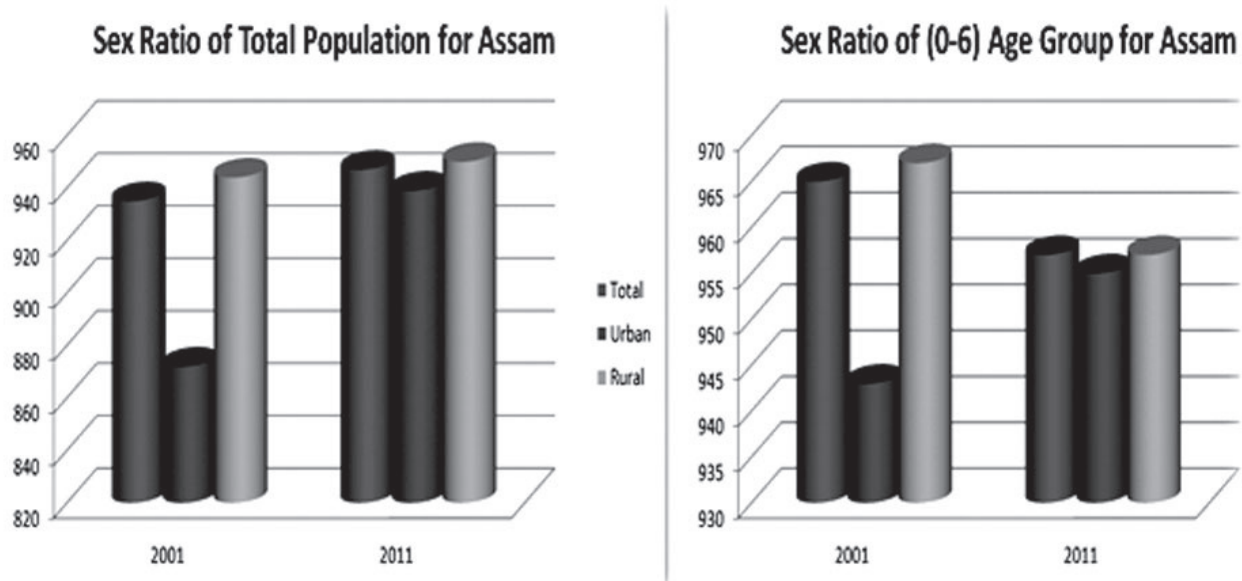
In 1991 census, sex ratio in Moran Municipal Board was 860. The value was 837 in 2001 and 964 in 2011.

Figure 2.5: Sex Ratio of Moran Municipal Board: 1991-2011

The sex ratio of Assam and MMPA for the last two decades as per census of India is given below:

Table 2.7: Sex Ratio of Assam and MMPA

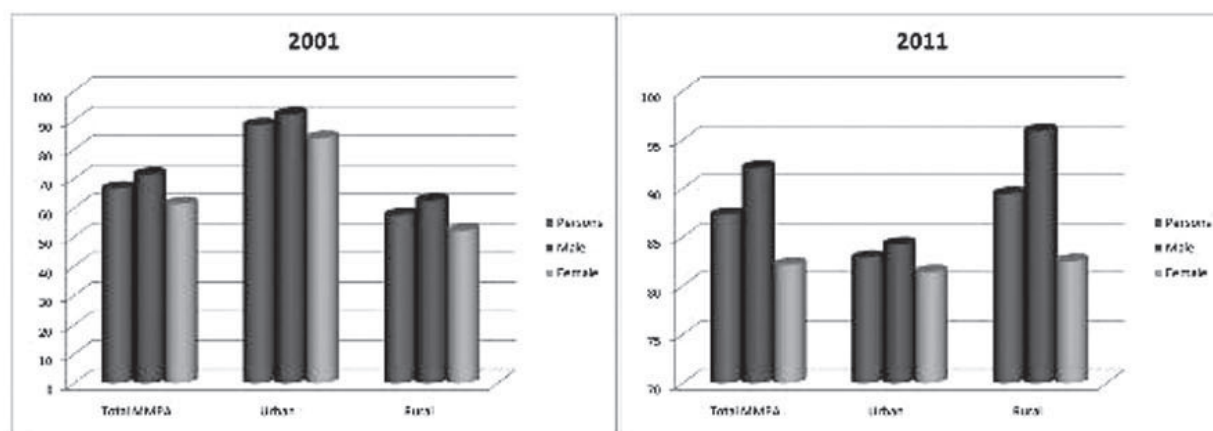
Year	Sex Ratio of Total Population		Sex Ratio of 0-6 Age Group	
	2001	2011	2001	2011
Assam State				
Total	935	947	965	957
Urban	872	939	943	955
Rural	944	950	967	957
Moran Master Plan				
Total	908	940	845	906
Urban	879	943	722	773
Rural	920	939	899	979

Figure 2.6: Sex Ratio of Assam**2.6. LITERACY RATE:-**

The literacy rate of Moran Urban area as per census of India report, 2011 is 88.89% which is lower than state urban literacy rate of 88.47%. Male Literacy is around 84.26% while female literacy rate is 81.42%. The comparison of literacy rate in 2001 and 2011 for Moran Master Plan area is given below:-

Table 2.8: Literacy Rate of MMPA

	2001						2011					
	Absolute			Literacy Rate			Absolute			Literacy Rate		
	Urban	Rural	Total Master Plan Area	Urban	Rural	Total Master Plan Area	Urban	Rural	Total Master Plan Area	Urban	Rural	Total Master Plan Area
Total	10010	15569	25579	88.29	57.54	66.62	11971	26855	38826	82.89	89.43	87.30
Male	5551	8819	14370	91.97	62.58	71.39	6264	14852	21116	84.26	95.91	92.13
Female	4450	6759	11209	83.93	52.14	61.37	5707	12003	17710	81.42	82.54	82.17

Figure 2.7: Literacy Rate of MMPA

2.7. WORKING AND NON-WORKING POPULATION:-

The total work force in Moran master plan area in 2011 is 29190 persons. The work force is calculated considering the age group between 15 to 60 years. Out of this work force the working population is 14057 persons equivalent to 48.16% which is higher than the national average of 38%. The balance non working population (51.84%) mainly consists of women group and unemployed section of the population who are seeking employment in white-collar jobs as well as investment opportunities in business.

2.8. SC-ST POPULATION:-

As per census 2011, the details of SC and ST population for the Moran Master Plan Area (MMPA) have been shown in the following table:

Table 2.9: SC-ST Population Under Charaideo District Areas / Town and Villages

Sl. no.	Name	SC	ST
1	Moran Town (1 st , 2 nd , 3 rd part)	50	185
2	Amguri Gaon (1 st and 2 nd part)	0	36
3	Chutia Gaon	0	7
4	Mout Gaon	0	2
5	Moran Changmai Gaon	95	13
6	Khumtai (1 st and 2 nd part), Bagisha	49	15
7	Khat Khati Tea State, Grant 257/276	19	0

Table 2.10: SC-ST Population Under Dibrugarh District Areas / Town and Villages

Sl. no.	Name	SC	ST
1	Moran Town(1 st ,2 nd ,3 rd part)	79	311
2	1 No Sarupather	0	0
3	2 No Sarupather	0	0
4	Hatkhola	0	0
5	1 No Kawaimari	0	0
6	2 No Kawaimari	0	0
7	1 No Mirihola	0	3
8	2 No Mirihola	0	0
9	Bezarchuk Bengali Gaon	0	10
10	Phatika Chowa Ahom Gaon	3	5
11	Photika Chowa Abhoypuria Gaon	17	84
12	Abhoypuria Bengali Gaon	0	189
13	Khelmati	0	0
14	Tikrai Bengali Gaon	0	0
15	Moran Tea State	99	602
	TOTAL (Charaideo & Dibrugarh)	411	1462

Figure 2.8: SC Population of MMPA in 2011

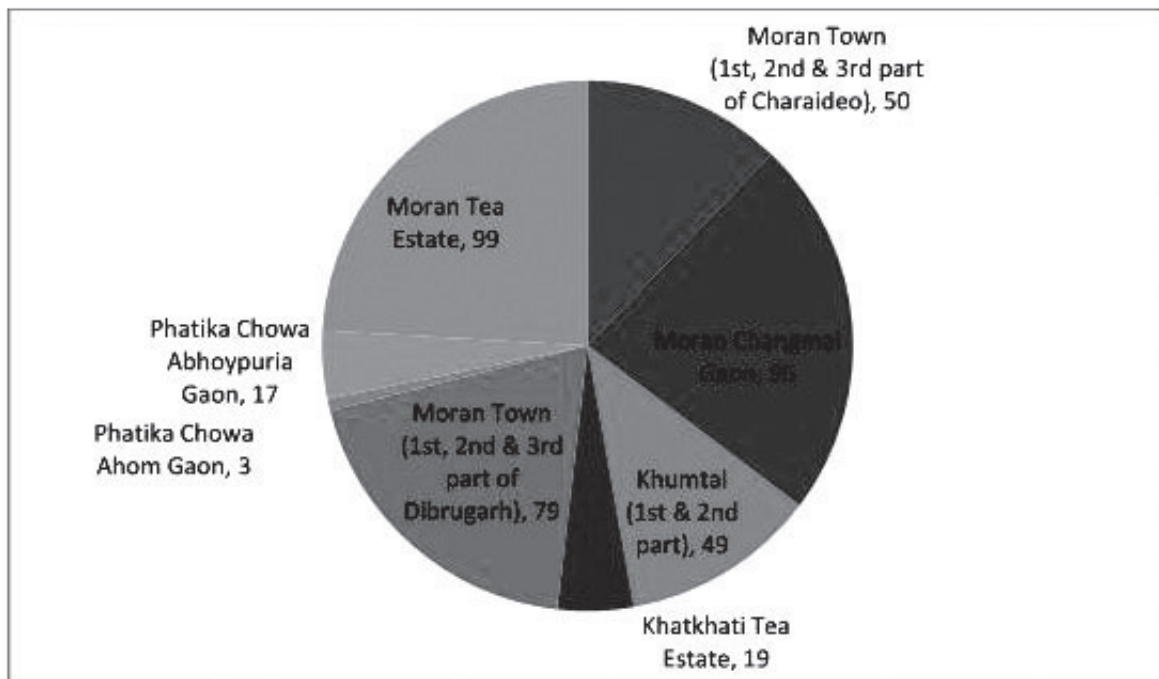
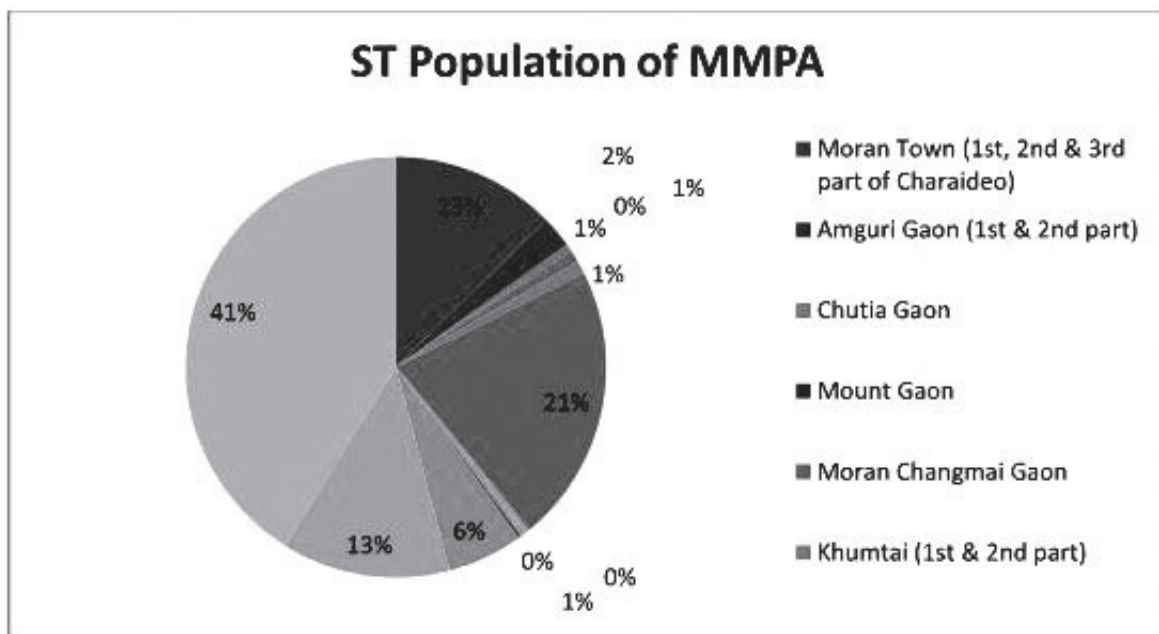


Figure 2.9: ST Population of MMPA in 2011



2.9. MIGRATION OF POPULATION:-

The robust local economy once attracted scores of people from other parts of the country to settle here in search of jobs and business opportunities. In addition to Assamese and various indigenous ethnic groups, the town is home to hundreds of people who migrated from undivided Bengal, Bihar, Uttar-Pradesh, Andhra-Pradesh and Nepal to change their fortunes.

2.10. HOUSEHOLD DENSITY AND SIZE:-

As per census 2011, there are 1165 households in Moran Municipal Board area and 1879 in Moran town (CT-under Dibrugarh district) area i.e. total 3044 households in urban area of Moran master plan area. As such, household size in urban area is 4.64 persons per house. Household density for Moran Municipal Board is 728 HHs per sqkm and that for Moran town (CT) is 1648 households per sqkm.

2.11. POPULATION PROJECTION:-

In making the future population projection for Moran Master Plan Area for the period 2001-2041, all the relevant factors such as changes in fertility and mortality rate, agesexcomposition of the population, existing land use pattern, socio-economic condition and expected emigrational flows have been considered.

For the projection, a general fertility rate of 0.19 for woman in a productive agegroup has been assumed. Mortality trends is based on recent experience of India and the trends on increase on life expectancy on the United Nations model life table for underdeveloped countries.

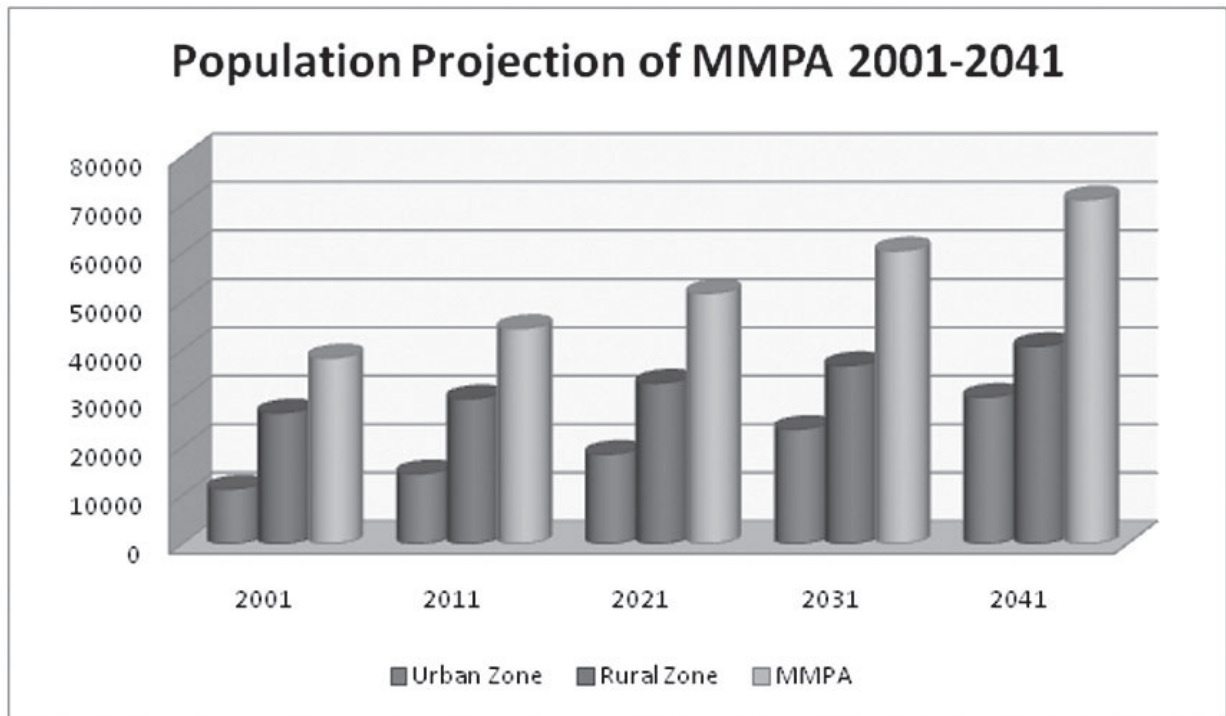
The final population projections have thus been arrived at with the entire base population of 2011 accounted for as the natural population, by adding to the natural population, the increase due to the natural growth plus the increase due to emigrational flow of trade & commerce purpose including the natural increase of migrants. The following table shows the population projections up to 2041 for the urban and rural zones of Moran Master Plan Area.

Table 2.11: Population Projection of MMPA 2001-2041

Year	Urban Zone	% Increase	Rural Zone	% Increase	Total Population of Moran Master Plan Area	% Increase
2001	11338	-	27057	-	38395	-
2011	14493	27.83	29979	10.80	44472	15.83
2021	18522	27.80	33216	10.80	51738	16.34
2031	23671	27.80	36803	10.80	60474	16.89
2041	30251	27.80	40777	10.80	71028	17.45

Note: 2021, 2031 & 2041 population figures are estimated as per decade average growth rate of 2001 & 2011

Figure 2.10: Population Projection of MMPA 2001-2041



CHAPTER -3 **ECONOMIC BASE AND EMPLOYMENT**

3.1. FORMAL SECTOR:-

The Master Plan for Moran stresses on the urgent need for creation of a conducive environment in which optimum use of natural, local and regional resources can be utilized to build up a sound economic base.

Moran is a centre for tea gardens and oilfields. There are several Tea gardens and small industries around Moran Town. Within the planning area, there are four tea gardens with factories. Other important industries in Moran are Rice, Floor, Cottage and light manufacturing units. Moran town is located about 30 km from the Brahmaputra Cracker and Polymer Limited (BCPL), Lepetkata. In order to provide adequate employment opportunities in the future, the establishment of new industry should be encouraged and the rate of industrial growth needs to be stepped up considerably along with the expansion of service sector, so that it can keep pace with the population growth of this area.

Assam is known as the place of one bud with two leaves. Assam's tea is not only famous within the country but it has also goodwill & demand in the international market. At present, there are eight big tea gardens in Moran and its suburb area. Moreover, a good number of small teagardens were also established in the suburb area of Moran boosting the socio-economic condition of the town.



Moran region has a scope for establishing industry associated with tea garden implements, equipments of drilling, fabrication etc and other non-ferrous utensil units, casting and general engineering industries.

3.2. INFORMAL SECTOR:-

There is an English proverb that "Necessity is the mother of all inventions". With rapid growth of Moran town, a number of Brick-kiln and Stone crusher industries have been setup in and around the planning area to construct house, road & bridges etc. The demand for bricks and stone is increasing day by day due to the establishment of new house, office building and institution etc.

The region is rich in forest resources which have not been exploited fully. But there is a good scope of various wood based industries, which can be taken up on a small and medium scale like safety matches, tea chests, furniture and pre-fabricated housing units etc.

The industrial development targets proposed above can be achieved through private sector & Governmental agencies by providing developed industrial land with necessary infrastructure like roads, power, water and drainage and incentive measures like rebate on power expenses, financial assistances in the form of loan at reasonable interest etc. The present concept of public –private partnership (PPP) can also be adapted for faster and smooth development of industries.

Moran Town is the nerve centre of business & service of that area. Within the radius of 20 km distance, people use to come here to sell their produce and to buy necessary goods for their domestic consumption. There are three main markets in Moran, one is Santipur market near Nahorkotia-Moran Bus stand, and others are near Moran Municipal Board office and near Santipur tank in Moran town. In Moran Town there are also vegetable markets which fulfil the demand for Moran & its suburbs. These markets have played an important role in the economic expansion of Moran Town.

There are two Rice mills and one Floor mill in Moran town. There are a number of small factories like one mini Aluminium factory, one candle factory and one Ice factory which provide the daily needs of the town.

Earlier the people of Moran need to go to Dibrugarh & Sivasagar for the banking transactions. But now, a number of nationalised banks such as United Bank of India, Assam Gramin Vikash Bank, ICIC Bank, Axis Bank etc have established their branches at Moran. Presently, the banking service at Moran has improved because of these banks. The financial condition of the people has been improved along with strengthening of economic structure due to money mobilization by these banks. Moreover, insurance companies are also playing an important role for expansion of trade & commerce, social security and socio-economic development.

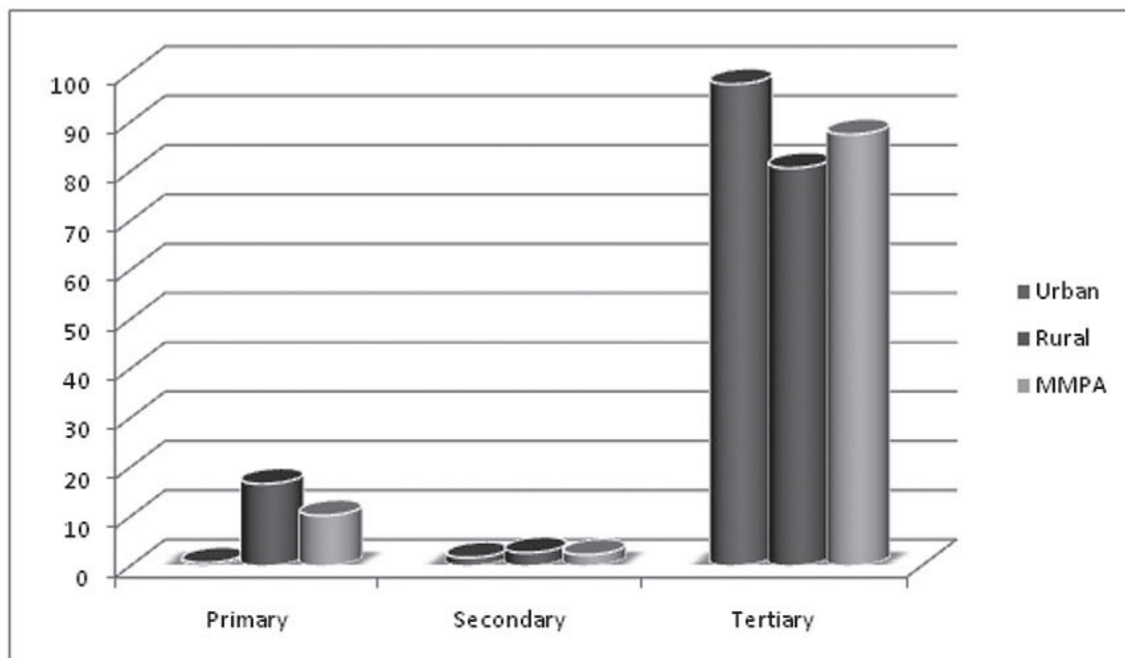
3.3. OCCUPATIONAL PATTERN:-

Occupational structure depicts the characteristics of employment for livelihood of the people living in a particular planning area. The engagement of people in industry, trade, commerce, white-collar jobs etc. is known as the occupation & employment character. In 2001, the total number of workers in Moran Master Plan Area was about 14057, which constitute 36.61% of total population. In 2011, the total number of workers in Moran Master Plan Area is about 19017 out of which urban worker constitutes 7630 and rural is 11387. The percentage of workers engaged in primary, secondary and tertiary sectors of occupations are 0.63%, 1.68% and 97.69% in the Urban Area and 16.64%, 2.69% and 80.67% in the Rural Area respectively. In the Planning area as a whole, the worker engaged in primary, secondary and tertiary sectors of occupations are 10.22%, 2.20% and 87.50% respectively.

The occupational distribution of population in Moran Master Plan Area of 2011 has been shown in the following table:-

Table 3.1: Occupational Distribution of Population in Moran master Plan Area in 2011

Sl. No.	Category	Urban Area		Rural Area		Moran Master Plan Area	
		No. of Workers	% of total workers	No. of Workers	% of total workers	No. of Workers	% of total workers
1	Primary Sector	48	0.63	1895	16.64	1943	10.22
2	Secondary Sector	128	1.68	306	2.69	434	2.28
3	Tertiary Sector	7454	97.69	9186	80.67	16640	87.50
	Total	7630	100.00	11387	100.00	19017	100.00

Figure 3.1: Percentage of Total Worker

The above table reveals that the number of people engaged in the secondary sector is higher in the Rural Area than in the Urban Area. This is due to the fact that in the suburbs of Moran Town, there is the existence of tea gardens. The number of people engaged in primary sector in the planning area is low in comparison to the tertiary sector. The highest number of people i.e. 14451 is engaged in the tertiary sectors in the planning area.

The people of nearby villages have been blessed with the alluvium & fertile soil by the river Budhi Dihing, which begets rich crops and this is the main source of livelihood for them. Secondly, due to expansion of micro, cottage & service industry, Moran Town has been developing day by day providing source of living to many people. In view of the above, the question of livelihood can be discussed on the following heads mentioned below:-

- Engaged in industry like Tea, Rice, Floor and Cottage etc.
- Engaged in cultivation.
- Engaged in business.
- Serving as a Govt. employee & private employee.

CHAPTER - 4

HOUSING AND SHELTER

4.1. HOUSING SCENARIO:-

Housing cover a large portion of an urban settlement at any point of time, It influences the quality of urban life, which in turn, affects the efficiency condition in Moran Town is mainly characterized by inadequate amenities essential for standard living.

Though the houses in Moran have been primarily designed for single family occupancy, the above figure supports the commonly observed situation of families doubling up in single-family dwelling units. According to 2011 census density of population in Moran town is 3549 persons per sq.km. In the Master Plan Area as a whole the density of population is 1392 persons per sq.km, in 2011. The rate of construction of new houses has not kept pace with the rate of increase of population mainly in the urban area.

Residential buildings of Moran are of mixed types. Generally in the old residential areas of urban zone Assam type houses and in the newly developed areas R.C.C. houses has been seen. In the rural areas more than 50% houses are Kutcha.

4.2. HOUSING SUPPLY MECHANISM:-

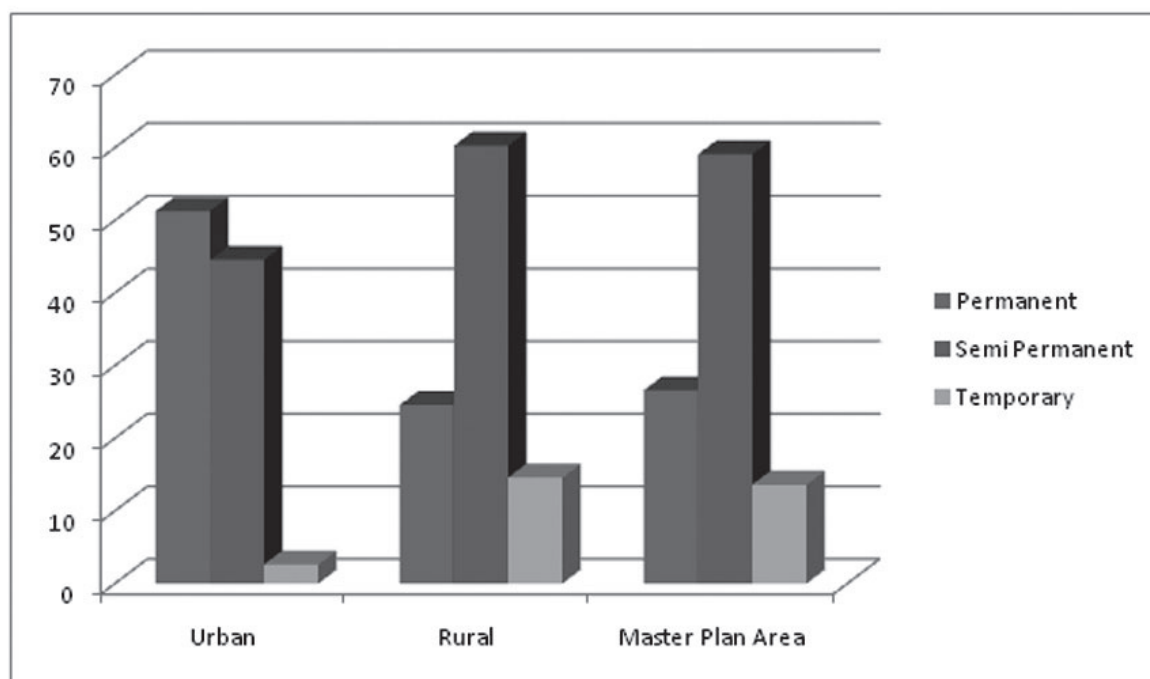
Housing supply is the main role of the state to improve living condition of the inhabitants either by direct provision or by enabling its provision. Different policies have been taken by the government to solve the housing problems especially for poor and low income group. Housing supply must address all social groups in the State including housing in urban areas, semi-urban areas and rural areas. In the recent years private builders and developers have come forward to solve the problems of housing in urban areas of the state by constructing flat. However at the present such practices have not been seen in Moran Town. In the rural areas of Master plan area a few house has been constructed under centrally sponsored housing scheme. Recently housing in urban areas has been initiated by the central government through "Pradhan Mantri Awas Yojana – Housing for All (Urban)" scheme.

4.3. HOUSING CONDITION, TYPE OF STRUCTURE ETC.:-

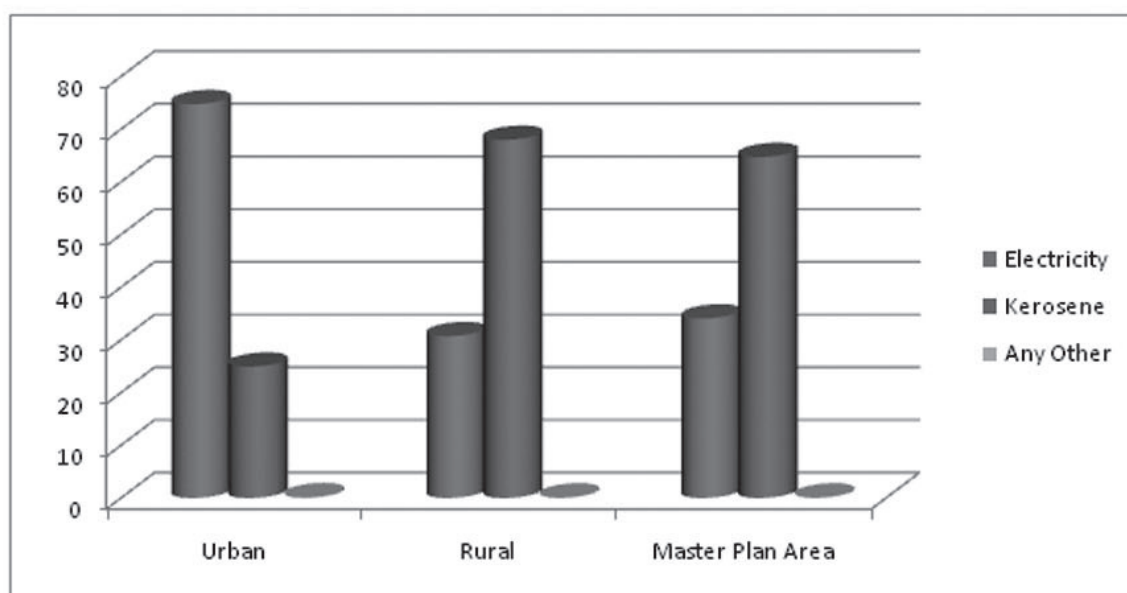
Number and percentage distribution of persons living in permanent, Semi Permanent and Temporary house in 2011 are shown in the table below:

Table 4.1 : Housing Condition, Type of Structure

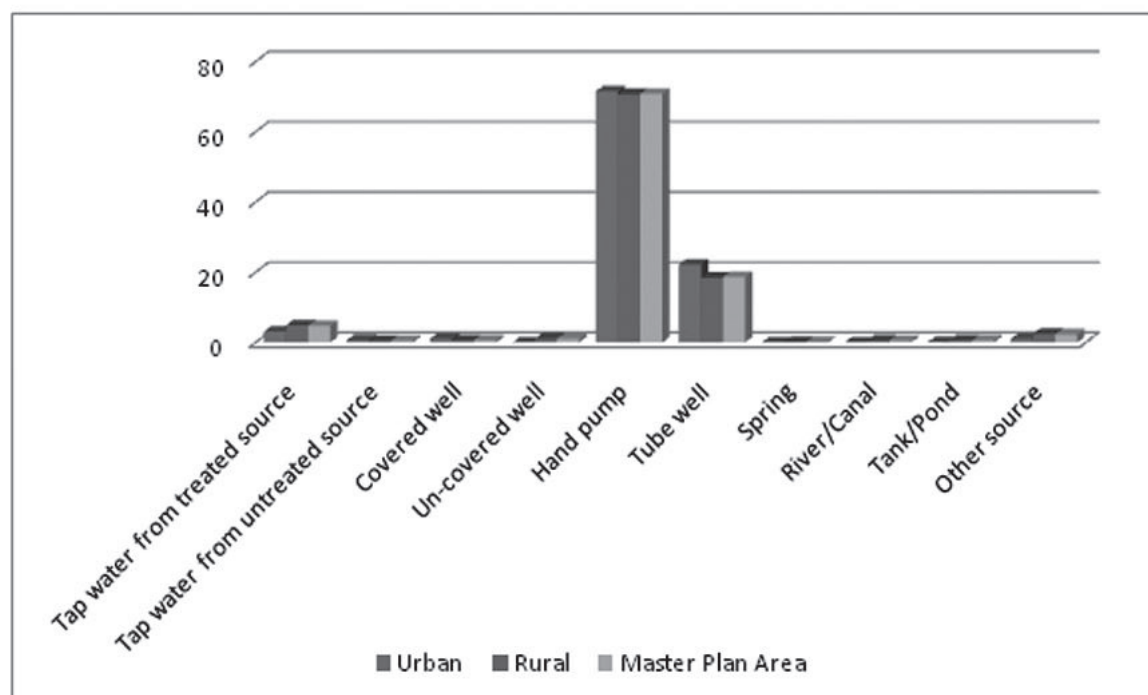
Housing Condition	Urban Area		Rural Area		Master Plan Area	
	No. of Households	Percentage %	No. of Households	Percentage %	No. of Households	Percentage %
Permanent	1076	51.26	6262	24.57	7338	26.60
Semi Permanent	935	44.55	15364	60.28	16299	59.09
Temporary	55	2.62	3716	14.58	3771	13.60

Figure 4.1: Housing Condition**Table 4.2: Number and Percentage of Households by Source of Lighting**

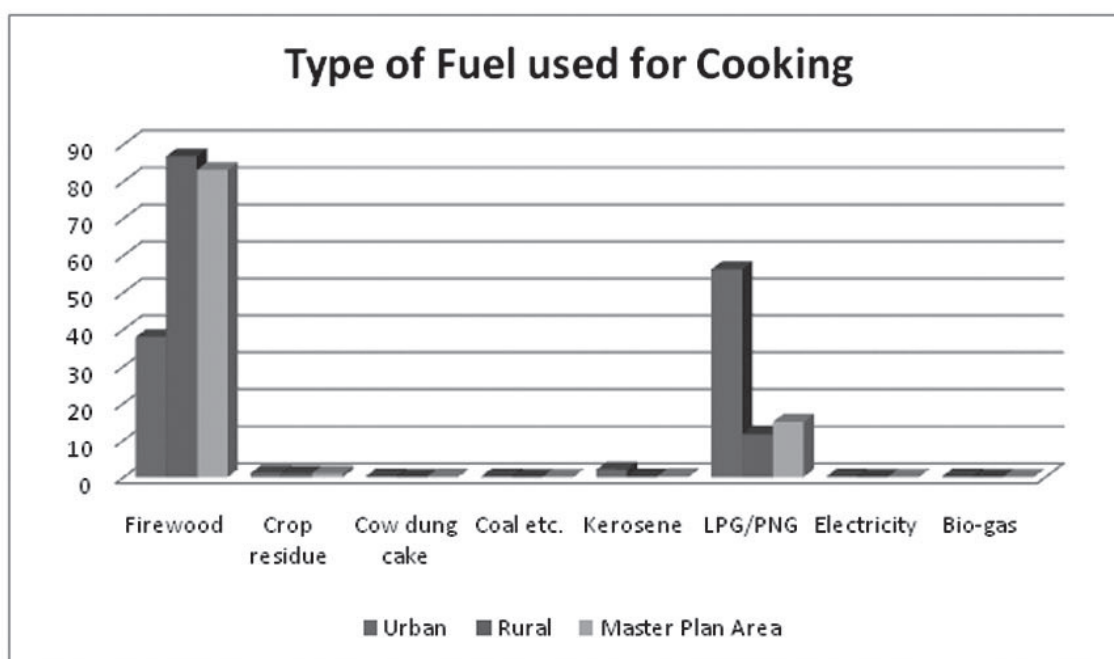
Particulars	Urban		Rural		Master Plan Area	
	No. of Households	Percentage %	No. of Households	Percentage %	No. of Households	Percentage %
Electricity	1,569	74.75	7,828	30.71	9,397	34.07
Kerosene	523	24.92	17,326	67.98	17,849	64.71
Solar	0	0.00	286	1.12	286	1.04
Other Oil	0	0.00	4	0.02	4	0.01
Any Other	3	0.14	23	0.09	26	0.09
No Lighting	4	0.19	19	0.07	23	0.08
Total	2,099	-	25,486	-	27,585	-

Figure 4.2 : Number of Household by Source of Lighting (%)**Table 4.3: Number and Percentage of Households by Main Source of Drinking Water**

Particulars	Urban Area		Rural Area		Moran Master Plan Area	
	No of Households	Percentage %	No of Households	Percentage %	No of Households	Percentage %
Tap water from treated source	65	3.10	1,248	4.90	1,313	4.76
Tap water from untreated source	15	0.71	114	0.45	129	0.47
Covered well	22	1.05	156	0.61	178	0.65
Un-covered well	1	0.05	284	1.11	285	1.03
Hand pump	1,502	71.56	18,037	70.77	19,539	70.83
Tube well	466	22.20	4,691	18.41	5,157	18.69
Spring	1	0.05	28	0.11	29	0.11
River/Canal	1	0.05	140	0.55	141	0.51
Tank/Pond	3	0.14	168	0.66	171	0.62
Other source	23	1.10	620	2.43	643	2.33
Total	2,099	-	25,486	-	27,585	-

Figure 4.3 : Source of Drinking Water (%)**Table 4.4 : Number and Percentage of Households by Type of Fuel Used for Cooking**

Particulars	Urban Area		Rural Area		Moran Master Plan Area	
	No of Households	Percentage %	No of Households	Percentage %	No of Households	Percentage %
Firewood	795	37.88	22,111	86.76	22,906	83.04
Crop residue	23	1.10	255	1.00	278	1.01
Cow dung cake	5	0.24	29	0.11	34	0.12
Coal etc.	4	0.19	6	0.02	10	0.04
Kerosene	42	2.00	32	0.13	74	0.27
LPG/PNG	1,180	56.22	2,946	11.56	4,126	14.96
Electricity	5	0.24	21	0.08	26	0.09
Bio-gas	3	0.14	14	0.05	17	0.06
Any other	24	1.14	0	0%	24	0.09
No cooking	18	0.86	72	0.28	90	0.33
Total	2,099	-	25,486	-	27,585	-

Figure 4.4 : Type of Fuel Used for Cooking (%)**Table 4.5 : Number and Percentage of Households Availing Banking Services and Number of Households Having Each of the Specified Assets**

Particulars	Urban Area		Rural Area		Moran Master Plan Area	
	No of Households	Percentage %	No of Households	Percentage %	No of Households	Percentage %
Banking Services	1,333	63.51	11,141	43.71	12,474	45.22
Radio	591	28.16	6,748	26.48	7,339	26.61
Television	1,319	62.84	7,832	30.73	9,151	33.17
Computer/Laptop with Internet	98	4.67	341	1.34	439	1.59
Computer/Laptop without Internet	313	14.91	1,469	5.76	1,782	6.46
Landline Telephone	161	7.67	690	2.71	851	3.09
Mobile Telephone	1,329	63.32	11,720	45.99	13,049	47.30
Both Land line and Mobile Telephone	121	5.76	465	1.82	586	2.12
Bicycle	1,271	60.55	16,843	66.09	18,114	65.67
Scooter/ Motor Cycle/ Moped	460	21.92	3,519	13.81	3,979	14.42
Car/ Jeep/ Van	255	12.15	1,209	4.74	1,464	5.31
None of the specified asset	226	10.77	5,221	20.49	5,447	19.75

Figure 4.5: Households Availing Banking Services and Having Each of the Specified Assets

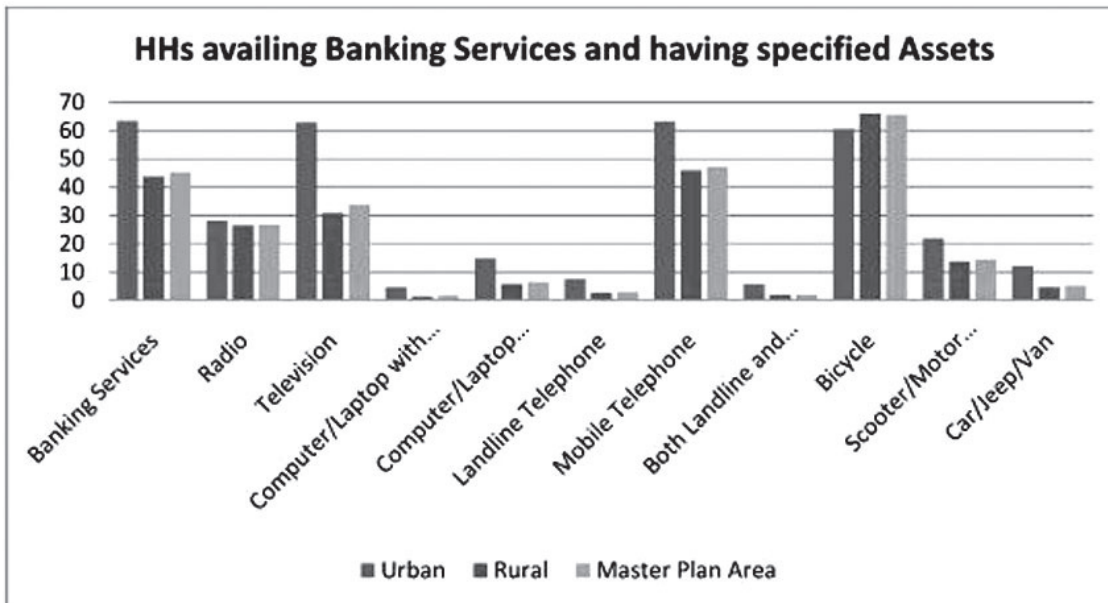
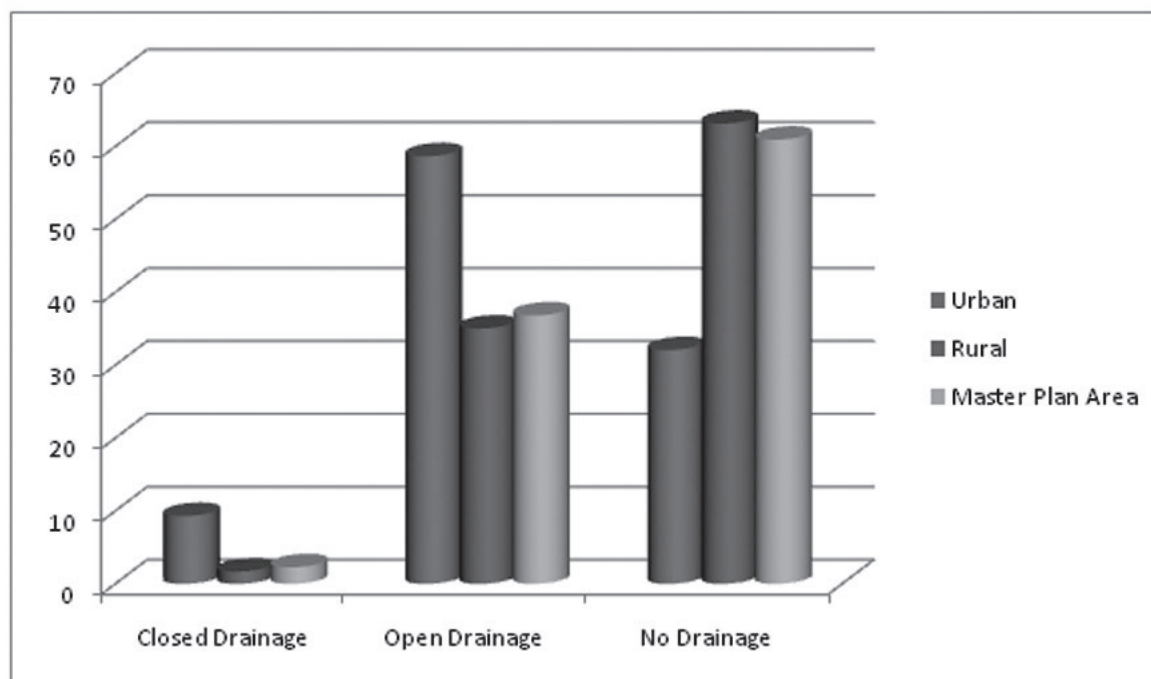


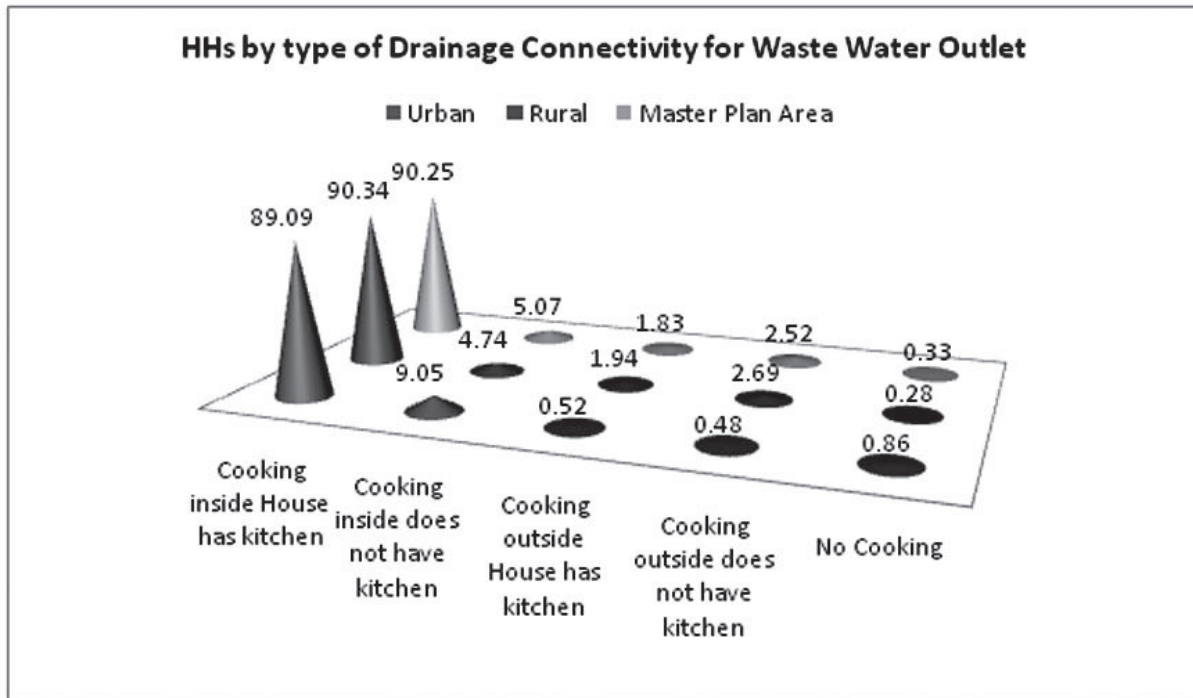
Table 4.6: Number and Percentage of Households by Type of Drainage Connectivity for Waste Water Outlet

Type of Drainage	Urban Area		Rural Area		Moran Master Plan Area	
	No of Households	Percentage %	No of Households	Percentage %	No of Households	Percentage %
Closed Drainage	195	9.29	429	1.68	624	2.26
Open Drainage	1,231	58.65	8,923	35.01	10,154	36.81
No Drainage	673	32.06	16,134	63.13	16,807	60.93
Total	2099	-	25,486	-	27,585	-

Figure 4.6 : Households by Type of Drainage Connectivity for Waste Water Outlet**Table 4.7 : Number and Percentage of Households by Availability of Kitchen Facility**

Availability of Kitchen		Urban Area		Rural Area		Moran Master Plan Area	
		No of Households	Percentage %	No of Households	Percentage %	No of Households	Percentage %
Cooking inside House	Has kitchen	1,870	89.09	23,025	90.34	24,895	90.25
	Does not have kitchen	190	9.05	1,209	4.74	1,399	5.07
Cooking outside House	Has kitchen	11	0.52	495	1.94	506	1.83
	Does not have kitchen	10	0.48	685	2.69	695	2.52
No Cooking		18	0.86	72	0.28	90	0.33
Total		2,099	-	25,486	-	27,585	-

Figure 4.7 : Number and Percentage of Households by Availability of Kitchen Facility



4.4. SLUMS – SQUATTERS AND INFORMAL SHARE:-

The Slum in urban area is a common phenomenon in India. Every city has varied set of slums defined by location, community, income group and housing typologies. Generally Slums can be identified by their informal settlement patterns. Slums are characterized by irregular clustering of small buildings, a lack of formal road networks, a high ratio of roof coverage to area, an absence of vegetation, and proximity to railways, highways, and other hazards such as steep slopes or low-lying areas which experience flooding.

Slum has not been identified till now in Moran Master Plan Area.

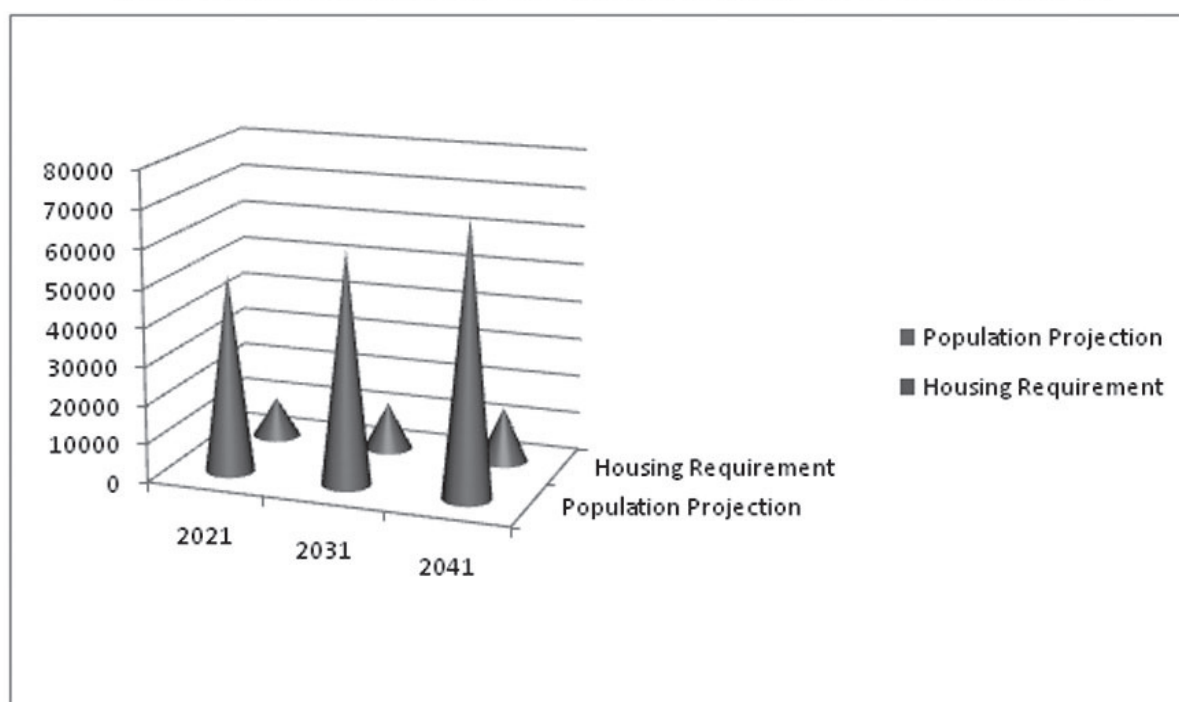
4.5. HOUSING STOCK, SHORTAGE AND NEED ASSESMENT:-

There are 1970 census houses within the Moran Municipal Board area and 1192 houses within the Moran town (CT) area, used as residence and residence cum other use i.e. a total of 3162 census houses in urban area of Moran Master Plan. This shows that an average of 4.5 persons occupy per house in urban area of Moran master plan.

To find out the housing need for future a detailed study of family size, level of obsolescence, existing shortage etc. are necessary. However, on the basis of projected population and household size of 5 persons, the gross housing needs are depicted below:

Table 4.8: Housing Requirement in Moran Master Plan Area upto 2041

Year	Projected Population	Gross Housing Requirement
2021	51743	10349
2031	60496	12099
2041	71061	14212

Figure 4.8: Population Projection and Housing Requirement in MMPA upto 2041

CHAPTER - 5

TRANSPORTATION

5.1. NETWORK OF ROADS:-

Urban road network is considered as engines of economic growth. However, the roads of Moran urban area are very narrow and shoulder width is insufficient to accommodate the present traffic volume for easy movement except N.H. -37 and there is also little scope for the widening. There are three level crossings within the Master Plan Area, one is within the town at Kalibari near Moran Railway station and the other two are near Raidongia High School and near Moran Khatkhati. The railway station remains always busy and requires immediate improvement. Moreover, road junctions in the town are not technically developed and it requires immediate technical intervention.

The roads within the residential areas are too narrow. Widening of these roads is urgently necessary. There is hardly any parking area within the Town. There are 14 km pucca roads and 7 km kutchra roads under Moran Municipal Board.

In this plan, emphasis has been given on the following aspects for effective transportation system in Moran Master Plan Area.

- Optimum use of the existing transportation system through improved traffic operation and controls.
- Improvement of the existing road network through strengthening and widening.
- Provision for adequate parking facilities.
- Development of new roads and other transport facilities.

The plan recommends development of road infrastructure as per table given below:

Table 5.1: Category of Roads

Category of Roads	Name	Existing Width (m)	Recommended Width (m)
Principal Main Roads	Moran – Dibrugarh Road NH 37	12	21 to 24
	Sologuri Road	3.66	12 to 15
	Moran – Bonomali Road	4.57	12 to 15
	Rahmat Ali Road	4.57	12 to 15
	Moran Khumtai Road	6.10	12 to 15
Main Roads	Natya Mandir Road	3.66	9 to 12
	A.S.E.B. Road	3.66	9 to 12
	New Market Road	3.05	9 to 12
	D.H. Road	6.4	9 to 12
	College Field Road	6.1	9 to 12
	Ananta Road	6.1	9 to 12
	RLY Feeder Road	6.1	9 to 12
	College Road No. 1	6.1	9 to 12
	P.C. Gogoi Path	3.66	9 to 12
Moran – Amguri Road	4.57	9 to 12	
Others Road	-		Minimum 6 and 3.65 for single plot

5.2. OVERVIEW OF CRITICAL ROADS AND IMPROVEMENT:-

Moran is well connected with the rest of the country by roads and railways. The N.H. - 37 have connected Moran with other places as shown below:

- Moran to Dibrugarh
- Moran to Sivasagar
- Moran to Duliajan via Nahorkotia
- Moran to Tinsulia via Dibrugarh or Nahorkotia
- Moran to Tizit of Nagaland via Sonari
- Moran to Deomali of Arunachal Pradesh.

Moran is also connected with railway network from Moranhat to Guwahati. The railway station of Moranhat facilitates the passengers to travel to Guwahati via Dimapur and also outside Assam. Beside train plying of taxis, buses, winger and trucks are playing a major role in transporting passengers and goods to and from Moran.

Moran town has gained importance in the field of industry and business owing to its industrial base and existence of nearby industrial and business towns like Sonari, Demow, Namrup, Nahorkotia and Dibrugarh. This has resulted in increase of vehicles on the roads of Moran town. On the other hand, a good number of ASTC buses, private buses and winger ply through the town.

5.3. BUS TRANSPORT TERMINALS:-

At present both ASTC and private bus stations are located along the road side of NH-37 and NH-27 within the main town. These stations serve intra -urban traffic, i.e. regional traffic but create lots of traffic congestion in the area. Taxi and Auto stands are also located by the side of NH-37. This stands are also creating congestion and obstruction to the smooth flow of traffic.

The plan proposes one Bus Stop near Police point. It also proposes one Bus Terminus by the side of NH-27 (Nahorkotia Road).

5.4. FREIGHT ZONES LOGISTICS:-

Presently, there is no truck terminus at Moran. The loading and unloading from trucks are carried out by the side of road. The plan proposes a Truck Terminus near Phatika Chuwa Abhoypuria Gaon by the side of NH-37.

5.5. FOOTPATHS AND BICYCLE TRACKS:-

Footpaths are normally designed for pedestrian for pleasant and comfortable walking. In Moran except NH-37, there is no any footpath in other roads of the town. There is no cycle track in the town. Exclusive lane for slow moving vehicles, pedestrians along with spaces for street vendors are also essential for overall development of a town. The hawkers and street vendors also play an important role in urban economy. The notification of vending and no vending zone by the authority is mandatory as per the provisions of the Street Vendors Act, 2014. This improves the capacity of the lanes designed for motorized vehicles and increases the safety of slow moving vehicles and pedestrians.

The plan suggests construction of footpath in both sides of all the roads in the town by the concerned authority .The plan also earmarks cycle tracks in the town.

The width of footpath as per URDPFI guidelines is as follows:

Table 5.2 : Width of Footpath

Sl. No.	Description	Width (M)
1	Minimum free walkway width in residential/mixed use areas	1.8
2	Commercial/Mixed Use Areas	2.5

The URDPFI Guidelines for cycle /NMT track is given in the following table:

Table 5.3: Cycle Track

Description	Arterial Road	Sub-arterial Road	Distributary Road	Access Road
Non Motorized Vehicle	Segregated cycle track	Segregated cycle track	Cycle lane	Mixed/traffic
location	Between carriageway or street parking and footpath on either edge of the carriageway	Between carriageway or street parking and footpath on either edge of the carriageway	On the edge of the carriage adjacent to the footpath or parking	Not applicable
Gradient	1:12-1:20	1:12-1:20	1:12-1:20	1:12-1:20
Lane width	2.2 to 5.0m	2.2 to 5.0m	2.2 to 5.0m	Mixed with motorized vehicular traffic
Minimum width	2.5m for a two lane cycle track and 1.9m for a common cycle track and footpath	2.0m for a two lane cycle track and 1.7m for a common cycle track and footpath	1.5m	1m (painted)

5.6. PARKING:-

At present, there is no organized parking space for the cars, two wheelers in the market area. The cars are generally parked on the main road of the town. The roads are already overcrowded with traffic and further encroachment on road surface by cars and two wheelers has resulted obstructed traffic congestion.

The plan proposes one parking area for two wheelers and four wheelers at junction point of NH-37 and NH-27.

The recommended equivalent car space (ECS) required for different type of vehicles as per URDPFI guidelines are given in the following table for design of parking areas:

Table 5.4: Parking Space

Sl. No.	Vehicle Type	ECS
1	Car/Taxi	1.00
2	Two Wheeler	0.25
3	Auto Rickshaw	0.50
4	Bicycle	0.10
5	Trucks/Buses	2.50
6	Emergency Vehicle	2.50
7	Rickshaw	0.80

5.7. AREAS WITH MAJOR TRAFFIC CONGESTION AND PARKING ISSUE, ACCIDENT PRONE AREA:-

The maximum inter -town traffic volume is generated on the road starting from Moran Daily Bazaar area and moving towards Dibrugarh along NH-37 and towards Nahorkotia along NH-27. This is the most vital link for both to the town and the rest of the district. The second inter town traffic generating road is Moran-Amguri Road.

The present mixed traffic on narrow roads has accelerated traffic congestion in Moran. The town has mainly two accident prone areas, the area adjacent to the traffic police point near Moran daily bazaar and near Children's Park. Proper road signage and marking in the road in these areas is the need of the hour.

The heavy vehicles belonging to tea industry ply daily through the town is also a cause of concern for public safety.

5.8. IMPROVEMENT OF ROTARY AND JUNCTIONS:-

The town does not have a road rotary and plan does not foresee its requirement. However, improvement of all road junctions as per IRC guidelines is urgent and important for improving the traffic scenario.

5.9. STREET LIGHTING AND PROPOSED IMPROVEMENT PLANT:-

The town is illuminated by Moran Municipal Board with around 200 numbers of street lights of 40 watts for the convenience of the people. The Municipal Board is planning a project for solar light installation in the streets covering the 11 (eleven) wards.

5.10. SIGNAGE – AVAILABILITY AND REQUIREMENT:-

The ULB, traffic & other concerned departments will assess the requirement of Signage and accordingly install the signage as per the rules and regulations for the beautification of the town as well as smooth flow of traffic and public convenience.

5.11. MAJOR PROPOSALS:-

- One Truck terminus is proposed at Govt. land near Phatikachuwa Abhaypuria Gaon beside NH-37 and the area is earmarked in the proposed land use map.
- The authority concern may develop existing bus stand with all facilities required for commuters.
- Considering the scenic beauty of the town, the plan recommends plantation along the major roads and development of traffic points to augment the aesthetic beauty of the town.
- The authority concern may take proposal to develop the right of way of National Highway-27 as Bus stand and as notified parking area. The same is shown in the proposed land use map.

CHAPTER – 6 :
INFRASTRUCTURE, PUBLIC UTILITIES& SERVICES

6.1. PHYSICAL INFRASTRUCTURE:-

6.1.1. WATER SUPPLY:-

The source of water in Moran is mainly Tube Well, Pond and Supply Water through Public Health Engineering Department. Most of the household use tube well as source of water where the supply water is not available. The only source of water is tube well and the ring well as ground water and surface water is readily available at Moran town and its adjoining areas. Though the tube well and ring well are efficiently functioning, it will no longer be considered as free from contamination due to presence of a number of pit latrines. A comprehensive water supply scheme with treatment plant covering the population up to 2041 is the need of the hour.

The objective of a public protected water supply system is to supply safe and clean water in adequate quantity, conveniently and as economically as possible. Rising demand of water due to rapid urbanization is putting enormous stress while planning the water supply system for an area; it is evident to consider water conservation aspects, which may be possible through optimal use of available water resources, prevention and control of water and effective demand management.

As per URDPFI guidelines the norms for water requirement for institutional buildings are given below:-

Table 6.1: Requirement for Institutional Buildings

Sl. No.	Institutions	Litres per head per day
1	Hospitals (including Laundry)	-
	a) No. of beds exceeding 100	450 (per bed)
	b) No. of beds not exceeding 100	350 (per bed)
2	Hotels	180 (per bed)
3	Hostels	135
4	Boarding Schools	135
5	Restaurants	70 (per seat)
6	Day School/Colleges	45
7	Offices	45
8	Cinema, Concert Halls and Theatre	45

In addition to the above the fire- fighting water demand is also as a function of population. It is desirable that one- third of fire fighting requirements from part of the service storage. The balance requirement may be distributed to several state tanks of strategic points. These strategic points may be filled from nearby pond streams or cannels by water tankers wherever feasible.

6.1.2. DRAINAGE SYSTEM:

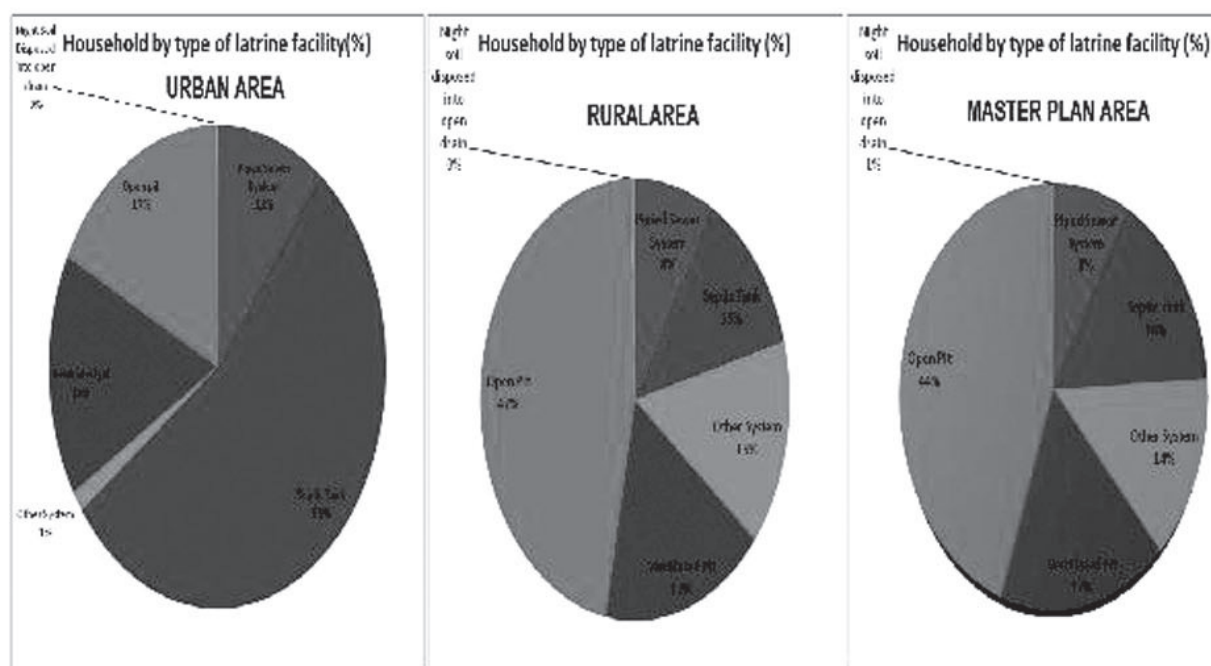
The drainage system at Moran town is not so good compared to nearby towns. There are natural channels in the both sides of town connecting the Budhi Dihing River. But due to low-lying of NH-37, which passes through the middle of the town, the existing drains are not capable of draining the surface run off out completely and as a result water logging has become a regular feature during the rainy season. The beds of the drains have become shallow resulting in the crippling of their capacity to discharge drain waters effectively. Even in the winter too, this disability causes water logging on the drains thereby giving chances for rise of mosquitoes and flies. A contour survey can be carried out to study the existing drainage condition of the town.

6.1.3. SANITAION:-

In Moran Master Plan area of present more than 50% household used septic tank. The percentage of household who used septic tank is almost double in urban area then in rural area. In the Master plan area still people use open pit or other means which are not conducive for health and environment atmosphere. So, this plan suggests authority concern to take step for such type of practices and also take measures under some scheme or providing financial assistance to construct septic tank in their household or authority concern to take steps for the construction of public toilet. These measures will help to reduce the hazardous atmosphere in urban areas as well as in rural areas. The number and percentage of households by type of latrine facility in MMPA are shown below:

Table 6.2: Number and Percentage of Household by Type of Latrine Facility

Type of Latrine Facility	Urban Area		Rural Area		Master Plan Area	
	No. of Households	Percentage (%)	No. of Households	Percentage (%)	No. of Households	Percentage (%)
Piped Sewer System	161	7.67	1499	5.88	1660	6.02
Septic Tank	842	40.11	2308	9.06	3150	11.42
Other System	21	1.00	2756	10.81	2770	10.07
Ventilated pit	252	12.01	3159	12.40	3411	12.37
Open pit	268	12.77	8511	33.39	8779	31.83
Night Soil Disposed into open Drain	1	0.05	82	0.32	83	0.30
Night Soil removed by human	90	4.29	18	0.07	108	0.39
Night Soil removed by animal	141	6.72	184	0.72	325	1.18
Public Latrine	9	0.43	700	2.75	709	2.57
Open	314	14.95	6269	24.60	6583	23.86
Total	2099	100.00	25486	100.00	27585	100.00

Figure 6.1 : Household by Type of Latrine Facility (%)

The general standard for public toilets in public area and modified norms for public toilets in public places and roads recommended in URDPFI guideline are given below:-

Table 6.3: Norms for Public Toilets in Public Areas

Type	Norms for Toilets
Public Toilet	On road and for open areas every 1 km including parks, open air theatre, car parks and fuel station. Toilets shall be disabled friendly and in 50: 50 ratios(M / F).
Signage	Signboards on main streets shall given directions and mention the distance to reach the nearest public convenience of visitors. Helpline number shall be pasted on all toilets for complaints / queries.
Modes	Pay and Use or free in pay and use toilet sentry is allowed on payment to the attendant.
Maintenance / Cleaning	The toilets have both men and women attendants. Alternatively automatic cleaning cycle covering flush, toilet bowl, seat, hand Wash basin, disinfecting of floor and complete drying after each use can be adopted. Public toilets shall be open 24 hrs.

The urban local body can follow the above norms for construction of public toilet and maintenance thereafter.

6.1.4. SEWAGE NETWORK:-

Like the rest of the towns of the state, Moran also does not have sewerage network and treatment plant. Human night soil is generally disposed at conventional septic tanks or low cost sanitary pits. Till the execution of the sewerage scheme, it is recommended to encourage the people to construct sanitary latrines of their own and to cover poor families under Swaachh Bharat Mission. The use of service latrine should be banned as per law for the health and hygiene of the community.

6.1.5. SOLID WASTE MANAGEMENT – CURRENT SITE ASSESSMENT, LAND OWNERSHIP, PROPOSED SITE:-

The collection and disposal of solid waste in Moran is done by Moran Municipal Board and by NGO. Moran Municipal Board has provided dustbins in some specified locations for collection of solid waste from the households. With the help of garbage van the collected waste is dumped in the specified open dumping ground in every morning. Also, the NGO collect the waste from the household in every morning and dumped into the same open dumping ground. A garbage disposal site has been proposed within the Khatkhathi Tea Estate.

6.1.6. ELECTRIC SUB-STATION AND MAJOR TRANSFORMERS:-

Power requirement of Moran Master Plan Area is met by the ASEB grid. Around 75% of the total population in the Town have electric connection. Moran is also facing the problem of acute scarcity of electric power like the other towns of the state. In peak hours load shedding for one or two hours is a way of life for its residents. Since the consumption is increasing at a fast rate, the department concerned fails to cater to the needs of the people causing load shedding a bitter experience. The authority concern provides around 200 numbers Tube lights/CFLs of 40 Watts in the street of Moran town for the benefit of the people. There is one electric sub-station at Moran Town.

6.2. SOCIAL INFRASTRUCTURE:-

6.2.1. SCHOOLS, COLLEGES AND UNIVERSITIES:-

The progress and development of a place is closely related to expansion and development of education. There are many good educational institutions in the city, catering the needs of many nearby villages and tea-gardens. Some of them are: The St Joseph's High School, which is a host of brilliant students who are now placed across various reputed organisations/companies in India and abroad. The Moran Higher Secondary School is one of the major institutes in Moran boosting education in this locality. The St Andrews High School, Moranhat is also a reputed institute. The Moran Girls' High School, Moran College, and Moran Mahila Mahavidyalaya, Moran Junior College, Moran Commerce College are some of the other major institutes of Higher Education of the locality. The Nehru Hindi Vidyalaya is a Hindi-medium school. The nearest University is the Dibrugarh University.



URDPFI guidelines for educational facilities are given below:

Table 6.4: Norms for Pre-Primary Nursery school to Higher education

Sl. No	Category	Student Strength	Population served per unit	Area Requirement	Other Controls
1	Pre- Primary Nursery School	-	2500	0.08 Ha.	To be located near park
2	Primary School (Class I to V)	500	5000	Area per School = 0.40 Ha. A) School building area = 0.20Ha. B) Play field area = 0.20 Ha.	Playfield area with a minimum of 18 m X 36 m to be ensured on effective play.
3	Senior Secondary School (VI toXII)	1000	7500	Area per School = 1.80 Ha. A) School building area = 0.60Ha. B) Play field area = 1.00 Ha. C) Parking area = 0.20 Ha.	Playfield area with a minimum of 68 m X 126m to be ensured on effective play.
4	Integrated School without hostel facility (Class I to XII)	1500	90000 To 1 Lakh	Area per School = 3.50 Ha. A) School building area = 0.70Ha. B) Play field area = 2.50 Ha. C) Parking area = 0.30 Ha.	To be located near a sport facility
5	Integrated School with hostel facility (Class I to XII)	1500	90000 to 1 Lakh	Area per School = 3.90 Ha. A) School building area = 0.70Ha. B) Play field area = 2.50 Ha. C) Parking area = 0.30 Ha. D) Residential area = 0.40Ha.	To be located near a sport facility
6	School for Physically Challenged	400	45000	Area per School = 0.70 Ha. A) School building area =0.20Ha. B) Play field area = 0.30 Ha. C) Parking area = 0.20 Ha.	To be located near park or sport facilities
7	College	1000 To 1500	1.25 Lakhs	Area per School = 5.00 Ha. A) School building area = 1.80Ha. B) Playfield area = 2.50 Ha. C) Parking area = 0.30 Ha. D) Residential area = 0.30 Ha.	

From the survey it has been found that the area most of the education institutions are not sufficient as per URDPFI guidelines and there are no adequate playfields and parking facilities.

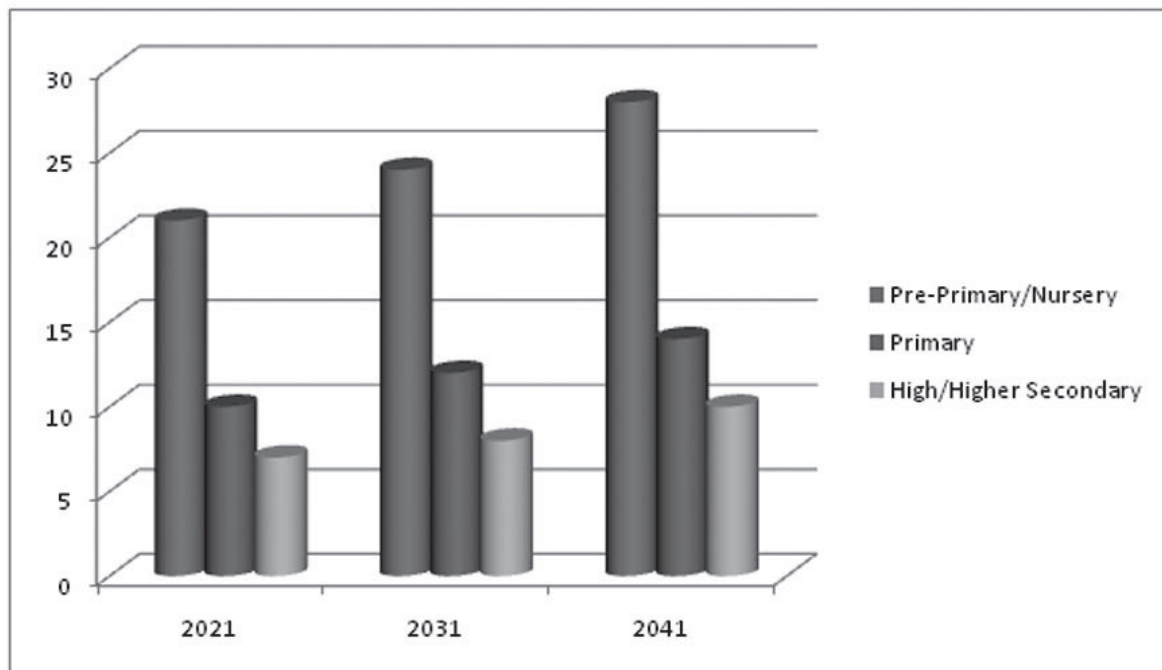
So, this plan suggests to take measures by the education department as well as private institution to increase the area of primary school upto 0.40 Hectare including playfield area, for High& Higher Secondary School upto 1.80 Hectare including playfield and parking area and for the intermediate school upto 3.50 hectare including playfield, parking facility and hostel facility as per URDPFI guideline.

This plan also suggests for the provision of school for physically challenged child /persons in an area of about 0.70 hectare for the enrolment capacity of 400 with adequate playfield and parking facility by the education department or by any NGO associated with social upliftment of the region.

The table below shows the number of students and additional school required in Moran Master Plan Area during 2011-2041.

Table 6.5: Additional School Requirement in Moran Master Plan Area

Year	Projected Population	Additional School Required		
		<u>Pre-Primary/ Nursery</u> Student strength-500 Population served per unit-2500	<u>Primary</u> Student strength-500 Population served per unit-5000	<u>High/Higher Secondary School</u> Student strength-1000 Population served per unit-7500
2021	51743	21	10	7
2031	60496	24	12	8
2041	71061	28	14	10

Figure 6.2: Additional School Requirement in Moran Master Plan Area

Source: Estimated by Town & Country Planning, Sivasagar

The shortage of schools in the plan area, to some extent has been fulfilled by the private institutions at present and it is also hoped that in the future, private institutions will play an important role to mitigate the shortage of primary schools as well as High and Higher Secondary schools.

6.2.2. HIERARCHY OF HOSPITALS AND HEALTH CENTRES:-

In Moran town there is one Moran Medical Centre and one private Nursing Home. Besides, there are Primary Health Centres, Secondary Health Centres and Sub Centres in specified places of Moran Master Plan Area. In spite of that, considering the population growth in greater Moran area, medical facilities at present are not adequate, as a result large no of patients rush to Dibrugarh for better treatment.

URDPFI guidelines for health care facilities:

In the health care facilities the size of a hospital depends upon the hospital bed requirement, which in turns is a function of the size of the population it serves. As perURDPFI guideline the calculation of number of beds is based on:-

- a) Annual rate of admission as 1 per 50 populations
- b) Average length of stay in a hospital as 5 days

Since the projected population for Moran Master Plan upto the year 2041 is71061, as such, the number of beds required for the sais population is:-

- i) No. of beds days per year = $(71061 \times 1/50) \times 5 = 7106$
- ii) No. of beds required with 100% Occupancy = $7106/365 = 20$

The classification of healthcare facilities as URDPFI guideline is given in the following table:-

Table 6.6: Health Care Facilities

Sl. No.	Category	No. of Beds	Population served per unit	Area Requirement
1	Dispensary	-	15000	0.08 to0.12 Ha
2	Nursing Home, Child Welfare & Maternity Centre	25 to 30	45000 to 1.00 Lakh	0.20 to 0.30 Ha
3	Polyclinic	Some observation bed	1.00 Lakh	0.20 to 0.30 Ha
4	Intermediate Hospital	200 Initially the provision may befor100 beds including maternity beds	1.00 Lakh	Total Area = 3.7 Ha. i) Area for hospital = 2.70 Ha. ii) Area for Residential Accommodation = 1.00 Ha.
5	Family Welfare Centre	As per requirement	50,000	Total Area = 500 Sqm to 800 Sqm
6	Diagnostic Centre	As per requirement	50,000	Total Area = 500 Sqm to 800 Sqm
7	Rehabilitation Centre	-	-	As per requirement

This plan suggest to take appropriate measures by the health department for the provision of 5 nos. of dispensaries at various location within the Master Plan Area covering an area of 0.08 – 0.12 hectare per dispensary serving at least 15,000 persons. This plan also suggest to upgrade the existing civil hospital upto 200 beds with all modern healthcare equipment or serving at least 1(One) Lakh population. This plan also suggest to set-up a family welfare centre to serve at least 50000 persons by the health department and also a Rehabilitation centre by the Govt. or by any NGO for the upliftment of deprived class of the community.

6.2.3. PARKS AND RECREATION SPACES:-

Moran Master Plan Area has only 0.714 sqkm of land for recreational facilities. There is also a library in the town. There is only one Children park near Moran Daily Bazaar along NH-37. There are total five community Halls/Bhawans within the Moran Master Plan area. In addition to this, numerous vacant plots of land serve as play grounds. But now these are occupied by newly constructed badges leading to shortage of open spaces in the planned area.

CHAPTER – 7 :

ENVIRONMENT AND CITY BEAUTIFICATION PLAN

7.1. DESCRIPTION OF ECO-FRIENDLY AREAS:-

The NH-37 passing through the Moran town divides Master Plan area in two parts. In both sides of NH-37 there are water bodies and water channels functioning as a natural water reservoir. There are several tea gardens in and around the master plan area. There is one polo ground beside the NH-37 near Khelmati. There is one Golf field near Khumtai TE. There is one Church field in front of Moran Catholic Church at Jyotipur. Besides these, there are Parks and playgrounds in the master plan area.

7.2. PLAN/MEASURES FOR PROTECTION AND CONSERVATION OF ENVIRONMENTALLY – FRIENDLY ZONES:-

Being environmental friendly simply means having a lifestyle that is better for the environment. It's all about taking small steps towards mother earth so as to make this planet a better place for our communities and generations to come. A good way would be to start with conserving water, driving less, walking more, consuming less energy, buying recycled products, eating locally grown vegetables, joining environmental groups to combat air pollution, producing less waste, planting more trees and many more. The more that we do on our part the faster we will create an environment of living that promotes sustainability.

In the environmentally friendly zone, there is more than just a good recycling program in place. People of the town who are committed to conservation and preservation of resources should encourage options like community play grounds, public transportation, green construction and work to change the way that fossil fuels and other resources are used to support community services.

This plan suggests following proposals for protection and conservation of environmental friendly zones:-

- People of Moran Town should join hand with environmental groups to protect the town and make the environment clean and green.
- Reduce, reuse, recycle waste hierarchy is the order of priority of actions to be taken to reduce the amount of waste generated and to improve overall waste management processes and programs.
- Plantation habit should be grown up among the people. For this necessary awareness camp should be organized by competent authority for conservation of natural resources and composting system.
- Steps should be taken by the authority to stop people from littering on roads. Instead, educate them to put trash and garbage in dustbins. The pile of garbage on road hampers the beauty of the city and also pollutes the air

7.3. CITY BEAUTIFICATION PLAN/ PROPOSALS:-

To improve town's appearance and aesthetic view, neighbourhoods often try to update what is known as streetscape, which pertains to the area between the driving lanes and the edge of the private property. Partly this is a popular strategy because it is public space and it's easy for the government to dictate what will happen there. In truth, streetscape can be quite effective in uniting block faces or a series of blocks that are discordant in some way, because streetscape often includes plantings, the effect is to soften the view created by streets and hopefully sidewalks. Care in the choice of materials and in the quality of the installation makes all the difference in this form of beautification.

In addition to streetscape, sometimes we need a focal point. This might be public art and open air theatre, fountains, a clock tower or grouping of tall grasses. If we already have a lonely statue or old historical building with nothing around it, maybe we should add planting beds of considerable size, an inviting bench or two, and maybe an interpretive sign explaining the rest of the store". A tree planting project, either on a vacant plot, in a park, or in the parkway between the sidewalk and the street is great for improving Town's appearance over the course of a few years at a relatively low cost. Voluntary schemes should be taken up by neighbourhood basis for cleaning up the park of the Town. Project should also be taken up for cleaning the river or stream. Litter collects on the banks and then ultimately in the water, especially when no trash cans are provided.

7.4. ROADSIDE PLANTATION:-

The main object of road side plantation is to provide protection to road, traffic, check soil erosion, food, fuel, fodder and timber to the society and mitigate climate change issues. Plantation is durable assets that produce fruits and raw-materials for agro based industry, and also generate livelihood after 7 to 10 years.

This plan suggests the social forestry department to prepare project on road side plantation with details of road to be covered, length of road and species of plants to be planned with numbers of plants for entire Moran Master Plan area.

Plantation of fruit bearing plants, suitable to local agro-climatic condition should be done in every area of the Master plan. The authority concerned should take steps for organizing camp and awareness program for road side plantation and educate the people about the benefits of road side plantation including its impact on city's landscape.

7.5. URBAN AGRICULTURE AND URBAN FORESTRY:-

Urban Agriculture is the new culture that is catching up in emerging cities. Since the population growth rate is very high, natural resource to feed the increasing population in coming days is going to be a difficult task. So, urban agriculture is seen as a big solution to the problem.

Urban forestry is the careful care and management of trees in urban settings for the purpose of improving the urban environment. Urban forestry advocates the role of trees as a critical part of the urban infrastructure. Urban forest functions are thus often oriented toward human outcomes, such as shade, beauty and privacy. Urban forests bring many environmental and economic benefits to town. Among these are energy benefits in the form of reduced air conditioning, reduced heating by shading buildings, homes and roads, absorbing sunlight, reducing ultraviolet light, cooling the air and reducing wind speed.

So, urban forestry scheme should be taken by competent authority for afforesting degraded forest land in the Moran Master plan Area. This type of scheme will act against climate change by creating a carbon sink and against air pollution in the town. This plan also suggests for starting tree surveys in the town which can be conducted by NGO and college or school students. A plan should be framed to create small nurseries in Govt. school as well as in private institution where there is extra space.

7.6. PUBLIC RAINWATER HARVESTING SCHEME:-

Rainwater harvesting is a process involving collection and storage of rain water that runs off natural or man-made catchment areas, e.g. roof top, Compounds, rock surface or hill slopes or artificial repaired impervious/semi-pervious land surface.

Due to deforestation and the consequent ecological imbalance, the ground water level is going down day by day. The constant rising demand of water supply especially from the urban areas does not match with the surface water sources, as a result of which the water reserves beneath the ground level are over exploited. This consequently results in the water level depletion.

Water harvesting apart from recharging the ground water level, increases the availability of water at a given place at a given point of time. It also reduces the power consumption. It further reduces the run off which chokes the storm water drains artificial flooding, chances of soil erosion and improves the quality of water. The plan suggest rainwater harvesting scheme to be implement by a competent authority. Moreover, the urbanization trend reduces the infiltration rate of rain water into the sub-soil thereby reduces ground water recharging.

7.7. DEVELOPMENT OF PARKS AND RECREATION SPACES:-

The Plan recommends land for recreational purposes. The land earmarked for parks and recreation is not sufficient for the increasing population. This plan is not in a position to increase the land for parks and recreation as required for the proposed population due to non availability of Government land in the plan area. The plan envisages a Town hall to meet the social and cultural needs of the town and also recommends modernizing the existing play ground with adequate infrastructure.

7.7.1. URDPFI GUIDELINE FOR PARKS AND RECREATION SPACES:-

The provision of socio-cultural facilities shall correspond to the changing urban demography and work life style.

Table 7.1: Norms for Socio-Cultural Facilities

SL. No.	Category	Population Served Per Unit	Land Area Requirement
1	Anganwadi – Housing Area/Cluster	5000	200-300 Sqm
2	Community Room	5000	750Sqm (NBC)
3	Community Hall/Marriage Hall/Library	15000	2000 Sqm
4	Music, Dance and Drama Centre	100000	1000 Sqm

Table 7.2 : Norms for Recreational Facilities

SL. No.	Category	Population Served Per Unit	Land Area Requirement
1	Housing Area Park	5000	0.50Ha
2	Neighbourhood Park	15000	1.00Ha
3	Community Park	100000	5.00Ha

Table 7.3: Norms for Sports Facilities

SL. No.	Category	Population Served Per Unit	Land Area Requirement
1	Residential Unit Play Area	5000	5000 Sqm
2	Neighbourhood Play Area	15000	1.50 Ha
3	District Sports Centre	100000	8.00 Ha

7.8. BEAUTIFICATION OF MAZOR TRANSIT ZONE:-

Moran has emerged as a major transit zone for Oil and Tea. The Oil and Tea of Moran region transit to all over India. So, it is very much essential to beautify and upgrade the major traffic points like bus stand, Railway station and market area of this emerging transit zone of upper Assam.

7.9. ROAD SIGNAGE AND STREET FURNITURE:-

Road signs are signs erected at the side of or above roads to give instruction or provide information to road users. The earliest signs were simple wooden or some milestones. But in course of time, many states of India have been adopting pictorial signs or otherwise simplified and standardized their signs to overcome language barriers and enhance traffic safety, such pictorial signs use symbols in place of words.

Street furniture is a collective term for objects and pieces of equipment installed on streets and roads for various purposes. It included Benches ,traffic barriers ,bollards post boxes phone boxes, street lamps, traffic lights, traffic signs ,bus stops, taxi stand, public lavatories fountains, public sculptures and waste receptacles an important consideration in the design of street furniture is how it affects road safety.

In Moran Master Plan Area existing road signs and furniture are inadequate for increasing traffic and those are not also scientifically designed. So, the plan suggests to authority concern to take steps for the installation of warning, priority, prohibitory, mandatory, information, facilities, service, direction, position and indication signs in the roads of Moran town, so that local people as well as outsiders can be benefitted and road safety can be maintained.

In Moran Master Plan area presently there is no street furniture necessary for the public. The concern authority should take steps for the construction of public lavatories at important public places and installation of benches in the park and public places, post boxes, bus stop, taxi stand, waste collectors etc.

This plan recommends for preparation and execution of a city beautification plan covering street light, traffic signal etc. that will enhance the beauty of this resourceful town.

CHAPTER – 8 : **LAND USE PLAN**

8.1. DEVELOPABLE AND NON – DEVELOPABLE AREA OF THE MASTER PLAN:-

Urban growth and development is often conditioned by the natural landscape like hills, water bodies, forests and manmade impediments like railway line, major roads, river, canal etc. It is also conditioned by the resources and technology employed in overcoming the growth impediments and constraints.

Existing Moran Master Plan covers an area of 31.96 sqkm (3196.00 hectare). Except the National Highway 37, passing through the middle of the Town, no other physical features are constraints for development. The soil is very fertile and good vegetation is observed in the region.

The quality of urban life and its functional efficiencies are governed by its land-use pattern. In order to understand and analyze systematically the functional relationship between various uses particularly the place of working, living and recreation, a detailed land use survey was conducted during 2010 and was analyzed up to 2011 to estimate the present and future need of the Town. The present Moran Municipal Board covers an area of 1.60 sqkm (160 hectare) and Moran town (CT-under Dibrugarh district) covers an area of 1.14 sqkm (114 hectare), while the existing Master Plan covers an area of 31.96 sqkm (3196 hectare), i.e. the total developed area is 8.57% of the total master plan area.

8.2. EXISTING AND PROPOSED LAND–USE:-

The existing various uses of land and the areas occupied by each use in Moran Master Plan Area has been shown in the following table:

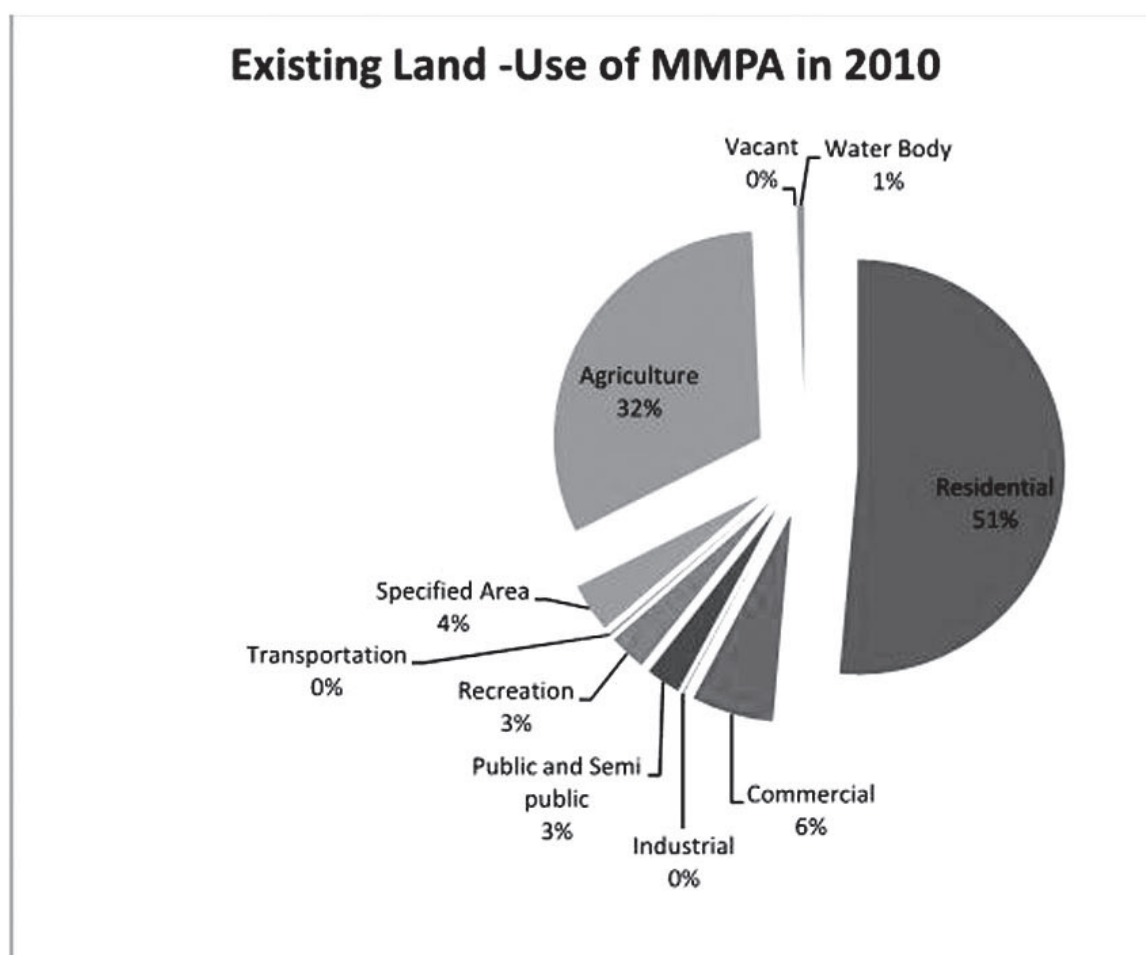
Table 8.1: Existing Land-Use of MMPA in 2010

Sl. No.	Categories	Moran Master Plan Area in Hectare	Percentage of Moran Master Plan Area (%)	Percentage of Developed Area (%)
A.	DEVELOPED AREA			
1	Residential	1346.90	42.14	57.38
2	Commercial	166.80	5.22	7.11
3	Industrial	3.60	0.11	0.15
4	Public and Semi public	71.00	2.22	3.03
5	Recreation	76.30	2.39	3.25
6	Transportation	581.80	0.18	24.78
7	Specified Area	101.00	3.16	4.30
	Total	2347.40	73.45	100.00

B.	UNDEVELOPED AREA			
8	Agriculture	830.80	25.99	
9	Vacant Land	2.30	0.07	
10	Water Body	15.50	0.49	
	Total	848.60	26.56	
	TOTAL MASTER PLAN AREA	3196.00	100.00	

Source: Town & Country Planning, Sivasagar Land Use Survey 2010

Figure 8.1: Existing Land-Use of MMPA in 2010



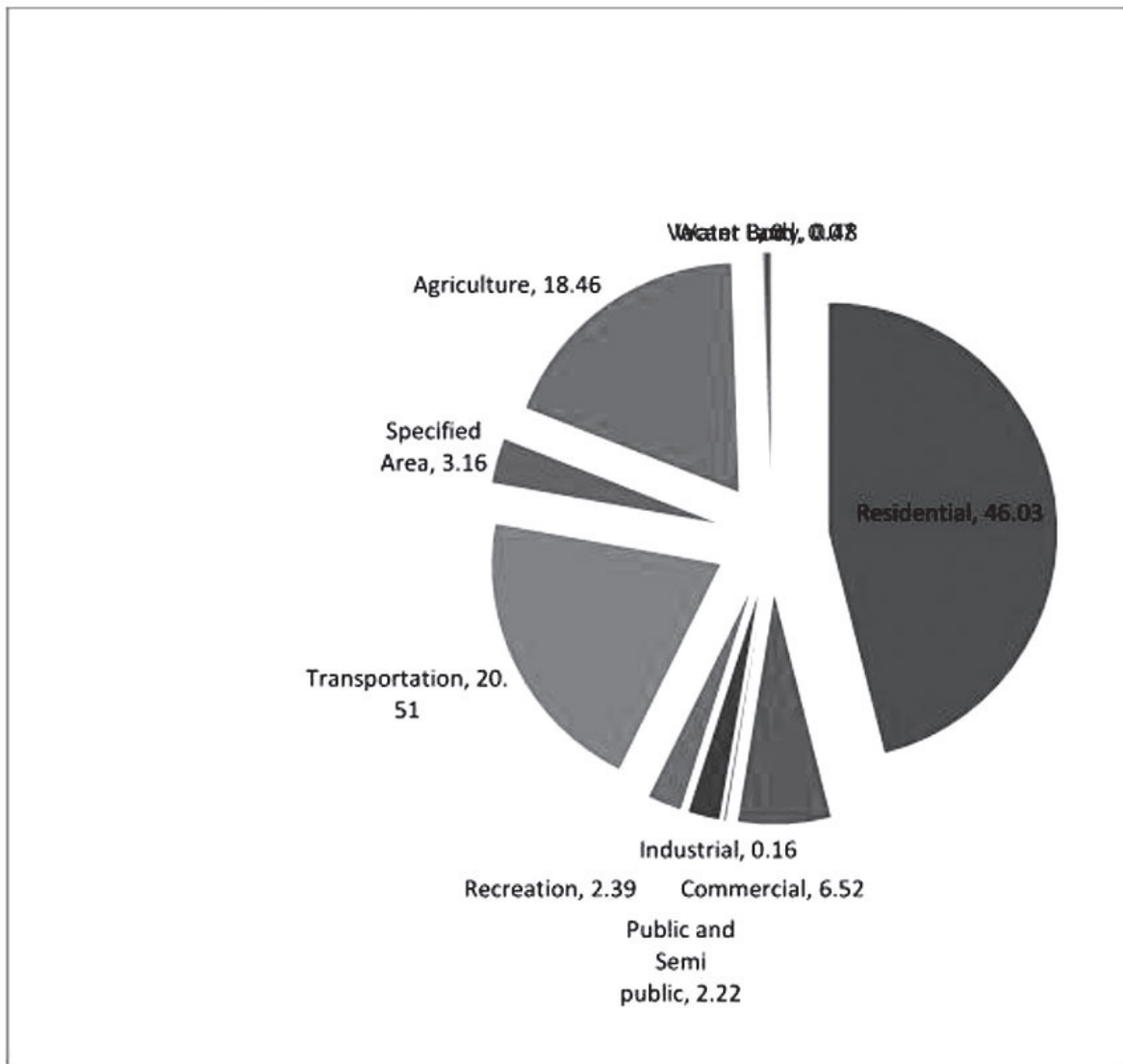
Land use planning has a bearing on the expansion of the Town and put pressure on rural areas. A change in urban economic function causes changes in population. The decision to locate administrative block, commercial activities and industrial estates in urban areas stimulates general economic development and accounts for population growth resulting in opportunities for employment, increased income and business opportunities.

The proposed Moran Master Plan covers an area of 3196.00 hectare or 31.96 Sqkm, out of which about 438.00 hectare or 13.71% of the total plan area is proposed to be developed for urban use by 2041 for a projected population of 71061 persons.

The following table shows the proposed distribution of land uses in Moran Master Plan Area up to 2041.

Table 8.2 : Proposed Land-Use of Moran Master Plan Area upto 2041

Sl. No.	Categories	Moran Master Plan Area in Hectare	Percentage of Moran Master Plan Area (%)	Percentage of Developed Area (%)
A.	DEVELOPED AREA			
1	Residential	1471.00	46.03	56.83
2	Commercial	208.50	6.52	8.06
3	Industrial	5.00	0.16	0.19
4	Public and Semi public	71.00	2.22	2.74
5	Recreation	76.30	2.39	2.95
6	Transportation	655.48	20.51	25.33
7	Specified Area	101.00	3.16	3.90
	Total	2588.28	80.99	100.00
B.	UNDEVELOPED AREA			
8	Agriculture	589.92	18.46	
9	Vacant Land	2.30	0.07	
10	Water Body	15.50	0.48	
	Total	607.72	19.01	
	TOTAL MASTER PLAN AREA	3196.00	100.00	

Figure 8.2 : Proposed Land-Use in MMPA upto 2041

8.3. COMPOSITE ZONES OR MIXED ZONES:-

With rapid urbanization and growth of urban population the demand for housing and market complex has increased manifold. The main item of development in the area will be development of well planned roads, drains, provision of external electrification, water supply and a site for community centre with a parks and a neighbourhood shopping centre. The plan proposes to take a viable project at Moran Naharkotia Road.

It is proposed to develop 0.12 hectare of land for local shopping centre, 0.28 hectare for development of a park and for neighbourhood community centre and 2.50 hectare of land for road network and roadside drain.

CHAPTER – 9 :

PROPOSED PROJECT, BRIEF AND TENTATIVE FUNDING SOURCE

9.1. IDENTIFY PRIORITY SECTORS AND PROJECTS:-

The plan proposals for Moran Master Plan Area spread up to 2041. It is quite obvious that the natural development will continue and the private developers will play an important role in this respect. As such, the private development is encouraged in conformity with the Master Plan. It is strongly recommended to stop unplanned and sporadic developments but to encourage balance planned and sustainable development where the provision for necessary physical infrastructure and socio-economic amenities are economically made possible. There are some immediate necessities as pointed out by the various stake holders, which are to be taken up as priority schemes for the Master Plan Area which is listed below:

- Widening and improvement of roads, with street lights and demarcation of notified parking area.
- Improvement of existing Santipur market near Nahorkotia-Moran Bus stand and others near Moran Municipal Board office and near Santipur tank in Moran town into a well planned, people friendly business hub.
- Construction of a Tourist lodge and a Marriage hall.
- Construction of a Town Hall & old age home.
- Construction of Slaughter house.
- Improvement of existing traffic signal points and setting up new ones.
- Setting up of Organic farming industry.
- Setting up of Micro Small and Medium Enterprises.(MSME)
- Improvement of existing A.S.T.C. Bus station.
- Construction of Vendor and Hawker market.
- Construction of public bus stand and truck stand.
- Construction of Auditorium.
- Improvement of existing hospital and dispensaries.
- Construction of cold storage, ware house etc.
- Development and Construction of playground and Indoor stadium.
- System of regular collection and disposal of garbage in the master plan area by the concerned authority.
- Scheme for Solid waste Management system as per waste management Rule,2016.
- Preparation and execution of a comprehensive drainage scheme.
- Execution of independent Residential Land Development.
- Water supply scheme
- Proposal for fuel filling station and LPG go down.

Necessary schemes for development of land and to provide necessary incentive to attract industrial enterprises in the areas earmarked for industries Abhaypuria Phatikachuwa gaon.

In the first phase, the schemes like widening and improvement of roads, construction of new roads, provision for required spaces for parks, playgrounds and parking places and improvement of commercial and market areas including existing market, daily bazaar etc. can be taken up. The Town Committee has to play an important role in liaison with other Govt. agencies in formulation and execution of such schemes in the Master Plan Area. All the above schemes need to be carried out to make the plan area in to healthy place of living.

In addition to the above, the plan also recommends for the establishment of Health centre, construction of fly-over, construction of Administrative block housing and Govt. offices under one roof.

9.2. FUND REQUIREMENT FOR EACH SECTOR/ PROJECT:-

Fund requirement for each sector project will be finalized by the ULB & concerned line department after preparation of detailed project report as per Govt. instruction.

9.3. IDENTIFY LAND SITE FOR PROPOSAL:-

The plan finds the following sites are suitable for taking up the proposals in accordance with the existing trends of growth as well as for balanced development:

- One Bus Stop near Police point.
- One Bus Terminus by the side of NH-27 (Nahorkotia Road).
- One Truck Terminus near Phatika Chuwa Abhoypuria Gaon by the side of NH-37.
- One parking area for two wheelers and four wheelers at junction point of NH-37 and NH-27.
- Auditorium and Marriage Hall beside Moran Municipal BoardOffice
- Water Supply Scheme at Burikhowang No. 2
- Solid Waste Management System near Khatkhati Tea Estate
- Residential Land Development Scheme near Khatkhati Tea Estate
- Light and Medium industrial unit near Phatika Chuwa Abhoypuria Gaon
- Oil filling station in front of Proposed Truck Terminusat NH-37
- Cycle track at Sonari road

9.4. INDICATIVE SOURCES OF FUND:-

The ULB & concerned line departments will submit the DPR's to their respective departments for sanctioning fund from State & Central Government under various schemes like NLCPR, NEC, 10% pool fund etc. The ULB's can also adopt the policy of Private Public Partnership (PPP) mode for raising the fund for a few remunerative projects.

CHAPTER – 10 :

DISASTER PLAN

10.1. HAZARDS SPECIFIC PRONENESS IN MORAN:-

➤ **Earthquake :-**

As per the latest seismic zoning map of India, the Charaideo district falls under High Risk Zone- V, where a maximum intensity of IX can be expected.

➤ **Flood :-**

Even Moran Town is also facing urban flooding in many localities due to low laying of NH-37 and lack of proper drainage system.

➤ **Soil Erosion :-**

The soil erosion is major threat to many areas due to the high undercurrent of river BudhiDihing.

➤ **Fires :-**

The fire takes places in Moran due to short circuit in commercial areas, thatched house. Mainly fire takes place from March to April when the climate remains very dry.

➤ **Cyclone:-**

In Moran cases related to low density cyclone occurred in some places.

10.2. NEED FOR DISASTER MANAGEMENT:-

Data on disaster occurrence, its effect upon people and its cost to countries, are primary inputs to analyze the temporal and geographical trends in disaster impact. Disaster losses, provide the basis for identifying where, and to what extent, the potentially negative outcomes embedded in the concept of risk is realized. They help to understand where, and to whom, disaster risk becomes impact. They also provide the basis for risk assessment processes, a departing point for the application of disaster reduction measures.

Development cannot be sustainable unless disaster mitigation is built into development process. Investments in mitigation are more cost effective than expenditure on relief and rehabilitation. Prevention and mitigation contribute to lasting improvement in safety and are essential to the integrated disaster management system. Disaster response alone is nonsufficient as it yields only temporary results at a very high cost. So, emphasis must be on Disaster prevention, mitigation and preparedness, which help in achieving objectivity of vulnerability reduction.

As per Section 40 of Disaster Management Act, 2005 that every department of the State Government shall prepare a Disaster Management Plan.

10.3. IMPORTANCE OF PUTTING DISASTER MANAGEMENT PLANS IN PLACE:-

Disasters are events that have a huge impact on humans and/or the environment. Disasters require Government intervention. They are not always unpredictable. Floods take place in valleys and flood plains, droughts in areas with unstable and low rainfall, and oil spills happen in shipping lanes. This predictability provides opportunities to plan for, prevent and to lessen the impact of disasters.

Disasters arise from both natural and human causes, and the responses needed could stretch community and government capacity to the limit. Disasters are inevitable although we do not always know when and where they will happen. But their worst effects can be partially or completely prevented by preparation, early warning, and swift, decisive responses.

Disaster management aims to reduce the occurrence of disasters and to reduce the impact of those that cannot be prevented. The Government White paper and Act on Disaster Management define the roles of Local Authorities as well as Provincial and National government in disaster management.

North East Region has been vulnerable to many natural and manmade disasters in the past. We can notice that most of the disasters have occurred within the last two decades, and the frequency, intensity and magnitude of the disasters are ever increasing.

10.4. PLAN OBJECTIVES:-

The objectives of the Disaster Management Plan are:

- ❖ Disaster management in the routine affairs of the office
- ❖ To provide technical and humanitarian assistance during disaster
- ❖ Prompt and effective discharge of office responsibilities during disaster situations
- ❖ Ensuring safety of office infrastructure, human resource and other assets
- ❖ Ensuring safety of the beneficiaries and others
- ❖ Speedy restoration after disaster impact
- ❖ To conduct trainings and capacity building for effective prevention, mitigation and response for disasters.
- ❖ To undertake information, education and communication activities to create awareness among the communities and the general public.

10.5. LIKELY GEOGRAPHICAL EXTENT AND MAGNITUDE/SEVERITY:-

- 1) The Master Plan area is situated on a flat land with slight slopes towards North-West up to the river Budhi Dihing which flows in to mighty Brahmaputra towards North. During Monsoon, river Budhi Dihing as well as mighty Brahmaputra overflows and excess water enters in to the Master Plan Area and causes flood. Moreover, low lying of National Highway-37 passing through the town and poor drainage system for unplanned development; enhance every chances of flash flood due to heavy rainfall. Such flash floods have been experienced during last five years.

- 2) Assam as a whole is within the Zone V of earthquake zone. Especially in 1950 Earthquake, Moran has witnessed a large devastation. So, it can be said that geographically and geologically Moran is situated in a very hazards prone zone.
- 3) Chances of Landslide are comparatively less in this district but might happen in the bank of BudhiDihing river. But fire can broke out in the congested residential and commercial areas, bazaars of the town anytime during lean season. So is the risk of epidemic in the slum/basti areas. The district has faced cyclones several times in the past. Road accident, rail accident, collapse of multi-storeyed buildings etc. can occur at any time. Of course riot is not so common in this district.

10.6. DISASTER MANAGEMENT CYCLE:-

In multi-hazard response plan, the disaster management cycle has a significant role to play. The four stages of disaster cycle have their own importance in terms of their implementation during, after and before the occurrence of any disaster.

Pre Disaster Activities

1. Policy development and National, State, district, local level disaster organization formation
2. Vulnerability and capacity assessment
3. Prevention and mitigation
4. Preparedness, planning and training

During Emergency Activities

1. Warning (beginning before the actual event)
2. Evacuation, search and rescue
3. Emergency assistance (relief) – food, water, shelter, medical aid

Post Disaster Activities

1. Repair and restoration of life lines (power, telecommunications, water transportation)
2. Reconstruction and rehabilitation.



10.7. FORMATION OF MORAN DISASTER MANAGEMENTCELL (MDMC):-

The Master Plan recommends for formation of a Moran Disaster Management Cell (MDMC) in the office of the Chairman, Moran Municipal Board, as per Section 40 of Disaster Management Act, 2005.

The MDMC has to be constituted with the functionaries like Chairperson (Chairman), Vice Chairman (Co-Chairperson), Chief Executive officer (Executive Officer), Members (SDO-Civil, Health, Roads, Building, Tea & Oil industries and other relevant department), and Nodal Officer (Jr. Engineer).

The MDMC will give emphasis towards the preparation of Moran Disaster Management Plan. The plan also recommends that the MDMC cell to co-ordinate during emergency with the District Disaster Management Authority (DDMA) located at the Head-Quarter of the District. The

MDMC Cell will provide all the available resources and manpower for Disaster Management. This Cell will mobilize the service of technical personnel for the damage survey work to help the District Administration.

The MDMC must meet at least once in six months i.e. in the month of March and September before the Disaster Season (Flood & Cyclone) of Moran town under the chairmanship of the Chairman/Chairperson, Moran Municipal Board & to update the plan. For this, one month's prior notice should be given to all concerned departments before convening the meeting. Chairman/Chairperson should review the work of MDMC. An emergency meeting will hold whenever information is received regarding calamity.

10.8. STANDARD OPERATION PROCEDURE (SOP):-

The Master Plan recommends the MDMC for formulation of Standard Operation Procedure (SOP) for automatic response of the members during disaster as follows:

- ❖ Written guideline that precisely defines how operations are to be carried out.
- ❖ An organizational directive that establishes a standard course of action.
- ❖ Written guidelines that explain what is expected and required of the personnel.
- ❖ Standardization of activities :-
 - Identify planned and agreed upon roles & actions.
 - Promote coordination and communication amongst personnel.
 - Simplify decision making during potentially stressful conditions.
- ❖ Proper implementation of Assam Notified Urban Area Building Rules – 2014 (ANUABR) & Sensitization among stakeholders engaged for construction work/owners to use disaster resistant technologies.

10.9. RAIN WATER HARVESTING:-

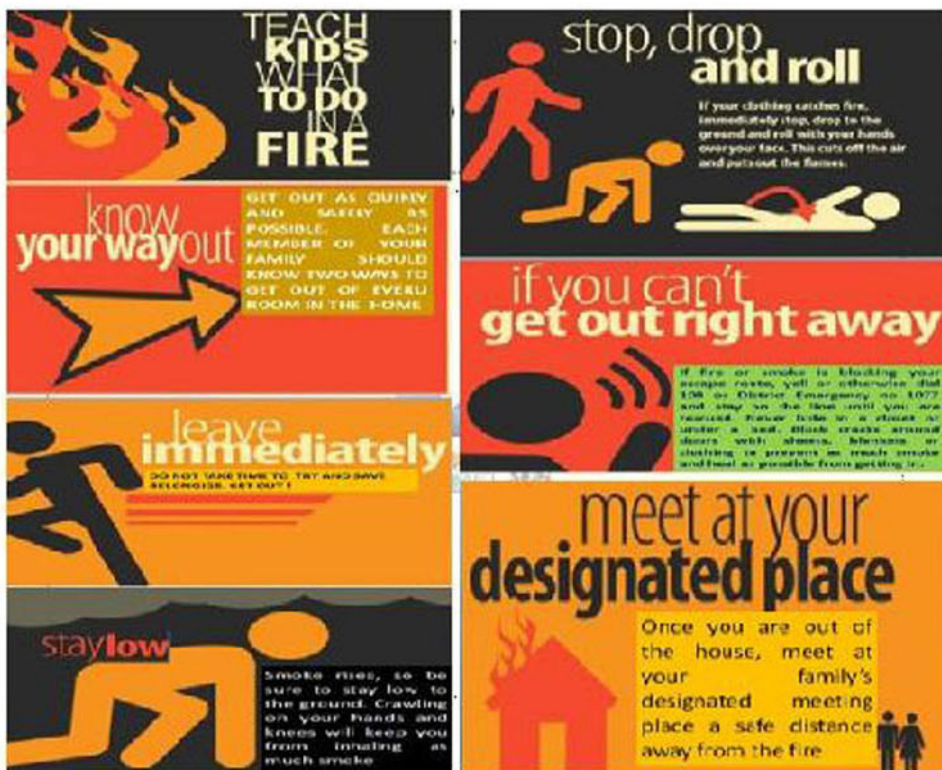
Moran Zone has experienced heavy rainfall during summer season due to the south-western monsoon that leads to artificial floods not only in the plan area. So, the plan recommends adoption of rainwater harvesting system in construction activities that will reduce the volume of artificial floods in the Master Plan Area and also help to maintain the ground water level.

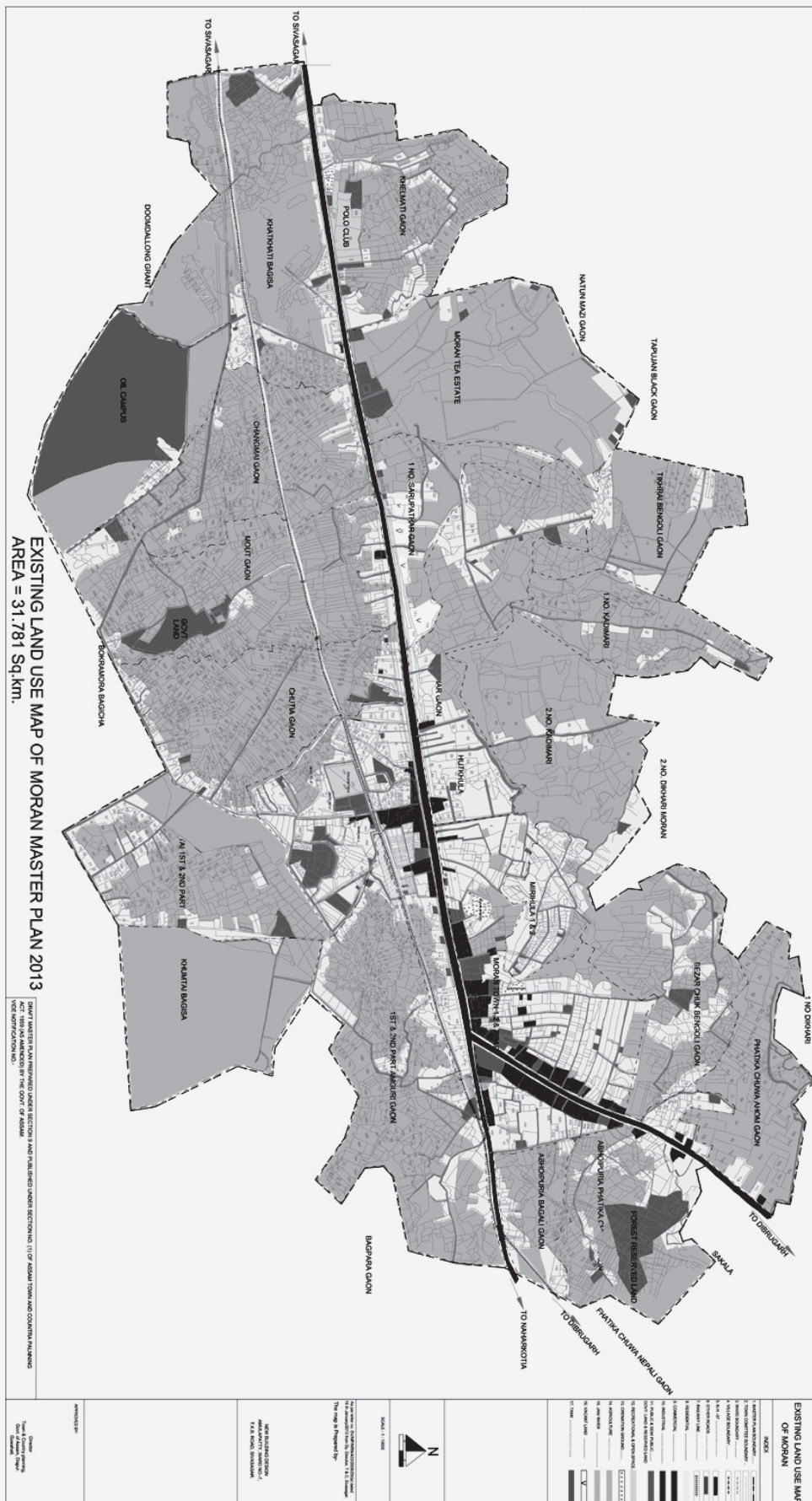
10.10. DOs & DON'Ts:-

a) DURING EARTHQUAKE :



b) DURING FIRE:





EXISTING LAND USE MAP OF MORAN MASTER PLAN 2013
AREA = 31.781 Sq.km.





