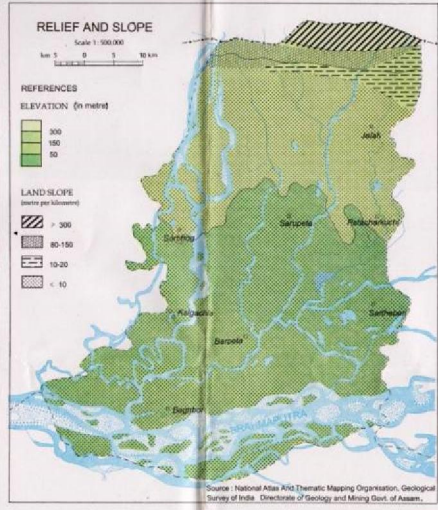
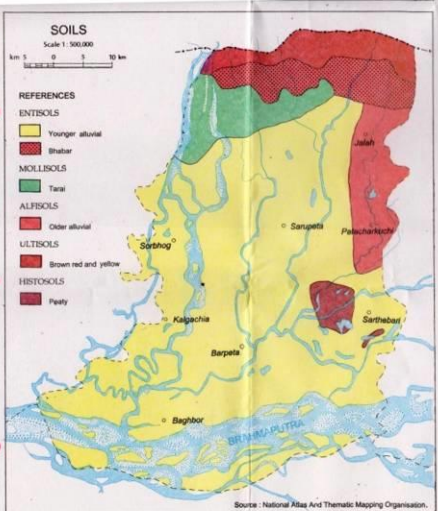


# ANNEXURE 2: FACT SHEET - ENVIRONMENT BASE LINE REPORT

## 1.1 Barpeta

<b>BARPETA</b>													
	<p><b>Topography</b></p> <ul style="list-style-type: none"> <li>The district is situated in the lower Brahmaputra valley of Assam between 26°5'N and 26°51' N latitudes and 90°38'E and 91°20'E longitudes.</li> <li>The district is characterized by almost plain topography.</li> </ul>												
	<p><b>Geology and Soil</b></p> <ul style="list-style-type: none"> <li>The district has soil cover of younger and older alluvial soil which has undergone diversified pedagogical changes. The soils are characterized by medium to high organic carbon and low to medium phosphorous and potash contents. Deep red coloured soil is developed in forested and foothill areas in the extreme northern region and the texture of these soils ranges from clay to sandy loam. The alluvial soils are light yellow to light grey in colour of recent age. The texture of the soil ranges from sandy loam to silty loam in nature.</li> </ul> <p><b>Agro climatic zone</b></p> <ul style="list-style-type: none"> <li>The district falls under the Lower Brahmaputra valley zone (NARP<sup>1</sup>). Rice, Wheat, Maize, Rapeseed, Mustard, Niger, Linseed, Sesame, Black gram, Green gram, Lentil, Pea, Jute, are the major field crops grown here.</li> </ul>												
<table border="1"> <thead> <tr> <th>Parameters</th> <th>Values/Remarks</th> </tr> </thead> <tbody> <tr> <td>Electrical Conductivity</td> <td>Within permissible limit</td> </tr> <tr> <td>Fluoride</td> <td>Within Permissible Limit</td> </tr> <tr> <td>Iron</td> <td>Beyond Permissible Limit</td> </tr> <tr> <td>Arsenic</td> <td>Within permissible limit</td> </tr> <tr> <td>Type of water</td> <td>Fresh and potable</td> </tr> </tbody> </table>	Parameters	Values/Remarks	Electrical Conductivity	Within permissible limit	Fluoride	Within Permissible Limit	Iron	Beyond Permissible Limit	Arsenic	Within permissible limit	Type of water	Fresh and potable	<p><b>Surface Water</b></p> <ul style="list-style-type: none"> <li>Major drainage pattern of the district falls under Brahmaputra, Manas, Kaldia, Pahumara River.</li> </ul> <p><b>Groundwater</b></p> <ul style="list-style-type: none"> <li>As per Central Ground Water Board, the present stage of ground water development is only 41 per cent and district is still under 'safe' category</li> </ul>
Parameters	Values/Remarks												
Electrical Conductivity	Within permissible limit												
Fluoride	Within Permissible Limit												
Iron	Beyond Permissible Limit												
Arsenic	Within permissible limit												
Type of water	Fresh and potable												

<sup>1</sup> National Agricultural Research Project



<b>BARPETA</b>															
<p><b>CLIMATIC CONDITIONS</b> Scale 1: 500,000</p> <p>REFERENCES RAINFALL ZONES (in millimetre)</p> <p>Annual Temperatures (in Degree Celsius)</p> <p>Annual Rainfall (in millimetre)</p> <p>Source: India Meteorological Department.</p>	<p><b>Climate and Meteorology</b></p> <ul style="list-style-type: none"> <li>The climate of the district is sub-tropical and humid. The average temperature ranges from 15° to 30°C. The winter season starts by November and continues till February. December/January is the coldest and July/August is the hottest period. The air is highly humid throughout the year and during rainy season; the relative humidity is about 90 percent. The area receives heavy rainfall every year and out of 2,051 mm of annual normal rainfall, 60 to 65% is received during June to September from south west monsoon. The district also receives rainfall during pre-monsoon period from March/April to May in the form of thunder showers and hail storms.</li> </ul>														
<p><b>Land Use Distribution</b></p> <table border="1"> <tr><th>Category</th><th>Percentage</th></tr> <tr><td>Agriculture</td><td>48%</td></tr> <tr><td>Forests</td><td>22%</td></tr> <tr><td>Grass/Grazing</td><td>8%</td></tr> <tr><td>Barren/Waste land</td><td>1%</td></tr> <tr><td>Built up</td><td>0%</td></tr> <tr><td>Wetland/Water body</td><td>1%</td></tr> </table>	Category	Percentage	Agriculture	48%	Forests	22%	Grass/Grazing	8%	Barren/Waste land	1%	Built up	0%	Wetland/Water body	1%	<p><b>Biodiversity and Forest</b></p> <p><u>Forest</u></p> <ul style="list-style-type: none"> <li>The district covers a forest land of 397 square kilometers. Open forest and moderately dense forest dominates the region covering 46.09% and 45.08% of the total forest land respectively. Whereas very dense forest covers only 8.81%<sup>2</sup>.</li> </ul> <p><u>Flora and Fauna</u></p> <ul style="list-style-type: none"> <li>The district is rich in flora and fauna. Manas National park, a World Heritage Site, with a prominent Tiger project situated at a distance of 52 km towards North West from Barpeta town is ornamented with rare and diversified wildlife. There are 543 species of plants, 60 species of mammals, 312 species of birds, 42 species of reptiles, 7 species of fishes and 100 species of insects in the park<sup>3</sup>.</li> </ul>
Category	Percentage														
Agriculture	48%														
Forests	22%														
Grass/Grazing	8%														
Barren/Waste land	1%														
Built up	0%														
Wetland/Water body	1%														
<p><b>Natural Hazard and Calamities</b></p> <ul style="list-style-type: none"> <li>The most common vulnerability to the all over state is flood and Seismicity<sup>4</sup>. Barpeta district is also vulnerable to flood which occur almost in every monsoon.</li> </ul>															

<sup>2</sup>Indian State Forest Report, 2011.

<sup>3</sup><http://barpetazp.com/barpeta.htm>

<sup>4</sup> All over state is coming under seismic zone V, i.e. very high damage zone

1.2 Cachar

<b>CACHAR</b>											
<p><b>RELIEF AND SLOPE</b> Scale 1 : 1,000,000</p> <p><b>ELEVATION (in metres)</b> 600 300 150 50</p> <p><b>REFERENCES LAND SLOPES (metres per kilometre)</b> More than 600 300 - 600 150 - 300 80 - 150 20 - 80 10 - 20 Less than 10</p> <p>Source: National Atlas And Thematic Mapping Organisation</p>	<p><b>Topography</b></p> <ul style="list-style-type: none"> <li>The district is located on the Barak Valley of Assam between, 24°22'N and 25°8' N latitudes and 92°24'E and 93°15'E longitudes.</li> <li>The district is mostly made up of plains, but there are a number of hills spread across the district.</li> </ul>										
<p><b>SOILS</b> Scale 1 : 1,000,000</p> <p><b>REFERENCES ENTISOLS</b> Younger Alluvial</p> <p><b>ALFISOLS</b> Red Sandy Red Loamy</p> <p><b>ULTISOLS</b> Laterite</p> <p>Source: National Atlas And Thematic Mapping Organisation</p>	<p><b>Geology and Soil</b></p> <ul style="list-style-type: none"> <li>The soil of the district varies from alluvial to lateritic in nature. Texture is generally clayey loam to clay. The pH ranges from 4.5 to 6.0. The river line tracts are found to be loamy to sandy loamy in nature. The hilly tracts are covered by lateritic soil.</li> </ul> <p><b>Agro climatic zone</b></p> <ul style="list-style-type: none"> <li>The district falls under the Barak valley zone (NARP<sup>5</sup>). Rice, Maize, Wheat, Sugarcane, Jute, Black gram, Gram, Mung, Pea, Lentil, Lathyrus, Other rabi crops, Rapeseed &amp; mustard Sesumum, Linseed, Nizer are the major field crops grown here.</li> </ul>										
<table border="1"> <thead> <tr> <th>Parameters</th> <th>Values/Remakes</th> </tr> </thead> <tbody> <tr> <td>Electrical Conductivity</td> <td>Within permissible limit</td> </tr> <tr> <td>Fluoride</td> <td>Within Permissible Limit</td> </tr> <tr> <td>Iron</td> <td>ranges from 0.24 to 4.19</td> </tr> <tr> <td>Arsenic</td> <td>Not determined</td> </tr> </tbody> </table>	Parameters	Values/Remakes	Electrical Conductivity	Within permissible limit	Fluoride	Within Permissible Limit	Iron	ranges from 0.24 to 4.19	Arsenic	Not determined	<p><b>Surface Water</b></p> <ul style="list-style-type: none"> <li>Major drainage pattern of the district falls under Barak River and its tributaries.</li> </ul> <p><b>Groundwater</b></p> <ul style="list-style-type: none"> <li>From the quality point of view, ground water attains its suitability for drinking as well as irrigation purposes.</li> </ul>
Parameters	Values/Remakes										
Electrical Conductivity	Within permissible limit										
Fluoride	Within Permissible Limit										
Iron	ranges from 0.24 to 4.19										
Arsenic	Not determined										
<p><b>CLIMATIC CONDITIONS</b> Scale 1 : 1,000,000</p> <p><b>REFERENCES RAINFALLS ZONES (in millimetres)</b> 4000 3000</p> <p>Annual rainfall (in millimetres) — 4000 — Annual average temperature (in degree Celsius) — 20 —</p> <p>Source - Climatic Atlas of Asia</p>	<p><b>Climate and Meteorology</b></p> <ul style="list-style-type: none"> <li>The district receives heavy annual rainfall of the tune of 3,874.5 mm. The maximum rainfall occurs during monsoon period between May to August. The district experiences a sub-tropical and humid climate. The temperature varies from 12 °C in winter to 35 °C in summer. The humidity varies from 32% to maximum of 98% during July and October.</li> </ul>										

<sup>5</sup> National Agricultural Research Project

<b>CACHAR</b>	
<p>A 3D pie chart illustrating the land use distribution in Cachar. The largest portion is Forests at 61%, followed by Agriculture at 33%. Other categories include Wetland/Water body (5%), Built up (1%), Grass/Grazing (0%), and Barren/Waste land (0%).</p>	<p><b>Biodiversity and Forest</b></p> <p><u>Forest</u></p> <ul style="list-style-type: none"> <li>The district covers a forest land of 2236 square kilometers. Open forest and moderately dense forest dominates the region covering 52.77% and 43.60% of the total forest land respectively. Whereas very dense forest covers only 3.62%<sup>6</sup>.</li> </ul> <p><u>Flora and Fauna</u></p> <ul style="list-style-type: none"> <li>The flora is mainly Tropical evergreen as well as there are huge tracts of the Rainforests within northern as well as southern parts in the district that are home of Tigers, Hoolock Gibbons, Asian Elephants, Gaurs etc. Unusual species found include Pig-tailed Macaques, Hoolock Gibbons, Phayre's leaf Monkeys, Masked Finfoots, Stump-tailed Macaques and White-armed Wood Ducks etc. Its southern division was known as the Dhaleswari Wildlife Sanctuary. The Barail is lone wildlife sanctuary in this district and in the Barak valley area.<sup>7</sup></li> </ul>
<p><b>Natural Hazard and Calamities</b></p> <ul style="list-style-type: none"> <li>The most common vulnerability to the all over state is flood and Seismicity<sup>8</sup>. Barak district is also vulnerable to flood which occur almost in every monsoon.</li> </ul>	

### 1.3 Darrang

<b>DARRANG</b>	
<p>A relief and slope map of Darrang district. The map shows the geographical outline of the district with shaded areas representing different elevation levels and slope percentages. A legend on the left provides the key for these symbols.</p>	<p><b>Topography</b></p> <ul style="list-style-type: none"> <li>The district is situated in the central part of Assam and on the Northern side of the river Brahmaputra, between, 20°9'N and 26°95'N latitudes and 91°45'E and 92°22'E longitudes.</li> <li>The district is mostly made up of plains.</li> </ul>

<sup>6</sup>Indian State Forest Report, 2011.

<sup>7</sup> <http://www.cachar.nic.in>

<sup>8</sup> All over state is coming under seismic zone V, i.e. very high damage zone

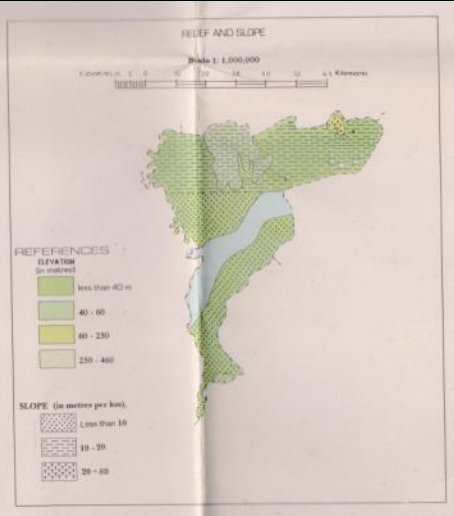
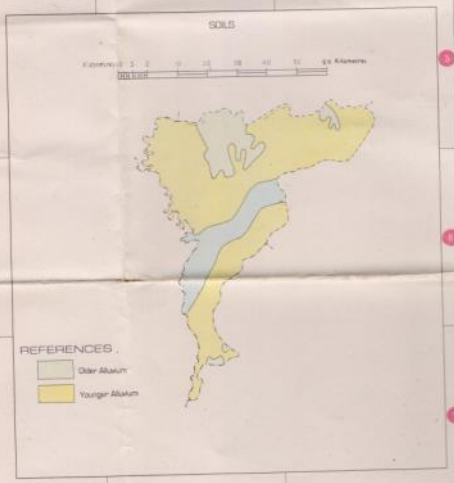
<b>DARRANG</b>								
	<p><b>Geology and Soil</b></p> <ul style="list-style-type: none"> <li>The district has soil cover of younger alluvium and older alluvium which have undergone diversified pedagogical changes. The soils are characterized by medium to high organic carbon, low to medium phosphate and potash contents. The alluvial soils are light yellow to light grey in colour of recent age. The texture of the soil ranges from sandy loam to silty loam in nature. The soil is suitable for cultivation of rice crops.</li> </ul> <p><b>Agro climatic zone</b></p> <ul style="list-style-type: none"> <li>The district falls under the North Bank Plain Zone (NARP<sup>9</sup>). Rice, Toria, Jute, Black gram, Wheat, Sugarcane are the major field crops grown here.</li> </ul>							
<table border="1"> <thead> <tr> <th>Parameters</th> <th>Values/Remakes</th> </tr> </thead> <tbody> <tr> <td>Electrical Conductivity</td> <td rowspan="4">Sporadic occurrence of high concentration of Fe in few pockets in shallow and deeper aquifer.</td> </tr> <tr> <td>Fluoride</td> </tr> <tr> <td>Iron</td> </tr> <tr> <td>Arsenic</td> </tr> </tbody> </table>	Parameters	Values/Remakes	Electrical Conductivity	Sporadic occurrence of high concentration of Fe in few pockets in shallow and deeper aquifer.	Fluoride	Iron	Arsenic	<p><b>Surface Water</b></p> <ul style="list-style-type: none"> <li>Major drainage pattern of the district falls under Brahmaputra, Dhansiri, Bega, Mangaldoi and Noa rivers.</li> </ul> <p><b>Groundwater</b></p> <ul style="list-style-type: none"> <li>From the quality point of view, ground water attains its suitability for drinking as well as irrigation purposes.</li> </ul>
Parameters	Values/Remakes							
Electrical Conductivity	Sporadic occurrence of high concentration of Fe in few pockets in shallow and deeper aquifer.							
Fluoride								
Iron								
Arsenic								
	<p><b>Climate and Meteorology</b></p> <ul style="list-style-type: none"> <li>The climate of the district is sun-tropical and humid. The winter season starts by November and continues till February. December/January is the coldest month and the temperature comes down to almost 15°C. The temperature starts rising from the month of February/March and July/August is the hottest month and it reaches up to about 40°C. The air is highly humid throughout the year and during rainy season; the relative humidity is about 90 percent.</li> <li>The area receives heavy rainfall every year and out of 1,951 mm of annual normal rainfall, 60 to 65% is received during June to September from south-west monsoon. The district also receives about 501 mm of rainfall during pre-monsoon period from March to May in the form of thunder showers and hail storms.</li> </ul>							
	<p><b>Biodiversity and Forest</b></p> <p><u>Forest</u></p> <ul style="list-style-type: none"> <li>The district covers a forest land of 470 square kilometers. Open forest and moderately dense forest dominates the region covering 78% and 19.36% of the total forest land respectively. Whereas very dense forest covers only 2.55%<sup>10</sup>.</li> </ul> <p><u>Flora and Fauna</u></p> <ul style="list-style-type: none"> <li>In 1990 Darrang district became home to Manas National Park, which has an area of 500 km<sup>2</sup> (193.1 sq mi). It shares the park with four other districts. It is also home to Orang National Park, which it shares with Sonitpur district. Orang was established in 1999 and has</li> </ul>							

<sup>9</sup> National Agricultural Research Project

<sup>10</sup> Indian State Forest Report, 2011.

<b>DARRANG</b>	
	an area of 79 km <sup>2</sup> (30.5 sq mi). Apart from the two national parks, it's also home to a wildlife sanctuary: the Bornadi. <sup>11</sup>
<b>Natural Hazard and Calamities</b>	
<ul style="list-style-type: none"> <li>The most common vulnerability to the all over state is flood and Seismicity<sup>12</sup>. Darrang district is also vulnerable to flood which occur almost in every monsoon.</li> </ul>	

## 1.4 Dhubri

<b>DHUBRI</b>	
	<p><b>Topography</b></p> <ul style="list-style-type: none"> <li>This district is located on the globe between 26.22° and 25.28° 'N latitudes and 89.42°E and 90.12°E longitudes and the Mighty River Brahmaputra is flowing through this district from east to west.</li> <li>The district is characterized by almost plain topography with patches of small hillocks like Tokorabandha, Dudhnath, Chandardinga, Boukumari, Boropahar, Chakrasila etc.</li> </ul>
	<p><b>Geology and Soil</b></p> <ul style="list-style-type: none"> <li>Soils in greater part of the district are sandy and silty loam, or clayey loam. It is found to be highly acidic to slightly alkaline in nature and is moderately permeable and characterized by the presence of low organic carbon and low soluble salts. Soils restricted to inselberg areas are more clayey, lateritic and less permeable and are highly acidic in nature. From agriculture point of view, the soils in major part of the area are suitable for all sorts of crops cultivation.</li> </ul> <p><b>Agro climatic zone</b></p> <ul style="list-style-type: none"> <li>The district falls under the Lower Brahmaputra valley zone (NARP<sup>13</sup>). Summer Paddy, Winter Paddy, Autumn Paddy, Rapseed &amp; Mustard, Wheat, Black gram, Nizer, Sesamum, Lentil, Linseed Pea, Groundnut, Green gram are the major field crops grown here.</li> </ul>
<b>Surface Water</b>	
<ul style="list-style-type: none"> <li>Major drainage pattern of the district falls under Brahmaputra, Gadadhar, Sankosh, Silai, Gouranga Rivers.</li> </ul>	

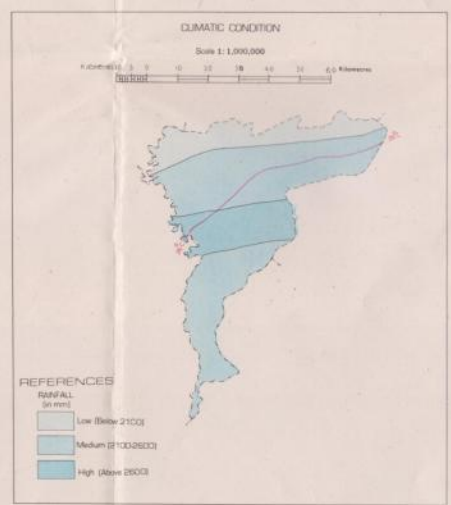
<sup>11</sup>[https://en.wikipedia.org/wiki/Darrang\\_district#Flora\\_and\\_fauna](https://en.wikipedia.org/wiki/Darrang_district#Flora_and_fauna)

<sup>12</sup>All over state is coming under seismic zone V, i.e. very high damage zone

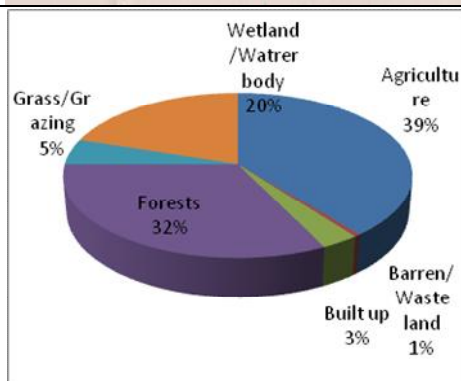
<sup>13</sup> National Agricultural Research Project

**DHUBRI****Groundwater**

- The concentration of major, minor and trace element in the district is generally within the limited range except iron. The iron distribution is abruptly high in and around Tamarhat and Chapar area where it has exceeded the permissible limit of drinking. The ground water is suitable for agricultural and industrial usages.<sup>14</sup>

**Climate and Meteorology**

- The district enjoys a subtropical humid climate with temperature ranging between 10.5° C (minimum, in December/January) and 30° C (maximum, in July/August). South west monsoon activates from May and continues up to September-October. The average annual rainfall of the district, as recorded at Dhubri is 2,363 mm with about 65% rainfall occurring during the monsoon. The monthly evapotranspiration is about 40% of the rainfall, the highest in August and lowest in January.

**Biodiversity and Forest**Forest

- The district covers a forest land of 418 square kilometers. Moderately dense forest and Open forest dominates the region covering 48.08% and 46.88% of the total forest land respectively. Whereas very dense forest covers only 5.02%<sup>15</sup>.

Flora and Fauna

- On 14 July 1994, a virgin forest patch of Dhubri District of Assam was declared as a wildlife sanctuary by the gazette notification of the Assam government. This sanctuary has been named as "Chakrashila Wildlife Sanctuary". It is the youngest sanctuary of North East India having an area of 11,260.00 acres (45.5676 km<sup>2</sup>). The diverse ecosystems of Chakrasila present model habitat diversity and support various mammalian species like tiger, leopard, golden langur, leopard cat, gaur, mongoose, porcupine, pangoline, flying squirrel, civet cat. Along with all these prolific gifts of the nature Chakrasila has a wide variety of avifauna.<sup>16</sup>

**Natural Hazard and Calamities**

- The most common vulnerability to the all over state is flood and Seismicity<sup>17</sup>. Dhubri district is also vulnerable to flood which occur almost in every monsoon.

<sup>14</sup>Ground Water Information Booklet Dhubri District, Assam, Central Ground Water Board North Eastern Region, Ministry of Water Resources Guwahati March 2013.

<sup>15</sup>Indian State Forest Report, 2011.

<sup>16</sup>[https://en.wikipedia.org/wiki/Dhubri\\_district#Flora\\_and\\_fauna](https://en.wikipedia.org/wiki/Dhubri_district#Flora_and_fauna)

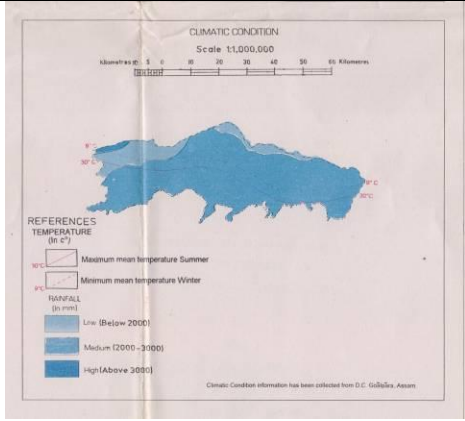
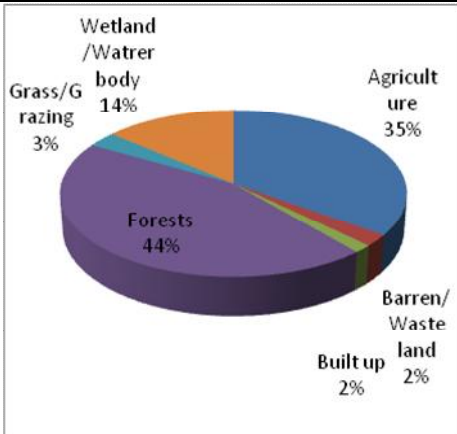
<sup>17</sup> All over state is coming under seismic zone V, i.e. very high damage zone

1.5 Goalpara

<b>GOALPARA</b>										
	<p><b>Topography</b></p> <ul style="list-style-type: none"> <li>Goalpara district, of Assam is located between 25°33' and 26°12' North latitude and 90°07' and 91° 15' East longitude and is situated entirely on the south bank of the river Brahmaputra.</li> </ul>									
	<p><b>Geology and Soil</b></p> <ul style="list-style-type: none"> <li>The plain areas bordering Brahmaputra River and in between the inselbergs are occupied by alluvial sediments belonging to Quaternary ages. Based on such criteria such as sedimentation, soil characteristics and geomorphic features, the Quaternary sediments can be grouped into two subdivisions, viz.                         <ul style="list-style-type: none"> <li>Older Alluvium, and</li> <li>Younger alluvium.</li> </ul> </li> <li>The Older alluvium by virtue of its relative maturity is composed of somewhat oxidized sediments comprising yellow and the reddish brown colour sand, silt and clay in contrast to the light colour, less compact Younger alluvial sediment. The Older alluvium always occupies the higher grounds than the adjacent Younger alluvium but takes the proper stratigraphical position underlying the Younger alluvium sediments in the plain areas. A scarp as seen in the Krishnai River valley sometimes separates these two groups.</li> </ul> <p><b>Agro climatic zone</b></p> <ul style="list-style-type: none"> <li>The district falls under the Lower Brahmaputra valley zone (NARP<sup>18</sup>). Summer Paddy, Winter Paddy, Autumn Paddy, Rapseed &amp; Mustard, Wheat, Black gram, Nizer, Sesamum, Lentil, Linseed Pea, Groundnut, Green gram are the major field crops grown here.</li> </ul>									
<table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 20%;">Parameters</th> <th>Values/ Remakes</th> </tr> </thead> <tbody> <tr> <td>Electrical Conductivity</td> <td rowspan="4">Except Fe and F problems in some parts of the district, other elements are within the permissible limit. Occurrence of Fe is more than permissible limit in the shallow aquifers. F content in deeper aquifers is more than permissible limit.</td> </tr> <tr> <td>Fluoride</td> </tr> <tr> <td>Iron</td> </tr> <tr> <td>Arsenic</td> </tr> <tr> <td>Type of water</td> <td></td> </tr> </tbody> </table>	Parameters	Values/ Remakes	Electrical Conductivity	Except Fe and F problems in some parts of the district, other elements are within the permissible limit. Occurrence of Fe is more than permissible limit in the shallow aquifers. F content in deeper aquifers is more than permissible limit.	Fluoride	Iron	Arsenic	Type of water		<p><b>Surface Water</b></p> <ul style="list-style-type: none"> <li>Major drainage pattern of the district falls under Brahmaputra, Dudhnoi, Krishnai, Jinjiram, Jinari and Deosila River.</li> </ul>
Parameters	Values/ Remakes									
Electrical Conductivity	Except Fe and F problems in some parts of the district, other elements are within the permissible limit. Occurrence of Fe is more than permissible limit in the shallow aquifers. F content in deeper aquifers is more than permissible limit.									
Fluoride										
Iron										
Arsenic										
Type of water										

<sup>18</sup> National Agricultural Research Project



<b>GOALPARA</b>	
	<p><b>Climate and Meteorology</b></p> <ul style="list-style-type: none"> <li>The climate in the district is moderate during the winter and in summer, it is hot. Rain makes its first appearance in the month of April with occasional and irregular light showers and at times, heavy down pour is followed by cyclonic storm. This irregular rainfall continues up to the end of May It occurs due to the influence of Northeaster wind.</li> <li>Physiographically, the area is occupied by both the hills and plains. The alluvial land is flat with a gentle regional slope of less than 1 m/km towards Brahmaputra River. The hills mostly occur as isolated inselberg whose areas vary from less than 1 sq km to almost 15 sq km (e.g. inselberg west of Goalpara town) with heights ranging between 60 to 300 m above MSL. The hills are veneered by lateritic mantle and are deeply forested with evergreen mixed open jungles. Tongue like projections of the main Shillong Plateau are also seen in the area around Agia (26o 05' / 90o 33'), Krishnai (26o02' / 90o 39'), and southeast of Rangjuli (25058' / 90004'). The height of the hills varies between 60 and 550 m above MSL.</li> </ul>
	<p><b>Biodiversity and Forest</b></p> <p><u>Forest</u></p> <ul style="list-style-type: none"> <li>The district covers a forest land of 337 square kilometers. Open forest dominates the region covering 78.63% of the total forest land respectively. Whereas moderately dense forest and very dense forest covers only 21.06% and 0.29% only<sup>19</sup>.</li> </ul> <p><u>Flora and Fauna</u></p> <ul style="list-style-type: none"> <li>The Surya pahar and Tukreswaripahar of district are the abode of monkeys. There are about 264 commonly known plant species in the district. About 67 plant species have medicinal properties, which are being traditionally used in Unani system of treatment. About 13 plant species are endangered. The area offers habitat to 104 species of birds, out of which 68 are residential and 21 are migratory. A total of 210 native fish species were reported to be available in the water bodies of the district. Naamecheilusgoalparanensis, an endemic fish of Goalpara area is already extinct<sup>20</sup>.</li> </ul>
<p><b>Natural Hazard and Calamities</b></p> <ul style="list-style-type: none"> <li>The most common vulnerability to the all over state is flood and Seismicity<sup>21</sup>. Goalpara district is also vulnerable to flood which occur almost in every monsoon.</li> </ul>	

<sup>19</sup>Indian State Forest Report, 2011.

<sup>20</sup>[http://www.goalpara.assampanchayat.gov.in/hidden/-/asset\\_publisher/XBzK2WCFJ2IJ/content/district-profile/7788096](http://www.goalpara.assampanchayat.gov.in/hidden/-/asset_publisher/XBzK2WCFJ2IJ/content/district-profile/7788096)

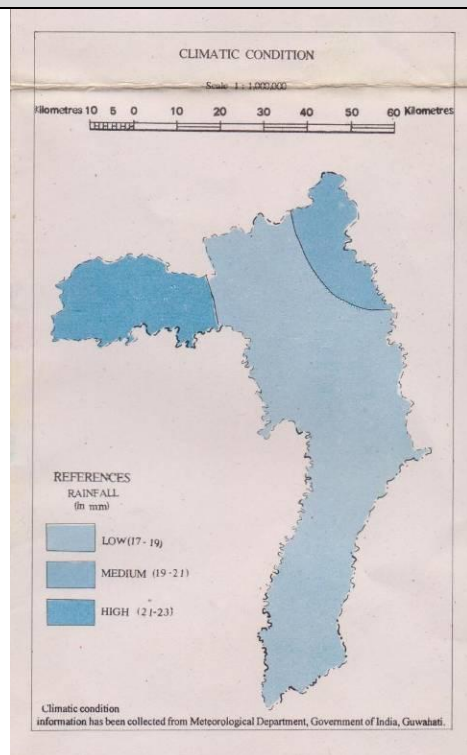
<sup>21</sup> All over state is coming under seismic zone V, i.e. very high damage zone

1.6 Golaghat

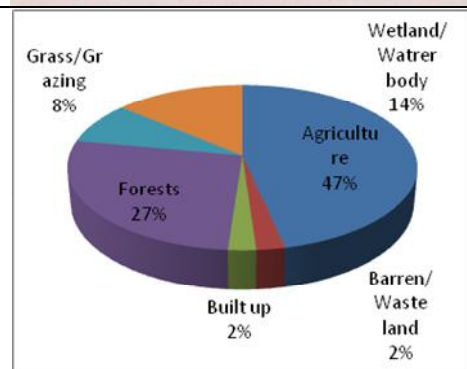
<b>GOLAGHAT</b>													
	<p><b>Topography</b></p> <ul style="list-style-type: none"> <li>The district is situated between 25°50'N to 26°47'N latitudes and 93°16'E to 94°10'E longitudes and is surrounded by Brahmaputra in the North.</li> </ul>												
	<p><b>Geology and Soil</b></p> <ul style="list-style-type: none"> <li>Two important soil groups are seen in the district. These are (i) deep reddish coloured soil developed over older geological formation and (ii) light grey to dark grey coloured soil covering the major parts of the district. Low nitrogen, low phosphate, medium to high potash, acidic characters of the soil are representative of the soil cover found in the hills. In the plain areas, the other type of the soil covers is found to be feebly alkaline.</li> </ul> <p><b>Agro climatic zone</b></p> <ul style="list-style-type: none"> <li>The district falls under the Hill zone (NARP<sup>22</sup>). Autumn rice, Winter rice, Summer Rice, Rapeseed &amp; Mustard, Potato, Sugarcane are some of the major crops grown here.</li> </ul>												
<table border="1"> <thead> <tr> <th>Parameters</th> <th>Values/Remakes</th> </tr> </thead> <tbody> <tr> <td>Electrical Conductivity</td> <td>56.00 – 820.00</td> </tr> <tr> <td>Fluoride</td> <td>Nil</td> </tr> <tr> <td>Iron</td> <td>0.10 – 4.60</td> </tr> <tr> <td>Arsenic</td> <td>NA</td> </tr> <tr> <td>Type of water</td> <td>NA</td> </tr> </tbody> </table>	Parameters	Values/Remakes	Electrical Conductivity	56.00 – 820.00	Fluoride	Nil	Iron	0.10 – 4.60	Arsenic	NA	Type of water	NA	<p><b>Surface Water</b></p> <ul style="list-style-type: none"> <li>Major drainage pattern of the district falls under Brahmaputra River and Dhansiri, Galabil, Desoi, Kakodanga Rivers.</li> </ul> <p><b>Groundwater</b></p> <ul style="list-style-type: none"> <li>As per Central Ground Water Board, the present stage of ground water development is only 41 per cent and district is still under 'safe' category.</li> </ul>
Parameters	Values/Remakes												
Electrical Conductivity	56.00 – 820.00												
Fluoride	Nil												
Iron	0.10 – 4.60												
Arsenic	NA												
Type of water	NA												

<sup>22</sup> National Agricultural Research Project



**GOLAGHAT****Climate and Meteorology**

- The district enjoys sub-tropical humid climate. Average annual rainfall in the district is 2,012 mm. About 60 to 65% of the annual precipitation is received during south-west monsoon from June to September. The pattern of rainfall varies in the district, from south to north, the intensity of rainfall increases and the maximum rainfall is recorded in the north eastern parts of the district. Annual average temperature of the district during winter period varies from 6 to 14°C and during summer, it varies from 29 to 36°C. The relative humidity varies from 93 to 95% during morning hours and during afternoon hours it varies from 53 to 75%.

**Biodiversity and Forest****Forest**

- The district covers a forest land of 525 square kilometers. Open forest and moderately dense forest dominates the region covering 75.61% and 23.23% of the total forest land respectively. Whereas very dense forest covers only 1.14%<sup>23</sup>.

**Flora and Fauna**

- In 1974 Golaghat district became home to Kaziranga National Park, which has an area of 472 km<sup>2</sup>. It shares the park with Nagaon district. It also home to Nambor - Doigrung Wildlife Sanctuary<sup>24</sup>.

**Natural Hazard and Calamities**

- The most common vulnerability to the all over state is flood and Seismicity<sup>25</sup>. Barpeta district is also vulnerable to flood which occur almost in every monsoon.

<sup>23</sup> Indian State Forest Report, 2011.

<sup>24</sup> [https://en.wikipedia.org/wiki/Golaghat\\_district#Flora\\_and\\_fauna](https://en.wikipedia.org/wiki/Golaghat_district#Flora_and_fauna)

<sup>25</sup> All over state is coming under seismic zone V, i.e. very high damage zone

1.7 Jorhat

<b>JORHAT</b>													
	<p><b>Topography</b></p> <ul style="list-style-type: none"> <li>The district is situated at the central part of the Brahmaputra valley between 26.74°N latitudes and 94.20°E longitudes.</li> </ul>												
	<p><b>Geology and Soil</b></p> <ul style="list-style-type: none"> <li>The soil of Jorhat district predominantly sandy loam (58.25%) of total soils. While 15.40% silty clay loam, 9.92% sandy, 8.17% loamy and 8.26% clay soils. However, this composition varies across the blocks<sup>26</sup>.</li> </ul> <p><b>Agro climatic zone</b></p> <ul style="list-style-type: none"> <li>The district falls under the Upper Brahmaputra Valley zone (NARP<sup>27</sup>). Rice, Wheat, Rapeseed, Green gram, Black gram, Potato, Pea, are some of the major crops grown here.</li> </ul>												
<table border="1"> <thead> <tr> <th>Parameters</th> <th>Values/ Remakes</th> </tr> </thead> <tbody> <tr> <td>Electrical Conductivity</td> <td>136 to 1,653 micromhos/cm at 25°C ( Mariani )</td> </tr> <tr> <td>Fluoride</td> <td>0.37 to 1.49 ppm</td> </tr> <tr> <td>Iron</td> <td>0.20 to 2.36 ppm</td> </tr> <tr> <td>Arsenic</td> <td>NA</td> </tr> <tr> <td>Type of water</td> <td>NA</td> </tr> </tbody> </table>	Parameters	Values/ Remakes	Electrical Conductivity	136 to 1,653 micromhos/cm at 25°C ( Mariani )	Fluoride	0.37 to 1.49 ppm	Iron	0.20 to 2.36 ppm	Arsenic	NA	Type of water	NA	<p><b>Surface Water</b></p> <ul style="list-style-type: none"> <li>Major drainage pattern of the district falls under River Brahmaputra, Bhogdoi and Kakodonga.</li> </ul>
Parameters	Values/ Remakes												
Electrical Conductivity	136 to 1,653 micromhos/cm at 25°C ( Mariani )												
Fluoride	0.37 to 1.49 ppm												
Iron	0.20 to 2.36 ppm												
Arsenic	NA												
Type of water	NA												

<sup>26</sup>Bhalerao A.K., Kumar B., Singha A. K., Jat P.C., Bordoloi, R., DekaBidyut C., 2015, Jorhat district inventory of Agriculture, ICAR- Agricultural Technology Application Research Institute, Umiam, Meghalaya, India

<sup>27</sup> National Agricultural Research Project

<b>JORHAT</b>	
<p><b>CLIMATIC CONDITIONS</b> Scale 1 : 750,000</p> <p>Source : Climatic Atlas of Asia, WMO, UNESCO, USSR.</p>	<p><b>Climate and Meteorology</b></p> <ul style="list-style-type: none"> <li>The climate of the district is classified as meso-thermal wet climate with forest type of vegetation. January is the coldest month with temperature of 6.1°C. July and August are the hottest period with average monthly temperature of about 29°C. The average relative humidity in a year is 78.7 per cent. The average annual rainfall for last ten years from 1998 to 2007 has been computed to be 1,867.08 mm. The amount of rainfall increases from southwest to northeast.</li> </ul>
<p>Grass/Grazing 9%</p> <p>Forests 32%</p> <p>Agriculture 58%</p> <p>Built up 1%</p>	<p><b>Biodiversity and Forest</b></p> <p><u>Forest</u></p> <ul style="list-style-type: none"> <li>The district covers a forest land of 613 square kilometers. Open forest dominates the region covering 81.23%. Whereas moderately dense forest and very dense forest covers 18.43% and 1.225 respectively<sup>28</sup>.</li> </ul> <p><u>Flora and Fauna</u></p> <ul style="list-style-type: none"> <li>In 1997 Jorhat district became home to the Gibbon Wildlife Sanctuary, which has an area of 21 km<sup>2</sup> is a protected area which is home of hoolock gibbons. There is another forest called MulaiKathoni, a man made forest covering 550 hectares of area on a Brahmaputra river sandbar located near Kokilamukh area.</li> </ul>
<p><b>Natural Hazard and Calamities</b></p> <ul style="list-style-type: none"> <li>The most common vulnerability to the all over state is flood and Seismicity<sup>29</sup>. Jorhat district is also vulnerable to flood which occur almost in every monsoon.</li> </ul>	

**1.8 Kamrup**

<b>KAMRUP</b>	
<p><b>RELIEF AND SLOPE</b> Scale 1 : 1000,000</p> <p>Source : National Atlas and Thematic Mapping Organisation</p>	<p><b>Topography</b></p> <ul style="list-style-type: none"> <li>Kamrup District is situated on the bank of River Brahmaputra between 25.46° and 26.49° North Latitude and between 90.48° &amp; 91.50° East Longitude.</li> </ul>

<sup>28</sup>Indian State Forest Report, 2011.

<sup>29</sup> All over state is coming under seismic zone V, i.e. very high damage zone

<b>KAMRUP</b>													
	<p><b>Geology and Soil</b></p> <ul style="list-style-type: none"> <li>The different rock formation occurring in the district has been subjected to various soil forming processes through agents of weathering and transportation during different geological ages. Soils comprising various proportions of sand, silt, clay and organic material in the district are grouped into three broad categories – a) newer alluvial soil, b) valley fill/older alluvial soil and c) soils over forest and hilly terrain.</li> </ul> <p><b>Agro climatic zone</b></p> <ul style="list-style-type: none"> <li>The district falls under the Lower Brahmaputra valley zone (NARP<sup>30</sup>). Summer Paddy, Winter Paddy, Autumn Paddy, Rapseed &amp; Mustard, Wheat, Black gram, Nizer, Sesamum, Lentil, Linseed Pea, Groundnut, Green gram are the major field crops grown here.</li> </ul>												
<table border="1"> <thead> <tr> <th>Parameters</th> <th>Values/Remakes</th> </tr> </thead> <tbody> <tr> <td>Electrical Conductivity</td> <td>NA</td> </tr> <tr> <td>Fluoride</td> <td>Present</td> </tr> <tr> <td>Iron</td> <td>Present</td> </tr> <tr> <td>Arsenic</td> <td>NA</td> </tr> <tr> <td>Type of water</td> <td>NA</td> </tr> </tbody> </table>	Parameters	Values/Remakes	Electrical Conductivity	NA	Fluoride	Present	Iron	Present	Arsenic	NA	Type of water	NA	<p><b>Surface Water</b></p> <ul style="list-style-type: none"> <li>Major drainage pattern of the district falls under Brahmaputra, Puthimari, Digaru, Kuls, Singra River.</li> </ul> <p><b>Groundwater</b></p> <ul style="list-style-type: none"> <li>The district is still under 'Safe' category and sufficient resources are still available for future development.</li> </ul>
Parameters	Values/Remakes												
Electrical Conductivity	NA												
Fluoride	Present												
Iron	Present												
Arsenic	NA												
Type of water	NA												
	<p><b>Climate and Meteorology</b></p> <ul style="list-style-type: none"> <li>The climate of the area has been classified as sub-tropical humid climate with heavy rainfall, hot summer and high humidity. Average temperature ranges from 12 to 38oC during the year. In winter, temperature ranges from 15 to 25oC during day and 8 to 15oC during night. The summer temperature ranges from 25 to 38oC during day and 15 to 25oC during night.</li> </ul>												
	<p><b>Biodiversity and Forest</b></p> <p><u>Forest</u></p> <ul style="list-style-type: none"> <li>The district covers a forest land of 1433 square kilometers. Open forest and Moderately dense forest dominates the region covering 52.54% and 42.70% of the total forest land respectively. Whereas very dense forest covers only 4.74%<sup>31</sup>.</li> </ul> <p><u>Flora and Fauna</u></p> <ul style="list-style-type: none"> <li>In 1989 Kamrup district became home to the Dipor Bil Wildlife Sanctuary, which has an area of 4.1 km<sup>2</sup> (1.6 sq mi). There is also a plantation where seedlings of teak, sal, sissu, sum, and nahor are</li> </ul>												

<sup>30</sup> National Agricultural Research Project

<sup>31</sup> Indian State Forest Report, 2011.

<b>KAMRUP</b>	
	reared, and experiments are being made with the caoutchouc tree. <sup>32</sup>
<b>Natural Hazard and Calamities</b>	
<ul style="list-style-type: none"> <li>The most common vulnerability to the all over state is flood and Seismicity<sup>33</sup>. Kamrup district is also vulnerable to flood which occur almost in every monsoon.</li> </ul>	

## 1.9 Karbi Anglong

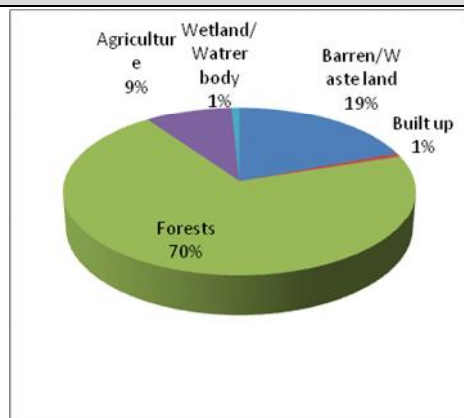
<b>KARBI ANGLONG</b>													
<b>Topography</b>													
<ul style="list-style-type: none"> <li>The Karbi Anglong District is situated in the central part of Assam. The district with dense tropical forest covered hills and flat plains are situated between 25°33'N to 26°35' N Latitude and 92°10' to 93°50' E Longitude.</li> <li>Even though, the district is dotted with hills, a few of which can be categorized into Mountain. Among them, the highest is the Singhason Peak which is at about 1360 metres above the sea level.</li> </ul>													
<b>Geology and Soil</b>													
<ul style="list-style-type: none"> <li>Two types of soils are mainly observed in the district. These are (1) Brown to pale brown soil developed on the top of the hills, lateritic in places and (2) the alluvial soil, sandy loam or clayey developed on the low lying terrain.</li> </ul>													
<b>Agro climatic zone</b>													
<ul style="list-style-type: none"> <li>The district falls under the Hills zone (NARP<sup>34</sup>). Rice, Rape &amp; Mustard, Maize, Sugarcane, Sesame, Wheat, Jute, Arhar, Cotton etc. are some of the crops cultivated here.</li> </ul>													
<table border="1"> <thead> <tr> <th>Parameters</th> <th>Values/Remakes</th> </tr> </thead> <tbody> <tr> <td>Electrical Conductivity</td> <td>varies from 121-1168 mus/cm at 250C</td> </tr> <tr> <td>Fluoride</td> <td>0.7-1.16 in dug well zone, beyond permissible limit in shallow and deep tube well up to 16 ppm.</td> </tr> <tr> <td>Iron</td> <td>0.29 ppm</td> </tr> <tr> <td>Arsenic</td> <td>NA</td> </tr> <tr> <td>Type of water</td> <td>NA</td> </tr> </tbody> </table>	Parameters	Values/Remakes	Electrical Conductivity	varies from 121-1168 mus/cm at 250C	Fluoride	0.7-1.16 in dug well zone, beyond permissible limit in shallow and deep tube well up to 16 ppm.	Iron	0.29 ppm	Arsenic	NA	Type of water	NA	<b>Surface Water</b> <ul style="list-style-type: none"> <li>Major drainage pattern of the district falls under Yamuna river with its tributaries.</li> </ul>
Parameters	Values/Remakes												
Electrical Conductivity	varies from 121-1168 mus/cm at 250C												
Fluoride	0.7-1.16 in dug well zone, beyond permissible limit in shallow and deep tube well up to 16 ppm.												
Iron	0.29 ppm												
Arsenic	NA												
Type of water	NA												
<b>Climate and Meteorology</b>													
<ul style="list-style-type: none"> <li>The average annual rainfall of the district is 1121.5 mm. The rainfall is unevenly distributed over the period of six months from April to September. About 60% of rainfall is received during July to September.</li> </ul>													

<sup>32</sup>[https://en.wikipedia.org/wiki/Kamrup\\_district#Flora\\_and\\_fauna](https://en.wikipedia.org/wiki/Kamrup_district#Flora_and_fauna)

<sup>33</sup> All over state is coming under seismic zone V, i.e. very high damage zone

<sup>34</sup> National Agricultural Research Project



**KARBI ANGLONG****Biodiversity and Forest**Forest

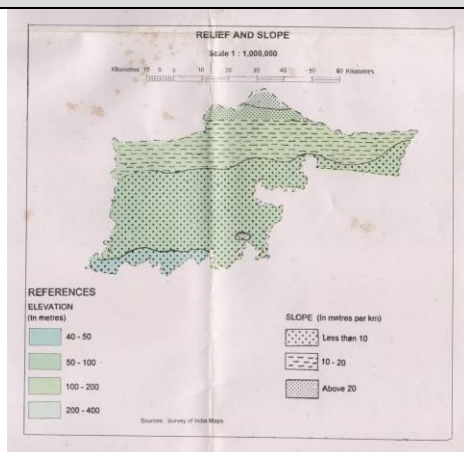
- The district covers a forest land of 7939 square kilometers. Moderately dense forest and Open forest dominates the region covering 48.10% and 44.76% of the total forest land respectively. Whereas very dense forest covers only 7.12%<sup>35</sup>.

Flora and Fauna

- In 1952, Karbi Anglong district became home to the Garampani Wildlife Sanctuary, which has an area of 6 km<sup>2</sup>. Nambor Wildlife Sanctuary is another wildlife sanctuary of Karbi Anglong covering 37 km<sup>2</sup>. More than 75% of the district is forested. The main vegetation is Tropical semi-evergreen with patches of Moist Deciduous and wet Evergreen forests in certain areas. The district boasts the largest population of hoolock gibbons in Assam.<sup>36</sup>

**Natural Hazard and Calamities**

- The most common vulnerability to the all over state is flood and Seismicity<sup>37</sup>. Karbi Anglong is also vulnerable to flood which occur almost in every monsoon.

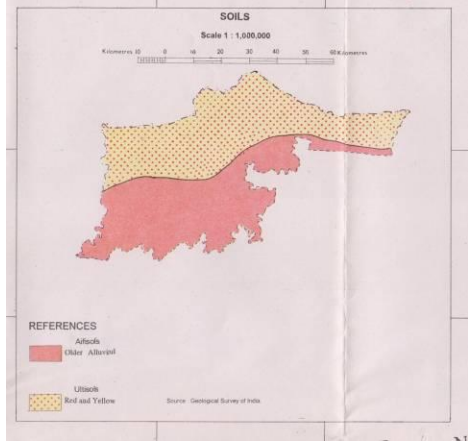
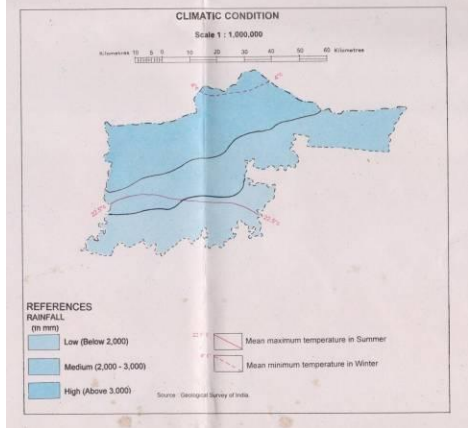
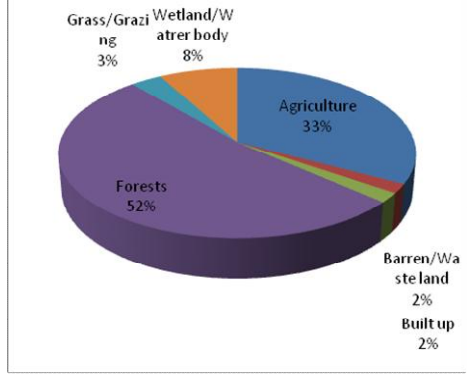
**1.10 Kokrajhar****KOKRAJHAR****Topography**

- The district is located on the north bank of the mighty Brahmaputra and stretches to the international border with the Kingdom of Bhutan. Kokrajhar district lies roughly within 89°46' East to 90°38' East and 26°19' North to 26°54' North Latitude.

<sup>35</sup> Indian State Forest Report, 2011.

<sup>36</sup> [https://en.wikipedia.org/wiki/East\\_Karbi\\_Anglong\\_district#Flora\\_and\\_fauna](https://en.wikipedia.org/wiki/East_Karbi_Anglong_district#Flora_and_fauna)

<sup>37</sup> All over state is coming under seismic zone V, i.e. very high damage zone

<b>KOKRAJHAR</b>													
	<p><b>Geology and Soil</b></p> <ul style="list-style-type: none"> <li>Soils are mainly alluvial in nature composed mixture of sand, clay and silt in varying proportions. The soils in Peidmont Plain have sandy in nature, alkaline to slightly acidic and highly permeable. The soils in flood plains have loamy soil, moderately permeable and are less acidic than piedmont plain soils.</li> </ul> <p><b>Agro climatic zone</b></p> <ul style="list-style-type: none"> <li>Agro climatic zone: The district falls under the Lower Brahmaputra Valley zone (NARP<sup>38</sup>). Winter Rice, Autumn Rice, Rape and Mustard, Summer Rice, Jute, Wheat, Mesta, Maize, Niger, Black gram, Lentil, Sesamum, Linseed, Pea, are some of the crops cultivated here.</li> </ul>												
<table border="1"> <thead> <tr> <th>Parameters</th> <th>Values/Remakes</th> </tr> </thead> <tbody> <tr> <td>Electrical Conductivity</td> <td>Permissible limit</td> </tr> <tr> <td>Fluoride</td> <td>Within desirable limit</td> </tr> <tr> <td>Iron</td> <td>0.35 -2.25 mg/l</td> </tr> <tr> <td>Arsenic</td> <td>Not detected.</td> </tr> <tr> <td>Type of water</td> <td>NA</td> </tr> </tbody> </table>	Parameters	Values/Remakes	Electrical Conductivity	Permissible limit	Fluoride	Within desirable limit	Iron	0.35 -2.25 mg/l	Arsenic	Not detected.	Type of water	NA	<p><b>Surface Water</b></p> <ul style="list-style-type: none"> <li>Major drainage pattern of the district falls under Gangia, Paponi, Saumukha, Saralaganga and Lonya rivers and their tributaries.</li> </ul> <p><b>Groundwater</b></p> <ul style="list-style-type: none"> <li>As long-term water level trend does not show any major change so the whole district may be considered as SAFE.</li> </ul>
Parameters	Values/Remakes												
Electrical Conductivity	Permissible limit												
Fluoride	Within desirable limit												
Iron	0.35 -2.25 mg/l												
Arsenic	Not detected.												
Type of water	NA												
	<p><b>Climate and Meteorology</b></p> <ul style="list-style-type: none"> <li>The district experiences a Sub-tropical and Humid climate with heavy rainfall and hot summer. The average temperature ranges from minimum 100C to maximum 350C throughout the year. The average humidity remains almost same with variation from 62% in winter to 87% in post monsoon period. The average annual rainfall of the district is 3102.4 mm with 110 annual average rainy days.</li> </ul>												
	<p><b>Biodiversity and Forest</b></p> <p><u>Forest</u></p> <ul style="list-style-type: none"> <li>The district covers a forest land of 1144 square kilometers. Moderately dense forest dominates the region covering 62.58%. Whereas Very dense forest and Open forest covers only 18.18% and 19.23% respectively<sup>39</sup>.</li> </ul> <p><u>Flora and Fauna</u></p> <ul style="list-style-type: none"> <li>In 1990 Kokrajhar district became home to Manas National Park, which has an area of 500 km<sup>2</sup>. It shares the park with four other districts also. Since Chakrashila Wildlife Sanctuary of the district is the protected habitat of endangered Golden Langur and Ultapani Reserve forest is the home of more than 300 different species of</li> </ul>												

<sup>38</sup> National Agricultural Research Project

<sup>39</sup> Indian State Forest Report, 2011.

<b>KOKRAJHAR</b>	
	butterflies so the district has been declared as the land of Butterflies and Golden Langur. Even different species of butterflies are found in different areas also as well as the Golden Langur is also can be found in Ultapani Reserve Forest. Kokrajhar town has also been declared as the city of Guinness World Record <sup>40</sup> .
<b>Natural Hazard and Calamities</b>	
<ul style="list-style-type: none"> <li>The most common vulnerability to the all over state is flood and Seismicity<sup>41</sup>. Some parts of Kokrajhar district is also vulnerable to flood which occur almost in every monsoon.</li> </ul>	

### 1.11 Lakhimpur

<b>LAKHIMPUR</b>	
	<p><b>Topography</b></p> <ul style="list-style-type: none"> <li>Lakhimpur District is situated on the North East corner of Assam and at the north bank of the River Brahmaputra. The district lies between 26°48' and 27°53' Northern latitude and 93°42' and 94°20' East longitude (approx.)</li> </ul>
	<p><b>Geology and Soil</b></p> <p>The soils of the district can broadly be classified into the following groups:</p> <ul style="list-style-type: none"> <li>Red Loamy soils: This soil is characterized by low nitrogen, low phosphate and medium to high potash and acidic in nature.</li> <li>Lateritic Soil: The lateritic soils are the product of high leaching and found in hilly region. Soil PH is acidic due to intensive leaching of bases and formation of clay minerals and ferric hydroxides.</li> <li>New Alluvial Soils: The new alluvial soils are found in the flood plain area and are subjected to occasional floods and consequently receive considerable silt deposit after the flood recedes. Soil PH is feebly alkaline and moderately rich in plant nutrient.</li> <li>Older Alluvial Soil: The soils are comparatively more acidic than the newer alluvial soil and hence more crop sensitive.</li> <li>The soils of the district as classified by NBSS and ICAR Nagpur are: Udalfs-Orchapt-Acquents, Fluvent-Aquepts, Aquepts-Aqualfs-Fluvent.</li> </ul> <p><b>Agro climatic zone</b></p> <ul style="list-style-type: none"> <li>The district falls under the North Bank Plain Zone (NARP<sup>42</sup>). Rice, Rapeseed &amp; Mustard, Rabi pulse, Black gram, Green gram are some of the major crops cultivated here.</li> </ul>

<sup>40</sup>[https://en.wikipedia.org/wiki/Kokrajhar\\_district#Flora\\_and\\_fauna](https://en.wikipedia.org/wiki/Kokrajhar_district#Flora_and_fauna)

<sup>41</sup> All over state is coming under seismic zone V, i.e. very high damage zone

<sup>42</sup> National Agricultural Research Project

<b>LAKHIMPUR</b>								
<table border="1"> <thead> <tr> <th>Parameters</th> <th>Values/Remarks</th> </tr> </thead> <tbody> <tr> <td>Electrical Conductivity</td> <td rowspan="4">Most of the chemical parameters are within the permissible limit set by BIS, except Fe. Iron content range from 0.13 to 6.90mg/l.</td> </tr> <tr> <td>Fluoride</td> </tr> <tr> <td>Iron</td> </tr> <tr> <td>Arsenic</td> </tr> </tbody> </table>	Parameters	Values/Remarks	Electrical Conductivity	Most of the chemical parameters are within the permissible limit set by BIS, except Fe. Iron content range from 0.13 to 6.90mg/l.	Fluoride	Iron	Arsenic	<p><b>Surface Water</b></p> <ul style="list-style-type: none"> <li>Major drainage pattern of the district falls under Subansiri, Ranga Nadi, Dikrong, Boginadi.</li> </ul> <p><b>Groundwater</b></p> <ul style="list-style-type: none"> <li>As long-term water level trend does not show any major change so the whole district may be considered as SAFE.</li> </ul>
Parameters	Values/Remarks							
Electrical Conductivity	Most of the chemical parameters are within the permissible limit set by BIS, except Fe. Iron content range from 0.13 to 6.90mg/l.							
Fluoride								
Iron								
Arsenic								
	<p><b>Climate and Meteorology</b></p> <ul style="list-style-type: none"> <li>The climate of the district is subtropical and humid characterized by high rainfall. The annual rainfall is 3268mm and relative humidity 74 to 89 percent with a mean of 81 percent. The district receives SW monsoon rainfall from the month of April and continues up to September/October. The highest rainfall areas of the district are located near the foothills of Arunachal Himalayas, i.e., in the northern part of the district. The maximum temperature goes up to 35oC during June / July and minimum temperature falls to 8oC in December and January.</li> </ul>							
	<p><b>Biodiversity and Forest</b></p> <p><u>Forest</u></p> <ul style="list-style-type: none"> <li>The district covers a forest land of 293 square kilometers. Open forest and moderately dense forest dominates the region covering 58.36% and 40.27% respectively. Whereas Very dense forest covers only 1.36%<sup>43</sup>.</li> </ul> <p><u>Flora and Fauna</u></p> <ul style="list-style-type: none"> <li>In 1996 Lakhimpur district became home to the Bardoibum-Beelmukh Wildlife Sanctuary, which has an area of 11 km<sup>2</sup>. It shares the park with Dhemaji district<sup>44</sup>.</li> </ul>							
<p><b>Natural Hazard and Calamities</b></p> <ul style="list-style-type: none"> <li>The most common vulnerability to the all over state is flood and Seismicity<sup>45</sup>. Some parts of Lakhimpur district is also vulnerable to flood which occur almost in every monsoon.</li> </ul>								

<sup>43</sup> Indian State Forest Report, 2011.

<sup>44</sup> [https://en.wikipedia.org/wiki/Lakhimpur\\_district#History](https://en.wikipedia.org/wiki/Lakhimpur_district#History)

<sup>45</sup> All over state is coming under seismic zone V, i.e. very high damage zone

1.12 Morigaon

<b>MORIGAON</b>											
	<p><b>Topography</b></p> <ul style="list-style-type: none"> <li>The district is bounded by the mighty Brahmaputra on the North, KarbiAnglong district on the South, Nagaon District on the East and Kamrup District on the West between 26.15 degrees North latitude and 92 degree East Longitude.</li> </ul>										
	<p><b>Geology and Soil</b></p> <p>The soil of the district is very suitable for production of all seasonal paddy and other Rabi and Horticultural crops. The soil of the district has been classified on the basis of chemical composition as follows:-</p> <ul style="list-style-type: none"> <li>Strongly acidic to alkaline</li> <li>Low to medium content of total soluble salts</li> <li>Medium to high phosphate</li> <li>Low to medium inorganic carbon percentage</li> <li>Medium to high in Potash content</li> </ul> <p><b>Agro climatic zone</b></p> <ul style="list-style-type: none"> <li>The district falls under the Central Brahmaputra Valley Zone (NARP<sup>46</sup>). Summer Paddy, Winter Paddy, Autumn Paddy, Rapeseed &amp; Mustard, Wheat, Black gram, Sugarcane are some of the major crops cultivated here.</li> </ul>										
<table border="1"> <thead> <tr> <th>Parameters</th> <th>Values/Remakes</th> </tr> </thead> <tbody> <tr> <td>Electrical Conductivity</td> <td>NA</td> </tr> <tr> <td>Fluoride</td> <td>0.1 – 0.7 ppm</td> </tr> <tr> <td>Iron</td> <td>0.1 – 2.5 ppm</td> </tr> <tr> <td>Arsenic</td> <td>NA</td> </tr> </tbody> </table>	Parameters	Values/Remakes	Electrical Conductivity	NA	Fluoride	0.1 – 0.7 ppm	Iron	0.1 – 2.5 ppm	Arsenic	NA	<p><b>Surface Water</b></p> <ul style="list-style-type: none"> <li>The district is drained by several perennial rivers flowing from south to north. Rivers Kalong and Kopili are two most important rivers.</li> </ul>
Parameters	Values/Remakes										
Electrical Conductivity	NA										
Fluoride	0.1 – 0.7 ppm										
Iron	0.1 – 2.5 ppm										
Arsenic	NA										

<sup>46</sup> National Agricultural Research Project

<b>MORIGAON</b>	
	<p><b>Climate and Meteorology</b></p> <ul style="list-style-type: none"> <li>The average annual rainfall of the district is 1770 mm out of which monsoon contribution is 83%. The maximum temperature is 29.5°C (average) while minimum temperature is 17.5°C (average). The numbers of rainy days is 24 from May to September. Morigaon district has sub-tropical and humid type of climate. The humidity data reveal that the air is humid throughout the year. It has the value of 67 to 79 % during dry period.</li> </ul>
	<p><b>Biodiversity and Forest</b></p> <p><u>Forest</u></p> <ul style="list-style-type: none"> <li>The district covers a forest land of 133 square kilometers. Open forest dominates the region covering 64.66% of the total forest land. Whereas moderately dense forest and Very dense forest covers only 30.82% and 4.81% respectively<sup>47</sup>.</li> </ul> <p><u>Flora and Fauna</u></p> <ul style="list-style-type: none"> <li>There are three Reserved Forest constituted under Assam Forest Regulation Act, 1891. These are Sunaikuchi, Khulahat, and BuraMayong. There is also one wildlife Sanctuary, named Pobitora Wildlife Sanctuary, located in Mayong which is famous for the Indian one horned Rhinoceros<sup>48</sup>.</li> </ul>
<p><b>Natural Hazard and Calamities</b></p> <ul style="list-style-type: none"> <li>The most common vulnerability to the all over state is flood and Seismicity<sup>49</sup>. Some parts of Morigaon district is also vulnerable to flood which occur almost in every monsoon.</li> </ul>	

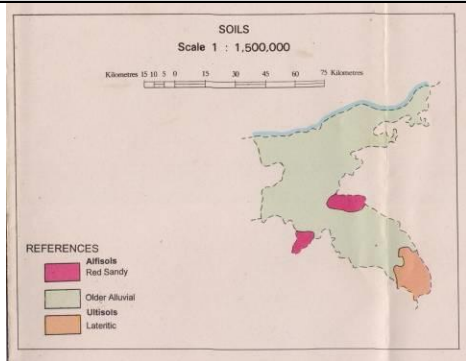
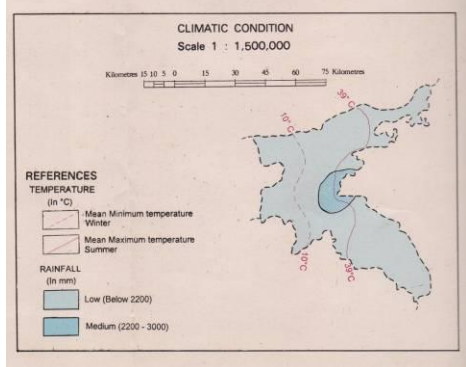
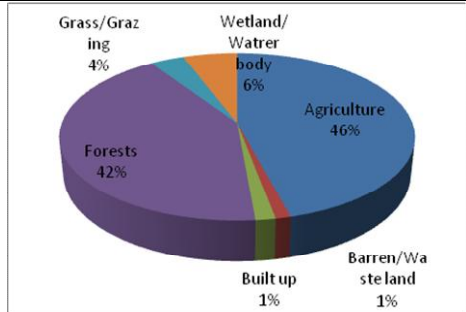
**1.13 Nagaon**

<b>NAGAON</b>	
	<p><b>Topography</b></p> <ul style="list-style-type: none"> <li>The district extends between 26.3464° N latitude to 92.6840° E longitude. On the north, Nagaon is bounded by Sonitpur district &amp; the Brahmaputra, towards its south lies West Karbi Anglong and North Cachar Hills, towards its east lies the districts of East Karbi Anglong and Golaghat</li> </ul>

<sup>47</sup>Indian State Forest Report, 2011.

<sup>48</sup>[https://en.wikipedia.org/wiki/Morigaon\\_district#Flora\\_and\\_fauna](https://en.wikipedia.org/wiki/Morigaon_district#Flora_and_fauna)

<sup>49</sup> All over state is coming under seismic zone V, i.e. very high damage zone

<b>NAGAON</b>													
	<p><b>Geology and Soil</b></p> <ul style="list-style-type: none"> <li>The alluvial soil is mostly loamy and consists of a mixture of clay and sand in varying proportions, ranging from pure sand on the banks of the Brahmaputra to sticky clay which is considered unfit for cultivation. Marshy soil is chiefly found in the low lying areas. These are black in colour. The red soil generally occupies the hill slopes and foot hills. Occasionally lateritic soil is also found near about Lunding.</li> </ul> <p><b>Agro climatic zone</b></p> <ul style="list-style-type: none"> <li>The district falls under the Central Brahmaputra Valley Zone (NARP<sup>50</sup>). Summer Paddy, Winter Paddy, Autumn Paddy, Rapeseed &amp; Mustard, Wheat, Black gram, Sugarcane are some of the major crops cultivated here.</li> </ul>												
<table border="1"> <thead> <tr> <th>Parameters</th> <th>Values/Remakes</th> </tr> </thead> <tbody> <tr> <td>Electrical Conductivity</td> <td>Permissible limit</td> </tr> <tr> <td>Fluoride</td> <td>Within desirable limit</td> </tr> <tr> <td>Iron</td> <td>0.35 -2.25 mg/l</td> </tr> <tr> <td>Arsenic</td> <td>Not detected</td> </tr> <tr> <td>Type of water</td> <td>NA</td> </tr> </tbody> </table>	Parameters	Values/Remakes	Electrical Conductivity	Permissible limit	Fluoride	Within desirable limit	Iron	0.35 -2.25 mg/l	Arsenic	Not detected	Type of water	NA	<p><b>Surface Water</b></p> <ul style="list-style-type: none"> <li>The district is drained Brahmaputra and its tributaries mainly Kolong, Kopili, Sonai and Diyang.</li> </ul> <p><b>Groundwater</b></p> <ul style="list-style-type: none"> <li>In Nagaon district stage of ground water development is 39 %, which shows under the SAFE category. As long-term water level trend does not show any major change so the whole district may be considered as SAFE.</li> </ul>
Parameters	Values/Remakes												
Electrical Conductivity	Permissible limit												
Fluoride	Within desirable limit												
Iron	0.35 -2.25 mg/l												
Arsenic	Not detected												
Type of water	NA												
	<p><b>Climate and Meteorology</b></p> <ul style="list-style-type: none"> <li>The climate is in general Monsoon type. But there are some differences from the other districts of Assam. Rainfall increases towards the east and the west of Assam from this district. The climate is of an extreme type compared to other districts of Assam. The pattern of rainfall is such that the south is usually dry and the north is relatively rainier. Rainfall from south to north increases from 1000 mm per annum to 2000 mm per annum. The area around Lanka is a semi desert. The cold season is from December to February. Floods create havoc usually from June to October. The monsoon lasts from April to May. The post monsoon season lasts from October to November. The average rainfall is about 1750 mm. Deforestation, El-Nino effect; speedy urbanization and global warming in general are changing the rainfall pattern of the district. Today the district has a vegetation cover of only 12%<sup>51</sup>.</li> </ul>												
	<p><b>Biodiversity and Forest</b></p> <p><u>Forest</u></p> <ul style="list-style-type: none"> <li>The district covers a forest land of 796 square kilometers. Open forest and moderately dense forest dominates the region covering 50.62% and 44.34% respectively of the total forest land. Whereas moderately dense forest and Very dense forest covers only 5.02%<sup>52</sup>.</li> </ul>												

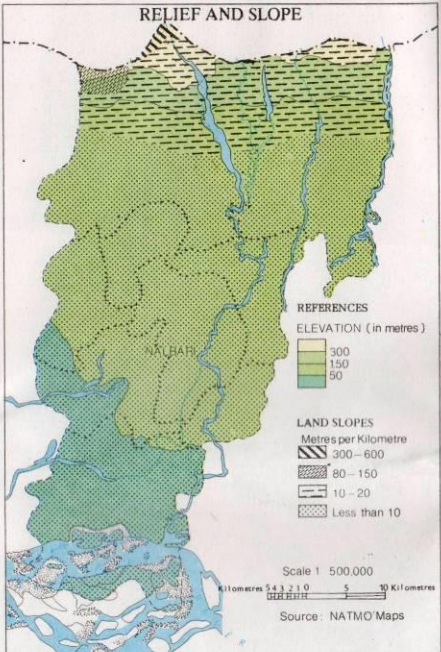
<sup>50</sup> National Agricultural Research Project

<sup>51</sup> <http://nagaon.gov.in/geog.html>

<sup>52</sup> Indian State Forest Report, 2011.

<b>NAGAON</b>	
	<p><b><i>Flora and Fauna</i></b></p> <ul style="list-style-type: none"> <li>In 1974 Nagaon district became home to Kaziranga National Park, which has an area of 175 km<sup>2</sup> within nagaon district. It shares the park with Golaghat district. It is also home to the Laokhowa Wildlife Sanctuary<sup>53</sup>.</li> </ul>
<p><b>Natural Hazard and Calamities</b></p> <ul style="list-style-type: none"> <li>The most common vulnerability to the all over state is flood and Seismicity<sup>54</sup>. Some parts of Nagaon district is also vulnerable to flood which occur almost in every monsoon.</li> </ul>	

### 1.14 Nalbari

<b>NALBARI</b>	
	<p><b>Topography</b></p> <ul style="list-style-type: none"> <li>Nalbari District is situated between 26°N and 26.51° N latitude and 91° E and 91.47° E longitude. The north and west side of the district is bounded by Baksa and Barpeta districts respectively. The southern and eastern side of the district is bounded by Kamrup district.</li> <li>The entire area of the District is situated at the plains of the Brahmaputra Valley. The tributaries of the Brahmaputra, Nona, Buradia, Pagaldia, Borolia and Tihu that originate from the foothills of the Himalayan Range are wild in nature and have enormous contribution towards the agrarian economy of the district.</li> </ul>

<sup>53</sup>[https://en.wikipedia.org/wiki/Nagaon\\_district#Flora\\_and\\_fauna](https://en.wikipedia.org/wiki/Nagaon_district#Flora_and_fauna)

<sup>54</sup> All over state is coming under seismic zone V, i.e. very high damage zone

<b>NALBARI</b>													
	<p><b>Geology and Soil</b></p> <p>The soil of the district can broadly be classified into two groups:</p> <ul style="list-style-type: none"> <li>• Deep reddish clayey soil in forest and hilly area and</li> <li>• Alluvial soil of Recent age occurring along the alluvial plains of the Brahmaputra river. The red clayey alluvial highlands of the district are ideally suited for the tea and sugarcane cultivation. The swampy and very low lands are characterised by deep grey silty soil suitable for jute cultivation.</li> </ul> <p><b>Agro climatic zone</b></p> <ul style="list-style-type: none"> <li>• The district falls under the Lower Brahmaputra Valley Zone (NARP<sup>55</sup>). Rice, Rapeseed &amp; Mustard, Pea, Lentil, Black gram some of the major crops cultivated here.</li> </ul>												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Parameters</th> <th style="width: 75%;">Values/Remarks</th> </tr> </thead> <tbody> <tr> <td>Electrical Conductivity</td> <td>Permissible limit</td> </tr> <tr> <td>Fluoride</td> <td>Within desirable limit</td> </tr> <tr> <td>Iron</td> <td>0.2-1.40</td> </tr> <tr> <td>Arsenic</td> <td>Not detected</td> </tr> <tr> <td>Type of water</td> <td>NA</td> </tr> </tbody> </table>	Parameters	Values/Remarks	Electrical Conductivity	Permissible limit	Fluoride	Within desirable limit	Iron	0.2-1.40	Arsenic	Not detected	Type of water	NA	<p><b>Surface Water</b></p> <ul style="list-style-type: none"> <li>• The district is drained by Pagladia river and its tributaries.</li> </ul> <p><b>Groundwater</b></p> <ul style="list-style-type: none"> <li>• The stage of ground water development is the under SAFE category.</li> </ul>
Parameters	Values/Remarks												
Electrical Conductivity	Permissible limit												
Fluoride	Within desirable limit												
Iron	0.2-1.40												
Arsenic	Not detected												
Type of water	NA												
	<p><b>Climate and Meteorology</b></p> <ul style="list-style-type: none"> <li>• The district experiences a tropical humid climate with heavy rainfall and hot summer. The average temperature ranges from minimum 8°C to maximum 34°C throughout the year. The average humidity remains almost same with variation from 62% in winter to 87% in post monsoon period.</li> <li>• The average annual rainfall of the district is 1904.4 mm with minimum rainfall as zero mm in November to maximum 395 mm during August. The maximum rainfall occurs during the period from April to August. Heavy rainfall starts from April with the onset of monsoon and continues till August. Then it recedes afterward.</li> </ul>												

<sup>55</sup> National Agricultural Research Project

<b>NALBARI</b>	
	<p><b>Biodiversity and Forest</b></p> <p><u>Forest</u></p> <ul style="list-style-type: none"> <li>The district covers a forest land of 282 square kilometers. Open forest dominates the region covering 73.75% of the total forest land. Whereas moderately dense forest and Very dense forest covers only 33.65% and 1.41% respectively<sup>56</sup>. The region possesses some valuable species like Goman, Titasopa, Uriam, Sonaru, Hallong, Sam, Simul, Khoira and Sisso which are abundantly found in the northern part of the district.</li> </ul>
<p><b>Natural Hazard and Calamities</b></p> <ul style="list-style-type: none"> <li>The most common vulnerability to the all over state is flood and Seismicity<sup>57</sup>. Some parts of Nalbari district is also vulnerable to flood which occur almost in every monsoon.</li> </ul>	

**1.15 Sivasagar**

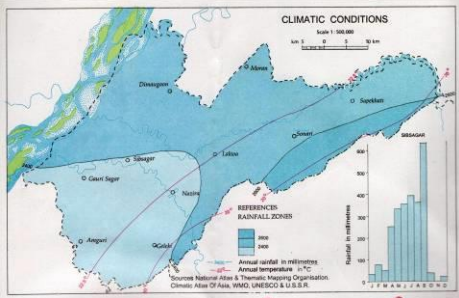
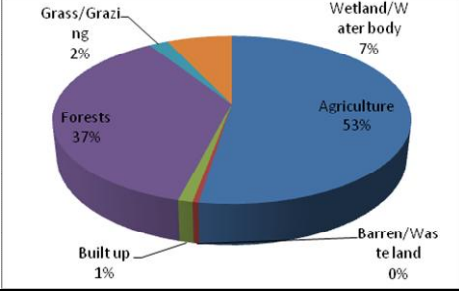
<b>SIVASAGAR</b>							
	<p><b>Topography</b></p> <ul style="list-style-type: none"> <li>Sivasagar District is situated between 94.25° and 95.25° East Longitude and 21.45° and 27.15° North Latitude.</li> <li>There is no hill area in the district. The Southern part extends up to the foot hills of Nagaland and it is well drained and high land and suitable for Tea plantation.</li> </ul>						
	<p><b>Geology and Soil</b></p> <ul style="list-style-type: none"> <li>Geologically, the district is a part of the Brahmaputra valley covered by recent alluvial deposits showing wide variations from place to place. Approximate thickness of this formation is 200 to 300 m. Soil is suitable for cultivation. High land is suitable for vegetable, pulses and Tea and other garden crops.</li> </ul> <p><b>Agro climatic zone</b></p> <ul style="list-style-type: none"> <li>The district falls under the Upper Brahmaputra Valley Zone (NARP<sup>58</sup>). Winter Rice, Autumn Rice, Summer Rice, Wheat, Green gram, Black gram, Peas, Rape and Mustard, Sugarcane, Jute are some of the major crops cultivated here.</li> </ul>						
<table border="1" style="width: 100%;"> <thead> <tr> <th>Parameters</th> <th>Values/Remarks</th> </tr> </thead> <tbody> <tr> <td>Electrical Conductivity</td> <td rowspan="3">Sporadic occurrence of iron</td> </tr> <tr> <td>Fluoride</td> </tr> <tr> <td>Iron</td> </tr> </tbody> </table>	Parameters	Values/Remarks	Electrical Conductivity	Sporadic occurrence of iron	Fluoride	Iron	<p><b>Surface Water</b></p> <ul style="list-style-type: none"> <li>The district is drained by Brahmaputra, Janji, Dikhow, Disang, Namdang, Mitong, Dorika Rivers.</li> </ul> <p><b>Groundwater</b></p>
Parameters	Values/Remarks						
Electrical Conductivity	Sporadic occurrence of iron						
Fluoride							
Iron							

<sup>56</sup> Indian State Forest Report, 2011.

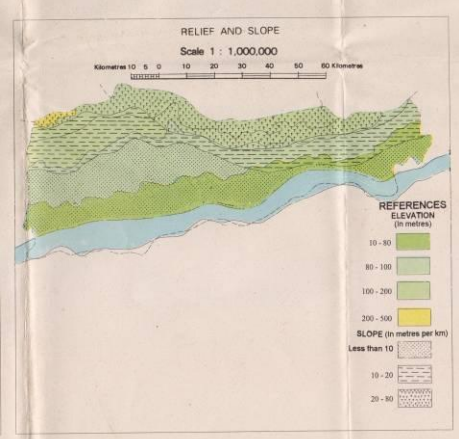
<sup>57</sup> All over state is coming under seismic zone V, i.e. very high damage zone

<sup>58</sup> National Agricultural Research Project



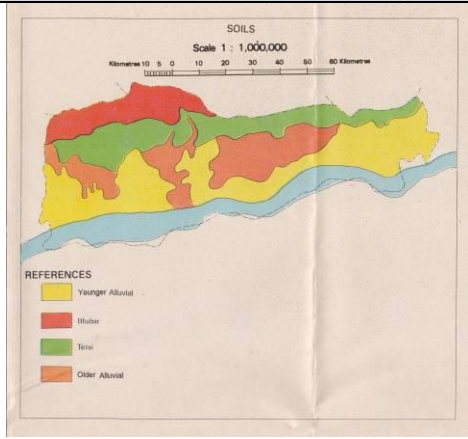
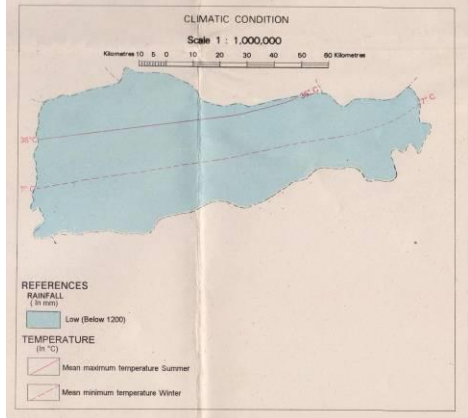
<b>SIVASAGAR</b>					
<table border="1"> <tr> <td style="width: 50%;">Arsenic</td> <td></td> </tr> <tr> <td>Type of water</td> <td></td> </tr> </table>	Arsenic		Type of water		<ul style="list-style-type: none"> <li>The stage of ground water development is the under SAFE category.</li> </ul>
Arsenic					
Type of water					
	<p><b>Climate and Meteorology</b></p> <ul style="list-style-type: none"> <li>The climate of the district is humid and sub-tropical with maximum temperature ranging from 27° to 38°C in the summer and minimum winter temperature varying between 3.4° and 11°C. Humidity is very high ranging from 74 to 87 per cent. The extreme humidity causes sweltering conditions during June to September.</li> </ul>				
	<p><b>Biodiversity and Forest</b></p> <p><u>Forest</u></p> <ul style="list-style-type: none"> <li>The district covers a forest land of 695 square kilometers. Open forest dominates the region covering 78.12% of the total forest land. Whereas moderately dense forest and Very dense forest covers only 20.71% and 1.15% respectively<sup>59</sup>.</li> </ul>				
<p><b>Natural Hazard and Calamities</b></p> <ul style="list-style-type: none"> <li>The most common vulnerability to the all over state is flood and Seismicity<sup>60</sup>. Some parts of Sivasagar district is also vulnerable to flood which occur almost in every monsoon.</li> </ul>					

**1.16 Sonitpur**

<b>SONITPUR</b>	
	<p><b>Topography</b></p> <ul style="list-style-type: none"> <li>The district is located on the Northern Bank of River Brahmaputra between 92°57' - 93° East Longitude and 26° 50' - 27° 01' North Latitude.</li> <li>Located between mighty Brahmaputra River and Himalayan foothills of Arunachal Pradesh, the district is largely plain with some hills. Brahmaputra River forms the south boundary of the district. A number of rivers which originate in the Himalayan foothills flow southwards and ultimately fall in Brahmaputra River.</li> </ul>

<sup>59</sup>Indian State Forest Report, 2011.

<sup>60</sup> All over state is coming under seismic zone V, i.e. very high damage zone

<b>SONITPUR</b>									
	<p><b>Geology and Soil</b></p> <p>The soils of the district can broadly be classified into the following groups:</p> <ul style="list-style-type: none"> <li>• Red Loamy soils, found in the northern border of the district, with low nitrogen, low phosphate and medium to high potash and acidic in nature.</li> <li>• Lateritic Soil, found in hilly region, acidic in nature and poor plant nutrient.</li> <li>• New Alluvial Soil, found in the flood plain area and is subjected to occasional floods and consequently receives considerable silt deposit after the flood recedes. Soil PH is feebly alkaline and moderately rich in plant nutrient.</li> <li>• Older Alluvial Soil, are comparatively more acidic than the newer alluvial soil and hence more crop sensitive.</li> </ul> <p><b>Agro climatic zone</b></p> <ul style="list-style-type: none"> <li>• The district falls under the Lower Brahmaputra Valley Zone (NARP<sup>61</sup>). Paddy, Wheat, Maize, Linseed, Rapeseed/mustard, Black gram, Green gram, Arahari, Lentil, are some of the major crops cultivated here.</li> </ul>								
<table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 25%;">Parameters</th> <th>Values/Remarks</th> </tr> </thead> <tbody> <tr> <td>Electrical Conductivity</td> <td rowspan="5">Most of the chemical parameters are within the permissible limit set by BIS, except higher content of iron.</td> </tr> <tr> <td>Fluoride</td> </tr> <tr> <td>Iron</td> </tr> <tr> <td>Arsenic</td> </tr> <tr> <td>Type of water</td> </tr> </tbody> </table>	Parameters	Values/Remarks	Electrical Conductivity	Most of the chemical parameters are within the permissible limit set by BIS, except higher content of iron.	Fluoride	Iron	Arsenic	Type of water	<p><b>Surface Water</b></p> <ul style="list-style-type: none"> <li>• The district is drained by Jia Bharali, Gabharu, Ghiladhari, Bargang, Belsiri Rivers.</li> </ul>
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	<p><b>Climate and Meteorology</b></p> <ul style="list-style-type: none"> <li>• The climate of the district is subtropical and humid characterized by high rainfall. The annual rainfall is 2,173 mm and relative humidity 65 to 85 percent. The district receives SW monsoon rainfall from the month of June and continues up to September/October. The highest rainfall areas of the district are located near the foothills of Arunachal Himalayas, i.e., in the northern part of the district. The maximum temperature goes up to 37.5°C during June / July and minimum temperature falls to 7.6°C in December and January.</li> </ul>								

<sup>61</sup> National Agricultural Research Project

<b>SONITPUR</b>															
<table border="1"> <caption>Land Use Distribution in Sonitpur</caption> <thead> <tr> <th>Category</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Agriculture</td> <td>45%</td> </tr> <tr> <td>Forests</td> <td>29%</td> </tr> <tr> <td>Wetland/Water body</td> <td>17%</td> </tr> <tr> <td>Grass/Grazing</td> <td>7%</td> </tr> <tr> <td>Built up</td> <td>2%</td> </tr> <tr> <td>Barren/Wasteland</td> <td>0%</td> </tr> </tbody> </table>	Category	Percentage	Agriculture	45%	Forests	29%	Wetland/Water body	17%	Grass/Grazing	7%	Built up	2%	Barren/Wasteland	0%	<p><b>Biodiversity and Forest</b></p> <p><u>Forest</u></p> <ul style="list-style-type: none"> <li>The district covers a forest land of 960 square kilometers. Open forest and moderately dense forest dominates the region covering 65% and 29.16% respectively of the total forest land. Whereas Very dense forest covers only 5.83%<sup>62</sup>.</li> </ul> <p><u>Flora and Fauna</u></p> <ul style="list-style-type: none"> <li>In 1998 Sonitpur district became home to Nameri National Park, which has an area of 200 km<sup>2</sup>. It is also home to Orang National Park, which it shares with Darrang district. Orang was established in 1999 and has an area of 79 km<sup>2</sup>. Sonitpur is home to two wildlife sanctuaries, namely Burachapori Wildlife Sanctuary and Sonai Rupai Wildlife Sanctuary. It is also home to Behali, Naduar, Charduar Reserve Forests<sup>63</sup>.</li> </ul>
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<p><b>Natural Hazard and Calamities</b></p> <ul style="list-style-type: none"> <li>The most common vulnerability to the all over state is flood and Seismicity<sup>64</sup>. Some parts of Sonitpur district is also vulnerable to flood which occur almost in every monsoon.</li> </ul>															

<sup>62</sup>Indian State Forest Report, 2011.

<sup>63</sup>[https://en.wikipedia.org/wiki/Sonitpur\\_district#Geography](https://en.wikipedia.org/wiki/Sonitpur_district#Geography)

<sup>64</sup>All over state is coming under seismic zone V, i.e. very high damage zone