

**GEOGRAPHICAL STUDY OF AGRICULTURAL POLICY AND ITS
IMPACT ON AGRICULTURAL DEVELOPMENT**

A CASE STUDY OF ASSAM

By
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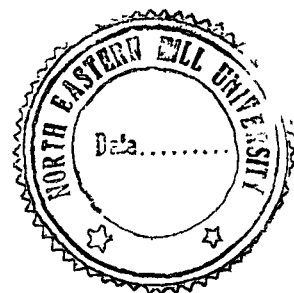
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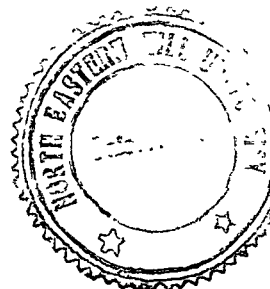
CERTIFICATE

This is to certify that the dissertation entitled "GEOGRAPHICAL STUDY OF AGRICULTURAL POLICY AND ITS IMPACT ON AGRICULTURAL DEVELOPMENT: A case study of Assam" submitted by Miss Karabi Baruah for the award of the degree of Master of Philosophy in Geography is a bonafide work under my supervision. The dissertation, or any part thereof, has not been previously submitted for any other degree to the best of my knowledge.

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31st May, 1988.



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CHAPTER-I

INTRODUCTION

General Problem

Agriculture constitutes the most extensive form of occupation in Assam Valley. The geographical spread of the state's population 80% of which still inhabit the rural areas is indicative of the fact. The dependence of the economy of Assam on agriculture is also evident from the fact that, the agricultural sector of the economy (excluding tea) is responsible for engaging 77% of the total workers and generating 44% of the state's income. Agriculture, therefore, plays a fundamental role in the overall socio-economic as well as political development processes. Thus, it is not surprising that this sector compels inescapable emphasis in any analysis of the state's economic action.

The society in the valley were acted on by external forces, notably through British annexation of the valley. This resulted in encouragement of commercialization of their subsistence economy and subsequently transformation of what had been a traditional agricultural society. This accounts for the existence of both the traditional peasant agriculture as well as the capitalist (tea plantation) agriculture. The present study is more concerned with the problems related to the former and

looks for explanations of the structures and functions.

Studies related to agriculture in Assam reveals that the state enjoys significant geo-physical advantages over many of the other states in the country, but the agricultural conditions are far from satisfactory. That there is almost a total dependence on agriculture, the planners accorded the highest priority to agricultural development since the inception of the First Five Year Plan. The objective was not only to gain self sufficiency in matters of foodgrain production but also to create surpluses, which would lead the state to go for industrialization. Despite this, there virtually seems to be no impact on the traditional agriculture of the state. Rather it seems to have reinforced the already existing disparities between the various regions of the valley, between the surrounding hilly periphery and between the agriculturally developed states of the country.

It is important to note that Assam was one of the few states in India, which was self sufficient in matters of food. At present this situation has changed drastically. The agricultural economy of the state today is beset with various problems. Over the millenia the peasant have evolved an indescribably complex mosaic of tenures

and techniques that defies generalisation. The extensive flood plains, susceptible to annual floods thereby causing great havoc to the peasant, great reliance on erratic and uncertain monsoon, inadequacy of infrastructural facilities and/or delivery of critical inputs such as seeds fertiliser, pesticides, irrigation and credits are some of the problems. Apart from these, in the wake of partition, the dislocation created due to snapping off railways, roads and water communication with the rest of the country, the influx of a sizeable number of immigration from the neighbouring countries, made the situation of the state quite difficult. The alarming rise in population has created not only acute shortages of food supply but also of agricultural land in the state. Besides, the age structure with relatively high proportion of child population has created the problem of dependency burden. A very slow rate of literacy among the agricultural population has stood in the way of easy and rapid innovation in agriculture.

Regarding the cropping pattern of the state there is hardly any diversity, with complete dominance of food-grain, particularly Winter rice. This leaves little scope for double cropping. Generally assured irrigation, use of fertilizer and mechanization of agriculture is

extremely low as compared to other parts of the country.,

Official pronouncements, debates, works of economists, geographers, agricultural scientists, etc. all are of the same opinion and emphasize that the agricultural situation in Assam is intolerable or explosive, that the backwardness in which the valley's population are engulfed is undeserved and above all could have been avoided. It is a fact that, aspects of agriculture cannot be accounted for by consideration of exclusively a single factor, be it agricultural, economic or political rather it has to be explained in terms of a geographical explanations of all factors combined together.

Besides, the political strategy of a particular government is of paramount significance in creating a particular system of agricultural economy and agrarian structure. This is especially true, since the geographical factors which influence policy decisions must enter through perception of the government and the consequences of such policies can only follow when government has implemented them.

It was stated that -

the political structure erected by every group is, ideally, a device

for facilitating the economic and social life of the community. It is most successful when it neatly fits the conditions of the natural environment in the areas where it functions.¹

Geographers had done considerable research to fill the lacunae that has prevented the agricultural economy of Assam to make rapid strides towards progress. Yet surprisingly enough, no attempt has been made so far, to probe the governmental policies, wherein might lie the answer for the slow agricultural growth of the region.

II. Review of Relevant Literature

Studies related to different branch of geography, be it political, agricultural or economic, sufficiently emphasise the role of government and their policies in promoting the development of a nation or a state (province), Generally the countries of the world adopt different strategies, according to their political ideologies and need. That any attempt to change the existing system solely depends on the strategy adopted by the government, had made it imperative to have an understanding of the policies and their implication.

1. D. Whittlesey, 1944. The Earth and the State, New York, p.256.

It was stated that "the results of political decisions on the agricultural landscape are evident in every country of the world. Sometimes political decisions play a far more decisive role as compared to socio-economic factors in many land use patterns."² It was also pointed out that "the problem of increasing agricultural production in India is more an administrative problem than a technical one."³ Further, the Central Teams on Agricultural Production, 1963, said that "unsatisfactory administrative and organisational arrangement was by far the most important single factor responsible for adequate progress in the sphere of agricultural production."⁴

Study of agricultural policies is generally regarded as beyond the purview of geographical analysis. Thus the possible relation between geographical factors in the process of policy formulation and consequent changes in its implementation is generally ignored. Thus geographers' contribution in the study of policies is very limited.

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2. J. Singh and S.S. Dhillon, Agricultural Geography, Tata Mcgraw Hills, p.162.
 3. Report of the Agricultural Administration Committee, Department of Agriculture, GOI, 1958, p.4.
 4. Report of the Working Group on Inter-Departmental and Institutional Co-ordination for Agricultural Production, Department of Agriculture, GOI, 1963.

Blouet (1965)⁵ for example, reviewed the results of Malta's First Five Year Developmental Plans (1959-64) and stated that the desire to diversify the economy was achieved through expansion of tourism and manufacturing. The main policies employed were government grants, various fiscal attractions to overseas capital, tariff protection and tax benefits.

Bettelheim's (1963),⁶ paper on India's Third Five Year Plan adopts the approach of the economist rather than that of the geographer. There was a clear statement of targets, the money spent and the balance of payment problem, but at no stage was it related to the way in which different regions of India benefitted in different ways, nor were there any significant geographical facts which may account some of the problems.

Farmer (1961)⁷ showed the situation of agriculture in Ceylon before the initiation of the plan and lists its major objectives and assumptions. He then throws doubts

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5. B.N. Blouet, "Malta's First Five Year Plan", Geography 50, pp.73-75 cited in, J.R.V. Prescott, 1968, Geography of State Policies, London: Hutchinson & Co., p.189.
 6. C. Bettelheim, 1963, "India's Third Five Year Plan", Pacific View Point, 4, pp.139-155, as cited in, Prescott, op. cit., p.189.
 7. B.H. Farmer, 1961, "The Ceylon Ten Year Plan 1959-68", Pacific View Point, 2, pp.123-136, as cited in Prescott, op. cit., p.190.

on the ability of the farmers to reach certain targets of production set by the planners and based his scepticism on the resistance of the small scale producers of export crops to the adoption of improved techniques and the character of Ceylonese peasants which made it difficult to raise rice yields.

This in brief are some of the works done by geographers in the study of national plans and policies. Regarding the negligible work done by geographers in the study of developmental plans of government, Prescott (1968), opines that "it is possible that this neglect is due partially to the tendency of geographers to be more concerned with the effects of policies rather than their formulation."⁸

Scholars from other disciplines have contributed substantially in this field. An important contribution by S.F. Singh was the book entitled "Centre State Relations in Agricultural Development".⁹ Here the author emphasises the need for adopting an inter-disciplinary approach to the problems of agricultural development and attempts to shift policy makers from purely technical exercises to the

8. Prescott, op. cit., p.98.

9. S.F. Singh, Centre-State Relations in Agricultural Development, Vikas Publishing House, New Delhi.

questions of proper organisation and managements.

So far to the best of my knowledge, there has been no attempt to study the agricultural policies of Assam by geographers. Hence, the present study "The Geographical Study of Agricultural Policy and Its Impact on Development (A Case Study of Assam)" is a modest attempt in this direction.

III. Study Area

The present study pertains to the state of Assam, along with its fifteen districts in the plains and the two autonomous hill districts, and the agricultural policies of the Ahom, the British and the Post-Independence period i.e. till the Sixth Five Year Plan (1979-85) is considered.

IV. Objective and Hypothesis of the Study

The present attempt, is to critically analyse the various agricultural policies of the government, and its nature. Also, the study would be considered from the geographical and economic point of view, and would attempt to suggest measures for its effectiveness or suggest valuable alternative if any. The proposed study is to be carried under the following broad principal objectives:

1. Analysis of the geo-political structure of agrarian society of Assam during the pre-independence period.
2. Independence and administrative changes-influence and impact.
3. The geographical impact of the above changes on landscape.
4. To analyse the various policies undertaken by the state government with the aid of the centre for agricultural development and its geographical impact on the study region.
5. Problem and prospects in implementation of such policies.
6. Finally, to suggest measures for the effectiveness of the policies to improve the stagnating agrarian conditions.

The objectives stated above is proposed to be achieved through the following hypothesis:

1. Geographical factors which influenced the formation of such policies and which includes conditions of their timing and motive.
2. That it is necessary to identify the geographical circumstances which influence the operation of such policies.

3. The study recognises the geographical results of policy implementation.

In the process the present work recognises the following broad groups of policies these are:

1. General policies by which the government seeks to promote development (centre-state).
2. Specific policies where the government makes its own decisions on measures to assist one region/one sector for development.

These also includes the consideration of

1. To understand the process by which policies are applied for it will indicate geographical effects on agricultural development policies.
2. Consideration of democratic system, i.e. where government control varies to the extent to which it is involved in the economy and the degree of control which it exerts.

V. Source of Data and Methodology

Any attempted geographical analysis of agricultural patterns over a large area presents at least one major problem right from the onset, namely, that the nature of data available is usually unsatisfactory, since it is rather weak both in terms of types and variety.

The present study is based entirely on secondary source of information. The required data and information, is mostly obtained from World Agricultural Census, 1971, Assam; the Statistical Abstract (Assam) 1980; Statistical Hand Book (Assam) 1980; Report of Assam Agricultural Commission June 1985; Draft Seventh Five Year Plan, 1985-86, Vol.I; Directorate of Agriculture, Approach Paper on Perspective Plan and the Seventh Plan 1985-1990; Besides, information is also collected from some of the published as well as unpublished agricultural information, from the Agro-Economic Research Centre, Jorhat; The Department of Planning and Development, Secretariat Assam; Directorate of Agriculture, Khanapara, Assam; as well as other offices of Agricultural Development in Assam.

The methodology applied for the study of agricultural policy is rather simple.

First attempt has been made with the help of the available data and information to provide the Agro-climatic set up; since this would help in identifying the prospects of agricultural development in the state.

Then, to provide the geo-political framework of the Assam valley, this necessitated to use the historical approach. This approach is used primarily to inquire into

the characteristics of policy at a definite point of time, and also to identify the processes and trends of the agricultural policies with changes in administration. Further with the help of such an approach, the past inconsistencies of the agricultural policies, if any, and their impact on the prevalent agricultural situation could be examined.

To have a better understanding of the present agricultural policies, and to assess their effectiveness, the agricultural situation of the state has been considered. Thus extensive survey of the prevailing agricultural conditions has been made. This is done with the help of materials collected from secondary and tertiary sources of information. The advantage of this method is that, it would help to identify any important geographical factors that has not been mentioned in the policies and at the same time, it would also indicate those sectors within agriculture that needs strengthening.

Further in an attempt to examine the various agricultural policies undertaken by the government, first the Five Year Plans have been examined listing their major objectives, targets and achievement. Then the important policies undertaken to achieve these objectives has been

discussed, taking into account the nature, the process of formulating such plans as well as the impact on its implementation.

The study has been supplemented with maps and diagrams, wherever, found necessary.

VI. Plan of Work

The present study has been carried out in the following manner :

Chapter One discusses, the problem, objectives, source of data, methodology and review of the earlier literature in this field.

Chapter Two deals with the general survey of geographical factors of the study area. The chapter highlights the geo-physical advantages of the state.

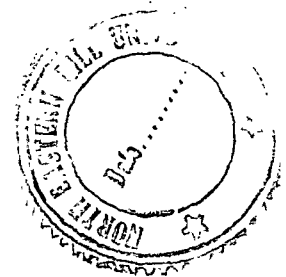
Chapter Three provides the geo-political framework of the state of Assam. Here the importance of the geo-political location has been emphasized and showed the important role it played in the evolution of the administrative units of the Assam valley, and consequently how it influenced the formulation of agricultural policies

In Chapter Four, we begin with an examination of the history of the agricultural policy and its impact on agriculture upto the present day. The historical treatment is divided into three parts viz., the Ahom period, the British period where the basic informations of the present agriculture is laid, and the period from Independence to the present day.

Chapter Five examines how after Independence, concious efforts were made to improve agricultural performances by the government. Thus the Five Year Plans as well as some of the important policies has been discussed. This chapter also provides the nature and the process of policy formulation in the state.

Finally, the conclusions of each of the chapters were assimilated. Then attempt has been made to relate the underlying unity of the entire study and highlight the basic issues that are common to the problems already identified.

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CHAPTER-II

GENERAL SURVEY OF GEOGRAPHICAL
FACTORS

Location

The study region Assam, situated in the extreme North-Eastern part of the country, lies, between $24^{\circ}08'N$ latitude and $87^{\circ}42'E$ and $96^{\circ}E$ longitude. Assam actually forms the core of the North-Eastern Region, comprising of Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland and Tripura, beside Assam. It has common borders with all the six units of the region and also West Bengal beside international borders with Bangladesh and Bhutan. The entire region is connected with the rest of India by a slender corridor leading from Dhubri and Kokrajhar districts of Assam.

Assam has an area of 78,523 sq. kms. accounting for 2.4% of the total land area of the country. There are two distinct natural regions, viz., the plain area of the Brahmaputra and the Barak valleys comprising of fifteen districts and the hill areas consisting of two autonomous districts. The two hill districts cover an area of 15,200 sq. kms. accounting for about a fifth of the land area of the State. The districts in the plains are Dhubri, Goalpara, Barpeta, Nalbari, Kamrup, Darrang, Sonitpur, Lakhimpur, Dibrugarh, Sibsagar, Jorhat, Nagoan, Kokrajhar,

Karimganj and Silchar; Karbi-Anglong and North-Cachar are the two Hill Districts of Assam (Fig. 1).

For the present analysis, the agro-climatic set-up is proposed to be studied under the following heads:

- i) The physiographic frame
- ii) Drainage
- iii) Climatic characteristic
- iv) Soil distribution
- v) The agro-climatic regions
- vi) The population characteristic.

2.1 The Physiographic Division

Assam may be divided into three principal physiographic divisions:

1. The Brahmaputra valley in the north
2. The Barak valley in the south
3. The hill region that lies between the two valleys.

1. THE BRAHMAPUTRA VALLEY

With an area of 56,339 sq. km. almost 72% of the total area of the state, the Brahmaputra valley has a total length of about 752 km. and 80 km. on average.

ASSAM ADMINISTRATIVE UNITS

- 14 NAGAON
- 15 NORTH CACHAR HILLS
- 16 SILCHAR
- 17 KARIMGANG

- 1 DHUBRI
- 2 GOALPARA
- 3 KOKA JHAR
- 4 BARPETA
- 5 NALBARI
- 6 KAMRUP
- 7 DARRANG
- 8 SONITPUR
- 9 LAKHIMPUR
- 10 DIBRUGARH
- 12 SIBSAGAR
- 13 JORHAT
- 14 KARBIANGLONG

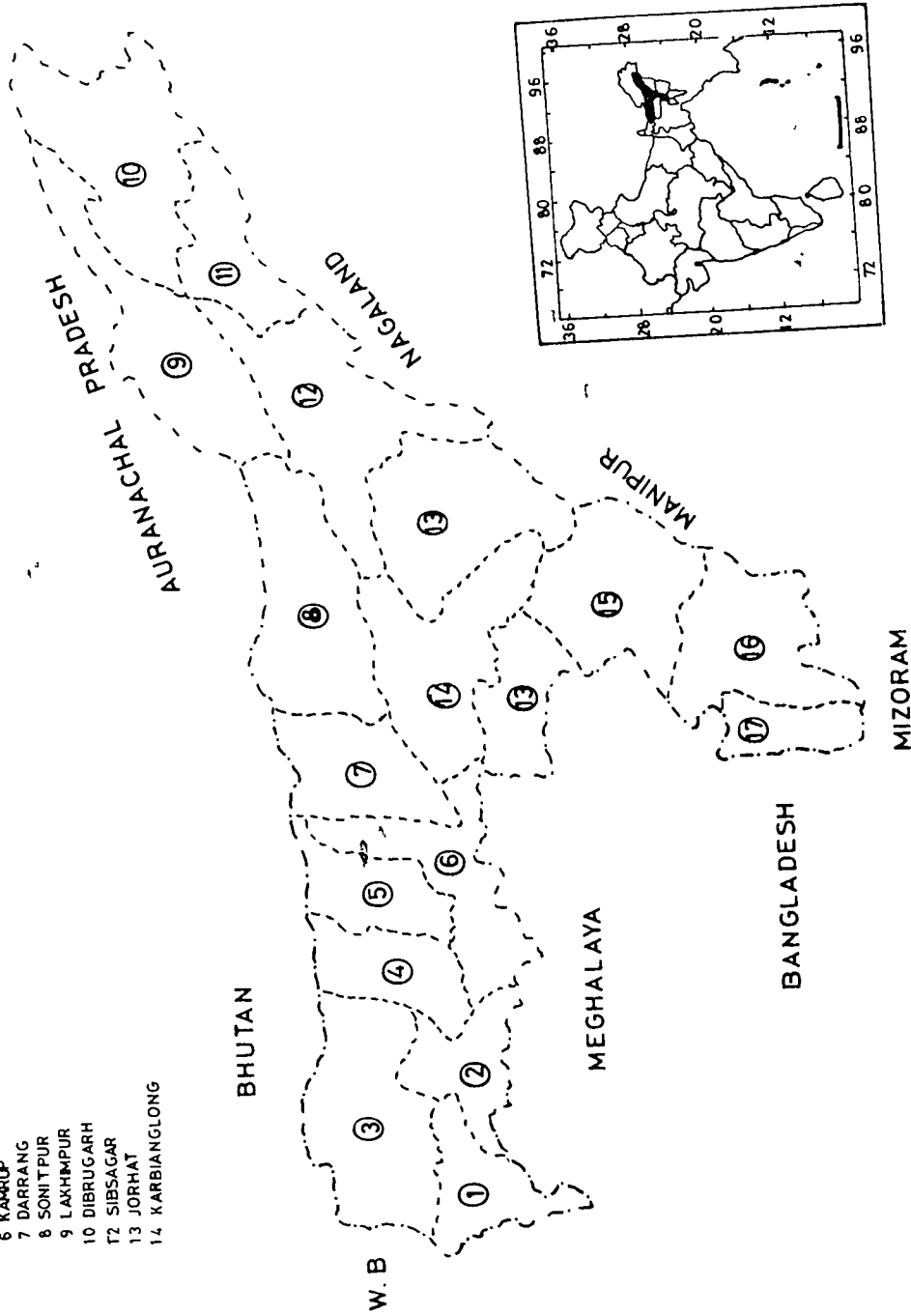


FIG.1

Typical of a gradational process the valley is essentially made up of both new and old alluvium, deposited by the river Brahmaputra and its numerous tributaries. Besides, some areas of the valley also displays the sign of erosional activities of the stream mainly along

i. the eastern part of the Nagaon district, which is mainly the outcome of the erosional activities of the river Kalang.

ii. Due to the continuous erosion of the Dhansiri, evolved the degradational plains, forming the western part of Golaghat sub-divisions.

iii. The funnel shaped plains found along the foot-hills of the Meghalaya plateau and in the Himalayas.

The valley as a whole gently slopes from Sadiya to Guwahati in North-East to South-West direction, and then proceeds upto Dhubri. At Sadiya in the eastern most point, the altitude is about 134 mts. above sea level, at Dibrugarh and Guwahati it is about 104 mts. 50 mts. respectively and at Dhubri, the western-most point it is only about 35 mts. The general gradient within the valley is from North to South in the North Bank plain and from South to North in the South Bank plain.

The Brahmaputra valley can be divided into two parts, the upper valley where unbroken plain lies from the Himalaya on the North to Naga Hills on the South, comprises the districts of Lakhimpur, Dibrugarh, Sibsagar and Jorhat and the lower Brahmaputra valley where the plains are broken by isolated groups of Hills comprises the districts of Nagoan, Sonitpur, Darrang, Kamrup, Nalbari, Barpeta, Goalpara, Dhubri and Kokrajhar.

Again running parallel or sub-parallel to the river Brahmaputra river, the valley may be divided into five physiographic zones (Fig. 2). These are :

- i) The Northern foot-hills zone of the lesser Himalayas;
- ii) The middle plain of the north bank;
- iii) The active flood plain and 'charlands'
- iv) The middle plain of the south bank;
- v) The southern foot-hills zone.¹

i) The Northern Foothills zone of the Lesser Himalayas

This zone is again sub-divided into the 'Bhabar zone' and the 'Tarai belt'. The former is a relatively

1. M. Taher, 1975, Regional Basis of Agricultural Planning in the Brahmaputra Valley, Journal of the North-East India Geographical Society, 8(1 & 2), p.13.

ASSAM PHYSIOGRAPHIC DIVISIONS

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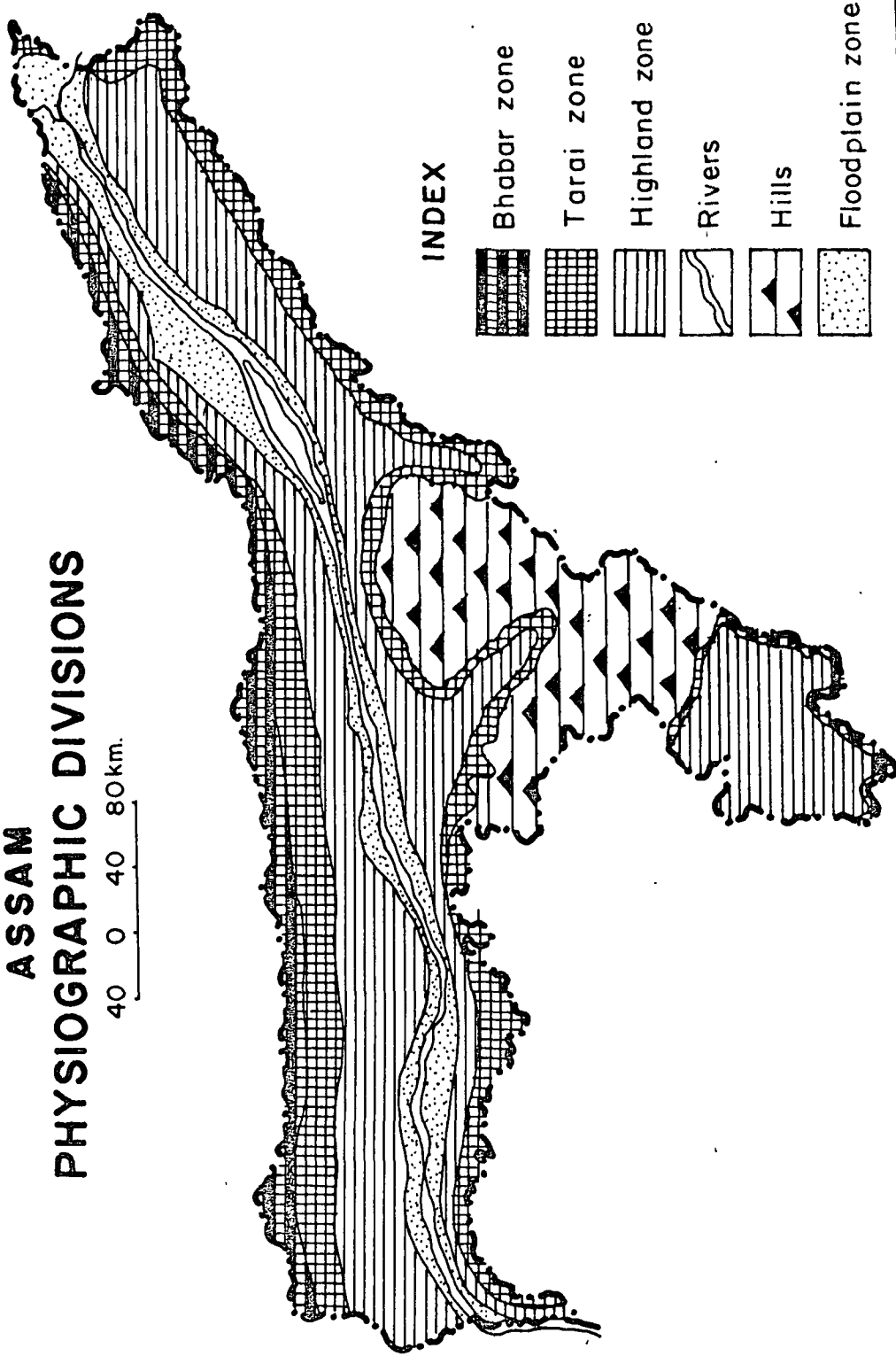


Fig. 2

high and narrow zone, composed mainly of unassorted detritus. Towards the south of this zone lies the Tarai belt, which is a flat plain with unhealthy damp soil, supporting tall grasses.

ii) The Middle Plain of the North Bank

Running parallel to the river Brahmaputra in an east-west direction and lying between the Tarai in the north and the flood plain in the south, this zone consists of a comparatively high and extensive flood plains, having rich rice fields.

iii) The Active Flood Plain

Towards the south of the middle plain of the north bank lies the extensive and active flood plain including both the banks as well as the islands of the Brahmaputra. This zone is swampy, containing numerous beels and water logged areas, though at the same time it contains the rich jute growing areas of Assam.

iv) The Middle Plain of the South Bank

This is a narrow and uneven belt where the continuity is broken by the Karbi Anglong hills. This belt contains the rich rice growing belts of Nagoan, Kamrup

and Goalpara, and the tea growing areas of Dibrugarh and Sibsagar.

v) The Southern Foot Hill Zone

This zone consists of high grounds and isolated hillocks with plain embayments particularly in Dibrugarh and Sibsagar districts. Also numerous isolated monard-nocks interspersed with erosional plains along the tributaries of the Brahmaputra are to be found. Most of this region is covered with forests and scattered rice fields are found in the plain embayments.²

2. THE BARAK VALLEY

To the south of the Shillong Plateau lies the small, but important river valley i.e. the Barak Valley or the Cachar Plain. Like the Brahmaputra plain, this valley too, is an alluvial plain comprising the districts of Silchar and Karimganj. It is about 190 km. long from east to west and 70 km wide from north to south, covering an area of 6962 sq. km. and bounded by hills on the three sides. It represents a vast deltaic expanse, liable to inundation during high rains. Barak is the major river

2. "Physiographic Frame of Assam": (Abstract), The North Eastern Geographer, Journal of North-East India Geographical Society, 12(1 & 2), p.25.

system, joined by numerous tributaries, arising from the surrounding areas. Due to extremely low gradient, most of these streams are sluggish depositing large amount of silt and forming low basins, interspersed with a large number of isolated and small raised spot locally known as 'tillas'.

3. THE HILL REGIONS

The Hill areas within Assam, comprise the two districts of Karbi Anglong and North-Cachar Hills, with an area of 15,222 sq. km. separates the Barak and the Brahmaputra valley, it lies due east and west, projecting from the Burmese and the Nagaland mountain ranges.

This region may be sub-divided into four physiographic units :

- i) The Rengma Hills, covering the Diphu sub-divisions of the Karbi Anglong district,
- ii) A part of the Meghalaya plateau, occupied by the Harren sub-divisions of the Karbi Anglong district,
- iii) The Barail range in the North Cachar district.

i) The Rengma Hills are detached from the main mass of the Meghalaya plateau by the headward erosion of the

rivers Dhansiri and Kapili. The average height of this plateau is about 600 mts. with occasional peaks rising above 1200 mts. above sea level. The western part of the plateau, consisting the most prosperous rice and jute growing areas are merged with Brahmaputra plain, due to the headward erosion of Dikharu and Jamuna river, the tributaries of Kapili.

ii) The Hills of the Hamren sub-division is structurally and geologically a part of the Meghalaya plateau, highly dissected by the Bogapani Nai, with an average elevation of 900 mts.

iii) South of the Rengma Hills and south-east of the Hamren hills, lies the Barail range, with its steep southern face, falling into the Cachar plain is remarkably abrupt, full of gorges and swift flowing rivers, while the northern edge gradually slopes to the Brahmaputra valley.

Drainage

The most dominating features in the topography of Assam, is the Brahmaputra valley and its numerous tributaries, as well as the Barak, which plays a very important role in the drainage system of the region.

The Brahmaputra valley has originated from the Chema-Yung Dung glacier, about 100 km. south-east of Manas Sarubar. In its upper course it is known as Tsangpo and has a long course of about 1,600 km. as it flows south-eastward and in an easterly direction taking in its course several tributaries like Kubi-Tsangpo, Chema-Yung Dung, Maryun Chu, Lhasa river, etc. Near the peak Namcha Barwa (7,755 mm) it takes a sudden turn southward and enters the Siang district of Arunachal Pradesh by the name Dihang or Siang. Near Sadiya, it is joined by Disang coming from the north and Lohit from the east. From this point onward the river by the name Brahmaputra enters Assam valley and flows westward for nearly 650 km, touching almost every district in the valley till Dhubri, below which, it turns south and enters Bangladesh (Fig. 3).

The Brahmaputra is joined by a number of tributaries both from the right bank and the left bank. Most of the right bank tributaries originate from the high snow-clad mountain ranges in the north, which are the extension of the Himalayan ranges. Thus, when the monsoon rain coincides with the melting of the snow in the summer months, the northern plain in the Brahmaputra is devastated

DRAINAGE SYSTEM

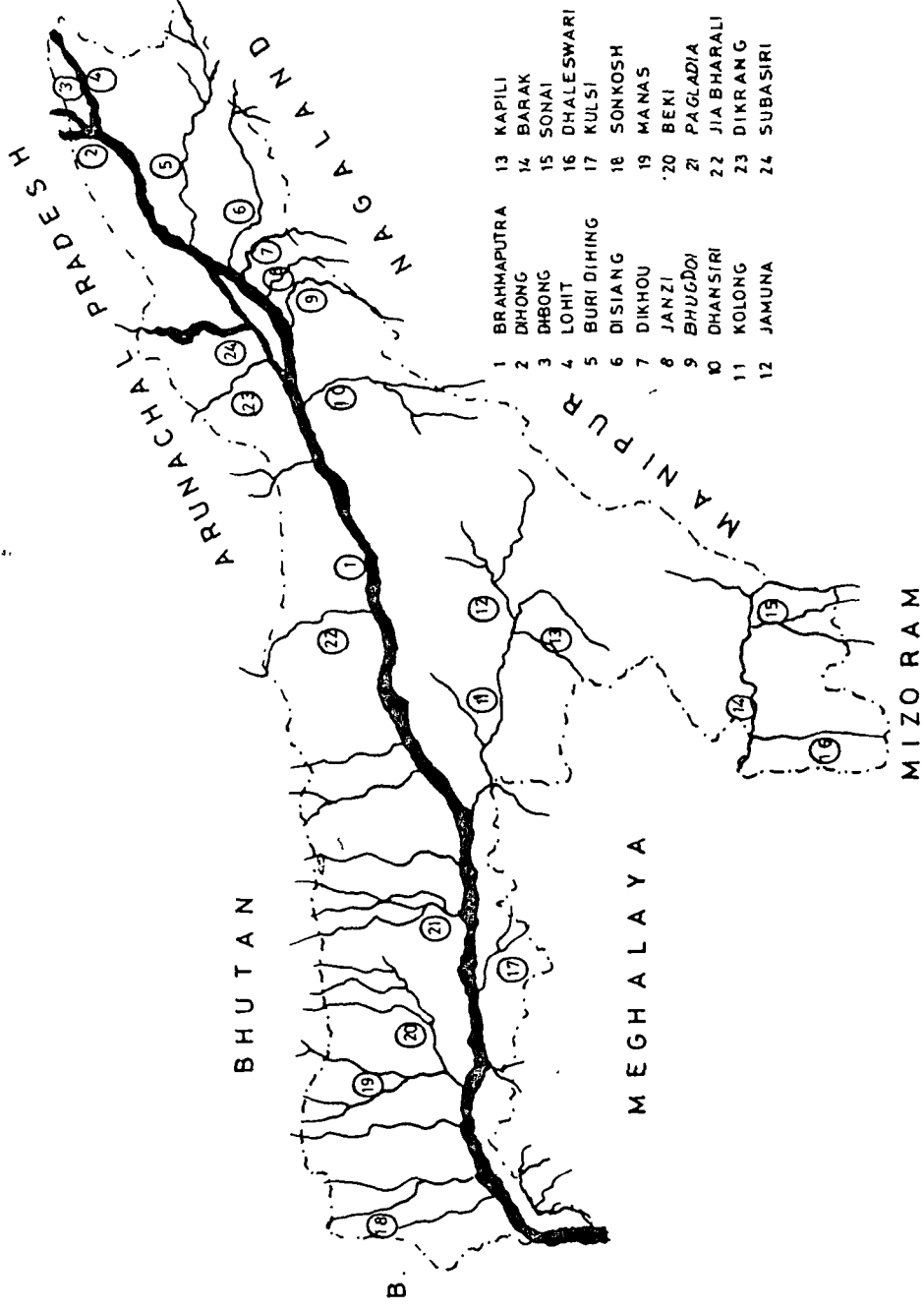
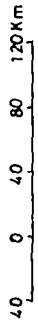


FIG. 3

by floods. The notable right bank tributaries from the north are the Subansiri in the Lakhimpur district, Bharali and Barnadi in the Darrang district, Pagladia, Beki and Manas in the Kamrup district and Champamati, Saralbhanga and Sankosh in Goalpara district.

Most of the left bank tributaries, originates in heavy rainfall areas of Khasi and Garo Hills of Meghalaya plateau, Karbi Anglong hills and Nagaland; they too create floods in the southern plain, but in contrast to the right bank tributaries they follow a less meandering course. As regard, the left bank tributaries, mention should be made of Buridihang in Dibrugarh district, Disang, Dikhow, Jhanji, Bhugdoi and Dhansiri in Sibsagar district, Kopili in Nagoan district, Digaru and Kulsi in Kamrup and Krishnai in the Goalpara district.

The Barak or Surma river system, is the other most important drainage system in the region. The Barak river rises on the escarpment of the Barail from the south of Jupvo peak to the north of Manipur. The river enters Assam near Lakhimpur and takes a meandering course through Cachar district till it reaches Badarpur where it separates into two branches to rejoin at Habibganj in Bangladesh. The upper part of this river is marked by steep banks and

severall falls. The total length of the river is 560 miles; before it joins the Brahmaputra the river is joined by numerous tributaries, the important ones being Jadukata, Jiri, Jatinga, Bogapani, Sonai, Longai, Manu and Khowai.

General climatic characterisitcs

Contrary to the pioneer climatologist Koppen who claimed, the climate of Assam as "humid mesothermal gangetic type" (CWG), local geographers' opinion differs. As opined by Dr. Borthakur, "a scrutiny of the climatic elements and data on Ganga valley and the Assam region exhibit spectacular differences in the distribution of temperature, rainfall, fogs, winds, circulation, etc. The weather in Assam may be characterised by the predominance of thunder storms, winter fog and local mountain, valley, wind. The development of the orographic law is a spectacular but complex thermo-dynamic phenomenon, is an uncommon feature in CWG-region. Therefore the variations in the elements and factors, deviate the normal CWG climate in north-east India and in fact these deviations have developed a climatic individuality for Assam ..."³

3. Borthakur, "Weather and Climate of Assam" as cited in World Agricultural Census, 1971, Assam Directorate of Economic and Statistics, Government of Assam, p.5.

Generally, the climate of Assam is characterised by relative coolness, extreme humidity, heavy summer rainfall and winter drought. The mean annual maximum temperature (July-August) in different districts of Assam lies between 30°C to 33°C, while the minimum temperature (December-January) ranges from 6°C to 12°C. The total annual rainfall in a year is around 2300 mm. On an average winter (December-February) brings about 60 mm. Summer (March-May) brings about 640 mm. Monsoon (June-September) 1460 mm and post monsoon (October-November) 140 mm. It is obvious that maximum amount of rainfall are confined to the months of June, July and August, while a comparatively lesser amount of rainfall is received during the months of March, April and May and the practically rainless months are December, January and February. As such two distinct types of crops i.e., Kharif (summer crop) and Rabi (winter crop) can be grown in the state.

Although rainfall is uniform through the year in the plain districts of the region, yet three zones can be identified: i) the area of heavy rainfall - the districts of Dibrugarh, Lakhimpur, Sibsagar and Goalpara in the Brahmaputra valley and Cachar in the Barak valley; ii) the zone of comparatively lesser amount of rainfall are Kamrup, Darrang, Nagoan and Karbi Anglong; iii) finally, the areas

adjoining the Meghalaya plateau and particularly the southern part of Nagoan district is regarded as the rainshadow belt.

An average annual rainfall of over 200° mm, and a low rate of evaporation on a rich alluvial soil of the Barak and the Brahmaputra valleys confer on Assam an ideal natural conditions for vigorous growth of all vegetation and the state can be agriculturally rich region suited for most tropical fields as well as plantation crops. It is also noticed that Assam inspite of being in the assured rainfall region, yet at times the state experience the effects of drought which calls for the development of irrigation in the region (Fig. 4).

Season

On the basis of temperature variation, rainfall and winds, Assam is divided into four well defined seasons, viz., i) Pre-monsoon, ii) Monsoon, iii) Retreating Monsoon, iv) Dry winter.

The pre-monsoon season begins by early March and continues upto May. The season is characterised by the gradual increase in temperature coupled with occasional thunder showers. For the most part the season is

AVERAGE ANNUAL RAINFALL

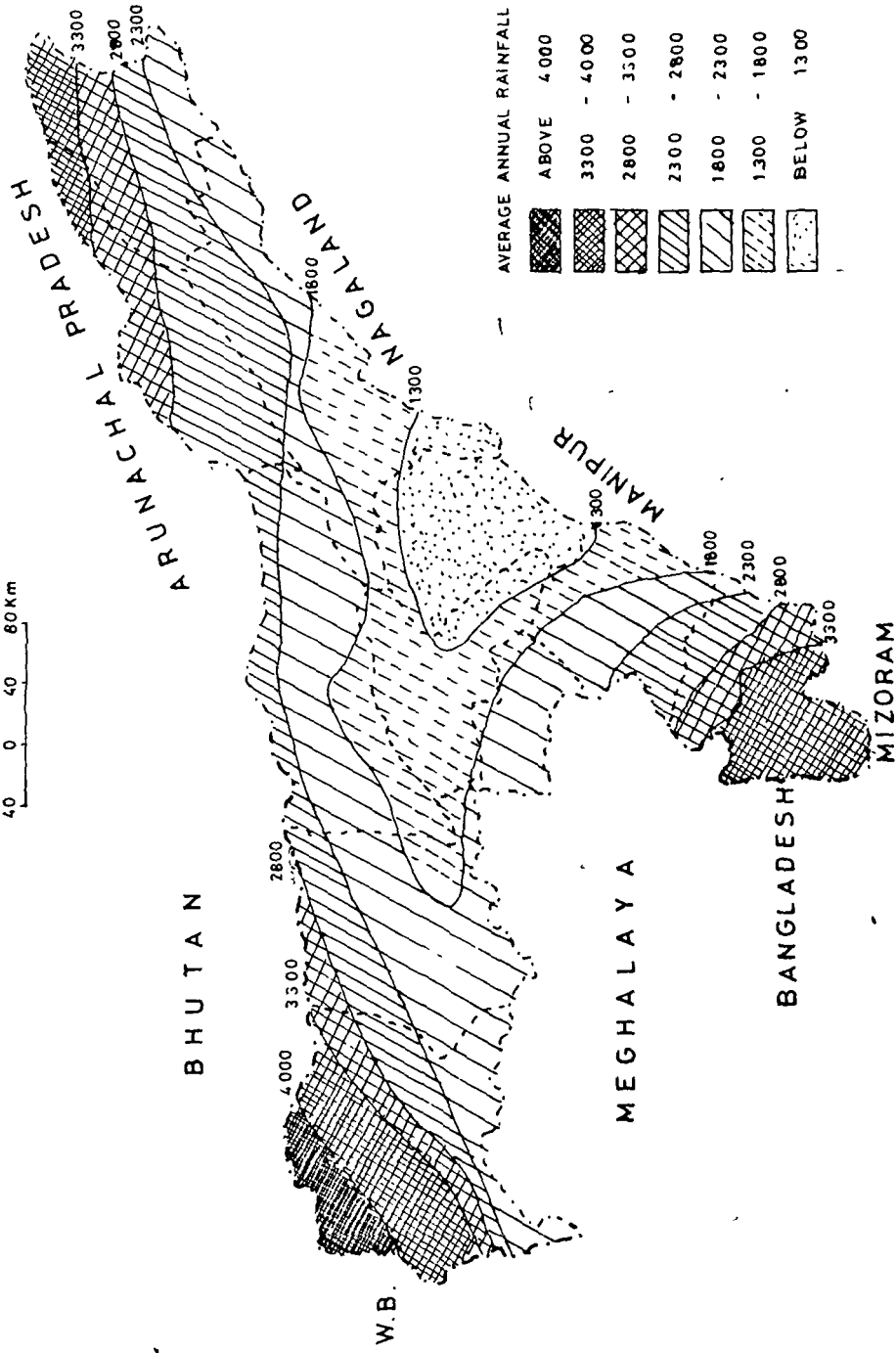


FIG.4

practically rainless with occasional strong wind causing dust storms. Cloudy weather, high atmospheric humidity, weak variable surface wind along with rise in temperature, marks the onset of Monsoon, towards the middle of May, and continues upto middle of September. Highest rainfall is experienced during this season, i.e. 18-20 days per month, and this arrest the rising temperature considerably. August is the hottest month.

By the end of September and beginning of October, withdrawal of monsoon starts, which is folowed progressively by fair weather and morning fog of short duration. The temperature gradually falls and south-west monsoon retreats. With the advance of the season, rainfall and number of rainfall decreases.

Winter season sets in with the beginning of the month of December and continues upto the end of February. This seasons is characterised by cool weather and frequent morning fog. The temperature goes down during the season and remains around 10-12°C.

Soil Distribution

In addition to climatic factors, soil too asserts its authority in the success and failure of agriculture.

"Broadly speaking, the soils of Assam are acidic in character with a satisfactory content of nitrogen and organic matter. The soils of the hills are more acidic than those of the plains."⁴

The major soil group found in the state are as follows:⁵ (Fig.5)

1. New alluvial soil : The recent riverine alluvial soils are derived mainly from the material deposited by the river Brahmaputra and its tributaries. A few kilometres on both the sides of the Brahmaputra in the districts of Lakhimpur, Dibrugarh, Sibsagar, Jorhat, Nagoan, Sontipur, Darrang, Kamrup, Barpeta, Kokrajhar, Dhubri and Goalpara included in this area. Flood occurs frequently in this area causing great variation in mechanical composition and chemical properties due to the deposition of sediments which differ greatly depending upon the parent materials in their respective catchment areas. The texture of the uppermost horizons of these soils are sandy loam or silt loam. In general lower most horizons are mostly sandy or loamy sand and soil texture becomes lighter along with depth, less acidic and often neutral.

4. Techno-Economic Survey of Assam, 1963. National Council of Applied Research (NCAER), p.2.

5. Agricultural Guide Book (1985-86), Department of Agriculture, Assam, pp.5-7.

AVERAGE ANNUAL RAINFALL

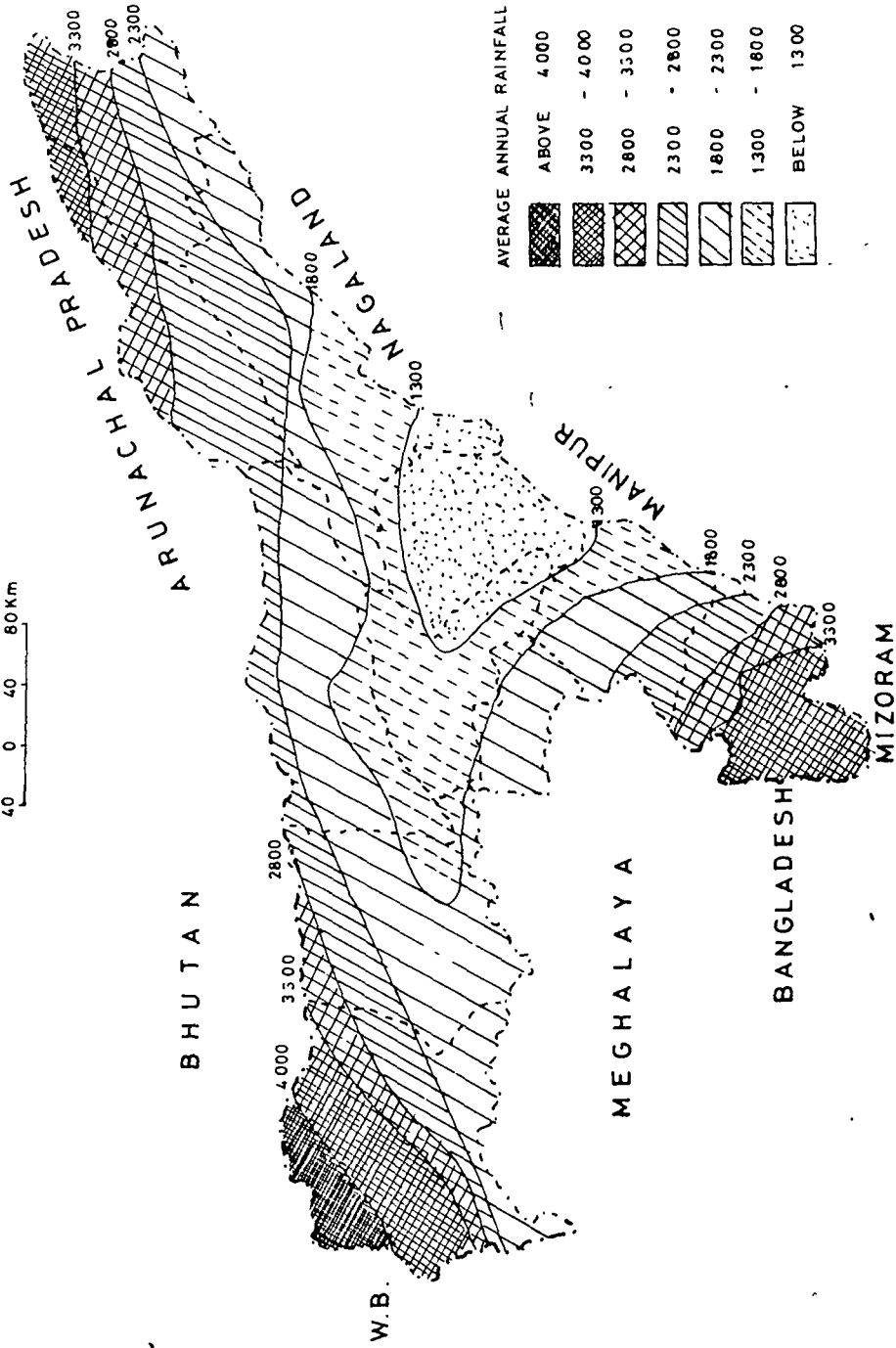
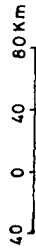


FIG.4

or slightly alkaline. The ground water table is 1 to 3 meters in some areas.

2. Old alluvial soils : The riverine old alluvial soils are also formed from the materials deposited by the river Brahmaputra and its tributaries in the long past. This group of the soil is mainly found in Dibrugarh, Sibsagar, Jorhat and Nagoan districts. The ground water table is generally deeper than the recent riverine alluvial soils. Profile development has taken place to some extent. These soils are not subjected to floods and the texture of the surface soils ranges from sandy loam-loam-silty clay loam to silty clay-clay acidic in reaction.

3. Old mountain valley alluvial soil : This group of soil is located in the foothills of Goalpara, Dhubri Kokrajhar, Karrump, Sonitpur, Darrang and Lakhimpur districts beyond the areas covered by the new alluvial group. It is also located in the foothills of the Naga Hills in the district of Dibrugarh and Sibsagar and in the foothills of Karbi-Anglong and North-Cachar in the district of Nagoan. Soils of Cachar and Karimganj district and also a small area in Kamrup district adjoining to the foothills of Meghalaya belong to this group.

These soils are built of alluvial materials washed down from the hill slopes. These are mainly heavy texture soils. The surface soils are compact, very sticky and very plastic. The texture of the soils also become heavier along with depth. Permeability of these soils are slow to very slow.

4. Non-Laterised red soils (mixed red and black soils): The red and black soils occur side by side and very close under certain toposequence in some parts of hill districts namely Karbi Anglong and North Cachar hills. Red soils are observed at higher elevations whereas the black soils are found in the lower elevation. The occurrence of the black soils at lower topography in mountain depression may be ascribed to the deposition of collodial materials from the red soils of higher topography, which becomes black under impeded drainage condition due to the hydration of the iron present in the soil.

5. Laterised red soils : Found in one or other form in some parts of Guwahati and Golaghat, part of North-Cachar hills and Karbi-Anglong and parts of the low hilly areas of the old Cachar district. These occurs both in the highland areas and also in the mountain valleys.

2.5 Agro-climatic Region of Assam

Based on rainfall, terrain and soil characteristics, Assam has been broadly delineated into the following six agro-climatic zones:⁶ (Fig.6).

- a) The north bank plains
- b) The upper Brahmaputra valley
- c) The central Brahmaputra valley
- d) The lower Brahmaputra valley
- e) The Barak valley
- f) The hills.

a) The north bank plains : This zone comprises the districts of Lakhimpur, Darrang and Sonitpur. It is a belt of rice cultivation and jute occupies the second position. The zone has an area of 14424 sq. km. comprising 18.37% of the state area, and 16.74% of the state population. The density of population varies from 94 in Dhemaji sub-division to 241 in Mongldoi sub-division, persons/km². The zone is sub-divided into three parallel belts:

- 1) Foothills of the Himalayas with alluvial soils;
- 2) Central belts of old alluviums which are acidic and
- 3) Low lying riverine belt lying by the side of the Brahmaputra. The average rainfall in this zone is 100 mm

6. World Agricultural Census, 1971, op. cit., p.9-11.

SOIL ZONES

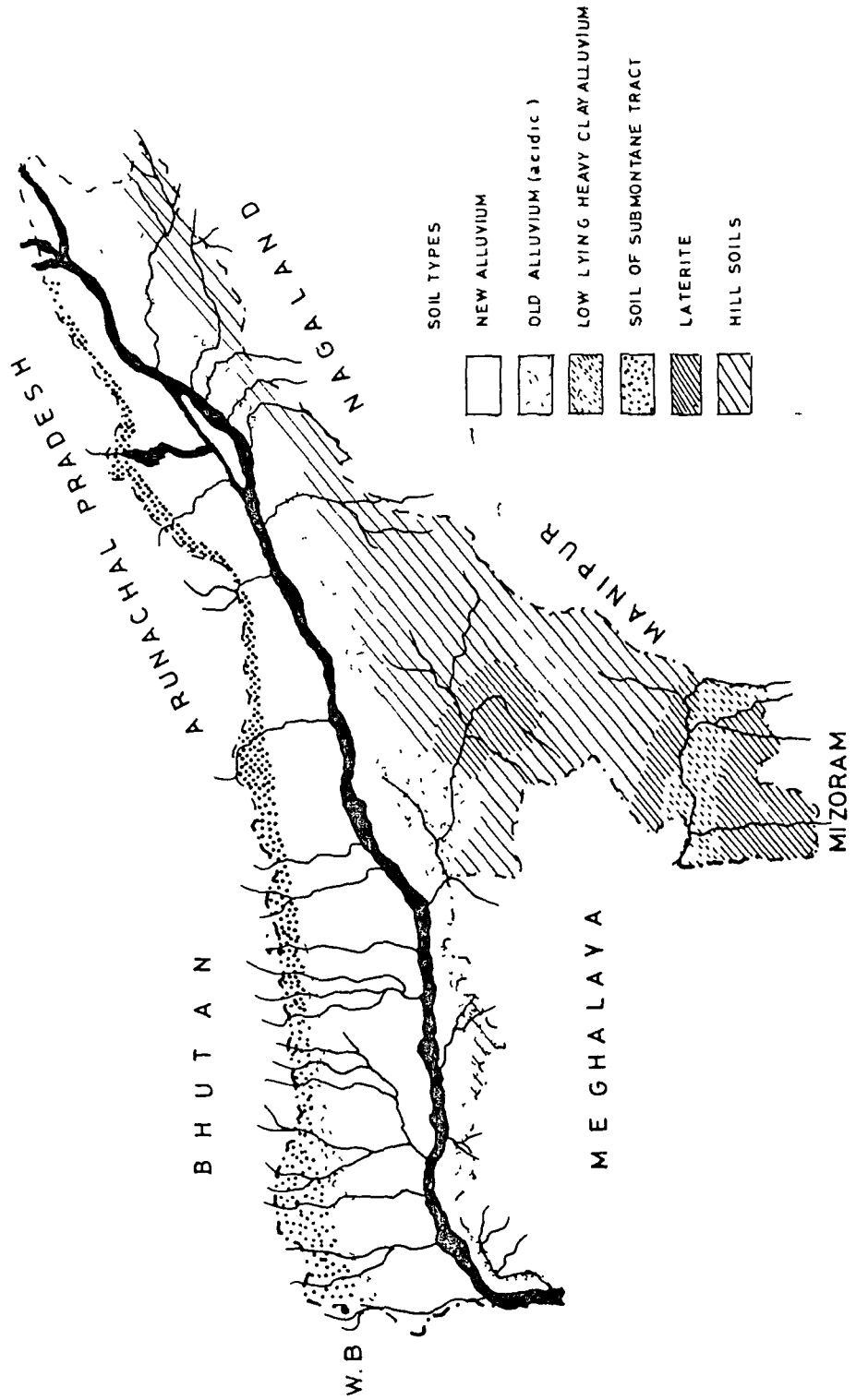


FIG. 5

with more than 80% humidity; the maximum temperature rise upto 37°C in July and August and the minimum falls to 5°C in January. This region is devastated by floods every year though it possesses higher agricultural potential than other regions.

b) The upper Brahmaputra valley : This zone comprises the districts of Sibsagar, Jorhat and Dibrugarh with an area of 16,013 sq. km. comprising 20.40% of the state area and 22.21% of the state population. The density of population is 203 persons/sq. km. This zone has six important fast flowing tributaries of the Brahmaputra. It is a high rainfall zone with more than 2000 mm per annum and humidity more than 80%. The maximum temperature rises upto 37°C in July, August and minimum falls to 5°C in January. Rice is the predominant crop, while on the slopes tea is grown. This region is not generally effected by floods but highly susceptible to erosion.

c) The central Brahmaputra valley : This zone comprises the districts of Nagoan only with an area of 5561 sq. km. comprising 7.08% of the total state area and 11.5% of the total state population with a density of 302

persons/sq. km. This zone is like a basin and is inundated during the monsoon. About 30% of the area situated in the southern parts fall under rain-shadow area with less than 600 mm annual rainfall. In other parts the annual rainfall is more than 1400 mm. The maximum temperature rise upto 38°C during July-August and minimum falls to 8°C in January. The zone is ideal for rice cultivation. The region is highly susceptible to flood which has rendered the plain fertile also.

d) The lower Brahmaputra valley : This zone comprises the districts of Kamrup, Barpeta, Goalpara, Dhubri and Kokrajhar with an area of 20,222 sq. km. comprising 25.75% of the state area and 34.73% of total state population. The density of population is 251 persons/sq.km. The average rainfall in the zone is about 1700 mm. The maximum falls to 10°C in January. This zone is also important for rice cultivation and this is the only region where wheat is grown in a considerable area i.e. about 4% of the total cultivated area of the region. The region faces enormous damage to the crops by the torrential current flowing from the North.

e) The Barak Valley : This zone comprising Cachar and Karimganj districts covers 8.9% of the state area and

11.7% of the total population. Total area is 6962 sq. km. and density of population is 246 persons/sq. km. Rainfall is high with an average of more than 2000 mm. Maximum temperature rises upto 37°C in July-August and minimum falls to 9°C in January.

f) The hill zone : This zone comprises the two hill districts of Karbi Anglong and North-Cachar hills with a total area of 15,222 sq. km. Comprising 19.4% of state area and only 3.11% of state population. Density of population is 37 in Karbi Anglong and only 16 in North Cachar hills persons/sq. km. Rainfall is varying with 1,144 mm. annual in North-Cachar and 600 mm annual in Karbi Anglong on an average. Maximum temperature goes upto 37°C and minimum falls to 9°C at Haflong.

Population Characteristics of Assam

In any studies, related to agriculture the population characteristic of the place deserves special attention. More so, in cases where the majority lives in rural areas, since they are ultimately responsible for the conditions prevailing in the agricultural sector and reshaping or redeveloping it as and when required.

In Assam 80% of the population lives in rural areas, against 75% in the country. It is found that the total population of the state, has been growing at a rate faster than that of the country since the beginning of the century, and at a much faster rate in the post-independence period. Between 1901 and 1971 the population of the country recorded a little over two fold rise while the increase was more than four fold in Assam. The decadal growth (per cent) of population since 1951 had been more than 10 per cent higher in Assam than the country as a whole. Because of the situation that prevailed in the state, the 1981 census could not be conducted in Assam. According to the projected population released by the Registrar General for Planning Purposes, the growth rate continues to be very high during 1971-1981. This is indicated in the table I and II.

Table I

Growth of Population of Assam and India

Year	Population (Lakh)		Decadal Variation (Per cent)	
	Assam	India	Assam	India
1951	80.3	3610.8	-	-
1961	108.4	4392.4	+34.98	+21.51
1971	146.2	5481.6	+34.95	+24.80
1981	199.0*	6851.9	+36.08	+25.00

* projected

N.P.: Population of Assam for all the years related to the present boundaries of Assam.

Table - IIProjected Population of Assam

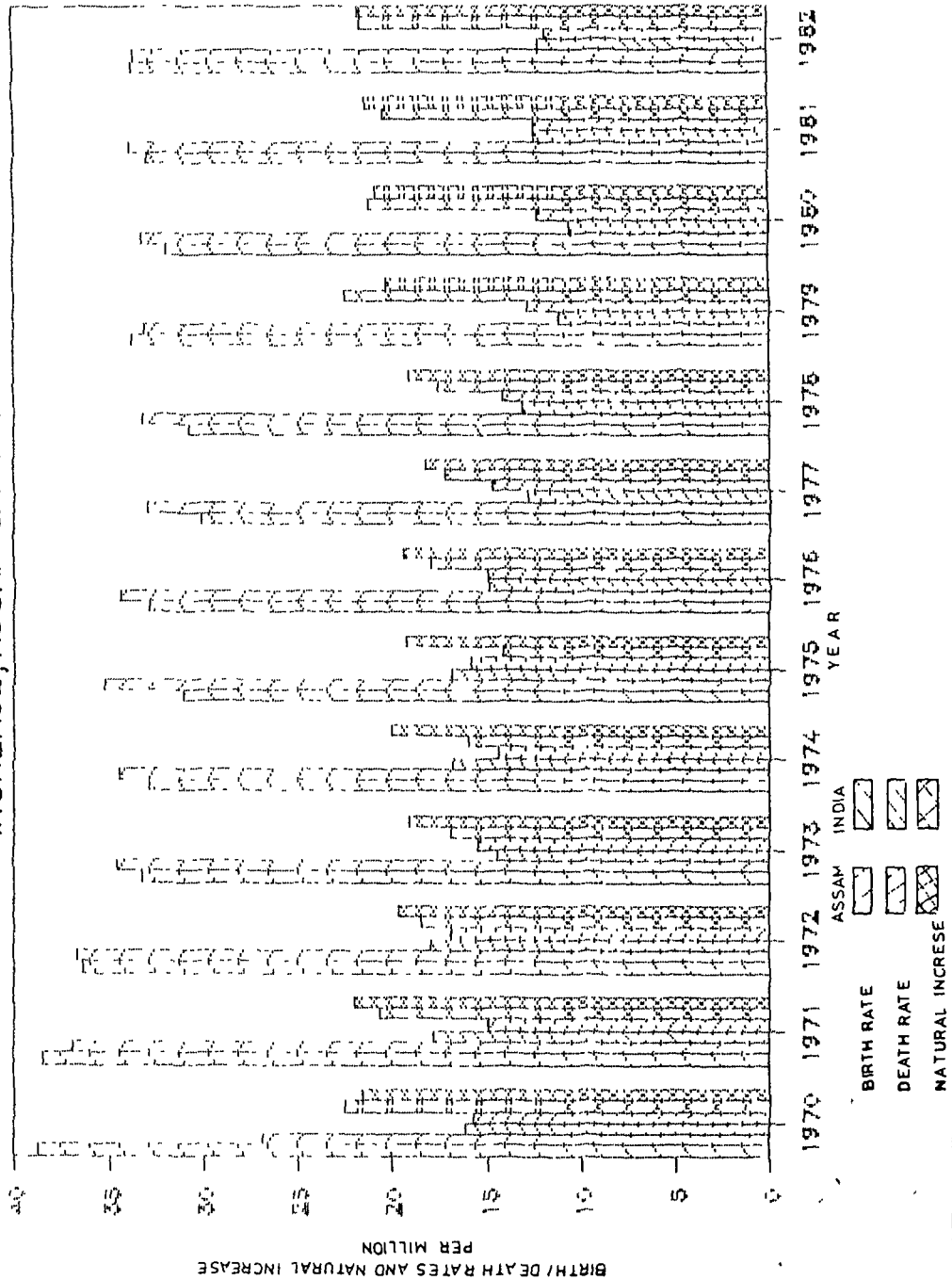
<u>Year</u>	<u>Population (Lakh)</u>
1971	146 (Census)
1981	199 (Projected)
1985	224 (Projected)
1990	260 (Projected)
1991	267 (Projected)

Source: Government of Assam, Draft Seventh Five Year Plan 1985-90 and Annual Plan 1985-86, Vol.I, F & D Department.

The high rate of growth of population is the combined effect of both natural increases and immigration. The natural rate of growth of population in Assam as indicated by the table III, is no higher than that of India, (Fig. 7).

As a result of the high rate of growth of population, the population density of the State in 1981 is estimated to be 254 persons per sq. km. as against the country's 221. There are, however, wide variations in density within the state even at the district level. The density was over 400 in the districts of Dhubri, Barpeta, Nagoan and Karimganj and only 21 in the North-Cachar Hill district. At the regional

ESTIMATED BIRTH/DEATH RATES AND NATURAL INCREASE, ASSAM & INDIA



level the density per sq. km. in 1981 was 41 in the Hill districts, 301 in the Brahmaputra Valley and 335 in the Barak Valley (Fig. 8).

Table - III

Estimated Birth Rates, Death Rates and Natural Increase for
Assam and All-India (1970-82)

Year	Birth Rates		Death Rates		Natural Increase	
	Assam	India	Assam	India	Assam	India
1970	38.8	26.8	16.2	15.7	22.6	21.6
1971	38.5	36.9	17.8	14.9	20.7	22.0
1972	36.4	36.6	17.9	16.9	18.5	19.7
1973	33.3	34.6	14.4	15.5	16.9	19.1
1974	32.8	34.5	16.8	14.5	16.0	20.0
1975	31.1	35.2	16.9	15.9	14.2	19.3
1976	32.8	34.4	14.9	15.0	17.9	19.4
1977	30.1	33.0	12.9	14.7	17.2	18.3
1978	30.8	33.3	13.2	14.2	17.6	19.1
1979	33.8	33.1	11.2	12.8	22.6	20.3
1980	31.9	33.3	10.7	12.4	21.2	20.9
1981	33.0	33.9	12.5	12.5	20.4	21.4
1982	33.8	33.6	12.2	11.8	21.6	21.8

Source: Sample Registration Bulletins, Registrar General of India Vol. XVIII NO 1 June, 1984

ASSAM POPULATION DISTRIBUTION

1971

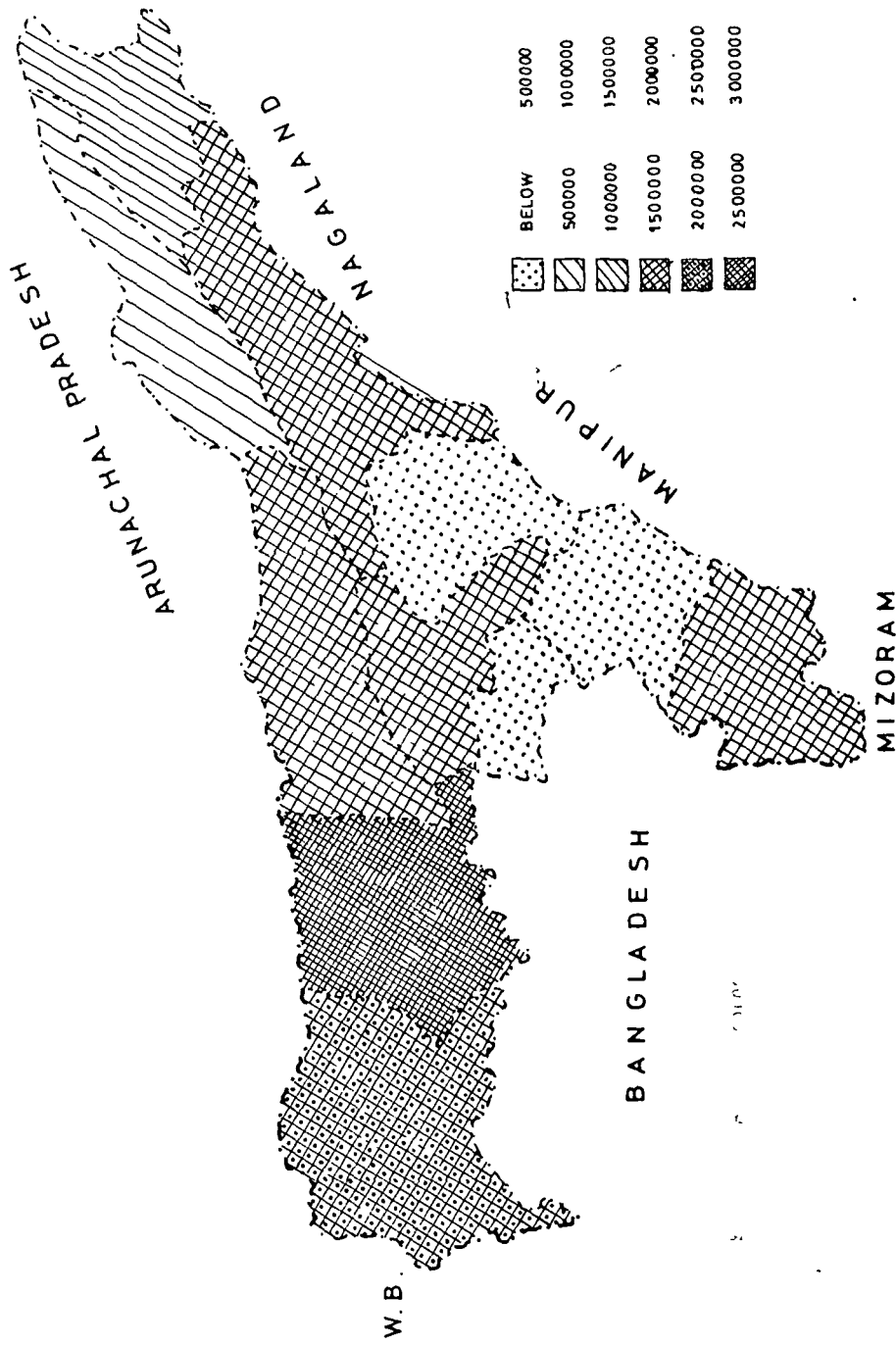


FIG. 8

The population in Assam is perhaps more heterogeneous than anywhere else in India. Assamese speaking people constitutes the majority. Besides, a large number of people (from Bengal, Bihar, Rajasthan, Nepal, Bangladesh, etc.) had come and settled in Assam. About 6.2% of the population belonged to the scheduled caste and are scattered all over the plain districts. The scheduled tribes (hills) account for 1.8% of the total population and 57.7% of the population of the hills.

The agro-climatic set up discussed so far, revealed that the state of Assam is endowed with tremendous potentialities to make the state agriculturally rich with the help of proper planning. The diverse physiography, together with a most favourable climate is conducive for the growth of almost all seasonal, tropical and sub-tropical crops. Besides, the soil of Assam too is naturally fertile, sufficiently rich in organic matters and high content of nitrogen. It was pointed out that due to high rainfall and humidity, the acid content of the soil is high. This, however, can be rectified through proper liming of the soil.

The river Brahmaputra and the Barak, along with their innumerable water channels provide the life line of the state. In spite of the devastating floods created by

these rivers and stream, yet they form one of the most important physical basis of agriculture in the state, for they not only supply water to the agricultural fields, build up alluvial soils but they also replenish the cultivated areas with fertile silts during floods.

In view of the rapidly growing population of the state, and confined largely in the rural sector, the natural advantages of the state has to be tapped effectively to make an all round development of the state. It, therefore, has to be seen that while formulating the agricultural policy of the state, the geographical factors are taken into consideration.

CHAPTER - III

EVOLUTION OF ADMINISTRATIVE UNITS

The geo-political location of the state of Assam had played a crucial role in the development of much of the state's political and socio-economic condition. Here, the term geo-political location is construed to mean, not only the actual location of the state in the narrow geographical sense, but its cultural, ethnic, political and economic relationship with its neighbour. The balkanisation of the state, that had taken place since independence was largely due to its geo-political location. The present chapter, therefore, attempts to trace out the evolution of the administrative units of the state of Assam, and its impact if any on the agricultural economy of the state.

Although numerous references related to ancient Assam could be found, yet one doubts its authenticity, mainly on the ground that such information cannot be treated scientifically. A fact which is evident throughout these references as well as present records is the ever changing administrative boundary of Assam and this constituted to be one of the basic geographical features of the pre-colonial, colonial, as well as post-colonial period. An idea of what might have been the extent of ancient Assam can be obtained from the Hindu epics and in the Pauranic and Tantric literature, e.g. Pragjyotisha where it was known "stretched

south-wards as far as the Bay of Bengal and its western boundary was the Karatoya ..."¹. On the other hand, from the information contained in the Puranas, it can be interpreted that Kamrupa (as it was known in the Puranas and Tantric literature) embraced almost the entire eastern Bengal, Assam and Bhutan. Whereas in the Jogini Tantra, Kamrupa is said to extend from the "Karatoya river on the west to Dikhu on the east and from the mountains of Kanjagiri on the north, to the confluence of the Brahmaputra and the Lakhya river on the south; that is to say, it included roughly, the Brahmaputra valley, Bhutan, Rangpur, Cooch Bihar, the north east of Mymensingh and, possibly the Garo Hills.

According to the same work the country was divided into four portions, viz. Kampith from the Karatoya to the Sankosh, Ratnapith from the Sankosh to the Rupohi, Suvarnapith from the Rupohi to the Barali and Saumarpath from the Bharali to the Dikrang ..."².

There are no dearth of such references which can be traced to the mythological period, but for practical purpose they appear to be dubious. Between the period

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1. E.A. Gait, 1905 (rev. 1967), A History of Assam, Calcutta, p.10.
 2. Ibid., p.11.

1200-1800 A.D. the information contained in the 'Buranjis' of the Ahoms, who had a very high sense of history, could be relied upon. During the Ahoms rules too, the extent of Assam varied from time to time, with the change in the leadership. According to the Chinese Buddhist pilgrim Huen Tsang who visited India in the first half of the seventh century of our era that Kamrupa had a circumference of almost 1,700 miles and hence it must have included the whole of Assam (except perhaps the Naga hills, Lushai hills and Manipur) and also Bhutan. North Bengal is as far as Karatoya river and the part of Nymensingh which lies to the east of the old course of the Brahmaputra. While its eastern boundary was a line of hills adjacent to the tribes of the Chinese frontier, i.e. it extended as far to the east as does the modern province of Assam.³ A further reference of the extent of the boundary of Assam during the Ahom rule is contained in the account given by Mir Jumalah, who accompanied Shihabb Uddin, on his invasion of Assam in 1662. From it, it can be gathered that Assam

"lies to the north-east of the province of Bengal. The river Brahmaputra flows through it from west to east, Gauhati to Sadiya is about 200 kms; its breath, north to south, from the hills of the

3. Ibid., p.26.

Garos, Miris, Mishmis, Daflas and Landahs to those of Naga tribes is given to eight days journey at a guess. Its southern mountains touch lengthwise the hilly region of Khasia, Kachar and Gonasher and breadthwise the hills inhabited by the Naga tribes ... The land on the north bank of the Brahmaputra is called Uttarkol, and on the southern bank Dakhinkol; Uttarkol stretches from Gauhati to the home of the Miri and Mishmi tribes, and Dakhinkol from the kingdom of the Nak-Kati Rani to the village of Sadiya ..."⁴

As we proceed further, we find in the report on Assam, by Walter Hamilton (1820)⁵ Assam adjoins the province of Bengal at the north-eastern corner, about 91°E longitude, from where it stretches in an easterly direction to an undefined extent; but it is probable that about the 96° east longitude, it meets the northern territory of Ava, and is separated by an intervening space of about 180 miles from the province of Yunan in China.

In this direction it follows the course of the Brahmaputra and is in fact the valley through which the noble stream flows. The average breadth of the valley

4. Ibid., pp. 144-145.

5. Walter Hamilton, Report on Assam, 1820, as cited in N.N. Acharya's "Historical Documents of Assam and the Neighbouring States - Original Records in English", pp. 39-40.

may be estimated at 350 miles in length by the average breadth; divided into three provinces, Kamroop on the west, Assam proper in the centre, and Sadiya at the eastern extremity. The western province Kamroop, with several subordinate or inter-mixed petty jurisdictions, extends from the British boundary to near the celebrated temple of middle Kamakhya, latitude $26^{\circ}36'N$, longitude $92^{\circ}56'E$ being about 130 miles in length. From the boundary opposite to Goalpara to Nogarbera, a distance of 21 miles, the Assamese possess only 109 miles. Its width on the side on an average about 30 miles. About 104 miles above Gauhati which stands in longitude $91^{\circ}48'E$ the Brahmaputra separates into two branches, and encloses an island five days journey in length and about one in width.

Assam proper, the middle province of the Kingdom is of greater extent than the western... The portion to the north of the Brahmaputra, named Charidwar, probably exceeds 200 miles in length and 20 in average breadth; but the length on the south side of that river is less considerable. It commences near the middle Kamakhya about 130 miles East, from Goalpara, and reaches to the upper Kamakhya, which is said to be 10 miles below Tikliya Potor Mukh. Within these limits it comprehends the upper half of the western island formed by Brahmaputra, and includes the whole of the very large islands, named Majuli, the main Brahmaputra and a

branch named Dihing..."

Of the third and most remoted province nothing is known, except that it is a small side of the Dibrong river, about long. $95^{\circ} 10' E$.

The changes in the boundary that had taken place so far, were mainly restricted to the peripheral region, where the Brahmaputra valley constituted the core. The Ahom policy towards the adjacent hilly periphery was generally to refrain from absorbing them within their domain. The logic behind the policy could be appreciated when the geographical factors of the region are considered.

The surrounding hilly region had a weak economic base, and were characterised by difficult and rugged terrain, with thick forest cover, that acted as a great deterrent to easy accessibility of the region. The physical barrier, therefore, presented the core from having any meaningful interaction with its periphery. At the same time it enable these regions to maintain the physical isolation, reflecting a multiplicity of ethnic, cultural and regional identities. The Ahom rulers conferred these regions, the status of dependencies. They were thereby able to devote themselves to the economic development of the Brahmaputra valley, which were essentially a rice economy. The six hundred years of uninterrupted rule was

a testimony of the success of their policy.

The Eighteenth century saw the gradual decay of the Ahom power, particularly the Ahom control over the region received its first blow from the Moamoria Civil War that took place in 1770, and since then under the impact of the repeated Burmese invasion, which culminated in their occupation of the valley (1817-1824), left the plain a reign of total chaos, lawlessness and oppression. Thus the last of the Ahom ruler had no option but to seek the help of the British, whose rule then extended till the adjoining Bengal plain. It is under such conflicting conditions in Assam, that the British made their appearance. They forced the Burmese in the treaty of Yandaboo in 1826 to surrender their claim over the region. Thus "according to the article 2 of the treaty the Burmese renounced all claims upon and future interference with the principality of Assam and its dependencies, and also with the contiguous petty states of Cachar and Jyntia ..."⁶ This marked the beginning of the new era in the history of Assam and put an end to a glorious rule of the Ahoms and the uninterrupted freedom that the people of Assam enjoyed so far; at the same time the British incorporated the province for the first time within dominion.

6. Ibid., p.54.

A portion of Upper Assam, (excluding Matak and Sadiya) was constituted into a separate principality and was conferred upon Furander Sinha, the last Ahom King. In 1834, the British of the Brahmaputra valley was divided into four districts, Goalpara, Kamrup, Darrang including Bishwanath and Nowgong. In 1838, due to the incompetence on the part of Furander Singha, the province under his jurisdiction was under the British administration and was formed into two districts viz., Silpur or Sibsagar, which included the tract South of the old course of Brahmaputra, and Lakhimpur or the part North of the same river. Again in 1842, Matak and Sadiya were incorporated into the British territory, that was later added to the Lakhimpur district the headquarter of which was transferred to Dibrugarh in the Matak district.

According to Mill (1853)⁷ "the province under the British authority, comprised of six districts viz., Gowalpara, Gowhatty, Tezpoor, Nowgong, Seeksagar and Luckhimpore".

The tract of the country, composing the district of Gowalparra was separated from Rungpoor under the provisions of Regulation X of 1822, covers an area of 4104 sq miles, exclusive of the unexplored

7. A.J.M. Mills, 1853 (rev. 1980), Report on Assam, Delhi, p.B1-17 to G1-21.

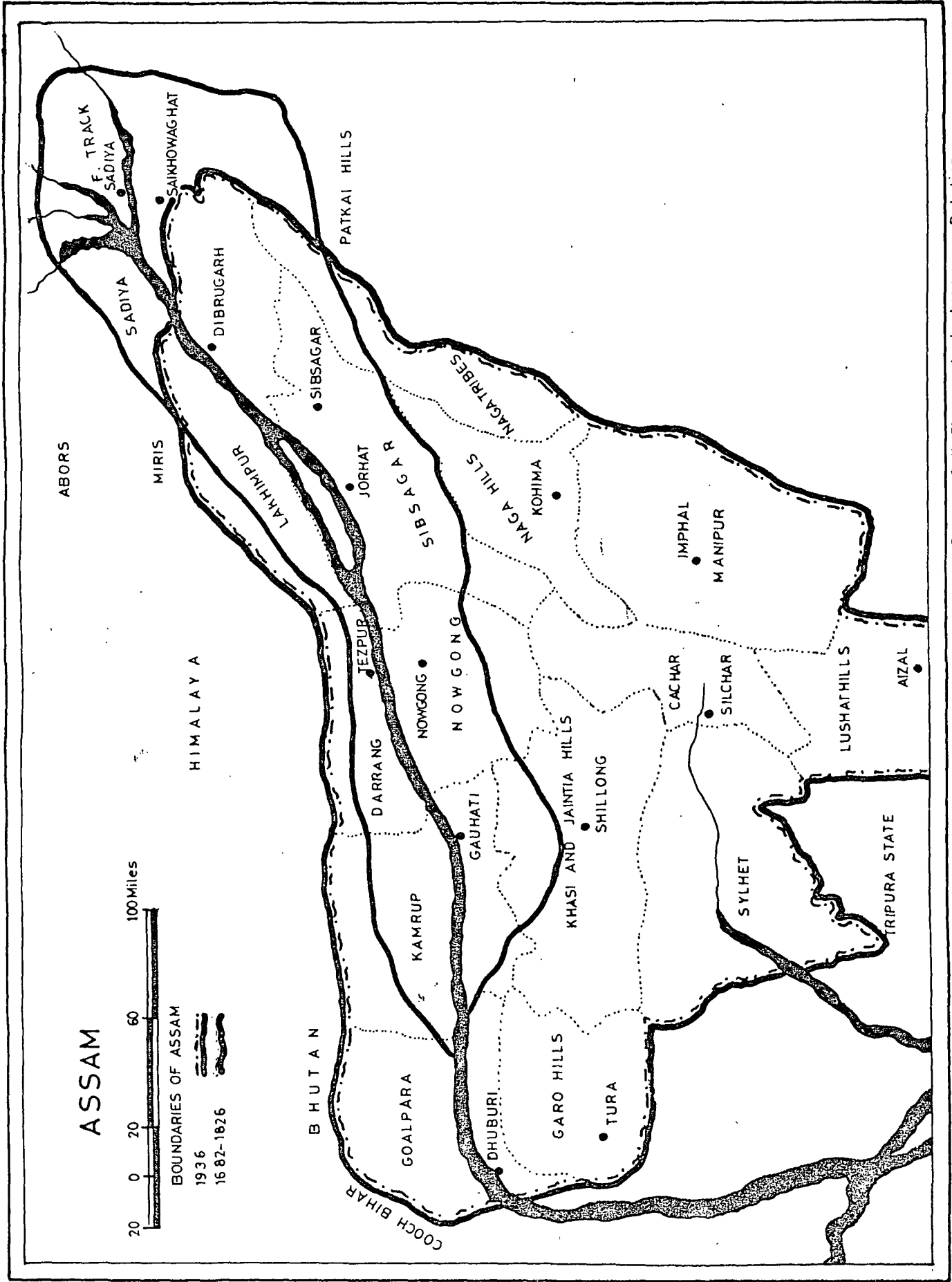
Garrow mountains, with an estimated population of 141,638 and the area of west and jungle is recorded at 3,427 sq miles... The district of Kamroop, with Gowahatty being the chief town, is situated on either side of the Brahmaputra, and contains an area of 3,210 sq miles and with an estimated population of 3,87,775 souls (acc. to 1848)... The district of Durrung is bounded on the north by the mountainous ranges of hills inhabited by the Bhooteas, Akahs, Kuppa-Chors and Dufflas, on the south by the river Brahmaputra, on the east by the Kalijan river separating it from the Lakhirpoor sub-division and on the west by Bornadi river which divides it from Kamroop, it contains a total of poorahs 5,51,840, d.1.k.o.1. 19, kr.1 ... by a census taken in 1841-42, the population is stated to consist of 1,85,569 souls... The district of Nowgong is on the south bank of the river Brahmaputra. The number of sq miles in the whole district is estimated to be about 8,769... No regular census of the population has ever been taken, though it was estimated to be about 241,300, exclusive of about 100,000 Jugaree Nagas... The district of Seeksagar with the exception of the large island called Majooli, is situated on the north bank of the Brahmaputra, it contains an area of 2,82,165 acres and according to the census taken in 1844, the total population amounted to be 180,000... Lackhimpore district is composed of three divisions; Lackhimpore on the north bank of the Brahmaputra and Nuttock and Saddyah on the south...

Once the British found their footing in the region

it became inevitable for them to be on constant lookout for newer and newer tracts that could be added to their Empire (Fig. 9). By 1858, the territorial boundary as it existed was thus, "It is bounded on the north-west and north by Burmah and the Naga tribes; on the south by Cachar, Tularan Senapati's country, Jynteah and country inhabited by Cossyah tribes; and on the west by the British Zillah Goalpara. It may be stated to extend from latitude 25°49' to 28°17' North and from longitude 90°40' to 97°1' East. The area is returned as 21,805... The population of Assam is returned at 710,000..."⁸

Much of the above mentioned countries that bounded Assam, i.e. the Kingdom of Jaintia, Cachar along with their dependencies the petty, independent tribal states of the Khasi Hills as well as the other hills were gradually annexed, in face of stiff resistance, within the following decade and a half, since the treaty of Yandaboo. The first to be incorporated within the administrative set-up was Cachar in 1832, though North Cachar Hills were organised into a separate administrative unit in 1854, after their complete subjunction; the Khasi state in 1833, while Jaintia Hills in 1835, and Garo Hills was made into a

8. Edward Thornton, 1858 (rev. 1984) A Gazetteer of the Territories under the Government of the East India Company and the Native State of the Continent of India, p.45.



Source : S. K. Bhuyan: Anglo-Assamese Relation

Fig.9

separate district in 1869, the process to bring them under full control continued till 1873. The Lushais were brought under control during the period 1871-89, and the Lushai Hills was formed into a district in the year 1898. The annexations of Bhutan Duars, the Sadiya, Balipara frontier tracts, the Naga hills etc. were a long process. Only a part of Naga hills was annexed in 1866, but the control over the Lotha Nagas was possible only in 1878-80 and the Ao Naga as late as 1889. Thus it was a fact that "the boundaries of the British power in North-East India were in fact always moving always in a flux, right upto its last days in India".⁹

Thus, since they entered the valley in 1826, gradually all the districts were brought under their control. They soon linked up the two major valleys of the region in the Brahmaputra and the Surma Valley. Initially, the British followed the policy of non-interference of their predecessors while dealing with the surrounding hill region. Later, to safeguard their growing interest in the Brahmaputra valley it necessitated to exert some control over these areas. The outcome was the unification of these units, whose expression were found in the name 'Assam'. They, however, took utmost care to restrict the

9. A. Guha, 1977. Planters Raj to Swaraj: Freedom Struggle and Electoral Politics in Assam 1826-1947, New Delhi, p.2.

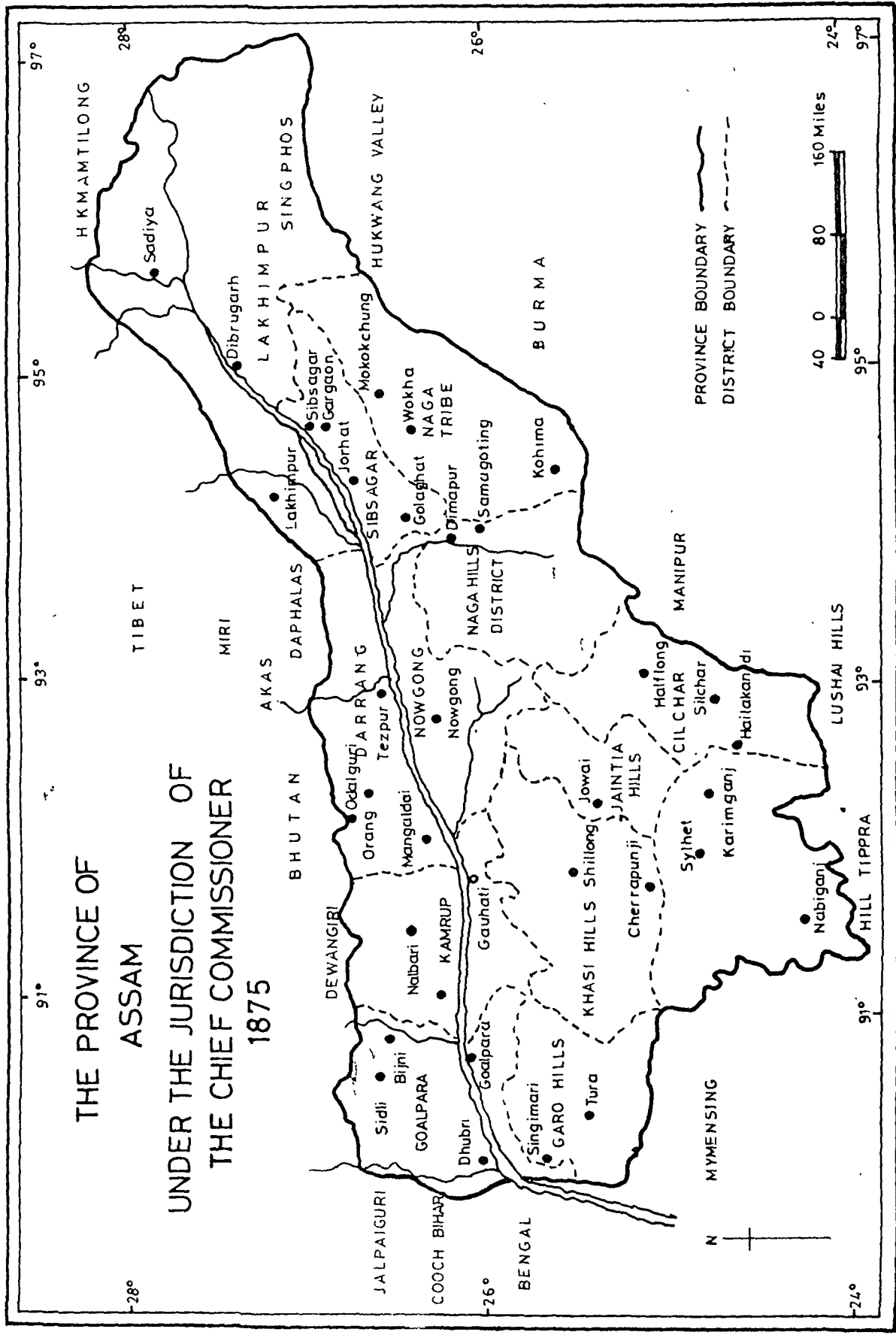


Fig.10

administration to a minimum level and this was basic to the success of their policy, that enabled them to rule the entire region as one.

It is important to note here that the British province that came to be known as Assam, was initially ruled by the Lieutenant Governor of Bengal. It was only in February 1874, that Assam was constituted into a Chief Commissioner's province (Fig. 10). In September of the same year, Sylhet district was separated from Bengal and was incorporated in the new province. By 1898, the whole of North-eastern India, as a province of Assam, was finally placed under a Chief Commissioner who was responsible to the British India Government under the Viceroy in Calcutta and then in Delhi. Thus Assam gained the honour of a new and self-contained state. From 1905 to 1912, Assam and East Bengal were merged as one and was ruled by a Lieutenant Governor as a result of the partition of Bengal by Lord Curzon (Fig. 11) to the status of a Chief Commissioner's province from 1912 to 1921. Just before the partition of India in 1947, Assam consisted of two valleys, viz., the Brahmaputra valley and Surma valley (with two districts of Cachar and Sylhet). After partition, most of Sylhet district went to the then East Pakistan (Bangladesh) and the remaining portion formed the Karimganj sub-division

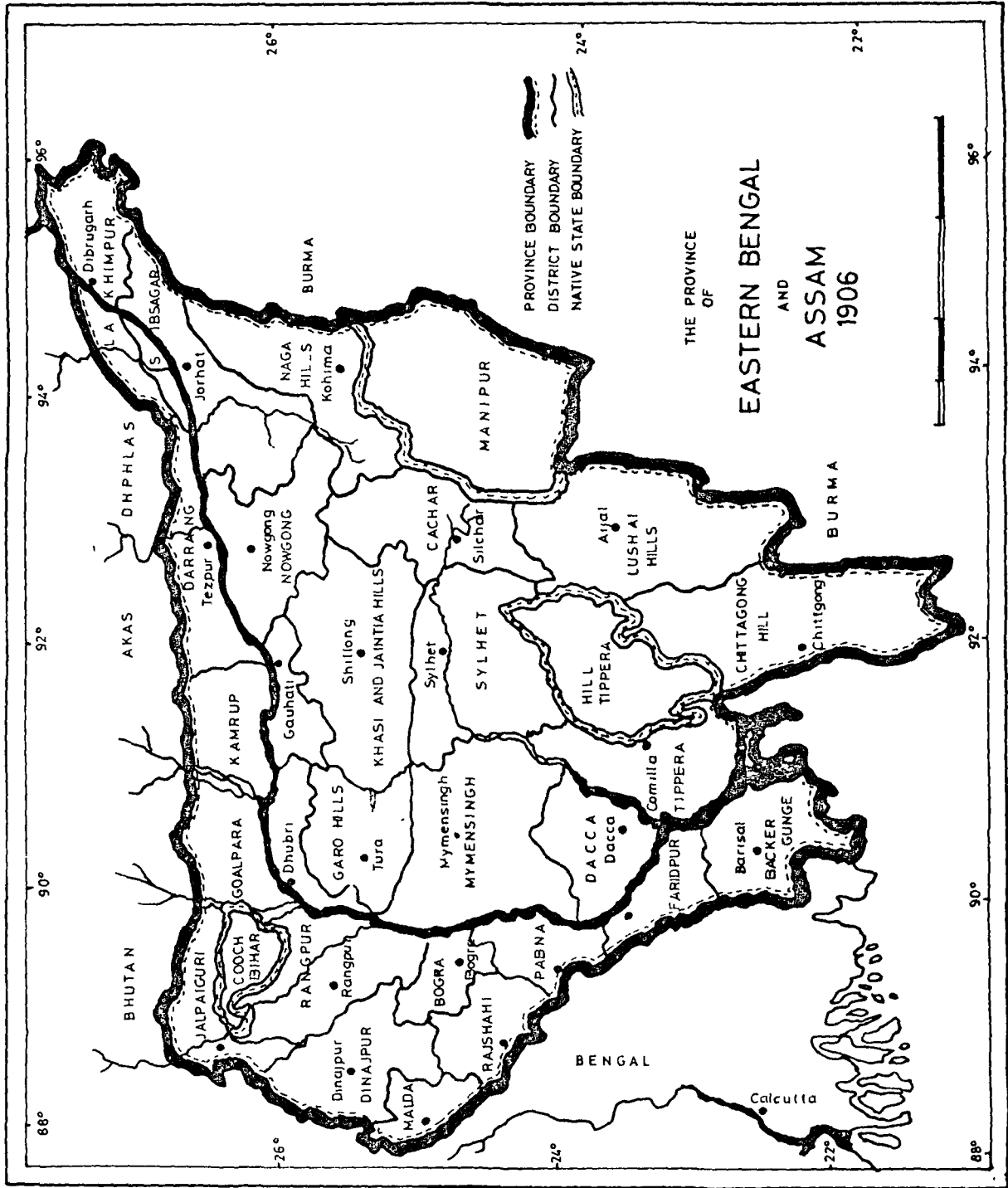


Fig.11 SOURCE: POLITICAL HISTORY OF ASSAM — H. K. BARRPUJARI

and was added to the Cachar district.

The location and boundaries of Assam as obtained after the partition of India was as follows: "Assam lies on the north-east border of India and is surrounded on all sides by the other independent states like Bhutan and Tibet on the south and Pakistan on the west. It was surrounded by mountainous ranges atleast on three sides, on the north is the Himalaya shutting off the tableland of Bhutan and Tibet; on the north-east is the Patkoi range along with a series of other hills which merge with those forming the limits of the independent republic of Burma and Part 'C' state of Tripura. It is only on the west where it adjoins West Bengal and Eastern Pakistan that there are no hills. It comprises the whole of the valley of Brahmaputra down to the point where the river emerging on the Bengal delta takes a sudden southward curve and a portion of the valley of Surma together with the intervening range of hills which forms the watershed between them."¹⁰

The post independent period witnessed a significant change in the relationship between the hills and the Assam valley. Independence led the government to totally abandon the policy of non-interference in the hill regions, due to their strategic location along the borders with China, East

10. Census of India 1971, Series-3: Assam Part I-A General Report, p.2.

Pakistan (now Bangladesh) and Burma. Thus, there was concerted efforts on the part of the government to bring these regions within the mainstream of the country. This resulted in bringing about a growing feeling of alienation among the hill units of Assam. In this context it is fair to state that "dissidence will normally occur amongst a section of the population which regards itself as being distinctive in some way such as language, religion, tribal origin and commercial interest."¹¹

The distinct ethnic, linguistic and cultural identity of the hill areas might have fostered to secede from the Assam valley and to form an autonomous state of their own. Due to their location in a sensitive and strategic region, it was not possible for the government of India to ignore the growing disenchantment of the dissidence population. The ultimate result was the reorganisation that took place and left Assam a shadow of her former self.

In the process, the first to breakaway from the threshold of Assam was the Naga people with the creation of a new state known as Nagaland, on 1st December, 1963, enjoying full representative of Government. It consist of the entire district of the former Naga hills of Assam

11. J.R.V. Prescott, 1968, The Geography of State Politics, London, p.59.

and a part of Tuensang, a former territory of NEFA. This served as a catalyst for the other hill tribal areas of Assam to seek their own state. The Mizoram, Arunachal Pradesh and Meghalaya was separated from Assam almost around the same time. Mizoram as a Union Territory was separated from Assam on 21st January 1972, covering the erstwhile Mizo hills district of Assam with an area of roughly 21,087 sq. km. The other area to be carved out of Assam was NEFA (North-East Frontier Agency). In 1972, under the provisions of the North-East Frontier Agency). In 1972, under the provisions of the North East Frontier Areas (Reorganisation) Act (1971), NEFA was declared a Union Territory and came to be known as Arunachal Pradesh covering an area of 83,578 sq km. Both Mizoram and Arunachal Pradesh acquired its state hood very recently, i.e., in 1987 (Fig. 12).

Finally, Meghalaya which was conferred the status of Autonomous state within the state of Assam on 2nd April, 1970, became a full-fledged state on January 21st, 1972, comprising of Khasi, Jaintia and Garo hills with an area of about 22,500 sq km. Since then there had been no changes in the external boundaries of the state.

The state of Assam as constituted in July 1977, was bounded by the Union Territory of Arunachal Pradesh,

RE-ORGANISATION OF THE STATE OF ASSAM (1947-87)

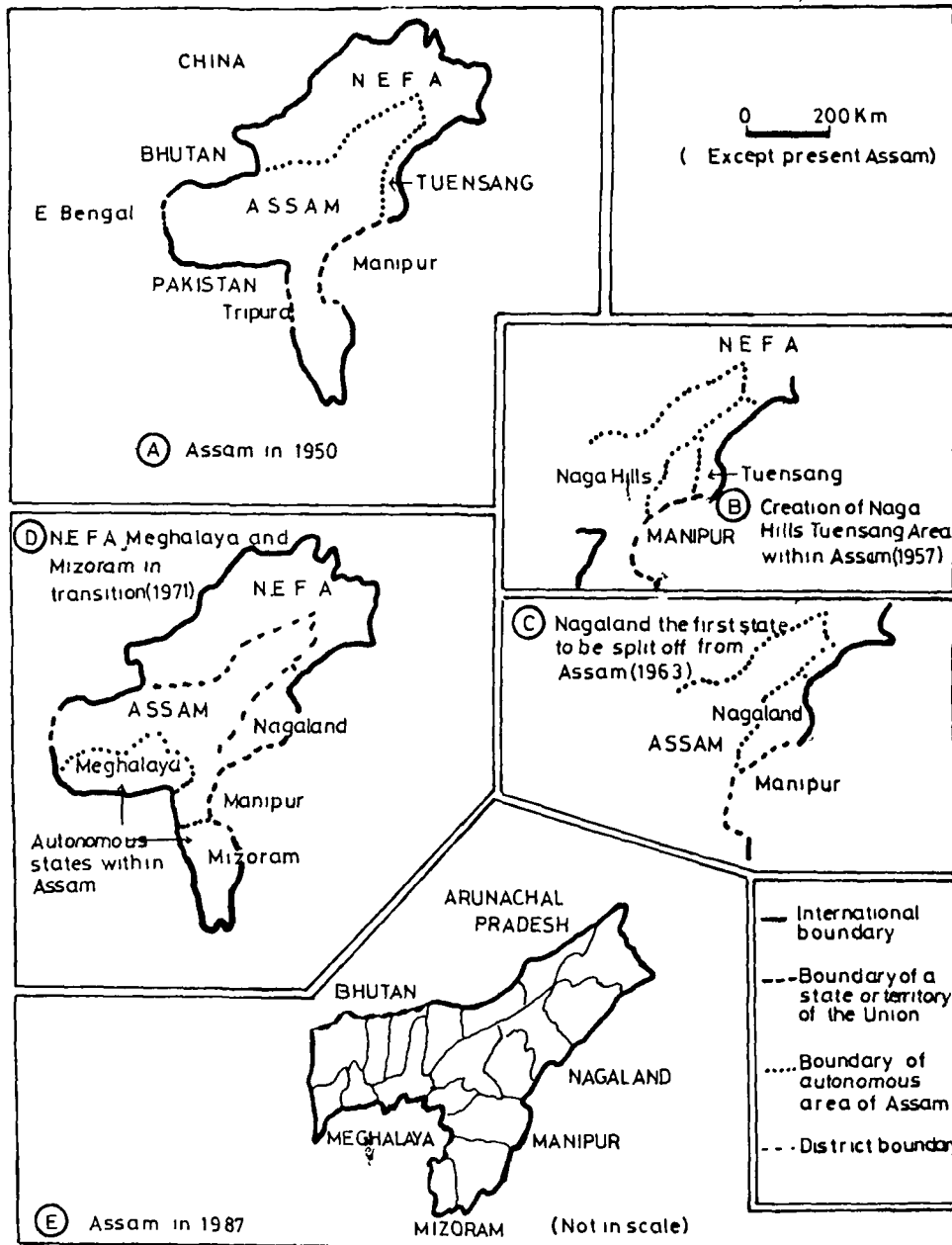


Fig.12

Nagaland and Manipur on the east, Bhutan and Arunachal Pradesh on the north, Mizoram, Tripura, Bangladesh and Meghalaya on the south; and Bangladesh and West Bengal on the west. It comprises the whole of Brahmaputra valley down to the point where the river takes a sudden southward curve and a portion of the Surma valley with the intervening hill districts namely, Karbi Anglong and North Cachar hills. It has an area of 78,523 sq. km. and a population of 14,625,152 persons as per the 1971 census.¹² There were altogether seven districts in the Brahmaputra valley viz., Goalpara, Kamrup, Darrang, Nagaon, Sibsagar, Dibrugarh and Lakhimpur; Cachar the only district of the Surma valley and the only two hill districts of Assam are Karbi Anglong and the North Cachar hill.

At present the number of districts has been increased to thirteen in the Brahmaputra valley viz., Dhubri, Goalpara, Barpeta, Nalbari, Kamrup, Darrang, Sontipur, Lakhimpur, Dibrugarh, Sibsagar, Jorhat, Nagaon and Kokrajhar; Karimganj and Silchar constitute the two districts of the Barak valley and Karbi Anglong and North-Cachar are the two hill districts of Assam.

In summing up it can be stated that, there is a definite link between political activities and the

12. Census of India, 1971, op. cit., p.3.

geographical space. A change in administration or territorial boundary includes a corresponding change in the policy and priorities of development; consequently landscape changes follows.

During the Ahom rule, the core of their power, i.e., the Brahmaputra valley, were surrounded practically on all sides by hills, accessible only through the numerous but difficult passes and river routes. The Ahom rulers policy towards the hilly periphery was essentially that of non-interference, motivated may be by the fact that :

"Possession of extensive unintegrated or economically neglected areas may result in a drain on state resources from the cost of administration and communication construction."¹³

Since, their sphere of jurisdiction were confined to the long alluvial valley of the Brahmaputra, homogenous in terms of physiography, economy which was described as a rice economy, and culture, it enabled the Ahoms to administer the region efficiently and effectively in all spheres. Thus the rice economy of the state made considerable progress under their rule.

13. R. Muir, 1975, Modern Political Geography, p.52.

The British interest, on the other hand, was more of economic exploitation, particularly since the discovery of tea and jute in the region. Due to the sporadic raids by the hill tribes, on the valley it, necessitated to exert some control over them, primarily to safe-guard their interest and also for reasons of security due to their location in sensitive areas, bordering China and Burma. They, therefore, gradually amalgamated the various political units of the surrounding hill areas. Despite this, their policy was in essence similar to that of their predecessors, i.e., they adopted the policy of conciliation in their dealing with the hill tribes. This policy helped to keep the hill people at bay and at the same time brought about an atmosphere, conducive for their pursuit in the commercial sector of the agricultural economy.

Independence had brought about a tremendous change in the existing landscape. Partition had resulted in the loss of territory whereby the state had to lose most of her jute producing areas to Pakistan (Bangladesh). Influx of a sizable number of refugees and dislocation created due to snapping off, of railways, road and water communication with the rest of the country made the situation of the state quite difficult. In addition, the government had to

abandon the policy of non-interference towards the hill areas. This in a way was responsible for the growing feeling of alienation amongst the hill people, and consequently their demands for autonomous states. Thus the state had to face the problem of the dissident population, that ultimately set in the process of re-organisation that continued till the early seventies.

The repercussions of all these activities had left a marked impression on the agricultural economy of the state. This may partly account for the slow progress made by agriculture inspite of planned development.

CHAPTER-IV

AGRICULTURAL SITUATION IN ASSAM

To understand the nature of the impact of the geo-political development on agricultural policies as well as on the present agricultural situation in Assam, it would be proper to consider the historical perspective. This would not only help us in identifying the under currents but also the directions in which the agricultural policies have adjusted themselves. This latter aspect will also indicate how the administrative changes exerted their pressure on agriculture in the state. Figure 13 shows the land use pattern in Assam.

Sources containing information about the pre-Ahom period is practically negligible. However, it could be inferred that "paddy was the dominant crop of the state, since land management was generally expressed in terms of paddy yields."¹ The Ahoms though, brought about a tremendous change in the field of agriculture, yet the dominance of rice continued. In fact their economy was generally described as a rice economy. During this period, therefore, there seemed to have been continuous efforts to find ways to improve rice cultivation.

Mainly two types of rice were cultivated, the Ahu and the Sali. The Ahoms were responsible for the

1. Amalendu Guha, 1966. Ahom Migration: Its Impact on Rice Economy of the Medieval Assam, Artha Vijana, Vol.9, No.2, June, pp.135-36.

ASSAM LANDUSE PATTERN 1973-74

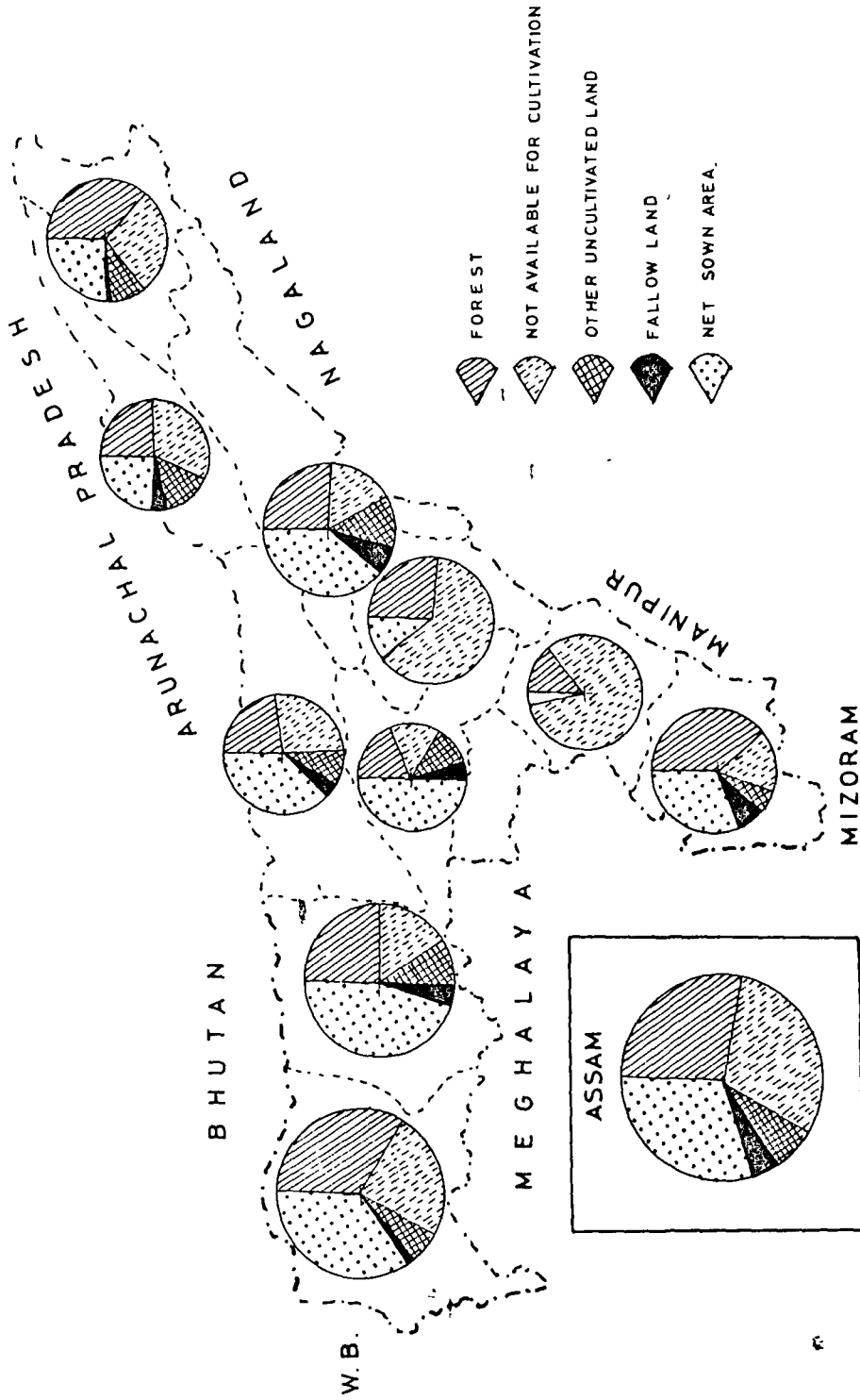


FIG. 13

introduction of the wet paddy cultivation, i.e. Sali in the state. It was mainly practised in low lying lands, locally, known as rupit. Of the two, Sali was more productive. The yield of Sali was 50-200 lbs. higher than that of Amu or Bao rice, per acre of cultivated land.²

This led Sali cultivation to become the dominant cropping practices among the Ahoms. For the Sali cultivation the following conditions were essential

Wet rice needed fields that could be flooded artificially from adjacent streams, as and when needed, or fields that could be reduced to one land so as to retain the rain water. The second technique is more important in this context. It suited the extensive alluvial flats, made up of clay soil which permitted the raising of low ridges in the criss-cross pattern so that the field was divided into a number of small, rectangular blocks in which the rain water could be held in the right quantity and drained when necessary.³

The Ahoms thus, developed a technique of growing rice through irrigation and terracing. Due to extremely fertile soil, the use of manure was practically unknown. From the available statistics, it was found that in Darrang

2. E.A. Gait, 1905. A History of Assam (rev. 1967), p.269.

3. Amalendu Guha, 1966, op. cit., p.146.

77%, in Nowgong and Kamrup 50% of all rice lands were under Sali.⁴

It is to be noted that wet paddy cultivation was mainly confined to upper Assam. As indicated, only 50% of all rice lands in Kamrup district were under such cultivation. Ahu and Bao, both flood resistant crops continued to be prevalent in Lower Assam. Thus it may be said that the Ahoms played a significant role in widening the base of the wet culture into the undulating plains of eastern Assam.

The Ahoms, however, failed to utilize the wastelands which in Robinson's opinion were "as rich as any of the lands now under cultivation ... the extent of unimprovable land is very small indeed."⁵

The general economic conditions of the state during the Ahom rule could be described as follows:

"Under the Ahom rulers the country on the whole was prosperous. It had developed a good system of agriculture, industry and trade. The existence of a strong and well organised central authority contributed not a little to make the country rich and self-sufficient. That there was economic progress has been attested to by the Mahammadan writers and later by the British Captain."⁶

4. Amalendu Guha, 1968. Medieval North East India, Policy, Society and Economy, Occasional Paper, No.19.

5. Ibid., p.146.

6. E.A. Gait, 1905, op. cit., p.221.

Agriculture Under the British Rule

The British, in order to ascertain the prospects of the newly acquired country of Assam in 1826, tried to gather as much information possible. As such A.J. Moffat, Mills (1853)⁷ made the following observations, which presented a very vivid picture of the state's agriculture existing at that time.

The Assamese, one and all, from the poorest peasant to the nobility of the country, are devoted to agricultural pursuits. Generally every family provides itself by agriculture with almost all the necessaries of life. They cultivate rice, pulses, fruits and vegetables to supply their table, mustard to light their houses and silks or cotton to provide their garments. The introduction of improvements in the art of agriculture, therefore, is the only means which can increase the general resources of the country, ameliorate the conditions of the people, raise them to wealth and affluence, advance manufactures and commerce etc... The soils of Assam is adapted to the productions both of the torrid and temperate regions. Silk, cotton, tea and variety of other valuable products grow luxuriantly in her fields and valleys and it requires only the introduction of an improved method of agriculture to render her produce "tenfold more abundant"... that a moderate degree of attention directed by Government to the subject will lead to the attainment of that all important and desirable object ... the implements at present used in the

7. A.J.M. Mills, 1853. (rev. 1980), Report on Assam, Delhi, p.AI-4.

country for agricultural purpose are of the rudest and simplest kind. They show that art is still in its most infant state ... and the husbandman is ignorant of the growth of a variety of the valuable articles of commerce which, would even without the aid of human labour grow spontaneously in the forest of Assam. The means of irrigation and drainage are seldom resorted to, and generally no attempts are made to create embankments, or devise means for the protection of the lands from the encroachments of floods or other accidents. The consequence is that drought or inundation often entirely destroys the crops, famine ensues, and the population is actually reduced to wretchedness and misery. The rude state of agriculture, prevents the farmers raising more than one crop throughout the year.

This then provides the picture of the agricultural front when the British came to the scene. It is seen that there were ample of scope, where intervention on the part of the British Government might have had boost up the traditional agriculture. In fact after the turmoil, the inhabitants of Assam had to undergo towards the end of the Ahom rule, under the settled Government, material prosperity did increase. Soon, with the discovery of tea and altogether a different meaning was given to the existing agriculture. The British were least concerned to seek measures to improve the conditions of the peasant. They were then more

keen to establish a commercialised agricultural economy from which they would derive maximum economic benefits. Thus they remain true to their exploitive colonial nature.

The following quotation is appropriate in this context:

A prosperous plantation sector was carefully organised out of the natural conditions of Assam. Tea discovered in a wild state in 1826, was taken up for experimental cultivation in the 1830's. It began to flourish by 1859, when the Assam Company, a private concern which had 4,000 acres under cultivation started producing over 16,87,200 kg. of tea per year. The cultivation soon spread all over Assam. By 1872, a total of 27,000 acres was under cultivation, producing 1,33,20,000 kg. per year. In 1815 the area under tea in the whole of Assam was 383,821 acres and the production had shot up to 544,756,742 kg per year.⁸

No doubt the tea industry generated maximum profits for the British which accounted for the gradual spread of it in the region although its cultivation did not conflict with the traditional sector since area most suitable for tea cultivation cannot be adapted to those where rice is cultivated. Hence, production of rice, the main-stay of the people was not affected. However, it necessitated increased

8. Figures tabulated from Sibsagar District Gazetteer, cited in Hiren Gohain's "Origin of the Assamese Middle Class", Social Scientists, Aug. 1973, No.13.

cultivation of rice to feed the huge labour force engaged in the tea gardens. Also, it was mainly responsible for the improvement of communications as well as giving impetus to trade, establishment of new markets, etc. etc.

The other cash crop, Jute, also received significant attention from the British, and came to figure prominently in agriculture in Assam. Prior to their colonization, cultivation of Jute was not unfamiliar to the Assamese farmers. Evidently, in 1860, Goalpara, Kamrup, Darrang, Lakhimpur and Cachar of Assam was supposed to have exported raw jute to Calcutta. The British were quick to notice the Agro-climatic suitability and the profitability in cultivating Jute. The only obstacle was the attitude of the Assamese farmers. They were contented to cultivate only for their subsistence. Further, they were not in favour of abandoning the already cultivated lands to reclaimed ones. In 1835, Francis Jenkins submitted a colonisation scheme. The idea behind was to boost up agricultural produce, thereby increasing revenue for the Government. After repeated efforts by several British administrators, Sir Henry J. Cotton, the then Commissioner of Assam, put forward a scheme in 1896. On 2nd June of the same year, his proposal was accepted. Thereby cultivation of Jute in the wasteland of Assam by settling the immigrants of Bengal became a reality.

We may conclude the agricultural economy during the British period, thus :

Agriculture was then transformed in the name of modernization. The traditional subsistence economy of the Assamese did not bring any profit for the British. Hence, agriculture was commercialised and cash crop cultivation was encouraged so as to increase the paying as well as the purchasing capacity of the peasants. Major Jenkins attempted to give the people a commercial and industrial bias, firstly by encouraging increased cultivation of such crops as were easily marketable, and secondly, by creating a class of Assam.⁹

Agricultural Situation at Independence and Since

The discussion so far indicates the lopsided development that took place in agriculture during the alien rule. Remaining true to their exploitive nature the British devoted themselves entirely towards the expansion and development of the plantation sector, whereby they could earn maximum profit. While the peasant agriculture remained tradition bound and continued to stagnate.

Independence, however, brought about a change in the Government's agricultural policy.¹⁰ In contrast to the policy adopted by the British, the Indian Government

9/ H.K. Barpujari, 1963, Assam : In the Days of the Company. Gauhati, p.215.

10. The various agricultural policies undertaken by the Centre and the State Government since Independence is discussed in Chapter V.

besides, encouraging the growth of the commercial sector, pursued a policy towards subsistence. This gave way to planned developmental efforts to increase production from 1951. Prior to reviewing the government's effort to promote agricultural growth, it is of equal importance to bring forth the distinctive characteristic of the agricultural economy of Assam that evolved through times and their present position in matters of various crops grown as well as the various inputs used. Figure 14 shows the cropping pattern of Assam.

Similar to the other parts of the country, in Assam too, food crops occupied the highest proportion. But a striking difference in case of Assam is an almost total dominance of rice (excluding tea). It has been pointed out that "In no other parts of India are the cultivators so dependent on one crop as the peasants of Assam on rice."¹¹ Of the total area under foodgrains, the area under rice accounted for 90.24% in 1980-81. Mainly three varieties of rice are grown in Assam. They are the winter rice (Sali and Bao), summer or autumn rice (Ahu) and spring rice (Boro). Winter rice is grown throughout the state and covers about 72% of the total area under rice. Autumn rice

11. H.P. Das, 1965. Geography of Assam, Gauhati, p.42.

ASSAM CROPPING PATTERN



ARUNACHAL PRADESH

BHUTAN

MEGHALAYA

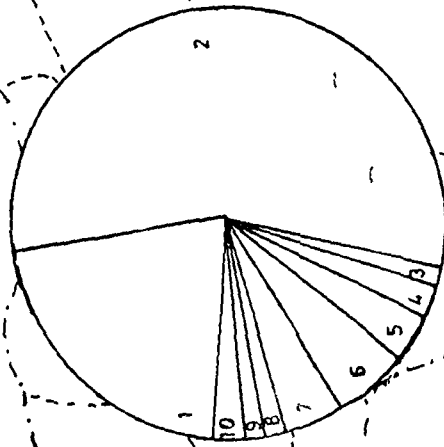
NAGALAND

MANIPUR

BANGLADESH

TRIPURA

MIZORAM



CROP COMBINATION

- 1 SUMMER RICE
- 2 WINTER RICE
- 3 SPRING RICE
- 4 WHEAT
- 5 PULSES
- 6 RAPE & MUSTARD
- 7 JUTE
- 8 SUGARCANE
- 9 POTATO
- 10 OTHERS

Fig. 14

is grown mainly in Goalpara and Kamrup district covering an area of 26.64%, spring rice is mostly restricted to Cachar and Nagaon districts. While all the districts of the state have the largest area under rice, the districts of eastern Assam occupies about 90% area of the total cropped area. Compared to the eastern region, the western Assam have lesser occupance of area under rice.

Although rice cultivation received considerable patronage from the peasants in Assam, yet its yield per hectare was not only much below national average, but also less than some of the states belonging to the North-Eastern region. That is, Assam had an average per hectare yield of 1109 kg. in 1980-81 compared to Andhra Pradesh 1978 kg, Haryana 2602 kg, Maharashtra 1570 kg, Manipur 1448 kg, Meghalaya 1339 kg, Punjab 2736 kg, Arunahcal 1182 kg.¹² The cause of this low production was a component of many factors and was attributed to little or no stress on agricultural technology.

Besides rice, the other two cereal crops grown in the state are Wheat and Maize. Wheat a comparatively new crop in Assam introduced to the state in mid-sixties now occupies an important place in Rabi crop. It is cultivated

12. Area and Production of Principal Crops in India, 1980
 Directorate of Economics and Statistics, Dept. of
 Agriculture and Co-operative, Ministry of Agriculture
 GOI.

mainly in the Kamrup Nalbari, Dhubri, Nagoan, Goalpara and Sonitpur district. While, maize constitutes an important crop in the two hill districts of Karbi Anglong and North Cachar Hills of Assam.

Pulses grown as an winter crop are mainly in the districts of Goalpara, Kamrup, Darrang and Nagoan. They occupy about 3.6% of the total area under all principal crops. The pulses grown are, gram, tur lentil, black gram, green gram, etc.

A comparison of average productivity of foodgrains per hectare of cropped area (Table IV) reveals that in Assam it was significantly higher than All India average in 1955-56, i.e. by 57%, became lower than the latter by mid eighties. The comparative advantage by Assam in foodgrains production declined considerably.

Table IV

Estimated Productivity of Foodgrains Per Hectare (1955-56 - 1985-86)

Year	Assam (a)	All India (b)	Difference (a-b) (kg)
1955-56	951	605	346
1960-61	940	710	230
1970-71	987	872	115
1976-77	910	894	16
1980-81	1073	1023	50
1985-86	1111	1184	(-)73

Source: (a) Important Statistics of Assam, 1986.
(b) Economic Survey, GOI, 1986-87.

At present, Assam is considered as a deficit state in food production. It was disclosed in the Assam Assembly on 18th March 1988, by the Minister of Food and Civil Supply that

The state produces approximately 29.12 lakh metric tonnes of essential commodities, against the estimated 32.45 lakh metric tonnes of such commodities imported from outside the state every year. Except for rice where the state's production is higher than imports, Assam imports more than it produces in case of all other essential commodities like, wheat, sugar, edible oil, pulses, potato and onion. The production figures of essential commodities and the amount imported respectively by the state are as follows (in metric tonnes) :

Rice = 24,38,000/10,62,000; Wheat = 1,55,000/6,89,000
 Sugar = 5,700/2,00,3000; Edible oil = 35,000/1,33,400
 Pulses = 59,000/1,45,000; Potato = 1,90,000/5,08,000
 Onion = 30,000/3,30,000.¹³

Among the cash crops grown in the state (excluding tea), jute is the most important. Nearly 70% of the jute producing areas of undivided India went to Pakistan, due to partition. As such, after independence to overcome the problem of raw material shortages the Centre launched "Grow More Jute" drive in 1950-51. In spite of it the total area

13. Assam Tribune, Vol. No.76, March 19, 1988, p.6.

of cultivation in Assam remained almost same. The average production increased from 1084 kg. per hectare in 1950-51 to 1552 kg in 1981-82. This increase, however, became insignificant when compared to the other jute producing states, viz. West Bengal for instance in 1981-82, the total production of jute was 44,73,000 bales and the total area of cultivation was 50,6000 hectares, whereas in Assam it was 100,40,000 bales and 11,6000 hectares, although the average yield in the period was almost the same.¹⁴

This crop is concentrated mainly in Nagaon, Kamrup, Goalpara and Darrang. Cotton and Mesta are the other two fibre crops grown in the state.

Oilseeds and sugarcane also occupies a place of considerable importance. Rape, Mustard, Sesamum, Linseed and Castor, are grown in the state. They are mainly concentrated in Goalpara, Kamrup, Darrang and Nagaon district. Sugarcane on the other hand is grown in almost all the districts of Assam, though most significant in Goalpara, Kamrup, Darrang and Nagaon.

There are other minor cash crops like tobacco, chillies, ginger, tumeric, spices and variety of vegetable

14. Lohit Talukdar, 1987. Jute Cultivation in Assam, Assam Tribune 23rd August.

grown mainly for domestic consumption, or for sale in small quantities. It was stated that "the emergence of jute and tobacco as cash crops and adoption of potato as one of the main vegetables show the most remarkable development of Assam during the last seventy years."¹⁵

Table-V presents a comparison of yield rates of crops of Assam and India .

Table-V

Productivity of Principal Crops : Assam and India
(Quintal Per Hectare)

Item	State/ Country	1960- 1961	1965- 1966	1970- 1971	1975- 1976	1980- 1981	1981- 1982	1982- 1983
Rice	Assam	9.5	9.5	10.1	10.2	11.1	9.9	11.2
	India	10.1	9.8	11.2	12.4	13.4	13.1	12.3
Wheat	Assam	8.1	6.8	5.8	12.0	11.6	11.3	11.2
	India	8.5	8.3	13.1	14.1	16.5	16.9	18.4
Pulses	Assam	3.6	4.4	3.8	3.9	4.2	4.4	4.2
	India	5.4	4.4	5.2	5.6	4.9	4.8	5.2
Oilseeds	Assam	3.9	4.4	4.2	4.1	4.8	4.6	4.7
	India	5.1	4.2	6.0	6.5	5.3	6.5	5.6
Jute	Assam	12.3	11.6	13.1	13.9	14.6	15.5	14.8
	India	11.8	10.6	11.9	13.2	12.5	14.8	14.5
Sugarcane	Assam	34.4	35.1	39.1	38.6	36.1	40.5	43.6
	India	46.1	45.0	49.6	65.5	59.1	58.4	56.2

Source: Draft Seventh Five Year Plan and Annual Plan 1985-86, Vol.I, Planning and Development Department, Government of Assam.

15. P.C. Goswami, Economic Development in Assam, Bombay, 1963, p.

Low yield rates reveal the backwardness of agriculture and at the same time offers challenge and opportunity to achieve a faster rate of growth.

Agriculture in Relation to Input Supply

The analysis so far, projects the picture of the various crops grown and their relative importance in the State yield is supposed to be a direct result of inputs application. In this respect, Assam's agriculture has to make a big leeway to make up with the national average or with some of the states which is evident from the indices of farm input use, given in Table-VI..

Table-VI

Indices of Farm Input Used by Selected States in India

Index for	Irrigation (A)	Fertilizer (B)	Credit (C)	HYV Seed (D)
All India	100	100	100	100
Assam	63	10	5	86
Punjab	302	358	222	246
West Bengal	71	95	98	115
Tamil Nadu	181	193	192	155

(A) Share of gross irrigation area in gross sown area in 1978-79 (27.5% = 100)

(B) Use of fertilizer per hectare in 1981-82 (34.6 kg = 100)

(C) Institutional credit per hectare of gross cropped area in 1978-79 (83.1% = 100)

(D) Share of area under HYV in gross sown area in 1978-79 (22.9% = 100).

Source: The State of the Nation by A. Vaze (1984).

Among the various inputs, irrigation was universally recognised as the kingpin. Its availability opened up scope for use of all modern inputs and growing both on and off season crops. Field survey shows that rice output can be increased by over 38% in Assam Valley simply by extending effective irrigation, as the rice yield per hectare from irrigated areas is 1524 kg compared to 1107 kg from non-irrigated area.¹⁶

The importance of irrigation becomes even more obvious, when one witnesses the wide annual variations in the production of crops in Assam. The fact may be ascertained from tableVII¹⁷.

The table shows the annual percentage variation of output over preceding year from 1950 to 1975-76 of some selected crops. This highlights the fact that timely and adequate rainfall is a must for favourable agricultural production. Since there is no guarantee of this because of its dependence on monsoon rains, hence assured irrigation is a must.

16. A.K. Neog and G. Bordoloi, 1987. A study of the impact of Agrarian Reform in Assam. Unpublished Research Paper.

17. P.D. Saikia, U. Phukan, Agricultural Development in Assam, Unpublished Research Paper. Agro-Economic Research Centre for N.E. Region, Jorhat.

Table-VVIAnnual Percentage Variation in Index Number of Output of Crops in Assam

Year	Rice	Wheat	Jute	Mustard
1951-52	+ 1.07	.1	+ 0.38	- 5.89
1952-53	- 1.67	-40.50	+12.57	-13.23
1953-54	- 1.67	+74.35	- 1.36	+ 0.31
1954-55	+ 3.18	- 9.22	-16.06	- 1.36
1955-56	+ 1.64	-36.25	+62.45	+17.45
1956-57	+ 5.00	- 4.95	-21.91	+13.35
1957-58	+ 4.00	+20.08	+14.90	- 7.70
1958-59	+ 3.41	- 9.36	+ 2.08	+15.89
1959-60	+ 4.88	- 7.79	- 6.32	-35.31
1960-61	- 2.06	+218.86	- 8.92	+ 8.26
1961-62	+ 0.93	+ 4.64	+22.31	- 7.04
1962-63	-10.44	- 0.53	-36.36	+ 2.79
1963-64	+18.85	- 0.16	+48.57	+19.46
1964-65	+ 1.95	+ 3.13	-10.52	+ 6.36
1965-66	- 4.21	-32.46	- 7.35	+ 3.88
1966-67	- 4.72	+ 7.04	+12.92	+ 4.90
1967-68	+ 9.50	-10.07	+ 6.72	+ 1.37
1968-69	+11.50	- 1.90	+23.29	-19.52
1969-70	+ 1.11	+30.90	+39.14	+ 3.65
1970-71	+ 0.66	+116.40	-11.46	+15.89
1971-72	- 3.65	+296.74	+21.51	+12.88
1972-73	+14.09	+233.98	-11.26	+ 2.23
1973-74	- 5.09	-69.97	+12.45	+39.29
1974-75	- 5.09	+61.77	-27.34	-28.31
1975-76	+13.41	-25.75	-11.23	-13.24

Source: Based on the Study on Agricultural Development in Assam, Agro-Economic Research Centre for N.E. India, 1978.

The need for irrigation was felt particularly after the introduction of HYV rice, wheat, etc. during the mid sixties; also in view of the two unprecedented natural calamities faced by Assam economy during 1986-87, firstly, the prolonged dry spell from mid-April to mid-August, a phenomenon quite unknown to the state, immediately followed by devastating floods that spread over several districts, called for an integrated approach for flood control, irrigation and hydro-electric power generation. The present development of irrigation in Assam is very low in comparison to all India average is undisputed. The state's achievement as on March 1987, was 17% as against the all India average of about 65%.

In Assam, actual scientific development of irrigation assumed greater importance only in the early 1970's when a separate department exclusively for irrigation was created in 1974. Prior to this, the Department was a part of Flood Control (F.C.) Department and obviously the plan priorities were concentrated on the other sectors than irrigation.

Irrigation in Assam made late entry in the field of Agriculture because of the assumption that since the State falls within the heavy rainfall zone, hence irrigation is not required. Besides, the State's traditional system of farming was also responsible. Particularly since the system is

mainly associated with the cultivation of a single crop, i.e. winter rice, raised with the help of monsoon rains. The extension and irreparable damages caused by the devastating floods every year to hundreds of irrigation schemes, seriously hampers the pace of irrigation development in the state. It is also experienced that 40% of the created potential remains unutilised in the fields out of the total created potential due to non-availability of inputs like better seeds, fertilizers, pesticides, etc. during the peak time.

It is well known that the core components of new technology for agricultural production were seed, fertilizers, pesticides and credit. However, fertilizer, the important ingredient of modern agriculture is of recent origin in the State. The present level of fertilizer consumption is still extremely low although, there has been a steady growth in recent years. Data as quoted in the statistical Hand Book, Assam 1980, show that per hectare consumption of fertilizers in 1976-77 was 1.12 kg, which came around 3 kg. in 1980-81. "Absence of adequate irrigation network, inefficient extension works, high price, untimely and inadequate availability of fertilizers, non-availability of credit, timely and inadequate soil testing services are the factors affecting fertilizer

consumption in Assam."¹⁸

After Independence, efforts were made to provide institutional credit to agricultural producers. In this respect too, there were many shortcomings. Until the nationalisation of the banks the main source of institutional credit for agriculture was the Primary Cooperative Credit Societies. In 1978-79, there were 3019 primary agricultural credit societies, besides 664 Gaon Panchayat level Multipurpose Co-operative Societies and 17 land mortgage Banks in Assam. These co-operatives had an outstanding loan of 764.27 lakhs of which 573.22 lakhs were overdue. It was reported that majority of the primary co-operative societies were dormant and only a few of the Gaon Panchayat level Cooperatives were working. Accumulation of large overdues is one of the main drawbacks of the co-operative credit institutions.¹⁹ Thus indicating the existence of poverty conditions in the rural Assam.

Since the nationalisation of the banks the position has improved slightly, but still falls short of the actual requirements of the farmers. In the state the assessment of input supply position during the year 1983-84, as given

18. N.R. Goswami, A Study of Fertilizer Consumption in Assam, 1984-85, Agro-Economic Research Centre for N.E. India, A.A.U., Jorhat.

19. Economic Survey of Assam 1980-81, Directorate of Economics and Statistics, Govt. of Assam.

in Table-VIII will show that there is a large gap between the requirement and availability.

Table-VIII

Input Requirements and Its Supply in Assam 1983-84

Input	Requirement	Actual Supply	Gap (%)
Certified seeds for all major field crops	17,75,000 Qtl.	1,16,944 Qtl.	93
Irrigation (net)	13 lakhs hec.	4 lakhs hec.	69
Fertilizer (at 10 kg/ha.)	30,000 tonnes	18,000 tonnes	40
Credit	Rs. 160 crores	Rs. 24 crores	98.5

Source: Directorate of Agriculture, Government of Assam 1984.

Apart from the inadequacy in the field of input supplies there are other malaise in the agricultural sector that prevents agricultural development. Excessive pressure of population on land is one such serious problem. Population has been growing at a rate much faster than the increase in foodgrain production. This factor is mainly responsible for the fragmentation and sub-division of land resulting in uneconomic holdings. Besides, the existence of small and fragmented holdings affected adoption of modernisation with improved practices and larger outputs.

According to the 1976-77 Agricultural census, the average size of operational holding was 1.4 hectare for Assam as against the national average of 2.0 hectares. Again 82% of holdings in Assam were of sizes less than 2 hectares as against 73% for the country as a whole and these holdings covered 43% of the area operated in Assam, as against 23.5% for India. The percentages of holding in the size groups 0-1 hectare, 1-2 hectares and above 2 hectares were 59.7, 22.6 and 17.7 respectively and the percentage of area under these groups were respectively 19.2, 23.3 and 57.5.

Since, the great earthquake of 1950, flood and soil erosion have poised as twin problems, in Assam, particularly during the rainy season. As a result extensive damage and losses occurs to crops, properties, etc. which set at naught, the limited developments efforts. The extensive damages caused by floods, is indicated by the table IX, while Figure 15 shows the flood prone areas of the Assam valley.

In the year 1983 floods came in four waves and during 1984, there were five waves of flood. The loss caused by floods to crops, houses and other properties (excluding cattle) during the period 1980 to 1983 alone was estimated to be Rs. 63.09 crores. The flood damage of 1984 which was quite extensive and heavy is estimated to be Rs. 200 crores.

ASSAM FLOOD AFFECTED AREA

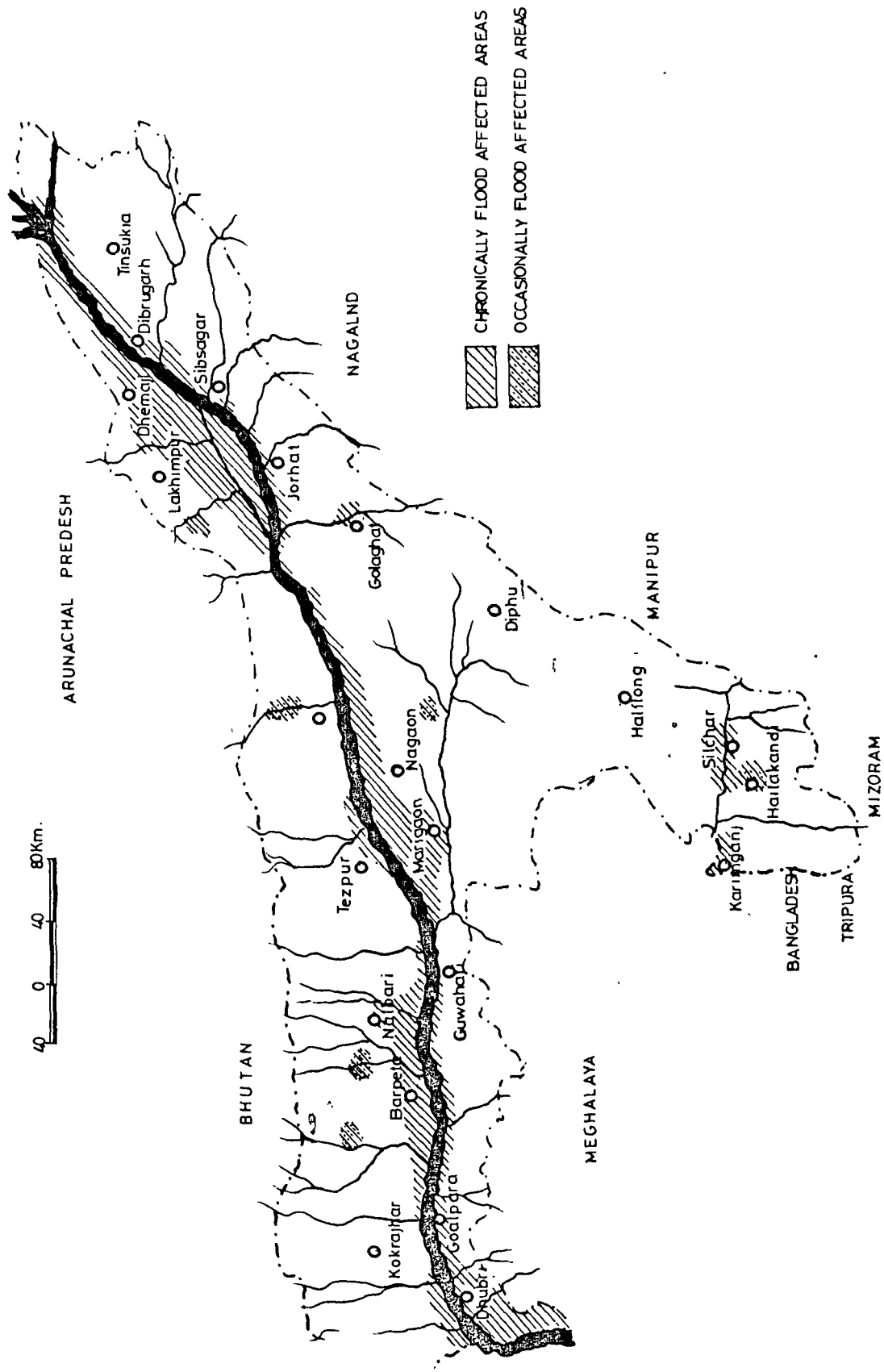


Fig. 15

Table-IX

Damages Caused by Floods in Assam

Extent of damages	1976	1977	1978	1979	1980	1981	1982	1983	1984
Area affected (lakh hect.)	14.19	10.40	3.06	6.73	11.60	4.57	68.85	6.95	15.16
Population affected (lakh)	14.63	45.49	9.17	23.51	33.59	13.58	14.24	21.21	56.83
Human lives lost (lakh)	-	70	2	29	37	22	16	20	90
Cattle lost (number)	-	26207	144	6062	9155	911	209	1574	26239
Values of crop damaged (Rs. crore)	8.65	26.64	3.93	26.14	32.37	7.01	4.69	10.32	48.99
Total loss (including damages to crops and other property)	11.98	31.08	4.27	28.16	39.80	7.40	4.88	11.06	***

*** List of property other than damage to crops during the fifth wave of flood has not been finally assessed. The total loss has been provisionally placed at Rs. 200 crores.

Source: Draft Seventh Five Year Plan 1985-90 and Annual Plan 1985-86, Vol. I - An Overview, Planning and Development Department, Government of Assam.

Also as a part of predictable pattern the three waves of devastating floods in 1987, are reported to have caused a damage of Rs. 600 crores and loss of 89 human lives. This situation therefore needs to be corrected.

Land System

The study of agricultural situation in Assam would be incomplete unless the land tenure system of the state is mentioned. Because the present land tenure system and the agrarian structure is not really conducive to increased agricultural output.

In the past, under the native rule, the land was the absolute property of the sovereign. He made extensive grants to temples, priests and charitable institutions, which were revenue free. The ministers and high officials were granted large estates. Their estates were cultivated by 'paiks' attached to them. The 'paiks' were the actual tillers of the soil. Two 'puras' (nearly one hectare) of the best rice lands were allotted to them in lieu of personal services rendered. Each 'paik' was given land for his house and garden for which he paid one rupee annually as house tax. In the inundated parts of the kingdom the land was chiefly cultivated by 'paik cultivators' (persons taking up land for temporary cultivation at a distance from their permanent

holdings) who paid a plough tax. The hill tribes paid hoe tax for growing dry crops like cotton.

For the first few years, the British was happy with the system of state proprietorship of land prevailing during the Ahom rule. They, however, abolished the systems of payment of land revenue in the form of permanent services. Occupied lands were surveyed and land revenue were imposed. In 1854, a system of land classification was introduced. Accordingly, lands were divided into three main classes, viz. 1) Basti or Bari or homestead, 2) Rupit or low rice land and 3) Faringati or highlands.

In the later part of the 19th century a proposal was made to introduce a type of feudal system in Assam by the Board of Revenue. It was decided on 1864 that in Assam it was "in every way preferable course to give the actual occupant of the soil as secure a tenure as can be conferred upon him subject to the payment of revenue to the government, at rates fixed for long periods, and to preserve a clear distinction between the rights and obligation of proprietorships and the duties of fiscal and official administration".

The Assam Land and Revenue Regulation, 1886 (A.L.R.R.), regulates and governs, the land revenue

administration and the terms and conditions of settlement. The A.L.R.R. recognises broadly three classes of owners, viz. proprietor, land holder and settlement holder. The settlement holders could not have any tenants under them, since they were not allowed by law to sublet their lands. The proprietors (except the fee simple tea estate owners and the petty Mirasdari of Karimganj) and the landholders could lawfully sublet their lands, and they did this quite extensively. Thus the multiplicity of various types of leases almost created "vertible rights, interest and obligations bordering a mess".

It is found at present that land is generally not owned by cultivators, and a large portion of the cultivated areas are on lease. Besides, majority of the tenant farmers are sharecroppers (Adhiars) and had to pay a high rent. For fear of eviction tenants do not object the high rent and at the same time are not motivated to take to improved methods of cultivation. It is, therefore, necessary that suitable land reforms are undertaken on high priority basis in the state, to ensure increase production and social justice to the cultivators.

In the two hill districts the age-old jhum system of cultivation is even now widely practised. As is generally the case in the hill areas, there is practically

no individual ownership of holdings. The efforts in these areas is to wean away the jhumias from the wasteful type of cultivation of land.

The principal conclusion that emerges from this chapter is the consequences of administrative changes in the formulation of agricultural policies and on agriculture.

Rice being the dominant crop of the state, the Agricultural policy during the Ahom period was directed towards improving the methods of cultivation. Their policy, however, did not include agricultural items of commercial values. They were mainly responsible for the wet paddy cultivation of the state, as also the development of the techniques of growing rice through irrigation and terracing. The success of their agricultural policy was indicated by the political and economic stability achieved during the period.

The treatment meted towards agriculture during the British period was a typical study of colonial exploitation. As noted earlier, the observation made by Mills (1853), that the introduction of an improved method of agriculture would render her produce ten fold more abundant and that a moderate degree of attention directed by the government to the subject would lead to the attainment of that all

important and desired object.

With the discovery of the profitability of tea and jute in the region, the agricultural policy of the British had been a shift of production in favour of cash crops, destined primarily to increase the material prosperity of the region. Thus policies were systematically designed to improve the conditions of these sectors to develop them on a commercial basis. The commercial sector, therefore, received the required impetus to make rapid stride towards progress. While the traditional sector was left to its own devices, consequently leading to stagnation.

Due to non-availability of local labour, migrant labour from outside was encouraged to settle in the region. Majority of the migration took place from the East Bengal districts of Mymensingh, Rangpur, Bogra and Pabna, that soon outnumbered that from other parts of the country. Thus "the settlement which was encouraged in the beginning and was treated as internal transfer of population between the two provinces upto the partition and independence of the country, became a trend, which once set could not be stopped, and continues even now, although with lesser intensity. The outcome of the agricultural policy of the British was the introduction of many new facets in the

region. These can be stated as:

First, it has given a commercial bias to the otherwise subsistence economy of the state.

Second, within agriculture, it created a class of workers more or less dependent on wages.

Third, the increased population in the valley, necessitated an increase in the production of foodgrains.

Fourth, since the British interest in the region was primarily commercial, the government attention and expenditures to improve the agricultural economy was restricted to certain favoured pockets comprising the commercial sector. This, therefore led to the stagnation of the traditional agriculture.

At the time of independence, the process of stagnation, with its associated problem had taken a firm foothold in the field of agriculture. After independence, the government was therefore left with the task of reshaping and restructuring its agriculture. The development of agriculture since independence, however, provides a dismal picture. This period also witnessed large scale immigration, particularly after partition, and after the Bangladesh war. Consequently, the alarming rise in population exerted tremendous pressure on agricultural land. This resulted in the imbalances in the man-land ratio, and the acute problem of food shortages faced by the state.

The relative backwardness of the peasant agriculture in Assam, as compared to the other states in India is demonstrated by the various indicators, discussed so far. At present we find that an average Assamese peasant cultivate a 1.4 hectare farm as against a national average of 2 hectare. The farm techniques used and the crops grown have remained essentially unchanged for centuries, so also the problems faced by the peasant. The main thrust of Agricultural development, of Assam has to be on intensive and modernised agriculture aiming at self-sufficiency in food production with an increase in production of pulse, oilseeds, sugarcane, potato and other crops. Pointed attention has to be paid to development of the infra-structural facilities. The re-construction of infra-structure, therefore, is undeniable. It is to be noted that Assam has to move up substantially even to reach a position near the national average. The various measures taken by the Government to overcome the present agricultural situation is discussed in Chapter IV.

CHAPTER- V

DEVELOPMENT OF POLICIES WITH SPECIAL REFERENCE
TO AGRICULTURE

The previous chapter identifies the fact that agriculture is the vital source of earnings of the people of the Assam valley as well as how policies influenced this aspect. It is important to note, that in matters of foodgrains, Assam was always self-sufficient. It was only during the Second World War, that the first impact of food shortages and likely food crisis was apprehended. It was at this juncture that the Government felt the necessity of producing more food in the State. With this end in view, 'the grow more food' campaign was launched in the State, as in other parts of India.

With the attainment of independence, the government further resolved to strengthen the base of its expanding economy. Thus, the development plan of the State of Assam was initiated in the optimistic climate of 1951 along with the rest of the country. During this time, the present States of Nagaland, Meghalaya and Mizoram were parts of the composite state of Assam and continued to do so till 1963. Till the beginning of the Fourth Five Year Plan, therefore, the plan expenditures in respect of Meghalaya and Mizoram figured in the Five Year Plans of Assam. Assam, embarked upon her programme of planned development, with a modest Five Year Plan of Rs. 20.5 crores. Since then, the financial outlay of the subsequent plans, has become

substantially larger in size. This could be seen from the Table 'X' below.

Table-X

State Plan Expenditure of Assam

Plan	Period	Expenditure (in crores)
1st Plan	1951-1956	20.5
2nd Plan	1956-1961	54.48
3rd Plan	1961-1966	132.34
Ad-hoc Plan	1966-1969	68.13
4th Plan	1969-1974	206.00
5th Plan	1974-1979	473.83
6th Plan	1979-1985	1311.40
7th Plan	1985-1990	3550.00

Source: Planning and Development Department, Government of Assam.

The importance of Agriculture which was reflected both in the past and the present history of the State, was given the highest priority. When we examine the plan expenditures, by different heads of development, it becomes obvious that these plans have a distinct agricultural bias (Table 'X'). It can be seen from the table that agriculture and rural development accounts for a major part of the total outlay.

Table-XI.F

Plan Expenditures un Different Plans in Assam

(Rs. in crores)

Head of Development	1st Plan	2nd Plan	3rd Plan	Ad-hoc	4th Plan	5th Plan	6th Plan	7th Plan
Agriculture and Allied Services	3.63	7.38	12.38	11.16	38.08	106.83	202.26	843.39
Co-operative	1.23	7.64	10.12	3.39	7.52	18.00	25.80	51.20
Irrigation & Power	4.60	6.83	57.43	31.24	66.09	149.00	661.95	1364.73
Industry & Mining	0.10	4.38	8.00	5.34	18.64	32.00	59.35	194.34
Transport & Communication	3.49	6.55	7.49	4.31	28.72	43.00	105.73	211.65
Social Services	7.46	20.17	35.61	12.19	44.25	117.00	247.86	822.26
Miscellaneous	-	1.54	1.31	0.50	2.70	8.00	8.47	61.92
Total	20.5	54.48	132.34	63.13	206.00	473.83	1311.40	3549.49

Source: Planning and Development Department, Government of Assam.

The main aim of agricultural planning is to produce new policy measures in order to promote and facilitate changes in the direction of the targets laid down in the overall developmental plan, i.e. to produce a programme of development. The essential elements are as follows:¹

- 1) Statement of agricultural development objectives consistent with the overall plan,
- 2) Realistic targets for the development of agriculture over the period of the plan,
- 3) Statement of measures to be taken and changes proposed to achieve these targets,
- 4) A list of special projects in the public sector required to be implemented to enable these targets to be met,
- 5) A long range programme in which the annual and medium term plans form a consistent part,
- 6) Organisational changes required to promote and facilitate implementation of the plan, and
- 7) A measure of external and other requirements of the plan.

Generally policies concerned with development has three basic aims - firstly, those that attempted to increase existing production; secondly, those that stimulate new forms

1. C.J. Martin, 1971, Planning Institution in M.G. Blase, ed., 1971, Institutions in Agricultural Development, Iowa, The Iowa State University Press, p.93.

of production and finally those that simply aimed at avoiding any loss of production by maintaining the existing levels of output.² The development policies of the state was governed by and large by the overall policy framework of the National Commission, as evident in different Five Year Plans. We find that the first two aims co-existed.

In accordance with the national plans, the early efforts laid emphasis, first, on institutional changes, through land reforms, co-operatives and community development, and second, on increasing production through techniques, such as increasing the hectarage sown, irrigation and fertilizers.

It is to be noted that the present study is concerned only with those policies that have direct relevance to agricultural production. Prior to considering the policies, it is of importance to consider the basic features of the Five Year Plans undertaken so far, particularly the objectives, targets and achievement. Because, this would provide the scope to examine whether geographical factors made any contribution in the difference between prediction and actual results.

2. J.R.V. Prescott, 1968. The Geography of State Policies, London, Hutchinson & Co. Ltd., p.141.

The First Five Year Plan was designed to remove shortages and disequilibrium in the economy, created by war and partition. In order to strengthen the economy at the base, priority was naturally attached to agriculture, with a view to increase the production of foodcrops. An expenditure of Rs. 362.77 lakhs was incurred on agricultural schemes, during the period. As a result of this, a potential of 2.75 lakh tonnes of additional production was achieved. The Second Plan (1956-61) was designed to carry forward the process of development initiated in the course of the Five Year Plan. In this Plan too, highest priority was accorded to agricultural development. An expenditure of Rs. 737.57 lakhs incurred against an allocation of Rs. 794.95 lakhs. The target of additional food production was fixed at 3.83 lakh tonnes against which the actual achievement was 1.38 lakh tonnes. The period, as can be seen, witnessed a considerable downward trend in agricultural production and thus, achievement during the First Five Year Plan could not be repeated. The Third Five Year Plan (1961-66), envisaged rapid agricultural development, which would in turn help the progress of industrial growth. The provision in the plan for the agricultural sector was Rs. 1,262 lakhs against which expenditure was Rs. 1,220 lakhs. The target for additional foodgrain production was fixed at 4.2 lakhs tonnes against which the achievement was 3.87

lakh tonnes.³

Despite, highest priority being accorded to agriculture, the Third Five Year Plan failed to make a significant headway. This was mainly due to, besides, the the natural calamities, the two foreign aggressions, that the country had to face. Hence, the Fourth Five Year Plan had to be differed, and the Ad-hoc Annual Plans (1966-67 to 1968-69) was formulated. So far, during these periods of planned development, the objective to increase agricultural production was motivated, to generate a surplus. However, since the end of the Third Five Year Plan the State has been rendered as deficit in foodgrain production, particularly rice, which is the main crop of the State. While in case of other foodgrains like wheat and pulses, the State is chronically deficit. Hence the main motive behind the plans, now is to regain self-sufficiency in foodgrains by increasing production. Thus the main objective of the Seventh Five Year Plan (1985-90) are as follows:⁴

- a) To attain self-sufficiency in rice production,
- b) To increase the productivity of wheat to all India level,

3. The figures cited are obtained from the Report of the Assam Agricultural Commission, June 1975, Govt. of Assam, State Planning Board.

4. Agricultural Guide Book (1985-86), Dept. of Agriculture Assam, Guwahati, p.84.

- c) To bring as much area under pulses and oilseeds as possible,
- d) To give special attention to augment the production of commercial crops like sugarcane, jute, etc.
- e) To give more stress on horticultural crops, by encouraging the farmers to take up production in commercial line, and to create infrastructure for processing and marketing of the product.

To realise the broad objective of increasing food production, since the First Five Year Plan, and to achieve the targets fixed in the plans, several policies were formulated. These policies besides augmenting agricultural development, were supposed to lead the development of other assumption of the plans mainly the availability inputs such as fertilizer, seeds, irrigation facilities, etc. within the scheduled time.

The 'Grow More Food (GMF) Campaign' a policy launched in 1942-43 reoriented in 1949-50, ultimately became an integral part of the First Five Year Plan. It was designed to step up food production, through a seven-point integrated programme of 1) Irrigation, 2) Seed multiplication, 3) Better farming practices, 4) Reclamation and utilization of waste land and 5) Double and multiple cropping. Since it was a

self-help project, it aroused a spirit of collective enthusiasm among the cultivators. It was claimed in the review of the First Five Year Plan that most of these schemes yielded a tangible results. Against a target of 2.3 lakh tonnes of additional foodgrains 4.41 lakh tonnes were achieved.⁵ During the last two years of the First Plan, a co-ordinated approach was given for agricultural development by the department of community Development and Agriculture.

It was thought during the early 1950's that Community Development Programme, would ultimately bring the desired transformation in rural India. "A fundamental idea behind Community Development was that increased agricultural production could be achieved only in an atmosphere of total development and that institutional changes had to precede any sustained production effort".⁶ In accordance to the national plan, the Assam government also adopted the policy of Community Development, initiated in the middle of the First Five Year Plan. During this period the project was introduced in Darrang, Cachar and Sibsagar districts, covering 5633 villages and 27 Community Development Blocks.

5. First Five Year Plan, Assam - A Review, Planning and Development Department, Government of Assam, p.6.

6. S.K. Ray, et al., 1979, Policy Planning for Agricultural Development, New Delhi, McGraw Hills, p.24.

During the Second Plan 57 additional blocks were started raising the total Community Development Blocks to 84, by the end of the Second Plan. By the third plan following the recommendation of the Balwant Rai Commission with Gaon Panchayat at the village level, Anchalik Panchayat at the Block level and Mokhuma Panchayat at the sub-divisional level was made directly associated with the Community Development Programme.

Under the programme, seed farms were established to cater to the needs of the improved seeds of the farmers. As there were scarcity of chemical fertilizer, more attention was given for the utilization of local ~~manurial~~ resources, including town composts. Lands were reclaimed and some of the flood affected areas were settled. This policy appears to have been successful, and as such continues to appear in the subsequent places.

During the Third Five Year Plan, two special policies came into operation - i) The Policy of Area Development (IADP & IAAP); ii) The Policy to adopt HYV, to increase agricultural production.

Intensive agricultural production programme (IADP) originated as a pilot programme designed to demonstrate how agricultural production could be increased at a rate much faster than had yet been accomplished. Since it was

realised that the doubling of personnel and other resources required for such programme would be explosive, a determined effort was made to initially restrict the programme into one district in each State. In Assam, the IADP was implemented in Cachar district, and has seem to have been made tangible impact. While the Intensive Agricultural Area Programme (IAAP) were initiated in four plain districts of the Brahmaputra valley. These programmes seem to have made lasting impact on the agricultural development of the State. This explains as to why these policies continue to recur in the plan.

So far, the growth of foodgrains has taken place mainly due to increase in area and associated traditional inputs. It is clear from the table XII that out of 17 states of the Indian Union 11 states occupy less percentage of area but higher percentage of output while remaining 6 states (Karnataka, Gujarat, Himachal Pradesh, M.P., Rajasthan and Maharashtra) have higher percentage share of output of the country. Regarding increase in area between 1965-66 to 1970-73, Assam ranks second after Punjab in the country. Therefore, the recent growth in agricultural output has come mainly from area increase and a slight

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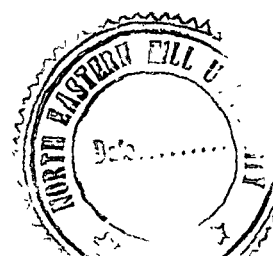


Table XII

Rank of Assam Among the States of India in Terms of Levels and Growth of Average Area, Output and Productivity (1962-65 to 1970-73)

Ranking of states based on 70's per hectare production	1962-65				1970-73				% Annual Compound Growth Rate	
	% Area (Hect)	% Output	Yield Rupees/Hect.	% Area (Hect)	% Output	Yield Rupees/Hect.	Area	Output		Yield
	(Hect)	put	Hect.	(Hect)	put	Hect.				
1. Kerala	0.70	1.32	1616	0.73	1.32	1777	0.83	2.02	1.18	
2. Tamilnadu	4.63	7.98	1469	4.57	8.31	1770	0.12	2.47	2.36	
3. Punjab	3.19	4.31	1152	3.75	6.79	1761	2.33	7.91	5.45	
4. West Bengal	4.56	7.14	1336	4.99	4.41	1442	1.45	7.42	0.96	
5. Assam	1.70	2.30	1154	1.91	2.41	1227	1.76	2.54	1.77	
6. Haryana	3.21	3.04	809	3.44	4.07	1150	1.19	5.73	4.49	
7. Jammu & Kashmir	0.60	0.52	747	0.60	0.70	1135	0.29	5.67	5.37	
8. Andhra Pradesh	7.88	9.89	1070	7.50	8.43	1093	-0.32	-0.06	0.27	
9. Uttar Pradesh	14.77	16.10	930	15.68	17.40	1079	1.04	2.94	1.87	
10. Orissa	3.96	5.14	1106	4.07	4.30	1026	0.65	-0.30	-0.93	
11. Bihar	6.96	7.53	923	6.70	6.73	978	-0.19	0.54	0.73	
All India	100.00	100.00	853	100.00	100.00	973	0.29	1.95	1.66	
12. Karnataka	7.01	5.79	705	6.05	5.85	940	-1.53	2.08	3.66	
13. Gujarat	6.83	6.22	774	6.45	6.22	937	-0.46	1.95	3.42	
14. Himachal Pradesh	0.60	0.53	745	0.60	0.58	931	0.33	3.15	3.83	
15. Madhya Pradesh	11.92	9.06	648	12.12	8.67	695	0.50	1.39	0.88	
16. Rajasthan	8.88	3.97	384	9.50	5.06	518	1.25	5.10	3.81	
17. Maharashtra	12.66	9.16	617	11.34	5.77	494	-1.08	-3.77	-2.74	

Source: Spatial and Temporal Variations in Levels and Growth of Agricultural Output (A Case Study of Assam), Ali Mohammad, New Delhi (unpublished paper).

improvement in productivity per hectare from some of the main crops. Output growth through area increase is in fact the most primitive way of expansion in agriculture.

Hence, a new policy to accelerate the foodgrain production was sought. With the intention to provide a breakthrough, the High Yielding Varieties (HYV), programme was initiated in 1966-67, in a limited scale, in the state. By the end of 1972-73, the entire area under wheat was covered by HYV seeds, and 13.1% of the area under rice. The main constraint, in the way of rapid adoption of HYV of rice cultivation by the farmers as pointed out in Chapter III, is the non-availability of irrigation facilities, supply of HYV seeds and fertilizers. Hence, in addition to the existing programme, the strategy in the Fourth Plan for agricultural development, therefore, was based on the HYV programme, with the package of practices supported by rapid development of irrigation. For this purpose, a separate department for Irrigation and Flood Control Board was created in Assam towards the end of the Fourth Plan. Efficient supply of inputs through Agro-Industries Corporation and Seed Corporation, Reorganisation of Education, Research and Extension in the State. This policy, continues to be the dominant feature, not only the Fifth and Sixth Five Year Plan, but also of the Seventh Five Year Plan. This is why, we find increasing allocation of resources in these sectors of the plan.

At the insistence of the Planning Commission, the Government of Assam during the Fourth Plan, took up the scheme of Small Farmers Development Agency (SFDA) and Marginal Farmers Development Agency (MFDA). The Agencies established four projects, in the districts of Goalpara, Kamrup, Nagoan and Karbi Anglong. Later the Government of Assam decided in favour of a composite project known as "The Small Farmers, Marginal Farmers and Landless Agricultural Labourers Development Agencies". The objective of the composite scheme is to provide special facilities to the small and marginal farmers for adopting new technology for the cultivation of HYV crops, so that they can minimise their income and provide employment to the Agricultural sector. In addition inputs were issued, training and other bank facilities including bank loans were arranged.

Further, to realise the objective of self sufficiency in rice production, as laid down in the Seventh Five Year Plan, the state government, in pursuance of the recommendation of the Economic Advisory Council, a massive project on rice, as special rice production programme was taken up. A total of 27 blocks, inclusive both developed and less developed, were selected for implementing the programme. This programme proposes to integrate with many

of the existing schemes of the state, aimed at increasing rice productivity and production without any financial involvement. With a view to gaining experience prior to implementing the programme, a Pilot Project on rice production has been initiated in Five selected blocks of the state, viz. Jugijan in Nagoan district, Kuchugoan in Kokrajhar district, Naduar in Sonitpur district and Nazira in Sibsagar districts.

The 'Grow More Food' (GMF) Campaign, the Community Development Programme (CDP), the Area Development Programme (IADP & IAAP), the High Yielding Varieties (HYV) programmes, the SF/MFDA, etc. to mention a few, constitutes the important policies by the Government, since the inception of planned development.

Planning in India has been characterised as "perhaps the most centralised system of planning in the world" and also "the most highly officialised". At the same time "planning at the state level is also highly officialised and is essentially a secretarial affair".⁷ Likewise 'the domination of the bureaucracy in policy formulation is pronounced'.⁸ At the central level different ministries

7. D.R. Gadgil, 1965, "The Fourth Plan Demands New Attitudes and Methods of Work", *Yojana*, 26 January, pp.3-6.

8. S.P. Singh, 1973, Centre State Relations in Agricultural Development, Delhi, p.95.

are responsible for policy formulation within their respective spheres of responsibility as well as for the execution and review of those policies.⁹ In the states, policy is formulated by the departments in the Secretariat with execution being left to heads of departments and other executive agencies.¹⁰

The existing administrative structure of Assam at the secretarial level has been described as follows :

At present at the Secretarial level, there is one Agricultural Production Commissioner, who is responsible for overall agricultural production like Agriculture, Animal Husbandry, Fisheries, Cooperation, Minor irrigation, etc. are in group under the charge of one Secretary, who has under him a number of Additional Joint and Deputy Secretaries depending on needs. The concerned secretary is administratively responsible for the work of his Department who has to take decision on various matters and obtain approval of the minister concerned. It is not clear as to how the Agricultural Production Commissioner is involved in this connection. We consider such an arrangement does not give the well needed co-ordination approach to agricultural production policies or programmes and also considerable time is spent in referring the files

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9. Organisational Set-Up and Functions of the Ministries/ Departments of the Government of India, 1974, Government of India, Department of Personnel and Administrative Reforms, New Delhi, p.11.
 10. B.L. Maheshwari, Organisation Development in a Government System, cited in S.K. Sharma (ed.), Dynamics of Development, Vol.I, 1977, Delhi, pp.343-344.

back and forth to other connected Departments to obtain their concurrence or views in the broad agricultural production couples.¹¹

The Planning Commission advises both the centre and the state governments on the strategy, size, mobilisation and allocation of resources. Since the ultimate decisions lies with the centre, hence, interaction between the centre and the state becomes crucial, while formulating policies. To quote Muir "... awareness of local conditions diminishes with distance from capital and consequently the more remote the region concerned the more numerous becomes consultations between local officials and central ministerial decision makers".¹² It becomes imperative therefore, on the part of the state to provide the requisite feedback so as to formulate policies conducive to local environment. However, 'at the state level, there was generally no consultative committee of the legislatures on agriculture, like the Parliamentary Committee on Agriculture and Rural Economy'.¹³

In order to make meaningful contribution it is essential for policy makers to acquaint themselves with the

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11. Report of the Assam Agricultural Commission, 1975, Government of Assam, State Planning Board, p.69.
 12. R. Muir, 1975, Modern Political Geography, London, p.211.
 13. S.P. Singh, op. cit., p.94.

local agricultural problems. These problems could be the vagaries of weather, the wide range variations in agro-climatic conditions, soil characteristic, the attitude of the people in adopting new technology, etc.

Failing to take into account the regional characteristics of a region resulted in policy failures. The 'new strategy' for agricultural development, as articulated in the Fourth Five Year Draft Plan, that

A deliberate policy of combining high yielding varieties of seeds with a 'package' of complementary inputs in selected but widely distributed water-assured areas was proposed ... the decision to concentrate inputs on the highest productivity areas represented a strengthening of the fundamental policy change which had been initiated under IADP. This decision had two objectives in view: to ensure quick production gains which the more productive areas would most likely obtain, and to promote the prospect that the results obtained by these farmers would set dramatic examples to stimulate later widespread adoption.¹⁴

Considering the agricultural situation in Assam, it can be inferred that the very nature of the new strategy would not allow the state of Assam to enter within

its purview. Particularly so, since the state do not fall within the zone of 'water assured areas' nor under the category of the 'highest productivity areas'. Despite this the 'New Strategy' had been adopted as an important tool in the state's developmental activities. Likewise the IADP, which was initiated with the view that its effect would spread to the adjoining areas. But over the years it was found that the programme remained confined to the same district. Similarly, the HYV programme could not make significant headway because of the inadequate infrastructural support. All these, may partly account for the negligible impact made by the agricultural policies on agriculture, indicated by the constant failure to achieve the targets set in the plan.

In conclusion it can be said that after independence, the contexts of the agricultural policies changed and included more aspects, i.e. not only agricultural production and inputs but also aspects of rural integrated development, etc. It has also become explicit that most of the increase in foodgrain production that had taken place had been due to increase in area, rather than under the impact of the policies. This, therefore, suggest the weakness in the agricultural policies. The important reason behind it may be attributed to the "lack of

communication between planning agencies, day to day decision makers and those affected by decision making."¹⁵

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15. M.P. Todaro, 1977. Economic Development in the Third World: An Introduction to Problems and Policies in a Global Perspective, London, Longman, p.378.

CHAPTER - VI

SUMMARY AND CONCLUSION

A framework of agrarian structure within which the policies undertaken by the government operates, has been presented. In this attempt, this has been done with a view to stress on spatiality. By briefly recapitulating the main findings, it would enable us to relate the underlying unity and thereby indicating the role of geographic factors in influencing the phenomena under study.

From our earlier discussion of the problem, it is clear that the following facts have decisive impact. These are:

Since independence there has been continuous efforts on the part of the government to improve the conditions of agriculture by means of planned development. Despite this and the fact that the state enjoyed significant geo-physical advantages over the other states, the agricultural conditions was far from satisfactory. The policies adopted and implemented by the government seemed to have virtually no impact on the agricultural scenario of the state. Rather, these policies tended to reinforce the existing disparities between the various regions of the valley; between the valley and the surrounding hilly periphery, and between the Assam valley and the agriculturally developed states of the country. The present study

enable one to identify the relationship between socio-economic aspects on one hand and the political phenomena on the other.

The analysis of the politico-geographical realities of the state revealed that there was a definite link between the political activities and the geographical space. A change in administration or territorial boundary induces a corresponding change in policy and priorities of development. Consequently landscape changes followed. It was found that the geo-political location of the state had played a crucial role in determining the present agrarian structure of the society. In the present study geo-political location is construed to mean not only the actual location of the state, in the narrow geographical sense but its cultural, ethnic, political and economic dimension and relationship with its hilly periphery.

The core of the Ahom powers were centred within the Brahmaputra valley. Their policy towards the adjacent hilly periphery was generally to refrain from absorbing them within their domain. The logic behind their policy could be appreciated as the geographical factors of the region were considered. Generally the hilly regions had a weak economic base, characterised by difficult and rugged terrain with thick forest cover that acted as a great deterrent to easy

accessibility of the region. Interaction was possible only through the numerous but difficult passes and river routes.

The British too, followed the policy of their predecessor, i.e. the policy of non-interference in their dealings with the hill region. Their growing interest, however, necessitated them to exert some control over the hilly periphery. Ultimately this led to the amalgamation of the various political units under a single entity. Independence made the government to totally abandon the policy of non-interference towards its periphery. This was due to the strategic location of the hill region along the borders with China, East Pakistan (now Bangladesh) and Burma (see Chapter III).

It was interesting to note that policies adopted by the Ahoms and subsequently the British, enabled them to keep the hill people at bay and at the same time brought about an atmosphere conducive for development of the agricultural economy of the state (although the British interest was essentially commercial exploitation of the region).

Independence brought about a tremendous change in the existing landscape. It resulted in a loss of territory whereby the valley lost most of her jute producing areas

areas to Pakistan.(i.e. Bangladesh). Influx of sizeable number of refugees and dislocation created due to snapping off of railways, road and water communication with the rest of the country made the situation quite difficult. In addition, the state had to face the problems of the dissidence population. This then, paved the way to widespread sectarian riots, leading to internal problems of unrest and divisiveness. In effect, it revealed deep rooted socio-economic cleavages. Consequently, reorganisation of the state took place. The constant turmoil that the state faced, was partly responsible for the reduction and diversion of resources that could otherwise been invested to strengthen the economic base. Consequently, there was a negligible impact of the policies on the growth of the agricultural economy of the state.

The agricultural policy during the Ahom rule was directed mainly to improve the rice economy of the state. The success of their policy was evident by the economic and consequently the political stability achieved during the period indicated by the six hundred years of their rule. The treatment meted towards agriculture during the British period was a typical study of colonial exploitation. With the discovery of the commercial viability of tea and jute in the region their policy had developed a distinct commercial bias. The outcome of the policies adopted by the

British was the introduction of many new facets in the region such as :

i) It has given a commercial bias to the otherwise subsistence economy;

ii) Within agriculture it created a class of workers more or less dependent on wages;

iii) The policy seemed to be also responsible in increasing the population of the valley. Due to the reluctance on the part of the local labour to work in the commercial sector, migrant labour from outside the state were encouraged. These cultivators who came as an immigrant labour were encouraged to settle in the region. This, therefore, necessitated to increase the foodgrain production.

iv) Since the British interest in the region was primarily commercial hence improvement of agriculture was restricted to the commercial sector. Thus while the commercial sector received sufficient impetus for development, stagnation seemed to have set in, in the traditional sector.

Independence brought about changes in the agricultural policy that differed radically from those of the British. Immediately after independence, the primary thrust was to restore status-quo (of the problems created by partition).

Agriculture was stagnant when the state was free from the alien rule, particularly the traditional sector. The state's first reaction, after independence was to intensify corrective efforts on traditional lines. Further, since the country had to face the problem of acute food shortages, it became imperative that the policy should lay emphasis on increasing foodgrain production. Simultaneously, the policy continued to support the growth of the commercial sector. As many of the agro-based industries particularly Jute and Cotton textile industries were facing crisis due to raw material shortages after partition, hence they were looking for alternative sources to meet their demand. The agro-climatic suitability for jute cultivation in the valley induced the government of Assam (so also parts of West Bengal and Orissa) to switch over to jute cultivation. Another notable aspects of the post-independence agricultural policy was the inclusion of aspects of integrated rural development.

Prior to reviewing some of the specific policies undertaken to increase foodgrain production, the conditions within which the policies had to function are briefly reviewed. The relative backwardness and the various constraints faced by the peasant agriculture in Assam, as compared to other states was demonstrated by various

indicators (Chapter IV). These are briefly reiterated below :

The cropping pattern of the state was dominated by rice cultivation, particularly winter rice, that leaves little scope for double cropping. Besides, yield per acre was much lower than that of the national average. In respect to other crops like wheat, maize, pulses, etc. as well as the cash crops grown in the state, the position is the same, if not worse.

The population of the state had been growing at a rate much faster than that of the country since the beginning of the century and the post independence period saw accelerated growth of population. This was largely due to the influx of migrants who came into the region in search of employment opportunities. Here the British administration and their commercial policies also encouraged such movements of population (see Chapter IV) as it served their interests. Later this situation was reversed due to the partition of the country and its attendant consequences.

The consequence of this increase created not only acute shortages of foodgrains but also of agricultural land in the state (Chapter IV). Further the existence of small and fragmented holdings were the result of the rapid

population growth. At present an average Assamese peasant cultivates a farm size of about 1.4 hectare as against the national average of 2 hectares. The small size of land holding is one of the major cause that has stood in the way of modernization of agriculture.

The annual recurrence of flood constitutes another stumbling block that stands in the way of increased productivity and modernization. The extensive damage and loss caused by floods brings to naught most of the developmental activities that takes place. Even in areas that are not susceptible to floods, the productivity has not shown any improvement. Drought is perhaps more exacting than floods. This is despite the fact that the entire area falls under heavy rainfall belt. This can be attributed to the very small proportion of area under irrigation.

The state also had to face the problem of inadequate infrastructure for production and marketing of critical inputs like seeds, fertilizers, pesticides, irrigation, credit etc.

All these factors had contributed substantially to the declining foodgrain production. Thus the state at present has been redered to a food deficit region and as such most of her food requirements are met from outside the state.

Since the inception of planned development many policies had been undertaken for the growth of agriculture in the state. These policies were essentially in accordance to the national policies. The GMP, the IADP and IAAF, the HYVP, IRDF, the CDF etc. were some of the important policies implemented in the state. The policies besides, augmenting agriculture were to initiate development of the rural agrarian infrastructure that has been emphasised or are fall outs of the plans, viz., the availability of inputs such as fertilizer, improved seeds, irrigation facilities, etc. within the scheduled time.

To recount, during the Fourth Plan, a separate department for irrigation was set up. So also to tackle the flood problem, the 'Brahmaputra Flood Control Board' had started functioning. To cater to the needs of improved seeds and other inputs requirements several institutions had developed. To mention a few - Assam seeds corporation was established in 1969. The Assam State Seed Certification Agency was constituted with effect from 1st January 1985, under section VIII of the Seed Act 1966. The main aim of this agency was to create a separate statutory body to provide third party guarantee of seed quality. Assam State Agri-Produce Marketing Board was established in 1970; while Soil Conservation was entrusted to a separate Department since 1975, and so on.

The various programmes undertaken by the government goes on to prove that the concerned authority did not neglect the problems faced by the agricultural sector. At the same time it was also apparent, that the policies failed to generate the desired growth and results in agriculture. This was indicated by the constant failure to achieve the objectives and targets stated in the plans (see Chapter V). Hence the basic aim of the policies which was to gain self-sufficiency in foodgrain production, were as such yet to be achieved. This can also be attributed to the inherent geographical inertia that had earlier kept the study area in comparative isolation.

The analysis of the policies (see Chapter V) has revealed that the negligible impact of the policies on agriculture was a result of inadequacies in policy formulation and implementation as also the understanding the role of geo-political compulsions was significant.

As most of the state plans, are finalised only after consultation with the centre (i.e. planning department), the policy decisions should envisage greater interaction between the state and centre as well as be more closer to the reality and peculiarity of the state. In other words, it becomes imperative for the state to

provide the centre with the requisite feedback inclusive of all the local problems.

It was found that the state had failed to meet this condition to a large extent. Such a situation was largely a consequent of insufficiency of data for plan design at the state level, as well as monitoring and evaluation. Consequently, this led to the over-ambitious objectives and targets stated in the plans resulting in the negligible impact on agriculture. Also the lacunae in implementation could be traced to the dispersed and divided administrative structure at the central and the state level. In the absence of an unified channel of command, there appears to be poor accountability at all levels and programme implementation does not catch up to build a tempo for higher growth rates. This, then, clearly leads to a suggestion that there should be a monitoring and evaluation cell for all development activities, (i.e. existing and proposed) so that the objectives and implementational goals are felt to the lowest administrative heirarchical levels.

In many projects like irrigation, soil conservation, flood control apart, there could be large category of inter-state and national projects involving investments which do not fit in within the limited financial, technical

and institutional resources of an individual state. To illustrate this point mention could be made of the Dihang and Subansiri project, that has yet to be implemented. According to experts, the Dihang project alone would bring down the Brahmaputra level by about five feet. Also both the project has hydal power potential of about 30,000 m.w. Since the project involves both the Assam and the Arunachal Pradesh government, and as it would incur a huge investment, hence, the intervention of the centre is especially desired.

To counter the problems of floods, concrete measures in the lines of Drought Prone Area Programme (DPAP) should be taken up, as applicable to the region.

For a successful assault on the problem of rapid population growth, measures to reduce fertility are likely to play a crucial role. Since the states population is the result of both natural increase and immigration, effective measures to contain the migrant population is required.

It is also universally recognised that all-round agricultural development is not possible without industrialisation (including specifically agro-industrial complexes). At present, there seemed to be a reverse flow of resources due to excessive dependence on import from other states to

meet the food requirements of the people. It is important, therefore, for the central government to locate some public sector industrial undertakings in the state.

It can then be summarised that the discussions so far, highlight the emphasis that was made by the basic premises of the study (see Chapter I). In addition to it, the corollary of the basic premises also becomes apparent i.e. there has been negligible impact of development on agriculture. The reasons for such a situation are due to responses-perception of the inhabitants, the administrators, and others both during colonial and post-colonial periods.

The present analysis suggests a need for a dynamic agricultural policy of Assam, formulated at the state and based on extensive survey of the local problems. The policy should give particular emphasis to resolve the problems of floods and strengthening the infrastructure. However this study is of an exploratory nature and further refinement will be brought about by considering aspects like land tenure system, agricultural price policy, the marketing system, etc. in its geographical perspective.

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