ASSAM'S HINTERLAND

Society and Economy in the Char Areas

Gorky Chakraborty

The hinterlands are seldom a part of dominant discourse. This book is an attempt to reverse the trend by providing the oft forgotten but productive hinterlands of Assam i.e. the *char* areas (the river islands), the 'space' it deserves in the mainstream development narratives in northeast India.

The history of humanization of the *char* areas is over a century old. It is well-documented that the colonial administrators facilitated the process of transfer of the *char* dwellers from the adjoining districts of East Bengal (present day Bangladesh) to the uncultured wastes in the Brahmaputra Valley and these peasants through their traditional skill, ecological adaptation and hard work have transformed the wastelands into the granaries of Assam.

But despite their enormous contribution towards the economic development and nationality formation in the state, the 'fruits' of development have largely eluded them. Where do they stand today? The present study is an attempt to understand the concurrent issues concerning the life and livelihood patterns in the *char* areas. The historical past, the emerging reality of economic hardship, the fury of nature and the tag of being 'aliens' in their homeland has been analyzed here with field level data from the *chars* of the river Brahmaputra and its tributary the Beki.

This is one of the rarest write-ups concerning the *chars* of Assam. The analysis and insight provided can go a long way in understanding these areas to frame policies for the development and recognition of the *char* dwellers of Assam.

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CONTENTS

1

A PROFILE OF THE HINTERLAND: The *Char* Areas in Assam

Introduction

Assam occupies an area of 78,523 sq. km. According to 2001 Census, 22.63 million people belonging to different racial stocks, ethnic identity and religious background inhabit the state. The geographical area of Assam is divided into two physical divisions, namely the plains and the hills. The plains comprise of the Brahmaputra valley and the Barak valley whereas the hill division consists of two Autonomous Hill Districts – Karbi Anglong and the North Cachar Hills under the Sixth Schedule of the Indian Constitution.[1]

In this archaic description of Assam the profile of hinterland are seldom included, which otherwise play an important role in shaping up the politico-economic and socio-cultural traits in the unfolding history of the state. This study is a modest attempt to understand such remote, uncharted and fringe areas, which are situated far away from the cities—the *char* areas of Assam, located beyond the banks of river Brahmaputra and its tributaries. These are the hinterlands that are detached from the geographical mainland and psychological mainstream of the state, despite their enormous contribution towards the economy and the process of nationality formation in Assam.[2] In order to understand these areas, we first take a stock of the river

Brahmaputra and then deal with the process of *char* formation and their classification accordingly.

The Brahmaputra valley is associated with the name of the river Brahmaputra, which originates in a glacier called Tamchuk Khambab in Tibet (China) at an elevation of 5,300 m in the Kailash Range of the Himalayas. The river passes through various mountains and gorges, in four different countries under different names before entering Assam plains near Pasighat (in Arunachal Pradesh) at an elevation of 155m. The steep gradient of its mountainous ranges and the enormous water that it carries makes the velocity of the current extremely high. During its journey through the plains of Assam, the river has a mean gradient of only about 1.5 m per km. Between Pasighat and Dibrugarh the bed slope of the river is 0.62 m per km, between Dibrugarh and Nemati Ghat (near Jorhat) 0.17 m per km, Nemati Ghat and Guwahati 0.13 m per km, and between Guwahati and Dhubri 0.094 m per km. Flowing in such a flat terrain, the river losses the velocity attained in the mountains, and consequently its capacity to carry silt.[2]

On the other, Brahmaputra is the fourth largest river in the world in terms of annual average discharge (Annexure-I). Simultaneously, it is also one of the most sediment-charged rivers of the world. It is second only to the Yellow river of China (Annexure-II). Under this circumstances, due to the inter-play of various factors namely, the meandering nature and braided channel of the river, its flat incline, along with the enormous bed-load and sediment-load that it carries, acts together during the course of flood, helping in the process of *char* (river island) formation.

Normally, the *chars* are triangular in shape and unstable in nature. The size, shape and location of, most of the *chars*, changes from time to time. Usually, they are subjected to erosion on their upstream part and deposition on downstream end. As a result, the *chars* migrate downstream. Again, since the *chars* are formed under the conditions of flood their natural height is never higher than the height of the highest flood. The slope of the upstream end of the *chars*, are generally steep whereas the downstream are gentle and covered with ripples

and larger bed forms. With the recession of the floodwater, the velocity of flow gets reduced and the capacity of the river to remove these deposits becomes less. This results in deposition of silts, which gets covered with grass and vegetation in due course. During the next flood, the *chars* are again submerged in floodwater either resulting in change in area or more deposition of silts. But whatever may be their life span; the *chars* have a unique eco-system surrounding them. The soil is composed of alluvium, freshly laid by the river with little humus, which allows the growth of river grasses. *Simul*, bamboo and *jhaobon* (*Casuarina equisetifolia)* are also a common sight in the *char* areas. Along with vegetation, they are a natural habitat for certain birds both domestic and migratory, and animals too. As a whole, the *chars* have an ecology and biodiversity of their own, which is slightly different from the surrounding mainland.[3]

According to Government of Assam, the definition of *char* includes "the sandy land area extended from Sadiya to Dhubri of Assam with in the river Brahmaputra or surrounded by water of the river Brahmaputra, where people can live and cultivate the land is included in the first category *char* area. Moreover, either sides of the river Brahmaputra extended up to nearby embankment, which is recurringly affected by flood and where people live and cultivate the land are second category *char*".[4] On the other, in popular literature in Assam, the alluvial formations found in rivers other than the Brahmaputra are also referred as *chars*.

Similarly, there are different views regarding the classification of the *chars*. The National Productivity Council[5] have classified *chars* in the following ways based upon:

(A) Duration

i) Permanent or those which are in existence for more than 10 years;

ii) Semi-permanent or those which are in existence for less than 10 years but more than 5 years;

iii) Temporary or those, which are in existence for less than 5 years.

(B) Physical Feature

i) Sandy-silty-clayee or soil which are of good quality for cropping;

ii) Sandy-silty or soil which are of medium quality for cropping;

iii) Areas with wild grass such as *Kahua*; and

iv) Completely sandy and water logged areas.

Again, scholars from Assam Agricultural University[6], Jorhat has classified *char* areas into three categories based upon

(A) Flood Profile

i) Chronically flood affected or those which are inundated throughout the monsoon season;

ii) Occasionally flood affected or those which are inundated for a short period due to flash floods; and

iii) Almost flood-free or those which are temporarily inundated during high floods only.

(B) Silt Deposition

i) Highly silted soils where silt deposit is above 30 cms;

ii) Medium silted soils where silt deposit is between 10 to 25 cms;and

iii) Low silted soils where silt deposit is below 10 cms.

The Char Area Development Authority, Government of Assam in its Socioeconomic Survey Report, 2003-04 estimated that there are about 3.6 lakh hectare *char* land found in the Brahmaputra River in Assam.[7]

These hinterlands of Assam were transformed from natural habitats to areas of human habitation during the colonial period due to the process of transfer of population from the erstwhile densely populated districts of East Bengal (present day Bángladesh) to Assam. It is therefore worthy to briefly deal with pattern of immigration in Assam.

Immigrants in Assam

In order to generate more revenue through human settlement of wasteland, the British administration encouraged immigration into Assam firstly, in plantation and thereafter into the agricultural sector. Besides, other accompanying batches were also engaged in different pursuits like trade, livestock rearing and providing administrative back up to the colonial administration. The British initiated the first large-scale importation of labour during 1858-59, initiated immigration as a deliberate ploy to utilize abundant resources in Assam. The 400 labourers, who were brought to Cachar district from Banaras, Ghazipore, Chota Nagpur and Bihar to serve the emerging plantation sector, comprised of one of the earliest immigrants. Then after 1860, the process accelerated further, when labourers from U.P., Orissa and Madras was also imported into the tea gardens of Assam.[8]

The second batch of immigrants comprised of people (mostly Muslims), mainly of peasant origin, from East Bengal (presently Bangladesh), encouraged by the British to transform the agrarian scenario of Assam, which in turn could generate additional revenue to fill the colonial coffers. In the process, they transformed Assam's uncultivated wasteland including forest, into revenue yielding fields. During this period, the *char* areas of the Brahmaputra region were also transformed from natural habitats to areas of human habitation.

Initially, Nepali immigrants also came to Assam as a part of the colonial scheme for external defence and maintenance of internal law and order. Later on, with the spread of information about the presence of luxuriant grassland and cultivable wasteland in Assam, large number of Nepali immigrants moved into the state. Their influx was rather intense during 1901-31, when about 50 percent of the total Nepali immigrants of the state are estimated to have arrived.[9]

Another stream of immigrants, mainly from East Bengal was the Bengali Hindus. They initially came into Assam as a part of the colonial administrative setup. Later due to the inter-play of various political factors namely, the partition of India (1947) and the creation of

Bangladesh (1971) and its after events, influenced the flow of Bengali Hindu immigrants into the state.

Presence of various other immigrant population groups are also found in Assam. For example, the Marwaris came into Assam almost simultaneously with the advent of the British into the state. This group of people were mainly involved with trading and mercantile capital as well as moneylending activities in many places of the Brahmaputra Valley. Similarly, there are other immigrants into Assam from the Hindi-speaking areas who were involved in construction activities. But their numbers are negligible in consideration to the first three group of immigrants mentioned earlier.

Immigration from East Bengal

As a part of economic colonisation and the process of revenue generation, peasants from East Bengal were encouraged to immigrate, settle and cultivate in fallow and wastelands of Assam. To facilitate the process, Mr. Francis Jenkins, Mr. Jhonson and other British administrators in Assam forwarded various proposals. They pleaded for communication corridors, inland water communication, subsidised rate of travel facilities by rail and steamer (providing family ticket at Rs.5/- only), revenue-free land grants etc. for the peasants of East Bengal.[10] However till 1891, the process of immigration from East Bengal could not gather desired momentum.[11]

There were only few peasants from the neighbouring districts of East Bengal such as, Mymensingh, Bogra, Pabna and Rangpur, who choosed to settle in Assam during the last decade of the 19th century. But the situation changed dramatically during the amalgamation of East Bengal and Assam into one single province, as a part of the First Partition of Bengal during 1905. Stream of landless peasants started pouring from East Bengal through rail, road and waterways. They mainly streamed in to the Goalpara district of Assam. The Census Report of 1911 for the first time highlighted that during 1904-11 there were 54,000 migrants from East Bengal to Assam, out of which 51,000 settled in Goalpara alone.[12]

After 1911, the immigrants moved beyond Goalpara to other parts of the Brahmaputra valley as well. In 1921, peasants from East Bengal numbered around 3 lakh and thereafter increased to 5 lakh 75 thousand (1931),[13] spread over Nowgong, Kamrup and Darrang districts. Among the immigrants 85 to 90 percent were Muslims and within them the largest number were from Mymensingh district of East Bengal.

Thus, within a short span of time, these East Bengal farm settlers changed the demographic profile of the state. At present besides Central and Lower Assam their presence is felt in all the districts of Upper Assam also.

Immigration and Its Impact on Agriculture in Assam

The agricultural sector during the later half of the 18th century has been unable to cope with the rising demand of food grain in Assam. The land-abundant economy of Brahmaputra Valley failed to grow enough food grain to feed its increasing population, which increased mainly due to a rise in the number of people from outside the state who were associated with plantation, transport and communication and other sectors related with infrastructure. The annual import of food grains into the valley increased from 0.3 million *maunds* around 1872 to 0.7 million *maunds* during the last five years of the 19th century.[14] Large-scale epidemics especially black fever and natural disaster such as the great earthquake of 1897 made the situation worse. All these factors added to the stagnation in the hitherto low yielding agriculture of Assam. Moreover, the indigenous peasant economy also failed to respond adequately to the rising requirement of food grain due to an acute shortage of manpower in the state.

The British administration responded to this situation with twin objectives. Firstly, by facilitating immigration of technically superior and hard working peasants who could bring in large tracts of land under cultivation and secondly, increasing revenue generation through cultivation of cash crops for the revenue deficit state of Assam. The peasants, who came from East Bengal particularly Muslim peasants, brought in large areas of uncultivated, barren, forest and *char* areas under cultivation. With their hardworking nature, amphibious charecter

and traditional expertise, they introduced the concept of cash crop particularly jute into Assam's agriculture. Other than revenue generation, jute cultivation also served the purpose of satisfying the rapidly rising demand of raw jute from the fast growing jute mills in and around Calcutta. Number of jute mills in the region rose by 30 percent during 1882-1913.[15] This further increased the requirement of raw jute, which necessitated more jute cultivation in the hinterlands, particularly the districts of East Bengal and the newly settled areas of the Brahmaputra valley in Assam.

This type of cultivation, largely, for marketable surplus, revolutionised agriculture in the state. It resulted in the introduction of diversified cropping patterns with higher yield and rise in cropping intensity in the region. Along with jute, these immigrant peasants grew various crops such as *mung*, seasum, linseed, mustard, wheat, tobacco, chillies, ginger, turmeric, potato, sweet potato, cabbage, cauliflower, radish, brinjal, tomato, onion, garlic, and condiment.[16] The cultivation of these cash crops in the flood prone areas as *rabi* crop, has been one of the most remarkable development in the agricultural history of Assam.[17]

Jute had maximum impact in terms of increase in acreage and revenue generation among the variety of cash crops introduced by these peasants. Earlier to their advent, jute cultivation was very limited in Assam. But its area increased rapidly from a meagre of 5 thousand acres during 1901-02 to 58 thousand by 1911-12, 76 thousand by 1921-22, 95 thousand by 1931-32 and 277 thousand acres by 1941-42 respectively.[18] This was the single biggest contribution of the immigrant population towards cash crop production in Assam. As communication network developed with expansion of railways and waterways, goods produced in Assam were exported to rest of the country and abroad through these routes. Till early 1950, jute occupied a sizeable share among the total commodities exported from Assam through railways and waterways.[19]

The large-scale immigration of the farm settlers from East Bengal undoubtedly changed the agricultural scenario in Assam and

Brahmaputra valley in particular but simultaneously it also altered the demographic profile of the region. Muslims as a percentage of total population in the Brahmaputra valley increased from 9.50 percent in 1901 to 22.64 percent in 1941. There were various 'push' and 'pull' factors associated with this process of large-scale transfer of human population from East Bengal into Assam, where the local administration in Assam also played an important role to facilitate the process. The role played by the Sadullah government in the name of "Grow More Food" scheme has been a programme in that direction. His Muslim League government resumed large-scale distribution of wastelands and de-reservation of grazing reserves for settling the immigrants from East Bengal. But the speed, at which the scheme was being implemented, made it infamous and there by termed as "Grow More Muslim" programme.[20] In the process of this government patronage, the *char*s and forestlands of all the districts in Lower Assam, as well as Lakhimpur district of North Bank were occupied by the these peasants.

Despite of their presence in the *char* areas for over 100 years and their contribution towards the economy of the state, there is dearth of information regarding various aspects related to these areas. In order to develop the *char* areas, Government of Assam undertook a special 'Char Areas Development Programme' during the 7th Five Year Plan (1983) through a newly formed organization namely 'The Assam State *Char* Areas Development Authority'. Thereafter, the Authority was re-designated as a full-fledged Government Directorate during 1996. In due course, Government of Assam created a new department namely 'Welfare of Minorities Development', which included the Directorate of *Char* Areas during 1998. In order to develop the *char* areas, this organization undertook various schemes related to education, safe drinking water, agriculture and dairy development and training to unemployed youths for self-employment. This Authority and later Directorate conducted two benchmark surveys during 1992-93 and 2003-04, which are the only sources of information regarding *char* areas of Assam.

Present Economic Setup of the *Char* Areas

The *chars* are spread over the entire course of the river Brahmaputra from Sadiya in the East to Dhubri in the West, covering 14 districts of Assam. According to the Char Area Development Authority,[21] there are 2251 *char* villages in Assam where 2490397 people reside (9.35 percent of the total population of the province). As per their estimation, it is found that the overall number of *char* villages have decreased in Nalbari, Barpeta, Goalpara, Bongaigon, Morigaon, Lakhimpur and Tinsukia districts whereas there has been increase in their number in Kamrup, Dhubri, Darrang, Nagaon, Jorhat, Sonitpur and Dhemaji districts during 1992-93 and 2003-04 respectively. Interestingly, Barpeta district had the maximum number (351) of *char* villages in 1992-93 but now (2003-04), Dhubri has the maximum number of *char* villages (480) in Assam.

The *char* areas are densely populated and there has been an increase in the density during 1992-93 and 2003-2004. In 1992-93 per hectare population in the *char* area was 669 persons per sq. km., which increased to 690 during 2003-04. This was much higher than the state average (340 persons per sq. km.). It is observed that, there has been a fall in per capita availability of cultivable land from 0.10 hectares to 0.09 hectares during the same period. Cultivable land as percentage of total land declined from 70 percent to 67.13 percent during this period.

Land ownership pattern has been extremely skewed in the *char* areas. Due to the absence of cadastral survey in large number of *char* areas, actual ownership patterns are difficult to ascertain yet according to one estimate, about 80 percent of the total land is occupied by 10 percent of the population.[22] It is noted that a sizeable section of the population are becoming landless due to land erosion. Large numbers of char dwellers are marginal and small cultivators. It is believed that due to the skewed land ownership patterns and near absence of land records, the *Mattobars* (political and economic power brokers) rule over the poor masses in these areas.

Agriculture is the main source of livelihood of the *char* dwellers. The cultivators have to engage themselves under adverse conditions in order to reap the benefit of their toil. *Ahu* paddy is the main food crop while Jute is the major cash crop in the *kharif* season. The *rabi* season starts from the later half of October or early part of November. The cultivable plots are endowed with variety of crops during this season. Wheat, lentil, linseeds, seasum, coriander, mustard, chilli, variety of spices and vegetables are common crops grown in the *char* areas. Recently, due to the availability of irrigation (shallow) pump sets, *Iri* paddy has gained prominence in *char* areas in *rabi* season. Due to this a limited extent, wheat is being replaced by *Iri* paddy in these areas.

Cropping pattern is largely dependent upon the timing and intensity of floods. While a low flood is always a welcome phenomenon, an early flood inevitably spells disaster for the *char* cultivators. Low flood, which brings in silt, increases the productivity of soil. But high floods render the land unproductive due to the problem of sand casting. Similarly, early flood causes extensive damage to the standing *Ahu* paddy and Jute crops, which results in loss of income and food security during the *Kharif* season.

The *char* areas exhibit large variety of crop cultivation. Crop diversification is an inevitable part of the milieu of *char* cultivators. Cropping intensity and area sown more than once are higher in *char* areas compared to other areas of the state. Studies undertaken by Assam Agricultural University, Jorhat have indicated that these 'alluvial-plains' have higher productivity compared to the mainland areas in Assam.[23] The soil profile along with the dexterous nature of the cultivators plays an important role in this direction.

Despite a higher cropping intensity and a diversified crop profile, the cultivators in the *char* areas are mostly poor. Skewed land ownership pattern, recurrent threat of flood and accompanying erosion, problems of sand casting, lack of agricultural extension programmes, non-availability of input support, weak marketing linkages, poor transport and communication along with various other factors acts

as constraints in the process of earning remunerative price, stable income and sustained livelihood for these people. It is due to these reasons that the *char* dwellers are overwhelmingly poor. As per the estimates of the *Char* Areas Development Authority, during 2003-04, more than 67.90 percent of the total population in the *char* areas lived below the poverty line. It is more heartening to note that as per their estimation, the population below the poverty line increased by 19 percent during 1992-93 and 2003-04.[24] The relevant information is shown in Tables 1.1,1.2 and 1.3.

Table 1.1
Number of *Char* Villages in Assam

Districts	*1992-93*		*2003-04*	
	Char Villages	*District wise Population*	*Char Villages*	*District wise Population*
Darrang	121	135876	134	142405
Barpeta	351	275525	277	268344
Kamrup	148	105687	175	154508
Nalbari	58	62892	32	83602
Bongaigaon	150	110215	117	135809
Goalpara	187	130007	179	186826
Dhubri	313	233206	480	689909
Morigaon	41	55581	39	97324
Nowgaon	29	45161	43	89803
Dhemaji	95	68998	149	91203
Lakhimpur	182	110200	109	143235
Sonitpur	118	92061	145	145729
Tinsukia	86	33034	79	52605
Jorhat	210	141901	293	215095
Total	2089	1600244	2251	2490397

Source: *Socioeconomic Survey Report, 1992-93* Char Areas Development Authority and *Socio-Economic Survey Report, 2003-04*, Directorate of Char Areas Development, Government of Assam.

Table 1.2
Land Details in *Char* Areas of Assam

(Land in ha.)

District	*1992-93*			*2003-04*		
	Char villages	*Total Land*	*Land suitable for cultivation*	*Char villages*	*Total Land*	*Land suitable for cultivation*
Darrang	121	6661.36	4662.95	134	16756	11239
Barpeta	351	27881.36	19516.95	277	36655	24736
B'gaigaon	150	11367.00	7956.90	117	14256	9520
Dhubri	313	86925.22	60847.65	480	99898	67124
Kamrup	148	5401.72	3781.20	175	17162	11654
Nalbari	58	8558.97	5500.58	32	13432	8996
Jorhat	210	5576.38	3903.46	293	42174	28016
Morigaon	41	6804.66	4763.26	39	11932	7354
Nowgaon	29	3265.25	2285.67	43	12036	8056
Goalpara	187	11623.45	8136.41	179	19860	13728
Dhemaji	95	13517.00	9461.90	149	16976	11347
Sonitpur	118	24014.06	20309.84	145	24168	16410
Lakhimpur	182	12069.51	8455.65	109	21523	14451
Tinsukia	86	10324.00	7226.80	79	14094	9496
Total	2089	239000.00	167300.00	2251	360927	242277

Source: *Socioeconomic Survey Report, 1992-93* Char Areas Development Authority and *Socio-Economic Survey Report, 2003-04*, Directorate of Char Areas Development, Government of Assam.

Table 1.3
Percentage of *Char* Dwellers Residing Below Poverty Line

Districts	*1992-93*	*2003-04*
Kamrup	53.0	68.00
Nalbari	54.2	68.36
Barpeta	55.0	66.78
Goalpara	53.2	68.57
Bongaigaon	54.0	67.50
Dhubri	54.2	69.00
Darrang	55.0	66.94
Morigaon	52.5	67.00
Nagaon	55.0	66.79
Jorhat	25.0	64.00
Sonitpur	43.0	68.00
Lakhimpur	49.0	69.02
Dhemaji	46.8	70.93
Tinsukia	34.5	68.90
Total	48.90	67.90

Source: *Socioeconomic Survey Report, 1992-93* Char Areas Development Authority and *Socioeconomic Survey Report, 2003-04*, Directorate of Char Areas Development, Government of Assam.

From Table 1.1 it is observed that among all the districts in Assam, Barpeta had the highest number of *char* villages and population during 1992-93. At the time of undertaking this research work, the Socio-economic Survey Report, 1992-93 of The *Char* Areas Development Authority was the only available source of secondary information for the *char* areas. As a result of which, this work was initiated based on the Report of 1992-93 and therefore Barpeta district was selected as it had the highest number of *char* villages and population. However, when the Report of 2003-04 was published, it was found that Dhubri district has now replaced Barpeta in terms of largest number of *char* villages and population in Assam.

Land Legislation and Revenue Settlements in *Char* Areas

The *char* areas are in a state of continuous flux and their formation, existence, erosion and re-emergence depends upon natural factors. Since *chars* are not permanent, enacting legislation for these areas possess certain difficulties. It is notw worthy that although there were pre-Independence legislative enactments concerning *char* areas yet post-Independence legislation in Assam, are completely silent about the issues related with land administration in these areas.

Assam had two different sets of land systems during the British rule. Goalpara district and Karimganj sub-division (of Sylhet district, now in Bangladesh), was under *Zamindary* system and for the rest of the state, it was *Rayatwari* system. There were three important legislations that governed all the three areas of Assam, namely Goalpara Tenancy Act,1929, Sylhet Tenancy Act,1936 (both the Acts governing the *Zamindary* areas) and Temporarily Settlement Act,1936 (governing the areas under *Raiyatwari).* All these three legislations had specific references regarding land administration in *char* areas. However, when all the above three legislations were merged into Assam Temporarily Settled Areas Tennancy Act, 1971, the new act refrained from mentioning any specific guidelines for the *char* areas. Under such circumstances. land in these areas; remain a major source of conflict.

Formation of new *chars* as well as erosion and their re-emergence are a regular feature in the Brahmaputra River. Abatement of revenue payment, under such circumstances, leads to cancellation of rights over their land. Moreover, when the old *chars* reappear, the earlier landowners, who move to other places, seldom get a chance to re-settle and take possession of these newly emerged *chars,* resulting in conflict among the *char* dwellers.

Most of the *chars* in the Brahmaputra and its tributaries are yet to be assessed under cadastral survey, as a result of which majority of the *chars* are placed under the non-cadastral category, where the land is termed as *khas* (i.e. it belongs to the government) and all those who inhabit or/and cultivate in these lands are illegal occupiers. Moreover, even in the *chars*, where cadastral survey has been completed, one

would rarely come across land under *meadi* settlement (i.e. where the owner enjoys permanent, heritable and transferable rights). Majority of the land are either under *ek chonia* (annual revenue titles with no permanent, heritable and transferable rights) or *touzi* (non-annual but temporary holders with non-hereditary rights).[25] In *char* villages of the Barpeta district, according to the estimates of the Char Areas Development Authority, only 17.76 percent of the land is under *meadi* or permanent settlement, whereas 38.76 percent under *touzi* and 43.48 percent under *ek chonia* settlements.[26] In fact, it seems that there is no concrete yardstick to categorize land in *char* areas of Assam.

Therefore, the temporary nature of the land, absence of proper legislative measures and cadastral survey creates problem for the revenue administrators and the *char* dwellers. In such a case, analycing land relations seems to the understanding a quagmire.

Literay in the *Char* Areas

Literacy status of a particular area or a population group helps us understand the aspect of human development and socioeconomic standard of that area or the concerned population group. Unfortunately, the *char* areas in Assam have disturbing figures concerning literacy. It is observed that the overall literacy increased from 15.45 percent to 19.31 percent only during 1992-93 to 2003-04.

It is observed from the data of the Char Area Development Authority that there has been a marginal fall in literacy levels in the *char* villages of few districts (Kamrup, Bongaigaon, Dhubri and Tinsukia). Moreover, if the literacy level of Jorhat district (where the culturally developed Majuli, one of the largest river island is located) is excluded then the overall literacy in the *char* areas of Assam work out to be 15.64 percent only. The relevant information is shown in Table 1.4.

Nevertheless, there are certain *char* areas, which have comparatively higher literacy rates such as Alopoti, Major Char and Baghmara in Barpeta district, Sukchar, Mancachar, South Salmara, Porabhita and Hamidabad in Dhubri district.[27] Due to the establishment of educational institutions during the pre-independence period along

with the untiring efforts of several social workers, these villages have comparatively higher rates of literacy among the *char* areas in Assam.

Table 1.4
Literacy Rates in the *Char* Areas of Assam

(in percentage)

Districts	*Literacy 1992-93*	*Literacy 2003-04*
Darrang	10.12	12.34
Barpeta	12.90	17.63
Kamrup	16.85	15.16
Nalbari	7.90	16.24
Bongaigaon	12.85	12.46
Goalpara	8.38	13.65
Dhubri	19.06	14.60
Morigaon	8.02	18.50
Nowgaon	9.44	17.59
Dhemaji	14.44	15.69
Lakhimpur	14.01	18.50
Sonitpur	12.63	16.93
Tinsukia	14.20	14.00
Jorhat	31.90	60.55
Total	15.45	19.31

Source: *Socioeconomic Survey Report, 1992-93* Char Areas Development Authority and *Socioeconomic Survey Report, 2003-04*, Directorate of Char Areas Development, Government of Assam.

Chars in the Barpeta District

Barpeta district has the largest number of *char* villages with highest *char* population in Assam. The *chars* of the district are covered under four Development Blocks namely Mondia, Chenga, Rupsi and Manikpur. The *char* population in the district is about 20 percent of the total population of the district, whereas the land area is 8.59 percent

of the total land area of Barpeta district. Table 1.5 gives us the information about the number of *char* villages, population, land area and the area suitable for cultivation in the Barpeta district.

Table 1.5
Blockwise Details of *Char*-villages, Population, Land and Area Suitable for Cultivation in Barpeta District, 1992-93

(Land in ha.)

Development Block	*Char Villages*	*Population*	*Land Area*	*Area suitable for cultivation*
Mondia	173 (49.29)	140449 (50.97)	13295.23 (47.67)	9306.66 (47.68)
Chenga	112 (31.91)	85364 (30.98)	9596.81 (34.41)	6717.77 (34.24)
Rupsi	54 (15.38)	41293 (14.99)	4312.32 (15.46)	3018.62 (15.47)
Manikpur	12 (3.42)	8419 (3.05)	688.00 (2.47)	481.60 (2.47)
Total	351 (100)	275525 (100)	27892.36 (100)	19516.95 (100)

(Figures in parentheses indicate percentages of column total)

Source: *Socioeconomic Survey Report, 1992-93*, Directorate of *Char* Areas Development, Assam.

Among the four Blocks, Mondia Block has the highest number of *char* villages (49.29 percent) and the largest number of population (50.97 percent) while Manikpur Block has the lowest on both the counts. Similarly, in terms of total land area and land suitable for agriculture, Mondia Block has the highest area (47.67 percent) while Manikpur Block has the lowest.

The *chars* of Barpeta district are socioeconomically backward. More than 66.78 percent of the *char* dwellers (Table 1.3) in the district are below the poverty line and only 17.63 percent among them are literate (Table 1.4). Agriculture happens to the main source of livelihood

of these people. However, constant threats of land erosion, unremunerative prices for their agricultural produce along with lack of proper marketing linkages affect their prospects adversely. Absence of alternative employment opportunities due to geographical remoteness, lack of proper communication network and back of development effort aggravates the situation further.

Importance of the Study

The *chars* of the Brahmaputra valley have a unique eco-system of its own. The geomorphology of these areas and the Brahmaputra river basin are an important area of enquiry in terms of economic geography. The flora and fauna along with its bio-diversity surrounding the *char* areas are an inseparable part in understanding the Brahmaputra valley.

Similarly, the transformation of these natural habitats into areas of human habitation in Assam is an important area of historical studies. The process of revenue consolidation through immigration under the imperial regime of the British, the factors encouraging immigration, the impact of immigration on the economy and the cause of their seclusion from the mainstream throw light into various aspects both in the past and in the present economic history of Assam.

The *char* dwellers transformed the waste lands, low lying areas and river site into crop yielding fields, yet today these areas present us with indices of low economic and human development. Questions therefore arise as to why despite their significant contribution towards the agricultural development of the states the *char*-dwellers remain entrapped in a vicious cycle of underdevelopment? Why more than half of the *char* dwellers in the state live below poverty line? Why majority of the *char* dwellers are illiterate? Why do these areas in spite of high cropping intensity and diversified crop profile fail to generate comfortable livelihood for the producers? What steps have been undertaken so far to minimise the evils of land erosion in these areas? Why has there been no cadastral survey for *char* areas? All these are

important aspects of enquiry, which needs to be dealt with factually and analytically in order to understand the existential reality of the *char* dwellers. The importance of the study of *char* and its dwellers lay hidden in the resolution of these enquiries.

Char areas of Barpeta region provides the researcher with the clue to understand the historical continuum of human settlement as well as analyze the present reality. The *chars* of Barpeta happen to be a classic example for the intensive study to answer our research queries. The study of the livelihood pattern, occupational structure, relations of production, index of productivity and the levels of living in these areas provide us with an insight into a region and population group of Assam, which has often been neglected if not forgotten. Under such conditions, the study of these human habitations is not only meaningful but also pertinent to understand the present day contradictions. The importance of the study lies in analysing these problems and searching a way out to resolve these contradictions.

Objectives

This study is based on the following objectives:

i) To examine the issues of immigrant settlement and its impact upon the agricultural economy of the state in its historical perspective;

ii) To ascertain the 'push' and 'pull' factors associated with immigration to the *char* areas;

iii) To examine the present socioeconomic characteristics of the *char* dwellers;

iv) To understand the existing land-man relation in *char* areas along with the occurrence of flood and erosion;

v) To find out the economics of the cropping pattern and market linkages in the *char* areas;

vi) To suggest policy measures for proper development of these areas.

Hypotheses

The study has been conducted with the following hypotheses:

i) Recurrence of floods and land erosion is the important cause for economic backwardness of *char* dwellers;

ii) Unequal income distribution is the result of unequal land ownership pattern in the *char* areas;

iii) High cropping intensity exhibits efficient production function in agriculture in *char* areas;

iv) Geographical isolation of the *chars* from the mainland areas of the state results in very low literacy rates.

Methodology

This work has been based on primary and secondary sources of information. Since Barpeta District had the largest number of *char* villages and population, it was selected for our study. Out of the 12 Development Blocks in Barpeta District, the concentration of *char* areas was significant in three Development Blocks. They were Mondia, Chenga and Rupsi Blocks. In this context it should also be mentioned that the *chars* of Mondia and Chenga Development Blocks were located in the Brahmaputra River where as the *chars* of Rupsi Block were located in Beki River (a tributary of the Brahmaputra). Here it is necessary to state that although the *chars* of Manikpur Development Blocks were administered under Barpeta district, geographically they were located in Bongaigaon district. So this Block was not included in our study. Two villages from the three Development Blocks were selected purposively, keeping in view their distance from the nearest settled area (either town or *mofussil* centre). These six *char* villages were the second stratum of our exercise.

From these six sample villages in the three Development Blocks, households were selected on the basis of proportionate sampling method. In all the six *char* villages, 10 percent of the total households were randomly selected for our study. This is the third and final stratum of our study. This has been shown in Chart-I.

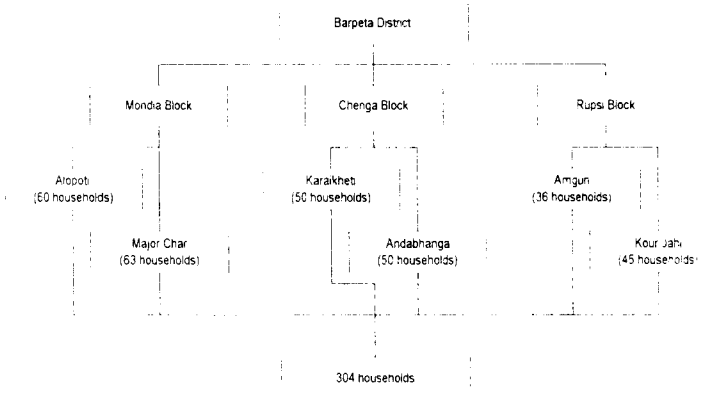

Chart I : Selection of *Char* Villages and Households in Barpeta District

The primary data from the sample households were collected through a structured personal interview schedule. However, both the structured and unstructured interview schedules were used in order to ascertain various details related to the study. Due care was also taken to interview knowledgeable persons in and from the respective *char* villages for an insight regarding various historical and socio-economic micro-details of the concerned villages.

Moreover, to supplement the primary data, secondary data and information has been collected from number of books, journals and periodicals in English, Assamese and Bengali languages. Unpublished reports of Assam Agricultural University, Jorhat and Socioeconomic Survey Data published by the Directorate of *Char* Area Development, Government of Assam has also been utilised in this study.

Statistical Tools

The primary households' data has been analysed with statistical and econometric techniques. The Cobb-Douglas production function has been used in order to understand the impact of various variables upon crop production. The function was fitted to some major crops

only. The production function used for the analysis is of the following form:

$$Y = AX_1^{b_1} X_2^{b_2} X_3^{b_3} \ldots\ldots X_n^{b_n}$$

Where Y = Yield of the crops in quintal per hectare

A = Constant term indicating efficiency parameter

$b_{i's}$ = Regression co-efficient of independent variable

U_t = Disturbance or error term with the properties

$E(U_t) = 0$

$E(U_t U_s) = \sigma_n^2 \forall t = s$

$= 0 \forall t \neq s$

Independent variables for *Ahu* Paddy and Jute production:

X_1 = Land in hectare

X_2 = Per hectare human labour

X_3 = Per hectare bullock labour

X_4 = Expenditure on fertilizer in quintal

X_5 = Expenditure on capital assets

Independent variables for *Iri* Paddy production:

X_1 = Land in hectare

X_2 = Per hectare human labour

X_3 = Per hectare bullock labour

X_4 = Expenditure on fertilizer in quintal

X_5 = Expenditure on pesticides in quintal

X_6 = Expenditure on capital assets

As the given function is in a non-linear form, it is converted into a linear form by taking logarithms. The parameters of the model are then estimated by using O.L.S. method under classical linear regression

assumption. The significance of regression co-efficient are tested by computing the respective 't' values, defined as:

$$\text{The statistic which } t^{*} = \frac{\hat{b}_i - b_i}{S.E.(\hat{b}_i)}$$

follows the 't' distribution with (n – k –1) degrees of freedom.

The goodness of fit and predictive power of the model is judged with the help of the co-efficient of Multiple Determination i.e. the R^2. It is the ratio of Regression S.S. to Total S.S. The estimate of R^2 can be obtained as :

$$R^2 = \frac{\text{Regression S.S.}}{\text{Total S.S.}} = \frac{\text{Explained Sum of Squares}}{\text{Total Sum of Squares}}$$

$$R^2 = \bar{R}^2 = 1 - (1 - R^2)\frac{n-1}{n-k}$$

After estimating production function, a test of hypothesis has been devised to test the 'returns to scale' of production by't-test' (one-tail) as follows:-

$$t = \frac{\left(\hat{b}_1 + \hat{b}_2 + \ldots\ldots\ldots\ldots + \hat{b}_n\right) - 1}{\sqrt{\text{var}\left(\hat{b}_1\right) + \text{var}\left(\hat{b}_2\right) + \ldots\ldots\ldots\ldots + \text{var}\left(\hat{b}_n\right) + 2\,\text{cov}\left(\hat{b}_1 \hat{b}_2\right) + \ldots\ldots\ldots\ldots + 2\,\text{cov}\left(\hat{b}_m \hat{b}_n\right)}}$$

If the t value thus computed exceeds the critical t value of the chosen level of significance, we reject the hypothesis of 'constant returns to scale'; otherwise we may accept the same.

To test the overall significance of the multiple regression model, in terms of R^2 technique of F- test is applied, which is given by the statistic –

$$F = \frac{\text{Regression Sum Square / df}}{\text{Error Sum Square / df}}$$

Which follows the F-statistic with d.f. (k-1, n-k) under the null hypothesis $H_0 : b_1 = b_2 = \ldots\ldots\ldots = b_n = 0$, where, n is the number of observations and k is the number of parameters. To evaluate the efficiency of resources used in traditional agriculture, Marginal Value Product (M.V.P.) of each input has been worked out as follows:

$$\frac{\partial Y}{\partial X_i} = \hat{b}_i \frac{\hat{Y}}{\hat{X}_i}$$

Where:

Y = Geometric mean of gross revenue.

X_i = Geometric mean of i^{th} input.

b_i = regression coefficient of X_i

Reference Period

A reference period from November 2003 to October 2004 has been used for all surveyed *char* villages.

Organisation of the Study

Keeping in focus the above mentioned details, objectives and hypotheses, the present study has been organised in the following way:

The first chapter deals primarily with introduction and design of the study. This chapter covers importance of the study, objectives, hypotheses, methodology, reference period and organization of the study.

In the second chapter the issue of wasteland settlement with the immigrants has been studied objectively along with the factors responsible for immigration from East Bengal to the state and the contribution of the immigrant peasants towards the agricultural economy of Assam.

The third chapter examines the socioeconomic condition of the *char* dwellers in the surveyed villages of Barpeta district.

The fourth chapter has been devoted to the issues related with land particularly legislation, revenue administration, erosion etc. in the *char* areas in general and Barpeta in particular.

The fifth chapter studies the economics of crop cultivation in the surveyed *char* villages of Barpeta district along with the marketing of various agricultural crops produced among these households.

The last chapter provides the main findings, conclusion and policy suggestion for the development of *char* areas in Assam.

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