Geographical Background of the Bhabar-Tarai Belt of Lower Assam District, India

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Abstract: From geo-ecological point of view, the Bhabar-Tarai belt bears immense significance as it considers as shelter belt for diverse species. It may be mentioned as a hub of interaction among all biota that holds life to sustain. Being a rich domain in respect of plant and animal species, the belt is composed by pebbles, sand, and silt with thick forest cover and ranges from dry disappearance river bed topography to wet, marshy land one. With an area of 3994.25 sq.km, Lower Assam district is also flourished by this notable structure of physiography out of which 89.24% are Tarai followed by 10.75% of Bhabar. Most of the area is covered by BTAD areas along with specified Assam-Bhutan Boarder that support a great number of people with their associated livelihood compositions. For more details, there has made an attempt of analysis this important zone of physical features along with adopted form of belongingness of people to the area as well. The paper is prepared on the basis of both primary and secondary data and findings are represented with the help different digital cartographic techniques.

Keywords: Bhabar, Tarai, Hub, Belongingness

I. INTRODUCTION

The continuous physical zone of Bhabar comprises with tall trees and absence of river with a width of 8-14km and an area of 524.056 sq.km. The flowing water from Shiwalik Himalayas is submerged here due to lack of porosity nature of soils that leads to dry land surface over the area. Towards its south, the Tarai belt is running parallel to the Bhabar that composed with wet to marshy land through the re-emergence of the river and regarded as a cap of sediments, silt etc form of deposition as well. The Bhabar-Tarai belt is a thickly forested area having some national parks and wildlife sanctuaries being considered as an eco-tourism heritage site. In India, the state of Himachal Pradesh, Uttar Pradesh, Uttarakhand, Haryana etc. of Northern Plain are categorised as a part of the this unique physical feature. Besides these, the Tarai region is renamed as “Dooars” in lowland areas of the state of Assam along its Bhutan and Nepal-Darjeeling boarder and also covered up to some grassland region of W.Bengal comprises with a great number of wetlands that support different species be termed as central zone for them. This eco-region has ample consideration particularly for tea plantation and growth and thereby has immense economic significance as people choose it as an income source of them. Apart from these, the another notable facts of the belt is the deposition of alluvium mostly from seasonal river helps to demarcate the area as a productive form of various agricultural practices and thus leads to be a shelter for a huge number of populations.

Being a thick forested area, the belt is also carrying another economic potential that related to the timber though it is still in a small scale enterprises. Assam is very much endowed with tremendous natural resources that hold it unique so far the state is concerned. Out of its uniqueness, the portfolio of Bhabar-Tarai region is another having 5.09% of area lying particularly in lower part of the state. These ranges are diffused over the districts of Kokrajhar, Chirang, Baksa, Udalguri along with some notable parts of Dhuburi, Bongaigaon and Barpeta district. This eco-hub has further concerned with most of the tribal peoples having diverse norms of cultures and beliefs. Considering all the facts, there has an attempt to analysis the significant Bhabar-Tarai belt in a micro level and for the reference, the lower parts of the state of Assam has been selected entitled as “A Geographical Background of the Bhabar-Tarai Belt of Lower Assam District”.

II. OBJECTIVES

The main objectives of the study are inculcated to analysis about the spatial extension and geographical dimension of the Bhabar-Tarai belt along with general introduction of land use pattern of the area.

III. METHODOLOGY

The paper is based on information that collected by both primary and secondary sources. During pre field stage basically for the development of conceptual framework of the work, there have to be consulted with the pre-existing literature related to the field in terms of thesis, e-journal, articles, reports, book etc. A top sheet on a scale of 1:200000 that collected from ISRIC, Netherlands is used particularly for delineating the Bhabar-Tarai belt by using digital form of cartography on the basis of soil characteristics. With the help of collected map from North-Eastern District Resource Plan (ISRO) and Arc-GIS (10.1 version), the position of the belt in respective districts of lower Assam have to be identified and accordingly the settlement spots are find out from the districts. For the ground truth, a sample survey has organised with carrying the responses of the inhabitants regarding their life style as well as the nature and geographical settings of the area. The documentary data are collected from the census office and respective district office that help to enunciate the findings and finally presented in a systematic manner.

IV. THE STUDY AREA

From the collected information, the foothill parts of the BTC districts are categorised under the Bhabar-Tarai belt along with some parts of Dhuburi, Barpeta and Bongaigaon districts. Therefore, the study is dealing with the specific parts of the same.
Geographical Background of the Bhabar-Tarai Belt of Lower Assam District, India

As the area belongs to Assam, thereby it carries the same type of climate i.e., the sub tropical monsoon climate with an average of 24-30°C of temperature and 1000-2700mm of rainfall respectively. The soil of these areas is of piedmont type with high rich type of natural vegetation as well. Physiographically, most of the area comprises with gentle to steep slope having foothill characteristics while others have normal plain nature. With the remarkable Manas National Park and Chakrasila Wildlife Sanctuaries, the study area bears immense significance from biological point of view. The tributaries of Brahmaputra drained the area with suitable capacity of holding of being cultivable land. The latitudinal and longitudinal extension of the study area is 25°25'0" to 27°40'N North and 90°00'0" to 92°30' East. The study area is privileged by the significant Assam-Bhutan border.

With the presence of Manas National Parks, Chakrasila Wildlife Sanctuaries and various beels and wetlands, the Bhabar-Tarai belt of the selected districts are considered as an area of rich bio-diversified features that shares its boundary with Bhutan in the north. It has numerous perennial streams having older alluvium soil that support dense forest. Agriculture and forestry are the main source of income of the dwellers. In Kokrajhar, nearly 8.7% area is covered by forest and tall grasses where Tarai composition is higher.

### Table 1: Distribution of Bhabar and Tarai Belt in the Context of Assam

| Spatial Context | Total Area (in Sq. Km.) | Bhabar | Tarai | Total |
|-----------------|-------------------------|--------|-------|-------|
| Assam           | 1079.109                | 5000.052 | 6079.161 |
| Upper Assam     | 555.053 (51.44%)        | 1529.855 (30.60%) | 2084.908 |
|      -34.30%    |                         |        |       |
| Lower Assam     | 524.056 (48.56%)        | 3470.197 (69.40%) | 3994.256 |
|      -65.70%    |                         |        |       |

V. RESULT AND DISCUSSION

In the context of the distribution of Bhabar-Tarai belt, Assam has a total area of 6079.161 sq.km out of which 65.70% area covered by lower districts of the state. The proportion of Tarai is found higher within the periphery of Kokrajhar followed by Chirang, Dhuburi, Baksa while in the context of Bhabar, the districts of Baksa, Udalguri, Bongaigaon are prominent (Table 1 &2).

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### Table 2: District-wise the distribution of Bhabar and Tarai Belt in Lower Assam, India

| Sl. No. | Districts | Proportion of Bhabar and Tarai soil to total in Lower Assam Part (%) |
|---------|-----------|------------------------------------------------|----------------|-------|-------|
|         | Bhabar    | Tarai | Total |
| 1       | Barpeta   | -     | 0.79  |
| 2       | Baksa     | 44.38 | 13.67 |
| 3       | Bongaigaon| 18.66 | 0.24  |
| 4       | Chirang   | -     | 23.78 |
| 5       | Dhuburi   | 7.49  | 15.7  |
| 6       | Kokrajhar | 3.61  | 35.43 |
| 7       | Udalguri  | 25.86 | 10.39 |
| Total   | 100       | 100   |       |

Fig. 1: Location Map

Fig. 2

Fig. 3
VI. DISTRICT WISE POSSITION OF BHABAR-TARAI BELT WITH SETTLEMENT SPOT OF LOWER ASSAM
VII. LAND USE PATTERN

According to 2011 census, Kokrajhar district has higher geographical area (3,12,900 Hectares) while Chirang posses lower in this context. A few forested areas are found in Bongaigaon district as compared to Kokrajhar (44 hectares, 1,61,195 hectares respectively). The following table has been used to demarcate the proportion of land according to their classification.

Among the districts, Net Sown Area and Cropping Intensity are found highest in Barpeta that delineate its greater contribution towards the agricultural development while in Chirang, this proportion is found in lowest level.
The districts of Baksa and Kokrajhar have considerable scope of crop intensification as their percent is found lower than the others. This may be arise through the adoption of modern techniques in agriculture as well as having planned productivity, diversification etc.

**Table 3: Cropping Intensity of the Study Area, 2011**

| Districts | Total Cropped Area (Ha) | Net Sown Area (Ha) | Cropping Intensity (%) |
|-----------|-------------------------|--------------------|------------------------|
| Barpeta   | 2,64,732                | 1,59,311           | 60.178                 |
| Baksa     | 1,37,955                | 66,085             | 47.880                 |
| Bongaigaon| 1,04,698                | 67,635             | 64.600                 |
| Chirang   | 89,679                  | 46,767             | 52.149                 |
| Dhubri    | 1,72,980                | 1,34,349           | 77.667                 |
| Kokrajhar | 1,79,533                | 86,556             | 48.211                 |
| Udalguri  | 1,59,311                | 99,949             | 62.738                 |

Source: Assam Statistical Handbook, 2011

As the economy of the area is agrarian, therefore majority of area is used in the production of different seasonal agricultural crops where paddy is the main crop in respect of all district. Besides this, the area is also rich in horticultural production along with their diverse and unique agro-climatic condition. Among them, horticultural production is found highest in Dhubri district while in context of main crops, the district Barpeta posses the higher rank (Table 4).

**Table 4: Area and Production of Crops in the Study Area, 2011-12**

| District | Main Crops | Area (in Hectares) | Production (in Tones) |
|----------|------------|--------------------|-----------------------|
| Baksa    | Boro, Jha, | 1,15,917           | 3,10,721              |
| Bongaigaon| Chuna,    | 81,589             | 2,24,155              |
| Barpeta  | Lota,     | 2,06,388           | 6,34,889              |
| Chirang  |          | 66,722             | 1,34,832              |
| Dhubri   |           | 1,36,777           | 5,38,179              |
| Kokrajhar|           | 1,45,875           | 4,08,041              |
| Udalguri | Shal, Dal | 1,10,412           | 3,08,639              |

Source: District Census Handbook, 2012

**Table 5: Area and Production of Horticultural Crops in the Study Area, 2011-12**

| District | Horticultural Crops |
|----------|---------------------|
| Barpeta  | 1,49,040            |
| Bongaigaon| 1,02,870           |
| Bongaigaon| 1,02,870           |
| Bongaigaon| 1,02,870           |

Source: District Census Handbook, 2012

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Geographical Background of the Bhabar-Tarai Belt of Lower Assam District, India

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