



# THE ASSAM GAZETTE

অসাধাৰণ

EXTRAORDINARY

প্ৰাপ্ত কৰ্তৃত্বৰ দ্বাৰা প্ৰকাশিত

PUBLISHED BY THE AUTHORITY

নং 25 দিশপুৰ, বুধবাৰ, 18 জানুৱাৰী, 2023, 28 পুহ, 1944 (শক)

No. 25 Dispur, Wednesday, 18th January, 2023, 28th Pausa, 1944 (S. E.)

GOVERNMENT OF ASSAM

ORDERS BY THE GOVERNOR

DEPARTMENT OF HOUSING AND URBAN AFFAIRS

**NOTIFICATION**

The 13th December, 2022

**ECF No. 256080/2022/71:-**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 Rule 3 of the Assam Town and 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 Draft Master plan for Kajalgaon-2042.

**Notice for the Publication of Draft Master Plan for Kajalgaon:**

1. It is notified that the Draft Master plan for Kajalgaon prepared by the Directorate of Town & Country Planning, Assam, under Section 9 of the Assam Town & Country Planning Act 1959 (As amended), as described in the schedule below is hereby published.
2. Any person or persons affected by the Draft Master plan may submit their objection or opinion in writing to the Director, Town & Country Planning, Dispur, Guwahati-6 within two months from the date of publication.
3. The Draft Master plan for Kajalgaon with all relevant papers and maps may be inspected free of Cost during office hours at the Office the Director, Town & Country Planning, Assam, Dispur, Guwahati-6, the Assistant Director, Town & Country Planning, District Office-Chirang, the Circle office, Kajalgaon Revenue Circle, Kajalgaon, Office of the Chairman, Kajalgaon Municipal Board, Kajalgaon. Copies of the Draft Master plan for Kajalgaon are available at the office of the Assistant Director, Town & Country Planning, Chirang for sale on payment.

**SCHEDULE****1) Situation and Area**

District:	Chirang
Sub-Division:	Kajalgaon
Area covered by Master Plan:	85.10sq.kms
Kajalgaon Municipal Area:	11.6sq.kms

**2) Villages included in the Final Master Plan for Kajalgaon Master Plan Area**

Sl. No.	Name of Revenue Villages	Sl. No.	Name of Revenue Villages/Census town
1	Ward 1, Kajalgaon MB	21	Kharija Dalaigaon Pt.2 (Part)
2	Ward 2, Kajalgaon MB	22	Krishnapur
3	Ward 3, Kajalgaon MB	23	Kukumari (Part)
4	Ward 4, Kajalgaon MB	24	Madhyam Kajalgaon.
5	Amguri	25	Maigaon
6	Banduguri	26	Manglagaon
7	Barighara (Borchara)	27	Nilibari
8	Bartalowa (Part)	28	Padmapur
9	Bherbhery	29	Palashbari (Part)
10	Bilashpur	30	Palashguri-1 (Palangsuguri No.1)
11	Dakhin Amguri	31	Palashguri-2 (Palangsuguri No.2)
12	Dakshin Kajalgaon	32	Petlagaon
13	Dangaigaon	33	Rajajan
14	Dologoon	34	Rowmari
15	Fuchulupara	35	Saljhora
16	Hasraobari	36	Sidli
17	Hatipota	37	Silpota. (Part)
18	Kahibari No.1	38	Simlaguri
19	Kahibari No.2	39	Sukhanipara
20	Khamarpara (Khumarpara)	40	Uttar Kajalgaon. (Part)
		41	Chatribor Gaon (Census Town) (Part)

**3) Description of Kajalgaon Master Plan Boundaries**

East : Dwarka Nagar  
North : Ankorbari  
West : Kashikotra  
South : Bongaigaon District

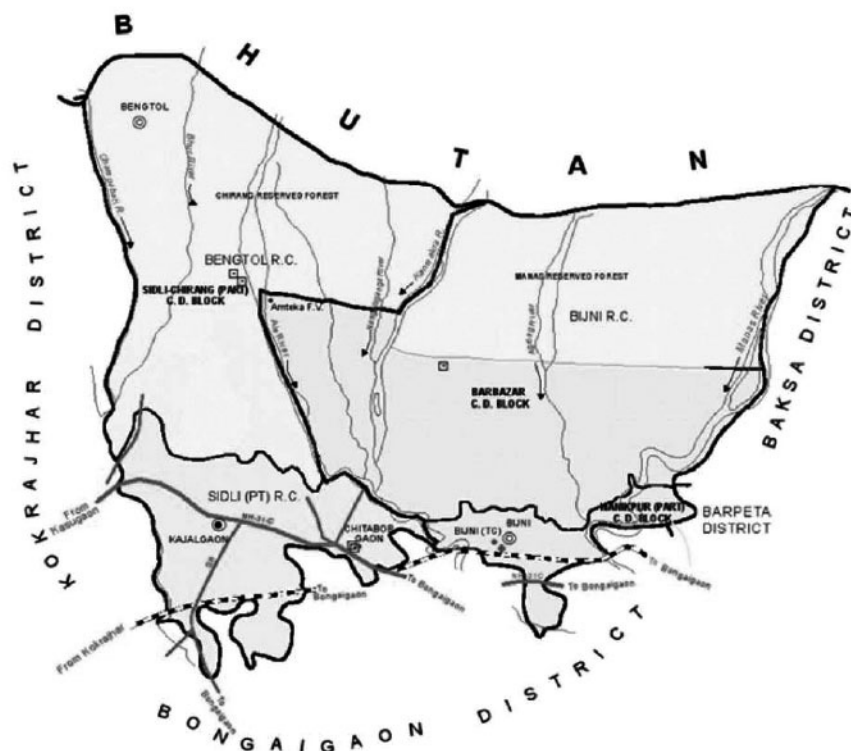
**KAVITHA PADMANABHAN,**  
Commissioner & Secretary to the Government of Assam,  
Department of Housing and Urban Affairs,  
Dispur, Guwahati-6

# Chapter 1: Introduction to Kajalgaon Master Plan Area

## 1.1. Kajalgaon town: Brief introduction

Kajalgaon is a small town in the district of Chirang in the Bodoland Territorial Region of Assam. Chirang was notified as a separate district on 4<sup>th</sup> June 2004 and formed by amalgamating parts of Kokrajhar, Bongaigaon and Barpeta districts. The map of Chirang district is provided below from the Census of India 2011. Since Kajalgaon was notified as a municipality in 2014, there is no data for the Kajalgaon town in the Census 2011 and is not marked in the map.

Figure 1: District Map of Chirang



Source: District Census Handbook, Chirang, 2011

## **1.2. Regional relevance**

Kajalgaon is located to the north of the Brahmaputra and is about 180 kms away from the city of Guwahati. The National Highway 31C passes through the middle of Kajalgaon Town. On the north, Chirang shares an international boundary with Bhutan.

Kajalgaon town has developed right next to the Bongaigaontown. In fact the Bongaigaon Refinery and its township is located within the Kajalgaon Master Plan area.

## **1.3. Topography, Climate and Soil**

The town has almost plain topography, with a gentle slope from north to south. The northern border is shared with Bhutan and thus, the foothill regions form very picturesque areas of undulating topography.

Like the rest of the State, Kajalgaon also enjoys sub-tropical humid climate, with a hot summer and moderate winter. January is the coldest month and May-August are the warmest months, with winter temperatures around 10<sup>0</sup> C and summer temperatures around 35<sup>0</sup>C. Monsoon rains are experienced from around June going up to September-October. Due to the outflow of water from the hills of Bhutan, the entire Chirang district experiences annual floods.

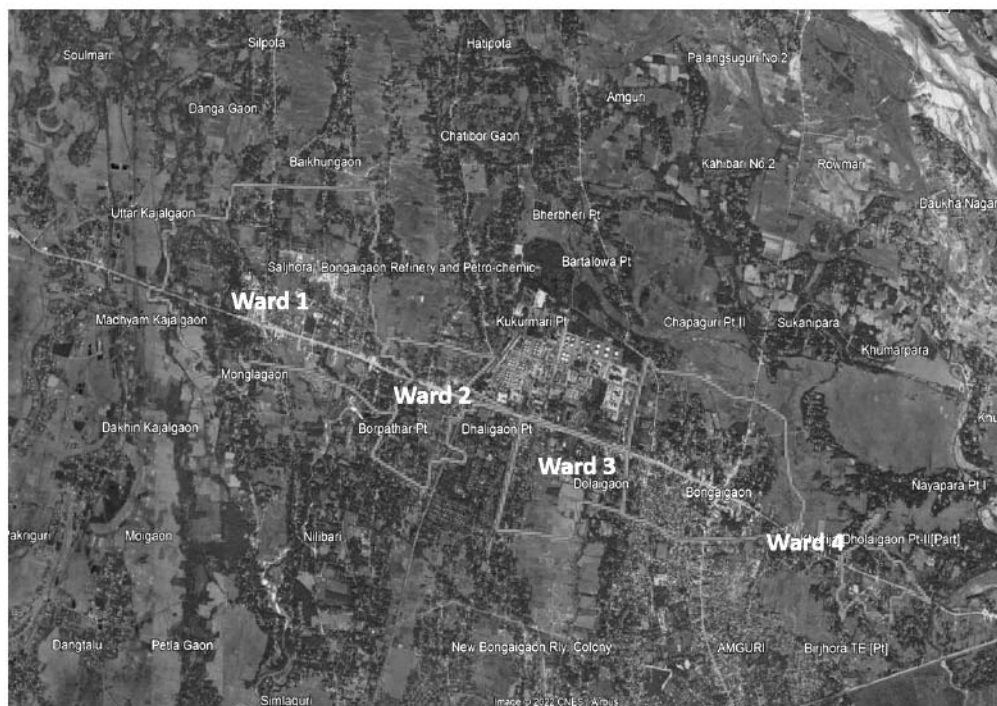
Being part of the Brahmaputra alluvial plain and sub-basin of Manas, the Chirang district is characterized by Older and Newer alluvium. Some of the plains are also formed out of denudation structural hills, with thick laterite soils. These soils support all kinds of crops.

## **1.4 Urban character of Kajalgaon town and its surroundings**

The town of Kajalgaon was declared in 2014, with 4 wards covering an area of about 11.6sq.kms. From the data available at the Kajalgaon Municipal Board, Kajalgaon notified

town covers a total population of 26,487 persons. However, the census information on Kajalgaon town will be available only once the data for the Census 2021 is made available.

Figure 2: Ward map of Kajalgaon Municipal Board area



Source: O/o AD, T&CP Chirang

Table 1: Ward-wise area break-up in Kajalgaon Municipal Town

Wards	Revenue Villages (parts/whole) that form the wards
Ward 1	Dangagaon (full), Baikhungaon (full), Palashbari (Part), Uttar Kajalgaon (Part), Silpota (Part)
Ward 2	Bartalowa (Part), Chatibar Gaon (Part)
Ward 3	Kukurmari (Part)
Ward 4	Chapaguri No.1 (full), Chapaguri No.2 (full) KharijaDalaigaon Part 2 (part)

Source: Kajalgaon Municipal Board, 2022

However, there are no census details of the Kajalgaon municipal town from the 2011 Census which is the basis for the analysis of the Master Plan report. Instead, in the 2011 Census for the first time Chatibor Gaon revenue village area was recognized as a Census Town.

### 1.5 Proposed Kajalgaon Master Plan Area

The Kajalgaon town as notified is acting as the commercial and transport hub for a large rural hinterland of Chirang district. To ensure that the infrastructure and service delivery provisions are likewise met up for the urbanising population, the master plan is proposed for an area covering an area of

The Kajalgaon Master Plan Area covers 40 revenue villages (see table below) and one Census town namely, Chatibor Gaon recognized in the Census exercise of 2011.

Table 2: Census Town and Revenue Villages that are part of the Kajalgaon Master Plan

Sl. No.	Name of Revenue Villages	Area in Sq.kms	Sl. No.	Name of Revenue Villages/Census town	Area in Sq.kms
1	Amguri	2.02	22	Krishnapur	2.00
2	Baikhungaon	1.46	23	Kukumari	1.98
3	Banduguri	1.12	24	Madhyam Kajalgaon.	2.23
4	Barighara (Borchara)	1.79	25	Maigaon	2.53
5	Bartalowa	1.79	26	Manglagaon	0.88
6	Bherbhery	2.88	27	Nilibari	3.08
7	Bilashpur	4.65	28	Padmapur	3.15
8	Chapaguri Pt I	1.85	29	Palashbari	1.59
9	Chapaguri Pt II	2.12	30	Palashguri-1 (Palangsuguri No.1)	1.56
10	DakhinAmguri	2.20	31	Palashguri-2 (Palangsuguri No.2)	1.23
11	Dakshin Kajalgaon	2.38	32	Petlagaon	2.75
12	Dangagaon	2.33	33	Rajajan	1.74
13	Dangaigaon	1.72	34	Rowmari	2.51
14	Dologaon	1.25	35	Saljhora	2.04
15	Fuchulupara	1.87	36	Sidli	1.41
16	Hasraobari	3.12	37	Silpota.	1.44
17	Hatipota	1.79	38	Simlaguri	2.81
18	Kahibari No.1	0.50	39	Sukhanipara	1.59
19	Kahibari No.2	1.40	40	Uttar Kajalgaon.	1.87
20	Khamarpara (Khumarpara)	2.55	41	Chatribor Gaon ( <i>Census Town</i> )	4.18
21	KharijaDalaigaon Pt.2 (Part)	1.75			
<b>TOTAL MASTER PLAN AREA in sq.kms</b>					<b>85.10sq.kms</b>

## 1.6. Delineation of Kajalgaon Master Plan Area

Figure 3: Kajalgaon Master Plan area



The Kajalgaon Master Plan area has been decided on the following justifications, -

- The growth of Kajalgaon along the National Highway 31 C (NH 27new) has been the base for the east west expansion of the master plan boundary
- Three major junctions (intersections on the NH 31 C) namely, Chapaguri, Dhaligaon and Kajalgaon junctions have acted as the nodes of growth
- The Southern boundary is mostly along the Chirang-Bogaigaon district administrative boundary
- The northern boundary has captured the multiple linear growths towards the Bengtoli agglomeration.

## Chapter 2 : Demographic characteristics and population projection

### 2.1. Urban character of Kajalgaon Master Plan Area

Kajalgaon developed as an administrative town for newly created Chirang district in 2004. Kajalgaon has all the district-level government offices, and district level institutions. There are few growth points around Kajalgaon town which have led to the expansion of the town, most prominently, the Bongaingaon Refinery Limited and Township. Surrounding areas are largely rural in character, although the increase in population indicates that it is becoming imperative to provide basic urban services and infrastructure to sustain the health and development of the population.

As mentioned in the earlier chapter, studying Chatibor Gaon Census Town shall provide some idea of the current urban characteristics of Kajalgaon master plan area, as the urban data for Kajalgaon town will be available only with the release of District Census Handbook from the Census 2021 Census. For the purpose of understanding the urban characteristics for the current exercise, the Chatibor Gaon Census Town information from Census 2011 is analysed.

### 2.2. Urban population and households

Kajalgaon Master Plan Area has a population of 57,014 persons with 11,700 households. Within this, Chatibor Gaon has achieved Census Town status with a population of 8,231 persons and 1,607 households. The remaining 40 revenue villages comprise of the remaining 48,783 persons and 10,093 households.

Table 3: Population and Households in Kajalgaon Master Plan Area

Area	Population	Households
Chatibor Gaon (CT)	8,231	1,607
Revenue Villages in the KMP area	48,783	10,093
Total Master Plan (KMP) Area	57,014	11,700

Source: District Census Handbook, Chirang, 2011



**2.3. Sex-ratio**

<b>Revenue Village</b>	<b>Area (sq.km)</b>	<b>Population</b>	<b>Pop Density/ sq.km</b>
Bartalowa	1.79	3527	1971
Chatibor Census Town (CT)	4.18	8231	1969
Manglagaon	0.88	1393	1590
Madhyam Kajalgaon.	2.23	3469	1556
Chapaguri Pt I	1.85	2868	1548
Baikhungaon	1.46	1833	1256
Banduguri	1.12	1373	1230
Simlaguri	2.81	3451	1229
Sidli	1.41	1717	1217
Padmapur	3.14	3022	961
Chapaguri Pt II	2.12	1980	935
Palashbari	1.59	1415	891
Hasraobari	3.12	2663	853
Hatipota	1.79	1198	671
Bilashpur	4.65	2888	621
Rajajan	1.74	1026	588
Barighara (Borchara)	1.79	948	529
Sukhanipara	1.59	767	484
Rowmari	2.51	1144	456
Nilibari	3.08	1369	445
Khamarpara (Khumarpara)	2.55	1129	442
Dangagaon	2.33	993	426
Fuchulupara	1.87	778	416
Silpota.	1.44	523	363
Kahibari No.2	1.40	489	348
Palashguri-1 (Palangsuguri No.1)	1.56	530	341
Amguri	2.02	620	306
Kukurmari	1.98	599	303
Saljhora	2.04	595	291
DakhinAmguri	2.20	541	245
Simlaguri	2.81	686	244
Dangagaon	1.72	410	238
Petlagaon	2.75	569	207
Palashguri-2 (Palangsuguri No.2)	1.23	247	202

Dologaoon	1.25	245	195
Kahibari No.1	0.50	91	182
Uttar Kajalgaon.	1.87	320	171
Dakshin Kajalgaon	2.38	377	159
Krishnapur	2.00	222	111
Maigaon	2.53	180	71
Bherbhery	2.88	5	2

The sex-ratio in Kajalgaon Master Plan Area is 950 women per 1000 men. The gender-wise population break up reveals that the Chatibor Gaon Census town has a comparatively higher sex-ratio of 980 women in comparison to 950 women per 1000 men in therevenue villages in the Kajalgaon Master Plan Area.

Table 4: Area-wise Sex Ratioin Kajalgaon Master Plan Area, 2011

Area	Male	Female	Sex-ratio
Chatibor Gaon Census Town	4157	4074	980
Revenue Villages in the KMP area	25029	23754	950
Kajalgaon Master Plan Area	29186	27828	950

Source: District Census Handbook, Chirang, Census 2011

## 2.4. Population Density

The population density of Chirang district is only 251 persons/sq.km. This reveals the intrinsic rural character of the district. However, it is found that in comparison the urban population density in Chatibor Gaon is very high at 1969 persons/sq.km. This is much higher than the population density of the other revenue villages in the Kajalgaon Master Plan Area. The table below shows the population density in the various revenue villages in Kajalgaon Master Plan Area.

The Census of India uses population density of 400 persons/sq.km as one of the criterion for recognising a settlement as urban. In 22 out of the 40 revenue villages in the KMP area, the population density is more than 400 persons per sq.km, while in 8 revenue villages, the density is above 1200 persons/sq.km. The highest densities of 1971 persons/sq.km and 1969 persons/sq.km are found in Bartalowa and Chatibor Gaon Census Town, respectively.

Table 5: Census Town /Revenue Village-wise Population Density, 2011

*Source: District Census Handbook Chirang, Census 2011*

## 2.5. Literacy and Scheduled Caste/Scheduled Tribe population

In literacy rate, theKajalgaon Master Plan Area reports a total literacy rate of about 60 per cent only. Chatibor Gaon Census Townhasa poorer performance with nearly 50 per cent literacy overall and 55.69 per cent male and 43.72 per cent female literacy. On the other hand, the revenue villages in the KMP have a higher overall literacy rate of 61.68 per cent, with 67.38 per cent male and 55.67 per cent female literacy.Overall,Chirang district also has low literacy rate as seen in the table below, which may be attributed to the lack of development of social infrastructure in the autonomous council areas for a long time.

Table 6: Crude Literacy rate in the Kajalgaon Master Plan Area, 2011

Census Town/Revenue Villages/District	Total Literacy Rate	Male Literacy	Female Literacy
Chirang District	63.55	70.24	56.65
Chatibor Gaon Census Town	50.00	55.69	43.72
Revenue Villages in the KMP	61.68	67.38	55.67
Kajalgaon Master Plan Area	60.00	65.72	53.92

*Source: District Census Handbook Chirang, Census 2011*

In terms of Schedule Caste and Schedule Tribe population to total population, the trend in Assam is to have higher Schedule Tribe population, due to presence of larger number of both hill and plains tribe communities in the state. This trend of higher ST population is seen in Chirangdistrict demography as well. Within the overall KMP area, there are 32 per cent ST persons, while only 4 per cent SC. Chatibor Gaon Census Townareinterestingly has equivalent SC and ST population of 1 per cent.In the revenue villages comprising the KMP area, about 38 per cent of the population is ST, while about 4 per cent is SC. The entire district of Chirang is mainly inhabited by Bodo-Kachari tribes, yet the Census figures reveal a high concentration of non-ST communities, unlike nearby Baksa district where nearly 99 per cent population is ST.

Table 7: Share of SC/ST population to total population, Kajalgaon Master Plan Area 2011

Revenue Villages/Census Town	Tot Pop	SC pop	%	ST pop	%
Chatibor Gaon Census Town	8231	92	1%	109	1%
Revenue Villages in the KMP	48783	1985	4%	18410	38%
Kajalgaon Master Plan Area	57014	2077	4%	18519	32%

*Source: District Census Handbook Chirang, 2011*

## 2.6. Population Projection

Population is the most important factor which is directly related to the various needs of the area. The prime objective of any Master Plan is to assess the present situation and project the future population for plan period, and accordingly calculate the requirements of both physical and social infrastructure in order to cater to the needs of such population. Therefore, population projection is the basic requirement for the projection of other needs of the area. From all these projections the developmental plan of an area should be prepared which can fulfill the different needs of the people living therein.

However, Chirang is primarily a rural district. Kajalgaon was notified as an urban municipality only in 2014, which deprived it of study under the Census of 2011. While Chatibor Gaon was recognized as a Census town only in 2011, which means that it does not have any urban population details in the Census of 2001. Details on the Kajalgaon Master Plan Areatown will be available only in the Census of 2021 which will be made available in the next couple of years. Till then, population projection for Kajalgaon Master Plan Area cannot be calculated.

## Chapter 3: Economic Base and Employment Scenario

### 3.1. Economic scenario of Kajalgaon Master Plan Area

Chirangis largely an agricultural district, with presence of few cottage industries based on food products and handloom. Kajalgaon Master Plan Area falls in the alluvial plain of the sub-basin of river Manas. The KMP is drained by a small stream called the Sanajan river, a small tributary of the larger Puthimari River, which is a tributary of the River Brahmaputra. Kajalgaon Master Plan Area (KMP) has been historically characterized by primary activities, mainly agriculture and fishing.

Table 8: Sector-wise economic activities in Kajalgaon Master Plan Areas as per Census 2011

Sectors	Economic Activities as per Census definitions	Economic activities found in Kajalgaon Master Plan Area
Primary	Agriculture, horticulture & forestry, Sericulture & fishing, mining and quarrying, animal husbandry and dairy	Paddy, jute, vegetables, mustard, bamboo
Secondary	Manufacturing, construction, household industries	Jute, cane, bamboo products and mustard
Tertiary	Trade, tourism, hotel & restaurants, transport, storage & communication, banking, public administration and informal sector	Not significant

Source: District Census Handbook Chirang, 2011

The old alluvial soil, rainfall conditions and terrain support the growth of tea, rice, mustard, other vegetables and bamboo. Other notable products from Kajalgaon Master Plan Area are bamboo products as well as mustard oil.

### 3.2. Work-force participation

The Kajalgaon Master Plan Area comprises a work-force participation rate (WFPR) of 37 per cent, indicating that there is a large dependent as well as unemployed population. The Chatibor Gaon Census Town shows a lower work participation rate of 30 per cent, with male WFPR of 83 per cent and 17 per cent female WFPR. The female WFPR is very poor with just over 26 per cent in the overall KMP area. This indicates that women do not have

adequate opportunities for economic engagements and are constrained to work within their homes or work without formal means of income.

Table 9: Work Participation Rate, 2011 (in %)

Census Town/Revenue Villages/KMP	Total Workers	%	Male workers	%	Female Workers	%
Chatibor Census Town	2481	30%	2071	83%	410	17%
Revenue Villages in the KMP	18574	38%	13408	72%	5166	28%
Kajalgaon Master Plan (KMP) Area	21055	37%	15479	74%	5576	26%

Source: Calculated from Census 2011 data

Comparing the WFPR of Kajalgaon Master Plan Area to that of the overall state and district of Chirang, it is found that KMP fares poorer than both. It is due to the fact that Chirang is one of the poorer districts of Assam, with large scale unemployment. However, like in other towns of Assam, a study over different census periods may reveal a better participation rate, as more investments are being made in the state leading to the opening up of the economy.

Table 10: Comparison of share of working population to total population at State and District level, Census 2011

State/District/Master Plan Area	2011
Assam state	38%
Chirang district	40.21%
Kajalgaon Master Plan Area	37%

Source: District Census Handbook, Chirang, Census 2011

### 3.6. Types of workers

As per the Census of India, the population can be divided into main workers, marginal workers and non-workers. They can be defined as:

- a) Main Worker: One who has worked in any economically productive work for at least 183 days/6 months in a year.
- b) Marginal Worker: One who has engaged in economically productive work for less than 183 days/6 months in a year.

c) The ones who have not participated in any economically productive activity constitutes the 'Non-Workers'.

The table below findsthat within the Kajalgaon Master Plan Area, 71 per cent of the total workers are main worker and 29 per cent are marginal workers. Within the Chatibor Gaon census town, the figure of main workers is higher at 76 per cent. The remaining 24 per cent of the working population comprise of the marginal working population. In comparison, in the remaining revenue villages of the KMP area 71 per cent working population are main workers. The remaining 29 per cent workers indicate towards higher number of people being engaged in agricultural activities for less than 6 months of the year, and remaining unemployed for the rest of the year. Throughout the KMP ,63 per cent of the total population remains unemployed.

Table 11: Share of Main & Marginal Workers and Non-workers of Kajalgaon Master Plan Area, 2011

Census Town/Revenue Villages/KMP	Main Workers	Marginal Workers	Non-workers
	As % of total population		
Chatibor Gaon Census Town	23%	7%	70%
Revenue Villages in the KMP	27%	11%	62%
Kajalgaon Master Plan (KMP ) Area	26%	11%	63%

Source: District Census Handbook of Chirang, Census 2011

The Census categorises workers into four main types. They are, -

- a) Cultivators: person engaged in cultivation of own land or otherwise, for payment in money, kind or share
- b) Agricultural labourers: person engaged in the cultivation of another person's land as a sub-cultivator or labourer for wages. Such a person has no right of lease on the land or contract on land in which they work.
- c) Household industry worker: Such a worker is engaged in an industry which is run by one or more members of a family within the home where they live in urban areas or within the village in rural areas.

d) Other workers: Workers who are not engaged in any of the above three kinds of work and includes government services, private job or other professionals, trade and commerce, etc. Plantation workers are included in this category as per Census.

Table 12: Categories of Main workers in the Kajalgaon Master Plan Area, 2011

Census Town/Revenue Villages/KMP	Main workers	Cultivators	Agricultural labourers	Household Industry workers	Others
Chatibor Gaon Census Town	1876	0.8%	1.1%	1.9%	96.2%
Revenue Villages in the KMP	12957	19.8%	6.6%	4.0%	69.6%
Kajalgaon Master Plan (KMP ) Area	14833	17.4%	5.9%	3.7%	72.9%

Source: District Census Handbook, Chirang, Census 2011

From the table above it is evident that in the KMP area the majority of 'main' workers are engaged as 'other workers', i.e., 72.9 per cent. As witnessed in most urbanising areas more of the main workers are progressively engaged in non-agricultural activities, likewise Kajalgaon MP area, as well as the Chatibor Census towns and Revenue villages, depict the same status. Thus it is evident that majority of main workers in the KMP area are engaged in as small business owners, as well as government and private services. This characteristic supports the need for looking at Kajalgaon Master Plan Area as an urbanizing area in need for developing its services sector and support its development, as the area becomes more and more urbanized.



## Chapter 4: Housing

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### 4.1. Housing and its relevance

The Census of India defines a house as a building or part of a building having separate main entrance from the road or common courtyard or staircase, etc. used or recognised as a separate unit. The United Nation's Universal Declaration of Human Rights, 1948, recognizes the need of housing along with food, clothing, medical care, etc., as a right to a standard living required for health and well-being of everyone. Provision of housing is a social right, and the Government of India has been involved in providing housing to both rural and urban poor.

The Pradhan Mantri AwasYojna-Urban (PMAY-U), a flagship mission of the Government of India for providing pucca housing to low and middle income groups characterizes housing as providing,

- a) All-weather housing unit with water, kitchen, electricity and toilet,
- b) Women empowerment
- c) Better quality of life for urban poor
- d) Security of tenure
- e) Adequate physical and social infrastructure.

The Government of India considers houses constructed with permanent materials to be a complete house. Thus through its various programmes it has promoted the use of permanent materials like burnt bricks, concrete, stone slabs, etc., for the completion of walls, floors and roofs. However in Assam, the earthquake hazard has led to the evolution of the Assam-type house which uses non-permanent materials on the walls, GI sheets for roof and concrete or mud floors, which have withstood the onslaught of the heavy rains of Assam. Such houses are also easier to reconstruct if damaged during Assam's annual floods.

## 4.2. Types of House structure

The Census enumerates houses on their sub-classification of 5 categories: permanent, semi-permanent, serviceable, non-serviceable and unclassifiable. The Census definition of the structures are as follows, -

**a) Permanent:** Houses with wall and roof made of permanent materials. Wall can be made of G.I., Stone packed with Mortar, Stone not packed with Mortar, Metal, Asbestos sheets, Burnt bricks, Stone or Concrete. Roof can be made of Hand-made tiles, Machine made tiles, Slate, G.I., Metal, Asbestos sheets, Brick, Stone or Concrete.

**b) Semi-Permanent:** Either wall or roof is made of permanent material while the other is made of temporary material.

**c) Temporary:** Houses with wall and roof made of temporary material. Wall can be made of Grass, Thatch, Bamboo etc., Plastic, Polythene, Mud, Unburnt brick or Wood. Roof can be made of Grass, Thatch, Bamboo, Wood, Mud, Plastic or Polythene.

- **Serviceable temporary:** Wall is made of Mud, Un-burnt brick or Wood.

- **Non-serviceable:** Wall is made of Grass, Thatch, Bamboo etc., Plastic or Polythene.

**d) Unclassifiable:** Houses not classifiable under any of the above category.

In Kajalgaon Master Plan Area, like the rest of Assam, there are 3 types of houses -

**a) Kutcha House (Temporary):** A house having mud floor, bamboo wall plastered with mud and thatch roof.

**b) Assam Type (Semi pucca/Semi permanent):** A house having brick wall, cement concrete or mud flooring, CGI/AC sheet roofing. Assam type houses may have any one or more of the house component (wall, roof, floor) in non-permanent material and are thus considered semi-pucca units.

**c) Pucca House or Permanent House:** A house having cement concrete flooring, brick wall and RCC slab roofing.

Table 13: Housing condition in Kajalgaon Master Plan Area, 2011(% of households)

Housing Condition		Chatibor Gaon Census Town	Revenue Villages in the KMP	Kajalgaon Master Plan (KMP) Area
Permanent		20%	33%	31%
Semi-Permanent		63%	57%	58%
Temporary	Serviceable	0%	1%	0%
	Non-Serviceable	17%	9%	10%
Unclassifiable		0%	0%	1%

Source: District Census Handbook, Census 2011

In the Kajalgaon Master Plan Area, 58 per cent of housing units are semi-permanent houses. This clearly indicates towards the existence of greater number of Assam-type house structures which are characterized by the use of partly kutcha materials, like mud floor or walls. Remaining 31 per cent households have permanent houses. In the Chatibor Gaon Census Town, 63 per cent households have semi-permanent or Assam type houses while 20 per cent have permanent units.

In the total KMP area nearly 10 per cent have non-serviceable temporary homes. In the Census town this figure is 17 per cent, while in the revenue villages this category of dwelling unit is reported by 9 per cent households. Unserviceable temporary houses cannot provide healthy living environment to their inhabitants and are vulnerable to the vagaries of nature, especially floods and heavy rainfall. This is a matter of concern and requires intervention through housing programmes.

Table 14: Housing Tenancy Typology in Kajalgaon Master Plan Area (% of HHs)

Tenancy Status	Chatibor Census Town	Revenue Villages in the KMP	Kajalgaon Master Plan (KMP) Area
Owned	83%	89%	88%
Rented	12%	8%	9%
Any others	5%	3%	3%

Source: District Census Handbook, Census of India 2011

Majority of housing units in the total Kajalgaon Master Plan Area are self-owned. It is found that 88 per cent units are owned, against 9 per cent which are rented. The trend of renting is higher in the Chatibor Gaon Census Town with 12 per cent units rented, against

only 8 per cent in the revenue villages of the KMP area. Overall in the total planning area, 1.48 per cent people live in other type of housing which usually means that there is existence of hostels and guest-houses, some amount of employer housing or the practice of living in relatives' homes.

Although Kajalgaon town has no census records in 2011, it has grown as an extension of the Bongaigaon town, beyond the Bongaigaon Refinery. Thus, rented accommodation is particularly noticeable here due to the presence of migrant workers and students from peripheral villages, as well as migrant families who move from rural to more urbanized areas looking for better opportunities. The presence of rental housing indicates towards rising urbanisation as people migrate in search of better housing, higher education and economic opportunities.

### **4.3. Condition of Dwelling units**

Housing condition indicates the physical state of the house or dwelling unit. Census has classified dwelling units into good, livable, and dilapidated. They can be defined in the following manner-

- a) Those houses which do not require any repairs and are in good condition may be considered as '*Good*'.
- b) Those houses which require minor repairs may be considered as '*Livable*'.
- c) Those houses which are showing signs of decay or those breaking down and require major repairs or those houses decayed or ruined and are far from being in conditions that can be restored or repaired may be considered as '*Dilapidated*'.

The percentage distribution of households based on different housing condition in Kajalgaon Master Plan Area can be understood from the following table:

Table 15: Structural condition of houses in Kajalgaon Master Plan Area, 2011(% of HHs)

Condition of Census houses as	Chatibor Gaon Census Town	Revenue Villages in the KMP	Kajalgaon Master Plan (KMP) Area
Good	15%	43%	39%
Livable	54%	45%	46%
Dilapidated	31%	13%	15%

Source: District Census Handbook, Census of India 2011

The table above reveals that 39 per cent households in Kajalgaon Master Plan Area live in 'good' houses, while another 46 per cent live in 'liveable' houses. Since livable houses means houses that require only minor repairs while good houses require no repairs, it indicates that majority of the houses are structurally stable. In the total master plan area of Kajalgaon Master Plan Area about 15 per cent houses are dilapidated. Such houses require intervention through the various housing supply schemes of the government which may be looked into through planning by the Kajalgaon Municipal Board and the various Panchayats, who are responsible for implementation of government-funded housing schemes.

#### 4.4. Housing Construction material: Roof, Wall and Floor

##### 4.4.1. Roof material

The condition of housing can be analysed through the study of the materials used in the construction of the roof, floor and walls. These three components help in understanding the viability of the house as an all-weather house. This is especially important in the flood plains of Assam, where floods are an annual occurrence across various locations in the state.

Table 16: Roofing Material of Kajalgaon Master Plan Area , 2011(% of HHs)

Roof Material	Chatibor Gaon Census Town	Revenue Villages in the KMP	Kajalgaon Master Plan (KMP) Area
Grass/Thatch/Bamboo/ Wood/Mud etc.	2.3%	5.5%	5.1%
Plastic/ Polythene	14.5%	4.3%	5.7%
Handmade Tiles	1.9%	1.8%	1.8%
Machine made Tiles	4.9%	0.1%	0.7%

Burnt Brick	0.3%	0.3%	0.3%
Stone/ Slate	0.6%	0.6%	0.6%
G.I./Metal/Asbestos sheets	75.4%	86.2%	84.7%
Concrete	0.1%	1.1%	1.0%
Any other material	0.0%	0.1%	0.1%

*Source: District Census Handbook, Census of India 2011*

The housing census information in the table above reveals that across the Kajalgaon Master Plan Area, more than 85 per cent houses use G.I., metal and asbestos sheets in the construction of their roofs. This makes it clear that majority homes in Kajalgaon Master Plan Area are Assam-type houses, which use metal sheets in construction to fend off heavy rainfall and decrease the load of the roof against earthquake impact.

Another 5 per cent houses in the total area use degradable natural products like grass, thatch, bamboo, wood, mud, etc., while 6 per cent are using polythene, plastic sheets etc. In the Chatibor Gaon census town, 14 per cent households use plastic and polythene sheets as roof material while in the remaining revenue villages this figure is 4 per cent. Such houses would require frequent maintenance and change in the roofing material to keep the houses safe from the heavy monsoon rains and vagaries of nature.

There is a growing trend across the state is to construct completely concrete homes, with RCC roofs. However in Kajalgaon Master Plan Area only 1 per cent of houses have concrete or RCC roofs.

#### 4.4.2. Wall material

Table 17: Wall Material used in the Kajalgaon Master Plan Area , 2011(% of HHs)

Wall Material	Chatibor Gaon Census Town	Revenue Villages in the KMP	Kajalgaon Master Plan (KMP) Area
Grass/ Thatch/ Bamboo etc.	75.2%	56.6%	59.2%
Plastic/ Polythene	1.0%	1.5%	1.4%
Mud/ Unburnt brick	2.8%	5.8%	5.4%
Wood	0.3%	2.3%	2.1%

Stone not packed with mortar	0.6%	3.2%	2.9%
Stone packed with mortar	1.9%	3.1%	3.0%
G.I./ Metal/ Asbestos sheets	0.8%	0.3%	0.3%
Burnt brick	16.2%	23.0%	22.1%
Concrete	1.0%	3.7%	3.4%
Any other material	0.2%	0.5%	0.4%

Source: District Census Handbook, Census of India 2011

Continuing the trend of Assam-type homes in Kajalgaon Master Plan Area, it is seen that more than 59.2 per cent houses use biodegradable materials like bamboo, thatch, etc., to construct the walls. In the census town, this figure stands at 75 per cent houses, while in the revenue villages of the KMP, this figure stands at 56.6 per cent. Next wall material used in majority is burnt bricks in 16 per cent households in the census town, and 23 per cent households in the revenue villages, while in the entire master plan area it is 22.1 per cent. Concrete walls are used by 3.4 per cent households in the KMP area, while in the census town this share is 1 per cent, and in the revenue villages it is 3.7 per cent. It is seen that the Census town is not building permanent housing as much as the surrounding revenue villages. However, data from Kajalgaon Municipal area would definitely be different from the Chatibor Gaon Census Town because Kajalgaon has developed much more rapidly as an extension of Bongaigaon town. However, that picture will emerge only after the 2021 Census data for towns are made available by Census of India.

#### 4.4.3. Floor Material

Table 18: Floor material used in Kajalgaon Master Plan Area, 2011 (% of HHs)

Floor Material	Chatibor Gaon Census Town	Revenue Villages in the KMP	Kajalgaon Master Plan (KMP) Area
Mud	81.1%	69.3%	70.9%
Wood/ Bamboo	0.7%	0.4%	0.5%
Burnt Brick	0.3%	0.7%	0.7%
Stone	0.2%	0.5%	0.4%
Cement	17.6%	28.8%	27.3%
Mosaic/ Floor tiles	0.1%	0.3%	0.3%
Any other material	0.0%	0.1%	0.0%

Source: District Census Handbook, Census of India 2011

The table above analyses the floor material used in the Kajalgaon Master Plan Area and it shows that 70.9 per cent households have reported using mud as the dominant material. This share in the census town alone is 81 per cent, while in the remaining revenue villages the share is a 69.3 per cent. Other significant material used for floor construction is cement, of which the share in census town area is 17.6 per cent, while in the rest of the KMP area is 27.3 per cent.

#### 4.5. Availability of Kitchen, Toilet, Bathroom

A good quality housing unit must be served by a cooking space, a toilet and a bathing area separate from the living/sleeping area. This ensure healthy, smokeless and clean cooking environment, with dignified, private and safe living conditions.

##### 4.5.1. Kitchen

The Census enumerates kitchens in the following manner, -

- a) Cooking inside the House: (i) Having a kitchen: In a separate room
  - (ii) Not having a kitchen as a separate space in the house
- b) Cooking outside the house: (i) Having a kitchen as a separate room outside the house
  - (ii) Not having a separate room, rather in an open space

Table 19: Availability of household kitchen in Kajalgaon Master Plan Area (% of HHs)

Kitchen Facility	Chatibor Gaon Census Town	Revenue Villages in the KMP	Kajalgaon Master Plan (KMP ) Area
Cooking inside the house	88%	69%	71%
Cooking outside the house	11%	31%	28%
No cooking	0.5%	0.5%	0.5%

Source: District Census Handbook, Census of India 2011

The table above depicts the availability of kitchen across households in the Kajalgaon Master Plan Area. Almost 71 per cent households in the Kajalgaon Master Plan Area have reported the availability of separate kitchen inside the house, while 28 per cent cook outside



thehouse. In the entire master plan area, less than 1 per cent households have reported not cooking at all, which indicate towards households in rental accommodations without families.

#### 4.5.2. Availability of Toilet

Availability of proper latrine with piped sewer system or septic tank is a must for households to lead a dignified life. The lack of proper access to latrine leads to a plethora of problems. Open defecation and outdated latrines like Pit Latrine and Service Latrine creates an unhealthy environment by attracting flies and contaminating land and water sources. It is known to spread fatal vector-borne diseases especially among children. It also creates discomfort and raises security issues.

Table 20: Availability of Toilet Facility in the Household, Kajalgaon Master Plan Area, 2011(% of HHs)

Latrine Facility	Chatibor Gaon Census Town	Revenue Villages in the KMP	Kajalgaon Master Plan (KMP ) Area
Number of households having latrine facility within the premises	54.2%	31.5%	34.3%
Number of households not having latrine facility within the premises	22.9%	34.2%	32.9%
Public Latrine	3.4%	2.6%	2.7%
Open defecation	19.5%	31.6%	30.2%

Source: District Census Handbook, Census of India 2011

The table depicts the percentage distribution of the availability of latrine facilities across households in Kajalgaon Master Plan Area. The availability of toilet within the premises is reported by only 34.4 per cent households within the total master plan area. However, inChatibor Gaon Census Town ,54.2 per cent have toilets within the house premise, while this figure in the remaining KMP area is 31.5 per cent households. Overall, 32.9 per cent households in the KMP have toilets outside the house.However, the distressing practice of open defecation was reported by 30.2 per cent households in the total master plan area during the Census 2011 exercise. In the census town the figure is 19.5 per cent while in the revenue villages of KMP, more than 31 per cent households reported defecating in the open.

Table 21: Type of Latrines used in the Kajalgaon Master Plan Area, 2011(% of HHs)

Latrine Facility		Chatibor Gaon Census Town	Revenue Villages in the KMP	Kajalgaon Master Plan (KMP ) Area
Flush/pour flush latrine	Piped sewer system	2.3%	14.9%	12.5%
	Septic tank	21.7%	43.7%	39.5%
	Other system	44.3%	19.2%	24.0%
Pit latrine	With slab/ventilated improved pit	3.7%	5.2%	4.9%
	Without slab/open slab	18.7%	12.9%	14.0%
Night soil disposed into open drain		0.05%	1.9%	1.7%
Service latrine	Night soil removed by human	4.3%	0.0%	0.8%
	Night soil serviced by animal	3.3%	2.4%	2.6%

Source: District Census Handbook, Census of India 2011

An in-depth analysis of the available toilet facilities depicts that majority of the households use the flush/pour flush latrine in the KMP area. Nearly 75.9 per cent households (12.5%+39.5%+24.0%) use versions of the flush/pour flush latrine, while the outdated Pit Latrine system is used by 18.9 per cent of household within the master plan boundary. The distressing practice of disposing the night soil into open drains and pits was reported by little more than 1 per cent households, as well as night-soil removal by humans and animals is reported by 3.4 per cent households in the planning area, but it is necessary to address this matter and take the numbers to zero.

Although the 2011 Census data provides a concerning scenario of sanitation in the Kajalgaon Master Plan Area, the launch of Swacch Bharat Mission on 2<sup>nd</sup> October 2014 have addressed the problem somewhat. Individual Household Latrines (IHHLs), as well as Community/Public toilets(CT/PT) have been constructed in the Kajalgaon Municipal Town. The scheme has provided toilets in 941 households, while also constructing 1 Community toilets in the municipal area. Infact, the Swacch Bharat Mission has with their efforts also declared Kajalgaon to be an Open Defecation Free city.

Other than the efforts under SBM, the municipality has also constructed community toilets on their own taking the total number of community toilets to 14.

Table 22: Toilets under Kajalgaon Master Plan Area Municipal Town

Toilet type	Units
Individual Household Latrines	941
Community/Public toilets	1

Source: Kajalgaon Master Plan Area Municipal Board, 2022

#### 4.5.3. Availability of Bathrooms

Table 23: Availability of Household Bathrooms in Kajalgaon Master Plan Area , 2011(% of HHs)

Bathroom Facility		Chatibor Gaon Census Town	Revenue Villages in the KMP	Kajalgaon Master Plan (KMP ) Area
Available	Separate Bathroom	16%	23%	22%
	Enclosure without roof	11%	5%	6%
No Bathroom		73%	72%	72%

Source: District Census Handbook, Census of India 2011

From the table above, it is clear that only 28 per cent (22%+6%) of the households under Kajalgaon Master Plan Area have access to bathrooms. For around 6 per cent households this means having an enclosure without roof for bathing. However, it is concerning that a total of 72 per cent households in the KMP area have no bathroom. Within the census town area, 73 per cent do not have bathrooms. In the KMP area outside the census town, 72 per cent households do not have any bathroom at all. Having simple enclosures for a bathroom is very common in more rural areas, where everyone has much open spaces and backyards where a small enclosure ensures privacy for bathing, unlike in more urban areas where lack of backyards makes its mandatory to have enclosed bathrooms for privacy. This indicates that much of the Kajalgaon Master Plan area has rural characteristics in this regard, but shall require to be addressed in the coming years.

#### 4.6. Adequacy of housing for families: Congestion issues

Addressing the issue of congestion is very essential in understanding the adequacy of housing and estimating the shortage of housing in a planning area. It is desirable that a married couple should have one separate room to themselves and their small children.

##### 4.6.1. Household size

The number of family members per household divided by the total population gives the household size of the planning area. In the case of Kajalgaon Master Plan Area, the average family size is 4.89 persons. The following table shows the number of person per household in Kajalgaon Master Plan Area .

Table 24: Household Size in Kajalgaon Master Plan Area , 2011

Year	Number of Households	Total Population (in numbers)	Number of Persons per Household
2011	11540	56431	4.89

Source: District Census Handbook, Census of India 2011

##### 4.6.2. Number of married couples per household

The table below shows that majority or 74 per cent of the households in Kajalgaon Master Plan Area have one married couple. Two married couples are usually seen in Indian households, when married son and parents live together. There are 14 per cent (1672HHs) households in Kajalgaon Master Plan Area with more than two married couple in the household.

Table 25: Percentage of Households with the number of Married Couples, Kajalgaon Master Plan Area , 2011

No. of Married Couples in a Household	Chatibor Gaon Census Town	Revenue Villages in the KMP	Kajalgaon Master Plan (KMP ) Area
None	13%	12%	12%
1	71%	74%	74%
2	12%	12%	12%
3	3%	2%	2%
4	1%	0%	0%
5+	0%	0%	0%

Source: District Census Handbook, Census of India 2011

### 4.6.3. Availability of exclusive rooms per household

Again the table below shows that most of the households in Kajalgaon Master Plan Area have one room(37% HHs) and two (32% HHs)rooms per household, while 2 per cent households have no exclusive rooms. Looking at the data from the Census town of Chatibor Gaon, it is found that more than 50 per cent households have one-room households. It is households with no exclusive rooms or just one exclusive room that are mostly likely to look for alternate housing as the family grows. Within Kajalgaon Master Plan area, the Census data shows that 4483 households fall in this category of households.

Table 26: Number of Rooms available in a House per Household, Kajalgaon Master Plan Area , 2011

No. of rooms	Chatibor Gaon Census Town	Revenue Villages in the KMP	Kajalgaon Master Plan (KMP ) Area
No exclusive room	2%	2%	2%
One room	50%	35%	37%
Two rooms	29%	32%	32%
Three rooms	11%	14%	14%
Four rooms	5%	9%	8%
Five rooms	1%	4%	3%
Six rooms and above	1%	4%	4%

Source: District Census Handbook, Census of India 2011

### 4.6.4. Number of members per household

Here again the table below shows that in the Kajalgaon Master Plan Area, majority of households (9705HHs) in Kajalgaon Master Plan Area have 3 or more members in the households. However, the area to be addressed is for the households with members shall require separate rooms as children grow up, marry and continue to stay in the same house.

Table 27: Number of family members per Household, Kajalgaon Master Plan Area , 2011(No. of HHs)

No. of family members	Chatibor Gaon Census Town	Revenue Villages in the KMP	Kajalgaon Master Plan (KMP ) Area
1	63	268	331
2	124	730	854
3	215	1622	1837
4	321	2456	2777
5	329	1955	2285
6-8	442	2364	2806
9+	112	539	651
TOTAL	1607	9933	11540

Kajalgaon Master Plan area have large sized households, while from the table of number of exclusive rooms in table prior to this, showed that majority of households have one exclusive room. Thus, Kajalgaon Master Plan area would be most likely to look for alternate housing if provided with affordable housing.

#### 4.6.5. Housing Shortage/Congestion in Kajalgaon Master Plan Area

From the tables above, the scenario that emerges is thus,

Sl. No.	Household Congestion Status	No. of HHs	% of HHs
1	More than 6 members in the household	3456	30%
2	More than 1 married couple	1672	14%
3	Households with no exclusive room	184	2%
4	Households with 1 family member	331	3%
<b>Physical Condition of the Dwelling Units</b>			
5	Temporary, non-serviceable DUs	1153	10%
6	Dilapidated houses	1747	15%
7	Non-permanent Roofing material	1240	10.8%
8	Unsanitary latrines	1416	12%

*Source: Analysis by T&CP, Chirang*

From the above table it is evident that household congested living condition in Kajalgaon is not a significant problem at all. There are very few households with no exclusive rooms, and from the available census data it is not possible to analyse the households looking to expand their homes due to congestion.

However, a look at the physical condition of the homes in the same table suggests that more than 10-15 per cent households shall require retrofitting and home improvement to be able to live in hygienic and safe living conditions. Thus the master plan proposals may focus on providing better housing infrastructure to the households in Kajalgaon area.

## Chapter 5: Transportation

### 5.1. Network of roads

Transportation facilitates commerce and communication. It provides access to places of employment, recreational centres and medical facilities. It is also the engine of economic growth. It is an integral component of supply chain management and therefore, a sound transportation infrastructure is crucial for maintaining price stability.

Road and Rail network plays a vital role in the urban planning, and traffic and transportation are considered as a function of land use planning. Transport network are considered as the lifeline of the city and if any bottleneck or obstruction arises, it will pose severe threat to the day-to-day life of the people. A good road and rail network is a symbol of sound development of a city. A bad transportation infrastructure on the other hand makes vehicles susceptible to wear and tear, increases fuel consumption of automobiles, and increases the likelihood of accidents.

The study of transportation helps in understanding the existing situation, potentials, weaknesses, etc. and consequently aids to draft out strategies and projects for future development.

Table 28: Status of roads in the Kajalgaon Municipality

Total length	Surfaced				Unsurfaced		
	Water bound macadam	Black top/Cement concrete	Paver Block Road	Total	Motorable	Non motorable	Total
127 kms		63 kms		63 kms	44 kms	20 kms	64 kms

Source: Kajalgaon Municipal Board, 2021

As per Kajalgaon Municipality Board, there are 127 kms (approx.) total length of road within the municipal area. Of this, nearly 63 kms is black topped. KMB reports nearly 44 kms of motorable roads, while 20 kms of non-motorable roads.

## 5.2. Parking

There is one bus-stand, auto-stand and taxi stand each with the Kajalgaon Municipal Area, as per the Municipality records. However, being established along the National Highway, there are informal on-street parking seen along the length of the town. The concentration of shops and vendor activities along the intersections of Chapaguri, Dhaligaon and Kajalgaon junctions create some traffic concentration during peak hours.

Each of the three intersections are marked by commercial activities which results in higher traffic activities. There are some on-street parking seen along all three intersections, while there are some designated parking spots along the Dhaligaon market and Kajalgaon markets at their intersections each.

Figure 4: Chapaguri Traffic Intersection







### 5.3. Traffic Volume Analysis

Being placed along the National Highway, fast moving traffic is a constant feature within the master plan area. However, the mushrooming of commercial activities along important road intersections and junctions throw up various traffic issues. To understand the traffic flow and volume, a traffic volume survey was conducted by the office of T&CP, Chirang.

Across the Kajalgaon Master Plan area, studies have been conducted in 10 locations to during three periods during the span of the day, i.e., 9:30-10:30AM, 12:30-1:30PM and 3:30-4:30PM. The 10 selected locations were,

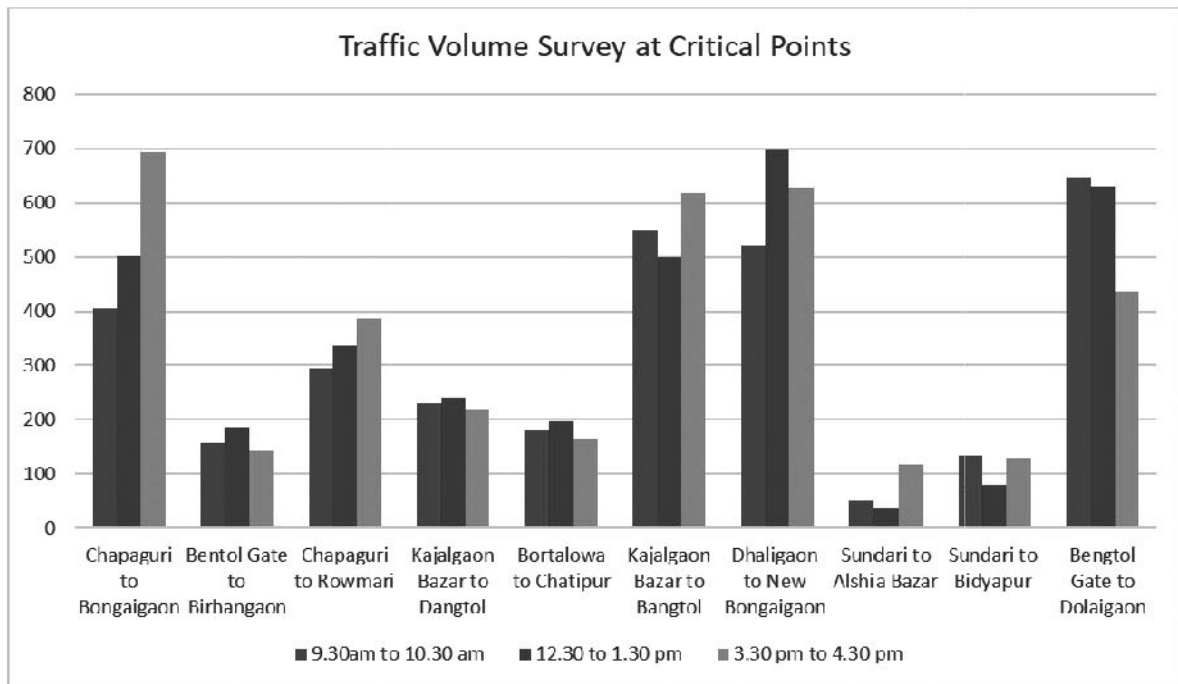
- 1) Chapaguri to Bongaigaon
- 2) Bentol Gate to Birhangaon
- 3) Chapaguri to Rowmari
- 4) Kajalgaon Bazar to Dangtol
- 5) Bortalowa to Chatipur
- 6) Kajalgaon Bazar to Bangtol
- 7) Dhalogaon to New Bongaigaon
- 8) Sundari to Alshia Bazar
- 9) Sundari to Bidyapur
- 10) Bengtol Gate to Dolaigaon

Figure 7: Traffic Volume Study: 10 Locations



Source: Study locations marked on Google image

Figure 8: Traffic Volume Study at 10 locations across Kajalgaon Master Plan area



Source: Traffic Volume Survey conducted by O/O Assistant Director, T&CP Chirang

The traffic volume was found to be highest during all the three time-periods at Chapaguri to Bongaigaon, Kajalgaon to Bangtol and Bangtol to Dolaigaon. All the three locations are the three liner locations around Bongaigaon Refinery and its township. The movement to Bengtol at location 6, Kajalgaon to Bengtol sees heavy traffic, indicating the importance of Bengtol for urban activities.

## Chapter 6: Infrastructure, Public Utilities, Services

### 6.1. Water Supply

Water supply source within the premises for cooking, cleaning and bathing is considered as the most essential need for healthy living. Providing treated water, available 24X7 all year round is a major function of municipalities. It is also a source of revenue for the local bodies. However, no notified town in Assam has complete coverage under water supply schemes. Unfortunately, the existing partial schemes that are present in the few towns are dysfunctional. Therefore, majority of the urban population has to be self-dependent for accessing water.

Table 29: Location of water source, Kajalgaon Master Plan Area , 2011(% of HHs)

Location of source	Chatibor Gaon Census Town	Revenue Villages within Master Plan	Total Kajalgaon Master Plan Area
Within premises	60%	62%	62%
Near premises	14%	22%	21%
Away	26%	16%	17%

*Source: District Census Handbook, Census of India 2011*

Nearly 62 per cent households in the Kajalgaon Master Plan Area have their water source within their premises. In the Chatibor Gaon Census Town, 60 per cent households have water source within their premise, while in the revenue villages in the KMP area 62 per cent have water source in their premises. Nearly 38 per cent have their water source outside their premise or away from it. Within the Census town, nearly 26 per cent households do not have water source within their premises.

The following table gives the percentage distribution of the sources of drinking water in Kajalgaon Master Plan Areas per the Census 2011:

Table 30: Main Source of Drinking Water in Kajalgaon Master Plan Area , 2011(No. of HHs)

Sources	Chatibor Gaon Census Town	Revenue Villages in the KMP	Kajalgaon Master Plan (KMP ) Area
Tap-water from treated source	3%	3%	3%
Tap-water from un-treated source	1%	1%	1%
Covered well	2%	3%	3%
Un-covered well	47%	51%	50%
Hand-pump	7%	22%	19%
Tube-well/Bore-hole	25%	10%	12%
Spring	0%	0%	0%
River/Canal	0%	1%	1%
Tank/Pond/Lake	0%	1%	1%
Other Sources	16%	8%	9%

Source: District Census Handbook, Census of India 2011

In the entire Kajalgaon Master Plan Area, the need for water is primarily met through private means. Almost half of the households, i.e., 50 per cent households in the total master plan area source their water from uncovered wells, while 20 per cent are dependent on hand-pumps. Within the census town, 25 per cent households are dependent on Tube-well/Bore-well, while 47 per cent household reported depending on uncovered wells.

### 6.3. Access to Drainage

As per Census 2011 data, 89 cent households in the total Kajalgaon Master Plan Area do not have any access to household level waste water drainage, while in the Census town more than 96 per cent households have no access to drainage. About 2 per cent households have access to closed drains in the total Master Plan area, while about 9 per cent have access to open drains. The lack of drainage indicates the dependency of the residents on leaving water within their own backyards, creating unhygienic conditions. Largely due to insensitivity of the public, garbage is often thrown in whatever open drains are available, making the drains redundant.

Table 31: Condition of drainage access in the Kajal Gaon Master Plan Area, 2011

Condition of Drainage	Chatibor Gaon Census Town	Revenue Villages in the KMP	Kajalgaon Master Plan (KMP) Area
Closed drainage	1%	2%	2%
Open drainage	3%	10%	9%
No drainage	96%	87%	89%

Source: District Handbook of Chirang, Census 2011

#### 6.4. Solid Waste Management

Solid Waste Management refers to the practice of collecting, treating and disposing municipal wastes originating from materials which have lost its purpose and are of no value, in accordance with the principles of public health, engineering, economics, aesthetics, etc. The sources of municipal solid wastes are- (i) residential wastes (ii) commercial wastes (iii) wastes from rituals (iv) de-silting wastes and (v) treated bio-medical wastes. According to the Solid Waste Management Rules, 2016, all the urban local bodies are responsible for Solid Waste Management activities within their respective jurisdiction.

In Kajalgaon municipal town, the waste collection has been taken up under the Swachh Bharat Mission scheme. A local self-help group, Saksham is engaged in door-to-door collection of garbage from the entire town and transporting to the solid waste processing facility. The details of municipal waste collection in Kajalgaon Municipal Area are as follows, -

Table 32: Solid Waste Management scenario in Kajalgaon Municipal Town, 2021

Total wards covered	4
Wards covered under door to door collection	2
Wards covered under Segregation of waste	1
Average waste generation	2.4 TPD
Average waste processing	1.8 tPD

Source: Kajalgaon Municipal Board, 2021

Table 33: Solid waste treatment facility at Kajalgaon town

Facility Type	Capacity (TPD)	Type of waste processed	End Product
Centralized Plant	Nil	Nil	Nil
Decentralized (6 nos.)	0.9	Wet	Manure
Decentralized (3 nos.)	0.8	Dry	Recycled product
MRF	1	Dry	Recycled product

Source: Kajalgaon Municipal Board, 2021

## 6.5. Social Infrastructure

The Sustainable Development Goals 2030 aims at ensuring peace and prosperity by addressing social needs of for people globally – specifically, ending poverty and other deprivations must go hand in hand with strategies that improve health and education, to begin with. Access to social infrastructure such as schools and institutions of higher and vocational education, as well as health care ensures a well-developed and progressive community.

### 6.5.1. Educational facilities

Kajalgaon Municipal Town being a smaller municipality has 14 educational institutions from primary schools to degree colleges. Of these 9 are primary and high schools, and 3 senior secondary schools. There are 2 colleges for undertaking graduate education in the town.

Table 34: Statu of Education Institutions in the Kajalgaon Municipal Board area , 2021

Sl	Educational institution	No. of units
1	Primary schools	7
2	High schools	2
3	Sr. Secondary schools	3
4	Colleges	2
Total		14

*Source: Kajalgaon Municipal Board, 2021*

As per the District Census Handbook of Chirang, 2011, there are anganwadis present in all the revenue villages as well the census town.

### 6.5.2 Health-care facilities

An adequate and well-distributed health infrastructure is crucial for efficient and timely response to health crisis. A quality health infrastructure plays a vital role in controlling various health related parameters like life expectancy, mortality rate, etc. to respectable level, and is also found to have a positive impact on speedy recovery from diseases. A sound health system is accessible and delivers high quality care at reasonable price. The following table shows the presence of healthcare institutions in the Kajalgaon Municipal Town as per the Census 2011 data.

**6.6. Daily markets, weekly haats, etc**

The Kajalgaon town has many commercial areas serving the residents of the Kajalgaon town, as well as the surrounding areas. These include the following daily markets,

-

In the rest of the revenue villages, only four have regular markets available within them, while 17 of the villagers are dependent on weekly haats for their needs. Only four of the villages have Agricultural marketing societies. Barring, four of the revenue villages, all others have Public Distributions System shops within the Kajalgaon Master Plan Area.



## Chapter 7: Land Use Plan and Proposals

### 7.1. Kajalgaon Master Plan Area: Existing land uses

The delineated Master Plan area for the Kajal Master Plan covers 85.10 sq.kms, of which a little above 10 per cent is covered by the town of Kajalgaon covering 11.6 sq.km.



However, in terms of use of the land revenue records, nearly half of the existing master plan area is under agriculture, i.e., more than 44 sq.kms is agriculture land. The next largest share is under residential which covers more than 24 per cent of existing land use. The next significant share is of the grazing reserves with 6.9 sq.kms or 7.73 per cent of total master plan area. However, on the ground it is seen that much of the grazing land has already been utilized under commercial and other public and semi-public uses. The Bongaigaon Refinery covers 3 sq.kms or 3.37 per cent of the land use as industrial use.

Table 35: Existing Land use of Kajalgaon Master Plan Area

<b>Types of Landuse</b>	<b>Area (in Sqm)</b>	<b>Area (in SqKm)</b>	<b>%</b>
Agriculture	44284563.3800	44.2846	<b>49.56%</b>
Barren Land	543983.5290	0.5440	<b>0.61%</b>
BGR Township	772920.8085	0.7729	<b>0.87%</b>
Commercial	668870.7851	0.6689	<b>0.75%</b>
Grazing Reserve	6904857.7500	6.9049	<b>7.73%</b>
Industry	3005933.7750	3.0059	<b>3.36%</b>
Public & Semi-Public	2868803.9020	2.8688	<b>3.21%</b>
Railway	110161.9107	0.1102	<b>0.12%</b>
Residential	24450162.1200	24.4502	<b>27.36%</b>
Road	3148734.1790	3.1487	<b>3.52%</b>
Waterbody	2595383.7640	2.5954	<b>2.90%</b>
<b>Grand Total</b>	<b>85354375.9033</b>	<b>85.3544</b>	<b>100.00%</b>

Source: Calculated by the O/O the AD, T&CP, Chirang from the Revenue Records

## 7.2. Proposed Land use

Keeping in view the administrative importance of the Kajalgaon area as the district headquarter town, a proposed land use is presented for planning the future development of the town and its peripheral areas. Following the URDPFI Guidelines by the Ministry of Urban Affairs in 2015, the land use share is revised to adjust the projected population increase and resultant urban developments.

Table 36: Proposed Land use of Kajalgaon Master Plan

<b>Types of Landuse</b>	<b>Area (in Sqm)</b>	<b>Area (in SqKm)</b>	<b>%</b>
Agriculture	34161799.3611	34.1618	<b>38.23%</b>
Barren Land	543983.5290	0.5440	<b>0.61%</b>
BGR Township	772920.8085	0.7729	<b>0.87%</b>
Commercial	2730316.1500	2.7303	<b>3.06%</b>
Grazing Reserve	6904857.7500	6.9049	<b>7.73%</b>
Industry	3005933.7750	3.0059	<b>3.36%</b>
Public & Semi-Public	2923316.5330	2.9233	<b>3.27%</b>
Railway	110161.9107	0.1102	<b>0.12%</b>
Residential	32451424.3000	32.4514	<b>36.32%</b>
Road	3154278.0220	3.1543	<b>3.53%</b>
Waterbody	2595383.7640	2.5954	<b>2.90%</b>
<b>Grand Total</b>	<b>89354375.9033</b>	<b>89.3544</b>	<b>100.00%</b>

Table 37: Comparative Analysis of Land use in Kajalgaon Master Plan Area

Types of Landuse	Existing Land use		Proposed land use	
	Area (in SqKm)	%	Area (in SqKm)	%
Agriculture	44.28	0.50	34.16	0.38
Barren Land	0.54	0.01	0.54	0.01
BGR Township	0.77	0.01	0.77	0.01
<b>Commercial</b>	<b>0.67</b>	<b>0.01</b>	<b>2.73</b>	<b>0.03</b>
Grazing Reserve	6.90	0.08	6.90	0.08
Industry	3.01	0.03	3.01	0.03
<b>Public &amp; Semi-Public</b>	<b>2.87</b>	<b>0.03</b>	<b>2.92</b>	<b>0.03</b>
Railway	0.11	0.00	0.11	0.00
<b>Residential</b>	<b>24.45</b>	<b>0.27</b>	<b>32.45</b>	<b>0.36</b>
Road	3.15	0.04	3.15	0.04
Waterbody	2.60	0.03	2.60	0.03
<b>Grand Total</b>	<b>89.35</b>	<b>1.00</b>	<b>89.35</b>	<b>1.00</b>

From a comparative analysis of the existing and proposed land uses, it is seen that the land uses have been adjusted to include more area residential, commercial and public-semi public uses. From the decrease in the share of agriculture land use, it is evident that existing agricultural land shall be converted for non-agricultural uses, especially to accommodate residential uses.

## **Chapter 8: Project Proposals**

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### **8.1. Multi-storied shopping complex with parking facilities at Kajalgaon Bazar**

Construction of Multi-storied shopping complex/ Construction of Multi-utility Building at Daily Market, Kajalgaon is one of the urgent projects to be taken up in Kajalgaon. A plot of land measuring 4 Bighas is available for this project. A portion of land can be developed for the said project, as well as providing parking facilities.

### **8.2. Development and maintenance of Kujia Riverfront and Milan Park as Recreational area**

Kujia river passes through the centre of Kajalgaon town and is proposed for riverfront development towards the southern side of the NH 31C. The Milan park and pond is situated in front of the Deputy Commissioner's office and covers an area of about 10 bigha, which if developed properly shall provide an excellent facility for jogger's park, sports practice, etc.

### **8.3. Construction of Town Hall**

A plot of land measuring 1 bigha in at Ward No.4 at Chapaguri is available for construction of a town hall in Kajalgaon.

### **8.4. Construction of auditorium cum library**

Behind the current Kajalgaon Municipal Board office, the development of an Auditorium and library is proposed on a plot of land measuring 2 katha and 10 Lessa, belonging to the Kajalgaon Municipal Board.

The project costs shall be figured out during the project planning basis, while the funding sources for these projects are usually under States Own Priority Development (SOPD).

## **Chapter 9: Disaster Management Plan**

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### **9.1. Need for Disaster Management-**

Kajalgaon falls under Seismic zone v data on disaster occurrence, its effect upon people and its cost to counties are primary inputs to analyze the temporal and geographical trends in the 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 released. 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 reducing natures.

Development cannot be suitable unless disaster mitigation is built into development process. Investment in the mitigation are more cost effective than expenditure on relief and rehabilitation, prevention and mitigation contribute to lasting improvement in safety and are essential to integrated disaster management. Disaster response alone is not sufficient as it yields only temporary results at very high cost. So emphasis must be on disaster prevention, mitigation and preparedness, which help in achieving objectives of vulnerability reduction. As per section 40 of Disaster Management Act-2005 that every department of the State Government shall prepare Disaster Management plan.

### **9.2. Plan objectives**

The objectives of the district disaster management plan are-

- i) Disaster Management in the routine affairs of the department.
- ii) To provide technical and humanitarian assistance during disaster.
- iii) Promote and effective disaster of departmental responsibilities during disaster situations.
- iv) Ensuring safety of departmental infrastructure, human resource and other assets.
- v) Ensuring safety of the beneficiaries and others.
- vi) Speedy restoration after disaster impact.

- vii) To conduct training and Capacity building for effective prevention, mitigation and respond for disaster.

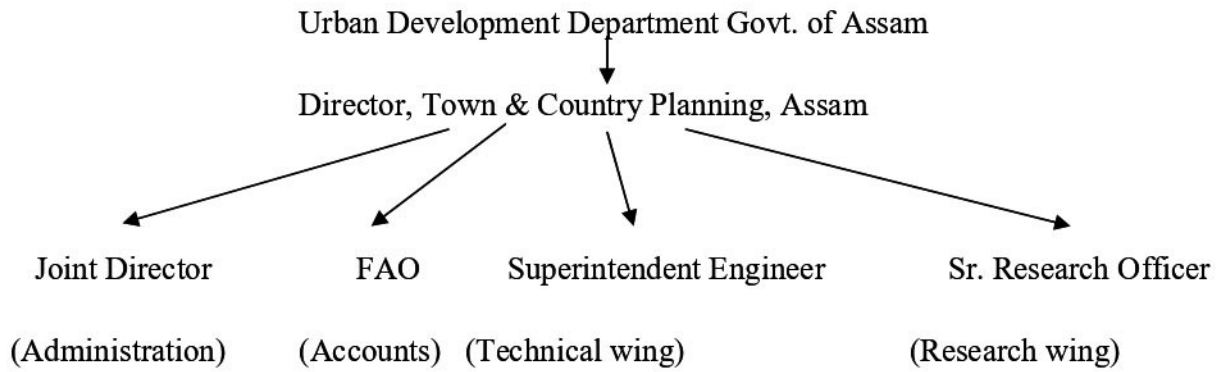
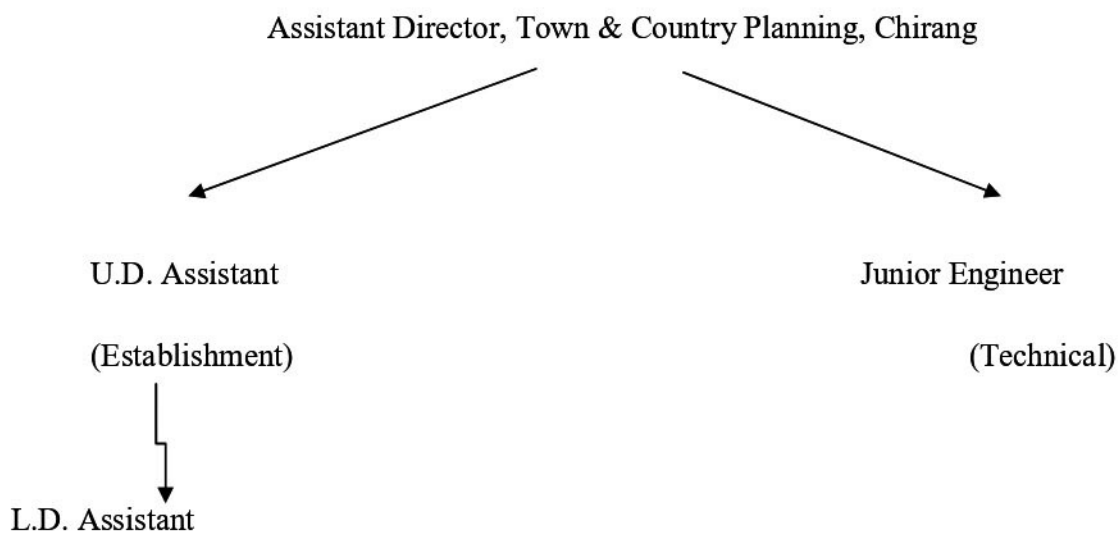
### **9.3. Objectives of Departmental Disaster Management Plan:**

The objectives behind the preparation of the Departmental Disaster management plan by the Town & Country Planning, District Office, Chirang:

- To mitigate impact of natural and manmade disasters through preparedness at the District/town level.
- To provide effective support and resources to all the concerned individuals, groups and departments in disasters.
- To disseminate factual information in a timely, accurate and tactful manner while maintaining necessary confidentiality.
- To develop immediate and long-term support plans for vulnerable areas during disasters.
- To have response system in place to face any eventuality related to disruption of urban infrastructure.
- To ensure active participation with the Government administration, communities, GOs and volunteers at the time of disasters.
- To equip the staff with the knowledge and skills for assessing delineating, strategies and delivering their roles in relation to risk mitigation, prevention and implementation of effective response to the extreme events.
- To enable understanding on the integration of Climatic Change Adaptation (CCA), Disaster Risk Reduction (DRR) and sustainable developments and their associated impacts and challenges in providing infrastructural support to the rescue and rehabilitation team.

To ensure that, standard code of practices such as National Building Code (NBC), Bureau of Indian Standard (BIS) code, Seismic codes etc. are followed by the department for design and construction of infrastructure to minimizing the effects for disasters.

### **9.4. Profile of the Department:**

**9.4.1. Functional Organization structure at State, District and Local Levels:****At State Level :****District Level :**

**At Local Level :** T&CP, Assam does not have any local office

### 9.5. Inventory of Departmental Resources:

- a) Resource :- Department provide technical support.
- b) Capacity :- Officials to be trained for Earthquake engineering & Rapid Visual Screening etc.
- c) Resources at office level.

Sl. No.	Resources	Quantity	Location
1	Tools & Plants	NIL	At Office
2	Computer Set	02	At Office
3	Safety Locker	NIL	At Office
4	Xerox Machine	01	At Office

### 9.6. 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.

#### 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 supply, transportation)
2. Reconstruction and rehabilitation.

**9.7. Main tasks of the department and possibilities of integration of related disaster management aspects**

**9.7.1. Main tasks of the Department:**

The primary responsibilities/activities of Town & Country Planning, District Office, Chirang is to prepare Master Plan for the urban areas of the district. While preparing the Master Plan a few sub-urban areas are also included in the Master Plan to cope up with the increased population load. Very recently it has been decided to incorporate the physical maps like Land use Plan, Zoning Plan, Transportation Plan, etc. in GIS platform. It has also been decided to make the Master Plan more comprehensive and useful in the field of drainage too and accordingly decided to club Physical Master Plan and Drainage Master Plan together.

Some of the important tasks under this department are as follows:

**i) Implementation of Master Plan :**

It is the responsibility of this Office to guide the growth of the urban areas of the District so that un-haphazard growth may not create chaos in future and the growth restricted within the Master Plan boundary. It provides technical guidance to the Implementing Agency in every aspect related with Implementation of Master Plan.

**ii) Enforcement of Zoning Regulations :**

It is the task of this office to enforce Zoning Regulations within the Master Plan Boundary and the town boundary as the case may be, by scrutinising land sale and building

permission applications on the basis of Proposed Zoning Plan. The cooperation from the implementing agencies like Kajalgaon Municipal Board, Basugaon Municipal Board & Bijnani Municipal Board in the district is highly essential in exercising this role. Presently though scrutiny of building permission applications are done by the district office T&CP, in the Chirang district, the scrutiny for land sale permission application are not enrooted through T&CP office. Due to non 100% implementation/compliance of the Assam Notified Urban Areas (other than Guwahati) Building Rules, 2014 by the ULBs/Authority the vary purpose of safety against manmade disaster could not be obtained.

#### **9.7.2. Possibilities of integration of related disaster management aspects:**

It is difficult to predict the accurate time, location, magnitude of any disasters. So, the departmental construction works should always be concerned with the disasters whether known or unknown or unforeseen. Hence, the construction of infrastructure should be planned/ designed and construct it in conformity with the standard code of practices utilizing sound materials and workmanship. To maintain the quality of the construction works, the laboratory tests plays a vital role. The weak structures are to be identified and should be strengthened by retrofitting through qualified and expert engineers up to the extent possible. More dilapidated structure are to be evacuated and dismantled as per standard guidelines.

- Disaster Vulnerability Maps to be collected from the District Disaster Management Cell and to be incorporated in the Revised Master Plan.
- Strict enforcement of Zoning Regulations will provide safer structure to live in and will also provide ample space for movement of personnel during disaster.
- A systematic and comprehensive Solid Waste Management strategy will reduce the chances of spreading of epidemic as a consequence of disaster to a great extent.
- Preparation of Drainage Master Plan and its implementation is a most to reduce the chance of occurrence of flood.
- All requisite road Cautionary, Mandatory, Informatory signs as per IRC guidelines have to be erected in proper places and a systematic traffic control system is to be provided to minimize occurrence of road accidents.

- Marking of roads will help in effective utilization of road networks during rescue and rehabilitation process.

A District Map is to be displayed in proper place locating all important infrastructures and life line building including a road direction map. Important contact numbers is to be displayed in public place so that the same can be utilised at the time of need.

### 9.8. Office Building:

This Office is running in the campus of the District Centre, Kajalgaon.

### 9.9. Status of Employees:

Sl. No.	Staff Strength & Pattern	Total	Male	Female
1	Asstt. Director	1	1	-
4	UDA	1	1	-
5	LDA	2 (1 Vacant)	1	-
6	Junior Engineer	2 (1 Vacant)	1	-
<b>TOTAL :-</b>		<b>6 (2 Vacant)</b>	<b>4</b>	<b>Nil</b>

### 9.10. Manpower Office Profile:

At present there are 04 (four) nos. of employees engaged with the District Office in different sectors, cadre and capacity. The details manpower of the office is as below:

Sl. No.	Name of Incumbent	Contact No.	Designation	Role & Responsibility	Responsible Deptt./Cell
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1	Sri Neejyoti Das	9864577108	Asstt. Director	Overall office management works as DDO	Overall management
2	Sri HridayKamar Brahma	995480501	U.D.A.	Pay Bill & Expenditure statements etc.	Establishment Branch
4	Sri Bijoy Kumar Sarma	7002374256	J.E. (C)	Monitoring & Supervision of works.	Technical Branch
5	Sri Jagannath Kachary	9954384821	L.D.A.	Pay Bill & Expenditure statements etc. and assistance to the U.D.A.	Establishment Branch

### 9.11. Preparedness & Response System

Department	Response System			
	Preparedness	Pre (after Waning)	During Disaster	Post Disaster
Town & Country Planning	<input type="checkbox"/> Capacity building (training) & sensitization among departmental official & staff <input type="checkbox"/> Assessment of existing department building & other hazard's. <input type="checkbox"/> Identification of vulnerable building (Safety Audit) in towns and necessary direction to Urban local Body's for necessary action. <input type="checkbox"/> Evacuation Plan in high rise and life line building.	<p>Pre preparedness in case of a disaster like flood, earthquake etc. Collection of some construction materials like bamboo, rope, wire, wood, sand, cement bags, first aid kit etc. Will be kept ready.</p> <p>Coordination with District Disaster Management Authority</p> <p>Dissemination of information for early warning to general public with the agencies as DDMA.</p>	<p>During disaster this department will provide technical manpower support to restore essential services and coordinate with DDMA.</p>	<p>After the disaster this department will make assessment of destruction and report to District Admin.</p> <p>Identification of rehabilitation site</p> <p>Modification of Master Plan</p> <p>Preparation of any new Master Plan for affected areas.</p>

### **9.12. Prevention and Mitigation Plan for Multi-Hazards:**

Disaster may occur in the forms of flood, urban flooding, cloud bursting, earthquake, cyclone, storms, fire, land slide etc. an effective prevention and mitigation plan will minimize the loss of life and property and accordingly, the following aspects have been laid down in this regards.

- All RCC structures have to be designed considering seismic parameter as per BIS code of practice.
- Repair of already damaged structures.
- Construction of causeways in locations those are more vulnerable during breaching of river guide bunds to pass out huge quantity of flood water safely without damaging the communication network.
- Cleaning of drainage structures to regulate the water flow.
- Pre-monsoon desalting of all major drains will be completed by March 31 each year.
- Besides the pre-monsoon desalting of drains, the periodicity of cleaning drains should be worked out, based on the local conditions. The roster of cleaning of such drains should be worked out and strictly followed.
- Inlets to drain the water from the roads into the road side drains will be provided where nonexistent and properly aligned.
- All waste removed both from the major and the minor drains should not be allowed to remain outside the drain for drying, the wet silt should be deposited in to a seamless container and transported as soon as it is taken out from the drain. In exceptional cases, the silt may be allowed to dry for about 4 to 24 hours outside the drain before transporting the semi solid silt for disposal.
- Completion of work will be certified by representatives of local Residents/Municipal ward Commissioner.
- The manual on solid waste brought out by the CPHEEO, MoUD (2000) will be followed in cleaning shallow surface drains.
- De silting of minor drains will be carried out as part of a regular preventive maintenance schedule.
- Cleaning of minor drains will be taken up from the out late to upstream side.
- Ageing systems will be replaced on an urgent basis.

- Every building shall have Rain Water Harvesting as an integral component of the building utility.
- Encroachment on drains and in flood plains will be removed.
- Adequate budget will be provided to take care of the men, materials, equipment and machinery. Special funds will be provided for safety equipment of the personnel carrying out maintenance of man-entry drains, culverts.
- Repairs of existing damaged cross drainage and construction of new one as per requirement.
- Adopt, accept and implement latest technical knowhow and skill in Construction Industry for more acceptability.
- Introduce various codes of practices and recommendations as received from the various competent organizations.
- Arrange for mitigation fund within the department through budgetary provisions.
- A key road map of the district which will guide the supply of materials and equipments to the concerned points from the storage place of various departments.
- Regularly capacity building training for staff to be undertaken for vulnerability assessment of critical lifelines and developed mitigation option at the review meeting with the Urban Local Bodies and Development Authority.

Massive Public Awareness Programmes covering solid waste disposal, problems of encroachment involving elected Public Representative in awareness generations.

### **9.13 Standard Operating Procedure:**

An efficient, well-coordinated and rapid action response mount in the consequence of disaster not only minimizes loss of life and property but also facilitates early recovery of normalcy.

The important ingredients of an effective response system are:

- Integrated institutional arrangements,
- Forecasting and early warning systems;
- Well organised and foolproof communication system;
- Quick deployment of specialized response forces

All the officers and staff must clearly understand their roles and responsibilities and the specific actions they have to take for responding to disaster or threatening disastrous situations.

This SOP lays down, in a comprehensive manner outlining the role, with direction for the specific actions required to be taken by all concerned in the department.

**9.14. The objectives of the SOP:**

1. To provide, in a concise and convenient form, a list of major executive actions involved in responding to natural disasters and necessary measures for preparedness, response and relief required to be taken.
2. To ensure that all concerned know the precise measures required of them at each stage.

SOP encompasses the following phases of disaster management for effective and efficient response to natural disasters: -

**9.15. Preparedness:****Emergency Operations Centers (EOCs):**

Control rooms will be set up at the District level.

The objectives of the control rooms shall be to:

1. Receive and process of disaster alerts and warnings from both the towns of the district and other sources and communicate the same to all designated authorities.
2. Monitor emergency operations in and the town areas.
3. Facilitate Coordination with various Organizations, Departments & Agencies during emergencies.
4. Issuing disaster/incident specific information and instructions specific to all concerned.
5. Consolidation, analysis and dissemination of damage, losses and needs assessment data.
6. Forwarding of consolidated reports to all designated authorities.

**Location of control room:**

The Control room will be set up in a suitable location preferably in a multi-hazard resistant building at the District level. Control Rooms will be connected with the respective District Control Room of DDMA, State Control Room at the Directorate of Town & Country Planning, Assam. Well trained personal will be engaged in the operation of Control Rooms.

**Incident Response System (IRS):**

As per the Government of India policy on disaster management, IRS will be integrated into the existing system and Incident Response Teams (IRTs) shall be put in place in the District level by imparting training in different facets of incident management. The emphasis will be on the use of technologies and contemporary systems of planning and execution with connectivity to the joint operations room at all levels.

The members of the IRTs will be imparted specialized training in collaboration with the DDMA, Chirang.

**Pre-contract for Essential Materials/Machineries:**

This Department is not having any equipments/machinery needed for establishing rescue and rehabilitation process and hence the department will enter into pre-contract with the suppliers/contractors for supply of such machineries and when required. A designated officer will be nominated for this purpose.

**Vulnerability assessment:**

The department will make vulnerability assessment and identify potential hazards in and around the towns and will be informed to the local community about their vulnerability to potential hazard through urban local bodies.

**Contact details:**

A comprehensive list of officers involved in disaster management at various levels will be prepared in the district level giving their names, address, telephone numbers, mobile numbers, e-mail address, fax number. The list will be circulated among all concerned.

**Review:**

Annual review of the preparedness measures will be done by the Asstt. Director, Town & Country Planning, District Office - Chirang. Annual review will ensure that all loose ends are tied up so that response during disaster is efficient, effective and time bound.



**Mock Drill :**

Mock exercises will be carried out for testing the effectiveness of all the preparedness measures including man power, equipments etc.

**9.16. Awareness generation:**

The department will carry out Awareness campaign by various means.

**Early warning :**

There are various Nodal agencies for early warning

Cyclone/Storm	Indian Meteorological Department
Heat and Cold Waves	Indian Meteorological Department
Floods	Central water Commission, State Emergency Operation Centre, North Eastern Space Application centre, Dist. Emergency operation Centre.
Forest Fires	Department of Forest

The Control Room Personnel will keep close coordination with these agencies/departments for receiving early warning. They will also regularly check the website of the above organizations. On receipt of early warning, the personnel will inform to all concerned.

**1. Details of budget provision:** - Budget provision is a must for successful implementation of SOP. Necessary direction to be received from Head office regarding such provision related to Disaster.

**9.17. Emergency Support Function (ESF) :**

1. Name of Head: NEEPJYOTI DAS  
OFFICER

NODAL

ASSTT. DIRECTOR, T&CP, CHIRANG (EXECUTION OF SOP)

MOBILE NO :- 9864577108

2. BIJOY KUMAR SARMA, J.E. (C),  
 T&CP, Chirang EXECUTION OF SOP  
 MOBILE NO :-7002374256 & SUPERVISION OF ESF 1&2

### 9.18. Damage Assessment

The team consist of technical person of Building Permit Section of Kajalgaon Municipal Board as mentioned in ESF 1 will do the rapid damage assessment in post disaster

#### 1. Rapid Assessment Team (RAT)

Sl. No.	Particulars	Contact No.	Area	Remarks
1	Sri Bijoy Kumar Sarma	9101384250	Technical supervisor will give necessary direction for field visit.	The officials will assess the ground situation and assist/report to concern DAMT officials and report to control room.

### 9.19. ESF 3 Control Room setup & Logistic:

Sri Hriday Kumar Brahma (CONTROL ROOM INCHARGE)

Mobile No.- 995480501

Sri Jagannath Kachary (DATA COMPILATION & DAILY SITREP TO HEAD & CONCERNED OFFICES)

Mobile No.- 9954384821

**9.20. Command and Control (CC)**

